The Comparative Cross-sectional Study on the Affordable Housing Finance Policy for low-income households: Lessons from NYC and Seoul

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by

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ABSTRACT

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Most of the cities around the globe have suffered from serious housing affordability problems, and the situation becomes worse as economic inequality and social disparity widen. Based on this concern, this paper compares the affordable housing policy of two representative global cities: New York City and Seoul. As the first comprehensive cross-sectional study on the two cities, this paper primarily encapsulates financial tools for the enhancement of housing affordability.

Granted their contrasting market contexts and policy strategies, this paper tries to derive some important implications and policy recommendations for each city from the intensive comparisons of demographic and socioeconomic backgrounds, housing policy history, and contemporary representative housing support programs including LIHTC and public housing. As a comparative methodology, the author utilizes his self-developed policy comparison model, coined as the SMART model, whose five major components are Subject class, target Market, policy Approach, Regulation intensity, and policy Tools.

This paper portrays that New York's affordable housing finance policy primarily puts weight on indirect subsidy including tax incentives and public-private partnerships as a conduit while specifically targeting low-income households via mixed-income developments. Instead, Seoul more centers on the broader range of classes such as young people and newlyweds via direct support programs including public housing and subsidized loans for rent, mainly utilizing $163.3 billion National Housing & Urban Fund.

In conclusion, this paper makes some policy suggestions for each city to fill the gap of housing inequality through the lens of urban planners, policymakers, and financial experts.

Keywords: Affordable housing; Housing finance; Comparative research; New York City; Seoul; LIHTC; Jeonse

Thesis Supervisor: Professor Lance Freeman of Urban Planning in GSAPP

Readers: Adjunct Associate Professor Richard Froehlich & Adjunct Associate Professor Tom Wright in GSAPP

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LIST OF ACRONYMS

AMI: Area Medium Income

HOPE VI: Home Opportunities for People EverywhereⅥ

HUD: U.S. Department of Housing and Urban Development

K-HAI: Korea-Housing Affordability Index

KHFC (HF): Korea Housing Finance Corporation

K-HAI: Korea-Housing Affordability Index

LH: Korea Land and Housing Corporation

LIHTC: Low Income Housing Tax Credit

LMIC: low- and Middle- Income Counties

MIH: Mandatory Inclusionary Housing

MBR: Maximum Base Rent

MOLIT: Ministry of Land, Infrastructure, and Transport

NHUF: National Housing and Urban Fund

NYCHA: New York City Housing Authority

NYC HDC: NYC Housing Development Corporation

NYC HPD: NYC Department of Housing Preservation and Development

PACT: Permanent Affordability Commitment Together

PAB: Private Activity Bond

PHA: Public Housing Authority

PHAS: Public Housing Assessment System

PIR: Price to Income Ratio

QAP: Qualified Allocation Plan

RAD: Rent Assistance Demonstration

RGB: Rent Guidelines Board

RIR: Rent Income Ratio

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CHAPTER 1. INTRODUCTION

According to a report released by the Korean National Assembly, as of 2Q.2019, Price Income Ratio (PIR) of the bottom 20 percent income earners in Seoul has increased by around 70 percent to 48.7 from 28.6 in 1Q.2015, which means that it would take 48.7 years without spending any incomes on other necessary living for low-income families to buy an average market-rate housing in Seoul. Aside from the fact, other several data also show that housing affordability in Seoul has worsened. Housing prices in Seoul have skyrocketed while household incomes have plateaued over the last 10 years since the unprecedented 2008 housing finance crisis. The housing market boom, which was catalyzed by the record-low base rate of the Bank of Korea and the misguided housing policy of government authorities, became a pivotal trigger to facilitate the speculation or investment in the housing market. A Korean legislator, Dong-young Chung insisted that as of 2018, the top ten individual persons owned a total of 3,800 housing units with a value of $ 0.6 billion. Specifically, from 2009 through 2017, the number of people owning three to eleven housing units more than doubled from 54,420 to 109,797 people, and multiple homeowners with eleven units or more also soared to almost three times that of 2009.

