Does Rent Regulation Help Affordable Housing in NYC?

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**Introduction**

In NYC, there are multiple forms of rent regulation measures. Under these rent regulations, rents either cannot be increased or can be increased by a very limited amount, and services and evictions are strictly regulated. The origin of rent control dates back to the housing shortages after World War II, where NYC government enforced tax deduction in order to provide returned soldiers a place to live[[1]](#footnote-1).The measure was effective at the time but created another problem as a result of succession[[2]](#footnote-2). "*Under rent control law, tenants are not obligated to sign renewal leases, as these tenancies are statutory. Rent increases are limited, and services and evictions are regulated.* (NYC government: https://hcr.ny.gov/rent-control)" Economically speaking, while freely increasing rent created a problem for everyone, people often failed to realize that putting part of housing inventory out of the market will only increase the rents/prices of other houses in the market as a simple rule of demand and supply. As a result, rent regulation only benefits few that are selected by lottery at the cost of everyone else desperately needing a house. To put things into perspective, shown in figure 1 is an example of what a rent-regulated apartment's rent would look like in Upper West Side. According to zumper.com, the current median rent for Upper West Side is $4300. In table 1 shows the median rent of different types of apartments as well[[3]](#footnote-3).

If a person with no previous knowledge goes online and searches for rent regulated units, the general answer the person will receive is that rent control helps reduce the rent and increase housing affordability, which contradicts with the reasoning mentioned above[[4]](#footnote-4). Coincidentally, this is often the claim from politicians and political activists. The intention of this paper is to examine this contradiction if rent regulation does help with housing affordability.

**Literature Review**

There are multiple studies being done on the subject, and economists are often taking the views that rent regulation hurts housing market rather than helping it. For example, the paper “*The Effects of Rent Control Expansion on Tenants, Landlords, and Inequality: Evidence from San Francisco*” by Rebecca Diamond, Tim McQuade, and Franklin Qian examined how rent control has negatively affected housing supply as well as creating inequality in the San Francisco region. Datasets being used are Infurtor housing history data, census tract data, and parcel history data. Author used linear regression to examine the effectiveness of rent control and showed that rent control has substantively increased impacts on income inequality in the short run. Politicians often claim that landlords and investors would boost price and create more income inequality, when on the contrary, author showed that in the long run, landlords and investors would adjust rent price to reduce income inequality and to mitigate the negative effect from rent regulations by building more unregulated house[[5]](#footnote-5).

Table

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Figure 1. A rent-regulated building in UWS

|  |  |
| --- | --- |
| Type of Unit | Median Price |
| Studio | 2966 |
| 1 Bedroom | 4277 |
| 2 Bedroom | 6098 |
| 3 Bedroom | 9391 |
| 4 Bedroom | 15125 |

Table 1. Median Rent of Upper West Side as of Dec. 2022

There are also arguments, however, that a carefully devised rent regulation policy could benefit the housing market. The paper “*Time for Revisionism on Rent Control?*” by Richard Arnott is a great example. In the article, author argued that housing market is viewed as perfectly competitive traditionally, and traditional economists’ view often take a harsh stance against the original rent regulation dated back to World War II. While the empirical evidence shows that housing market is imperfectly competitive, which means the rent price is not fully determined by the market and can be potentially manipulated, arguments can be made about how rent regulation can benefit the rental pricing. Additionally, each rent control system affects the market differently, and some carefully devised rent control system could potentially benefit the housing market. Author concludes that each rent regulation system should be reviewed case-by-case and certain “soft” rent control system can be beneficial[[6]](#footnote-6).

Both arguments provide valid points to the rent regulation system. While the classical economic theory seems to suggest that rent control harms the market by reducing supply of housing units, this allegation is based on a perfectly competitive market. When factoring the scenario such as oligopoly/monopoly competition, price manipulation can often provide additional profits to oligopoly/monopoly at the cost of inefficient market. In this case, rent regulation forces big players to play a fair game and help medium-to-low wage workers find affordable rent. None of these, however, answers the question in the tile. Theoretical arguments can only go so far, and a case-by-case analysis is required to provide empirical evidence to this question. In the next section, the housing data of NYC will be examined to provide some insights into the rent regulation system and affordability of housing market in NYC.

**Data Explanation**

Data used to conduct the analysis is US Census 2017 NYC Housing and Vacancy Survey[[7]](#footnote-7). A detailed category is provided in the reference, and some columns are deleted while remained columns are added with title. Below are some of the variables being used in the dataset.

1. In the original data, boroughs are ranked alphabetically. In the updated version, boroughs are ranked based on median income in the area. The category is now ranked as such: Bronx-1, Brooklyn-2, Queens-3, Staten Island-4, Manhattan-5. This is the only difference from the original data category.
2. Householder’s Sex indicates that households are either 1-male or 2-female. Figure 2 shows that number of household male vs female compositions in terms of race.
3. Complete Kitchen/Plumbing Facility with 1 indicating completed or 2 indicating no.

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Figure 2. Race vs Sex

**Data Preparation**

To make sure that people who bought a house can also be incorporated in the survey, instead of using the gross rent as a measure to evaluate housing affordability, a new variable named “housing\_cost” added and is calculated as shown below.

For renters,

For buyers,

The number is lower than the actual cost for buyers who hold a mortgage and higher than those who own the house and rent free. The purpose of this cost is not to reflect the true cost of buyers but to reflect the potential rent of these units if they were renting. #Value

It is also helpful to note that the affordability of houses can only be computed as a fraction of household income. If an area is consisted of only high-income individuals, it is reasonable for the area to have significantly higher rent than other areas. Similarly, a new variable “housing\_ratio” is created and is calculated as:

And monthly income is computed as:

It is worth noting that in the original dataset, there are negative incomes being reported. One cannot earn a negative income under any circumstances, and negative income reported is a loss either to the business owned by the person or to the investment made by the household. The loss is part of savings and will be treated as average income. Similarly, those who didn’t report their income will also have their income set as average income.

Finally, since all housing affordability is considered as a function of income, the main purpose of this paper will consider the work force in general (18 < Age < 65). Figure 3 shows the age summary of the dataset being used.

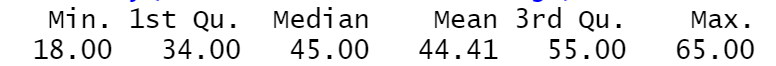


Figure 3. Age Summary

**Model** **and Analysis**

The first step of the model is to construct a linear regression based on housing ratio. In this linear regression, all variables included as part of the model are shown in table 2, and each coefficient’s estimated result and corresponding p-value is labeled. The goal is to find variables that are statistically significant on a 99% confidence interval. The answer is zero. As part of the analysis, any significant values based on a 95% confidence interval is highlighted in bold form, while significant values based on a 90% confidence interval is highlighted in italicized form.

Note that the only coefficient that is statistically significant on a 95% confidence interval is “complete kitchen facilities” and this is expected. One way medium-to-low-income households find to reduce rent in NYC is by sharing part of the living space. As a result, households often share facilities that is non-essential, such as kitchen and living room. Not having a standalone kitchen facilities often mean that the households needs to pay significantly less for the unit, which result in a higher house ratio.

The borough of the unit and householder’s age and rent regulation status are statistically significant on a 90% confidence interval. Boroughs would indicate how high the rent is going to be, and a negative relationship would match the way boroughs are being ranked in data preparation section. A positive relationship between householder’s age and housing ratio is also evident; as householder progresses in age, he/she will most likely progress in career, receiving a higher income. Since dataset considers mainly householders that are younger than 65, it is safe to ignore those who retire and stop receiving high incomes. Rent regulation status comes in as one of the significant variable, and reasonably so as well. If a house is rent-regulated, the house has below-the-market rent. Since the house is most likely supplied to someone with medium-to-low income, it will most likely have minor effect to the housing ratio.

|  |  |  |
| --- | --- | --- |
| Coefficients | estimates | p-value |
| *Borough* | *-0.65863* | *0.0434* |
| *Householder’s Age* | *0.07422* | *0.0421* |
| Householder’s Sex | -0.79961 | 0.3573 |
| Householder’s Race | -0.22648 | 0.2991 |
| Condo/Coop Status | 0.01305 | 0.5399 |
| Number of Stories in Building | 0.36228 | 0.4707 |
| Number of Units in Building | -0.24879 | 0.3035 |
| Number of Bedrooms | -0.39607 | 0.6489 |
| Number of Rooms | -0.21697 | 0.7270 |
| ***Complete Kitchen Facilities*** | ***12.86830*** | ***0.0189*** |
| Complete Plumbing Facilities | -7.41480 | 0.1834 |
| Type of Heating Fuel | -0.99842 | 0.0811 |
| *Control Status* | *0.02723* | *0.0452* |