Nor is this experience unique only in Seoul; most of the global big cities regardless of their locations in Global South and North such as NYC, London, and Shanghai have also been suffering from a similar severe housing affordability crisis. At a glance, the housing market boom seems to be able to benefit everyone in our society and help boost up the economy; however, in reality, only the haves could accumulate more wealth, while the have-nots would be exposed to the higher risk of involuntary displacement and economic exclusion. What is worse, more and more people want to live in big cities to have access to better job opportunities or enjoy superior amenities as well as the well-connected social infrastructures; the UN projected that 68 percent of the world population will be living in cities by 2050. Based on the recent trend and projection, equitable housing, public health, and socioeconomic disparity have been exacerbated. According to UN Habitat (2016), only 13 percent of the worlds' cities have affordable housing. Nearly 1 billion people dwell in slums worldwide, and the number is forecasted to double by 2030. Approximately 330 million urban households are living in substandard housing or feeling the crunch for housing costs, and the figure is estimated to increase to 440 million by 2050 (Mckinsey, 2014). Richard Florida (2017) warned that over 50 percent of the world population lives in substandard conditions; approximately 25 percent of the population resides in informal settlements. Now, the affordable housing issue is not a choice of better living places, but a matter of survival to low-income households and underprivileged class.

In response, various approaches have been chosen to address or mitigate the serious housing crisis. But in terms of methodology, each country and city has implemented its unique programs that conform to its economic and political circumstances as well as social urban contexts. It was because every city has its idiosyncratic traits in terms of demography, economy, society, and culture. Different circumstances such as racial composition, governmental budget, level of household income, housing market vitality, and social attitude led to the development of discrete and distinct housing policies. Some cities, for instance, focused on the top-down approach mainly by way of government-led public housing provision and direct subsidy to the most needy, while other cities zeroed in on indirect subsidy and public-private partnership through tax benefits and the zoning ordinance including Mandatory Inclusionary Housing (MIH). There is no panacea compatible with every situation and environment. However, it is worthy to learn invaluable lessons from other cities' best practices and historical experiences.

For this reason, the effectiveness of various housing policies employed in major cities has been intensively examined by many policymakers and scholars in academia; housing affordability is one of the most principal topics in the Urban Planning and Public Policy arena. Despite an increased interest in affordable housing, it is surprising that so little empirical comparative research on housing finance policy between different continents has been conducted. Particularly, comparative research on the affordable housing finance setting is scarce. Most of the research has focused on each country's contemporary and unique specific topics such as Low Income Housing Tax Credit (LIHTC) or "Jeonse" (the money deposit), which do not have a counterpart to compare. Moreover, the existing small amount of relevant research also has already been outdated; new up-to-date research on the topic is required.

Some cross-sectional comparative research between the West and the East on housing policy has been conducted in Western academia; however, only a handful of studies have specifically conducted the comparative analysis between the United States and South Korea, and especially comparative research on affordable housing finance policy has yet to come. The City of New York is a paragon case study city for the research as one of the most populated and expensive cities with severe housing cost burdens as well as a cutting-edge financial hub therein. Seoul is also taking the smart city initiative while experiencing rapid urbanization as one of the highly-dense cities in the world. So, this paper attempts to contribute to the literature on addressing severely worsening housing unaffordability in the U.S. and South Korea as well as broadening the knowledge base by exploring housing finance policies in New York City and Seoul. This study purports to scrutinize the existing major affordable housing programs for low-income households as well as finding a lacuna in the housing policies of both the cities. Finally, I will derive some suggestions for the enhancement of the two cities' housing affordability.