Table 2. Linear Regression of Housing Ratio

However, while the explanation seemed to be logical, the data suggests that there is no variable that is statistically significant on a 99% confidence interval, and this goes back to the economic model established earlier. In a demand and supply model of perfect competition, the household will pick the best products (in this case, a house) that maximize the household’s utility. If the household could not pick the best products due to affordability, the household would maximize its utility by balancing between income and affordability. The housing ratio regression demonstrates that none of the variables (as part of utilities) are affecting the household utilities, which is a demonstration that household’s utilities are not maximized when picking houses. In other words, households except the wealthiest have to compromise when choosing a place to live. The linear regression shows that NYC’s rental market, or the whole housing market, is in a deep shortage in terms of unaffordable prices and shortages.

However, rent regulation probably should not be directly blamed for this issue. After all, housing shortage in NYC existed before rent regulation was written into law. The next model, however, shows that rent regulation is ineffective in solving the issue, if it did not make the issue worse.

To understand how rent regulation has helped with the problem, it is helpful to compare rent regulated units to free market units to gather an idea on the topic. In the next two linear regressions, the housing costs of rent-regulated units and free-market units are both created and are shown in table 3, and this time only variables that are statistically significant on a 99% confidence interval is included in the table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Free Market | | Rent-regulated | |
| Coefficients | Estimate | p-value | Estimate | p-value |
| Borough | 320.4778 | < 2e-16 | 119.8099 | < 2e-16 |
| Householder’s Age | -17.7627 | 4.04e-08 | -14.5679 | < 2e-16 |
| Number of Stories in Building | 424.9750 | < 2e-16 | 96.3080 | 2.82e-13 |
| Number of Units in Building | -116.4538 | 1.72e-07 |  |  |
| Number of Bedrooms |  |  | 187.1898 | 2.13e-11 |
| Number of Rooms | 361.5846 | 1.32e-12 |  |  |
| Complete Kitchen Facilities |  |  | -355.8349 | 0.00328 |
| Type of Heating Fuel | 227.1220 | 2.20e-05 | 84.1915 | 4.33e-09 |

Table 3. Linear Regression of Rent-Regulated Units vs Free-Market Units

The linear regression shows a great example of what matters in rent-regulated units. While number of units in the building increases with free market units, it is generally the case that individual living spaces would reduce. Also, in the rent-regulated units, the number of bedrooms matter while in the free market units, the number of total rooms matter. The difference is likely a result of different requirements in the rental units. While in free market units, an increased number of bedrooms without an increase in bathrooms will hurt its marketability, yet in rent-regulated units, the condition is to provide a place to live. Similarly for complete kitchen facilities. A completed kitchen would significantly increase the cost of a rent-regulated unit, while in a free-market unit, it is the general understanding that a complete kitchen facility will be included.

It is worth nothing that in both regression, age seems to be affecting the overall rent significantly with a negative trend. As age progresses, adults generally would have kids, which by providing a room to kids would increase rent significantly. However, as adults age further, kids would leave to get their own place. Putting the age as a linear variable seems to be not the best choice. An additional linear regression with free market unit will be created with Age^2 as the new variable. A linear regression is run and a joint significance test is conducted. The result is as shown in figure 4. As indicated in the table, the joint significance test failed and age^2 will be kept as the linear regression variable in the next section when conducting prediction of future rents.

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Figure 4. Linear Hypothesis Test

The comparison shows how limited NYC’s rent regulation system is and kitchen facilities is just a small part of a bigger problem. The houses that are used as rent-regulated units often has no improvements, and no owner would be willing to do any renovations and let the building degrade to the point that it is unlivable to force tenants out, so the owner can gut-renovate the place and get rid of rent-regulation status. Having the place rent-regulated forever would not help, either. It would just force owners to leave the house as is without renting them out or sell it to the next owner for the household to occupy as a single-family residence, while the house can easily be facilitated as affordable housing units for multiple households. Landlords will always find ways to maximize their profits and government should try to find solutions to the problem and that does not include harm rent-regulated units’ landlords, often also smaller investors and more established households, to benefit others; big investors and corporation are often targeting free market units only, and governments’ action to force more laws into rent-regulated units often has no effect on them. If no one is willing to take and maintain these rent-regulated building, which is slowly becoming the case in NYC housing industry, it would just hurt the housing supply more.

Why, one might ask, are politicians often claim rent regulation systems are the key to affordable housing? This is often the result of statistical manipulation without proper reasoning. A simple simulation could show how the process is being done. In the first step, a linear regression model is created that incorporates only free market units, and then rent-regulated units comes into the market using the current free-market price. The result before and after is shown in table 4. The hypothesis is if Actual NYC and simulated NYC has the same mean. The difference is significant, and a t-test result shows significance based on 99% confidence interval (shown in table 4).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual NYC | | Simulated NYC |
| Median | 1587 | | 1871.1 |
| Mean | 2069 | | 2245.6 |
| Standard Deviation | 2739.963 | | 2723.82 |
| Two-Sample t-test | | | |
| t-stat | | -4.695 | |
| df | | 20671 | |
| O0vakye | | 2.683e-06 | |

Table 4. Actual NYC data vs Simulated NYC data

This is often the argument from politicians as well. This argument still ignored that with new units coming into a market, the market will adjust price to compete with that new unit. When all rent-stabilized units are in the market as free-market units, the markets will need to reduce the price in order to compete with these units, and these units will renovate to provide better quality housing to tenants. It could be a win-win situation for everyone.

**Conclusion**

The purpose of this paper is to show that current rent regulation system is ineffective and not to demonstrate what an effective system is. Although part of the analysis suggests a completely free market housing market could benefit everyone, the area of research leaves a lot to be talked about and is, again, not the focus of the paper. As in the literature review section, there might be a carefully devised rent regulation system that could benefit almost households, but such system does not exist in NYC. There is substantial criticism regarding rent control in general and yet it is still used by politicians as a way to affordable housing. Eric Adams in a speech blames landlords directly for raising rents freely[[8]](#footnote-8), which is an absurd accusation considering the market function is to match demand with supply until an equilibrium point is reached. Government has enforced rules to restrict building, increase cost to build, and made it harder to build in general for any investors or general contractors trying to help with the situation. Maybe landlords didn’t help the situation, although in the literature review section, one of the articles indicated that landlords were the main force helping San Francisco’s houses become more affordable, or maybe the true solution lies inside the policy and a extreme complicated bureaucratic system that no one knows how to navigate through.

1. NYC Gov fact sheet #1 (2022): https://hcr.ny.gov/system/files/documents/2022/09/fact-sheet-01-09-2022.pdf [↑](#footnote-ref-1)
2. NYC Gov fact sheet #30 (2019): https://hcr.ny.gov/system/files/documents/2020/11/fact-sheet-30-11-2019.pdf [↑](#footnote-ref-2)
3. Zumper.com (2022): https://www.zumper.com/rent-research/new-york-ny/upper-west-side [↑](#footnote-ref-3)
4. Google search question: is rent control good: https://www.google.com/search?q=is+rent+control+good [↑](#footnote-ref-4)
5. Diamond, Rebecca, Tim McQuade, and Franklin Qian. 2019. "The Effects of Rent Control Expansion on Tenants, Landlords, and Inequality: Evidence from San Francisco." American Economic Review, 109 (9): 3365-94. [↑](#footnote-ref-5)
6. Arnott, Richard. *1995.* *"Time for Revisionism on Rent Control?"* *Journal of Economic Perspectives*, *9 (1): 99-120.* [↑](#footnote-ref-6)
7. US Census 2017 New York City Housing and Vacancy Survey Microdata Occupied Records <https://www2.census.gov/programs-surveys/nychvs/datasets/2017/microdata/uf_17_occ_web_b.txt>

   US Census 2017 New York City Housing and Vacancy Survey Microdata 2017 Household Records - Occupied Units https://www2.census.gov/programs-surveys/nychvs/technical-documentation/record-layouts/2017/occupied-units-17.pdf [↑](#footnote-ref-7)
8. Address Transcript Dec. 8, 2022: https://www.nyc.gov/office-of-the-mayor/news/896-22/transcript-mayor-eric-adams-delivers-address-new-york-city-s-affordable-housing-crisis-and [↑](#footnote-ref-8)