CHAPTER 2. LITERATURE REVIEW AND APPROACH

Housing, a Fundamental Issue in Human History

If we choose the biggest challenge that our human history has ever confronted regardless of ethnicity, skin colors, nationality, and continents, the housing problem must be one, particularly affordable housing for low-income families and underserved people. According to Maslow's "Hierarchy of Needs", the shelter belongs to the fundamental need called "Physiological need" together with clothing, water, food, etc. However, although human society has drastically evolved in terms of technology and economy, the housing affordability problem has never been resolved enough in any societies regardless of political paradigm and region, and it was the case in both under economic recession and expansion periods. To make matters worse, the housing unaffordability issue has become deeper due to the recent unprecedented massive urbanization and development frenzy as well as population concentration caused by the inflow of returning suburbanites into the inner cities and Central Business District (CBD) area over the last decades. Most of the major cities in advanced and developing countries, regardless of their topological size and economic rank, have seriously struggled with this housing affordability problem. The housing problem even looks like an unsolvable riddle.

The Purpose of this Comparative Housing Research

Spurred by the non-disputable concerns mentioned above, every country has made efforts to preemptively address the ever-worsening housing affordability issue. But their diagnosis and solutions showed a big discrepancy because of the different standards. The housing market is like a kind of a social organism, which interacts with socio-political issues, government interventions, and environmental issues as well as economic factors; therefore, the extent of affordability, fundamental causations, and policy solutions could be varied and intertwined in multi-dimensions. However, at the same time, human society also has commonly shared-values. In retrospect, human history has been repeated over and over, and it will be replicated again for the coming future. Based on the assumptions, a comparison on the advanced countries' housing markets and policy countermeasures could have an invaluable worth particularly to many low- and middle- income counties (LMICs). Through this comparative study, we can have a deeper understanding of how the affordable housing mechanism works, how market participants react to a certain urban circumstance, and what the implications or lessons could be learned from.

The Trend of Comparative Housing Affordability Research

Cross-sectional comparative research in housing policy scholarship has been conducted by many researchers and academia in the urban planning arena. Housing affordability is still one of the biggest topics along with economic development, climate change, and inequality in the global South. But researchers and scholarship that concentrated in the housing policy of East Asia were very limited in Western academia. John Doling and R. Ronald, who are renowned scholars concerning comparative housing policy research, dealt with major countries' housing issues including East Asia; however, they also focused on general housing policy comparisons without a deeper understanding of housing finance mechanisms and housing affordability itself in detail.

More specifically, Connerly (2005) conducted comparative research on fair housing in the U.S and U.K, and Priemus (2000) focused on rent subsidies in the U.S and Housing allowances in the Netherlands. Bentley et al. (2016) examined the role of tenure in the relationship between housing affordability and mental health of individuals in Australia and the

U.K, and they showed that the U.K housing context provides a greater level of protection to tenants living in subsidized housing than Australia through the empirical analysis. Basolo and Hastins (2016) explored the obstacles to the regional housing solutions through a multiple case study about four U.S. metropolitan areas, and showed NIMBY against race and growth is a big impediment to regional housing policies. Bjorn Harsman and John Quigley (1990) conducted comparative research about housing markets and housing institutions in some international cities, and they mainly focused on European metropolitan cities and San Francisco. Desiree Fields and Sabina Uffer (2014) conducted comparative research about the financialization process of New York and Berlin. They argued that the two cities' fiscal instability motivated the privatization of state-owned housing stock and the abandonment of public housing subsidies, but the tenant harassments soared in the property purchased by private equity funds. Robert Buckley and Jerry Kalarikal (2005) also overviewed housing policy in developing countries including Korea, China, and Mexico. They concluded that high housing price was the consequence of the misdirected government policies that failed to make housing supply more elastic by restricting the absolute level of the housing units available.

As seen so far, most of the previous cross-national research on housing policy was saturated in the contemporary research trend with the concentration on the supply and demand mechanism of the housing inventory in the market. The prior research with a fine-tuned focus on up-to-dated affordable housing policy and housing finance system simultaneously was hard to find, and especially no research conducted a direct comparative analysis on affordable housing policy between the U.S and South Korea. The bottom line is that research on affordable housing finance tools between the two cities could fill the research gap and enrich the affordable housing scholarship in urban planning context with the most recent reliable data.

Research Design and Process

This research aims to evaluate contemporary affordable housing policies in New York City and Seoul. It is an effort to figure out what upsides and pitfalls of the policies are, especially from the perspective of how to fill the housing finance gap. Then, policy implications and suggestions to enhance the housing affordability of low-income families will be derived. To do that, a comprehensive mixed-method research scheme including qualitative document review and interviews as well as basic quantitative research using statistical data are employed here.

First, the demographical comparison between New York City and Seoul will be done to clearly understand the two cities' economic and social conditions, which are the principal fundamental factors to affect the contemporary housing policy.

Second, based on demographic analysis, the overall brief review of housing policy history will be conducted. For this analysis, publicly-released statistics, public documents, and existing scholarship will be thoroughly investigated. The evolvement of housing policy will be explored first, and then seek to understand the causation and background behind the scenes.

Third, the interviews with some knowledgeable and qualified housing experts including city agencies, government officials, private developers, and scholars will be included to build concrete arguments and find supporting shreds of evidence. The intensive and heuristic interviews enrich the arguments and understanding of the housing phenomena.

Finally, based on findings from the previous sections, the efforts of generating the grounded theory to explain the contemporary phenomenon as well as some singular policy suggestions will be followed.

CHAPTER 3. THE COMPARISONS OF TWO CITIES

Demographic Backgrounds: Seoul

According to the 2019 World Economic outlook[1] by International Monetary Fund (IMF), South Korea ranked as the world's 11th largest economy with $1.63 trillion GDP with a total population of 51.36 million people as of 2017 (Korea Statistics Bureau), which means that Per Capita GDP is approximately $31,737. As the capital and the largest city of South Korea, Seoul is the economic and cultural hub of Korean Society. The Brookings Institution showed that as of 2014, Seoul had the fourth largest economy with GDP of $845.9 billion after Tokyo ($1,617 billion), New York City ($1,403 billion), and Los Angeles ($860.5 billion). Seoul's economic size is much greater than London, Paris, Beijing, and Washington D.C.

In terms of population size, Seoul is a megacity. As of November 2018, the South Korean population was 51.63 million, and the population of the Seoul Capital Area accounted for 49.8 percent of the total national population. According to the city of Seoul, as of 2018, Seoul's total population was 9,763,936, and the number of households registered was 3,981,741. Given the land size of 233.7 square miles, the population density was intense; 41,778 people per square miles. Moreover, the inhabitants including adjacent commute cities including the Kyunggi province amount to 24.7 million, which placed the Seoul Capital area[2] in the 7th rank among major urban agglomerations in terms of the population across the globe. The infusion of the young creative class will make the population density of Seoul would be greater.

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[1] IMF puts South Korea in other advanced economy category.

[2] Generally, Seoul Metropolitan region contains Seoul, Incheon and Kyunggi province, but, a few big cities in Kyunggi province were included for the analysis. For this reason, there is a report to say that Seoul Metropolitan ranks 5th largest in the world when including all cities within Kyunggi province.

< Table 1. World population in major urban agglomerations >

Rank	City Name	Country	Population	Remarks
1	Guangzhou	China	45,600,000	Incl. Dongguan, Foshan, Jiangmen, Shenzhen, Zhongshan
2	Tokyo	Japan	40,200,000	Incl. Chiba, Kawasaki, Maebashi, Sagamihara, Saitama, Utsunomiya, Yokohama
3	Shanghai	China	35,900,000	Incl. Changzhou, Suzhou, Wuxi
4	Jakarta	Indonesia	30,600,000	Incl. Bekasi, Bogor, Depok, Tangerang, Tangerang Selatan
5	Delhi	India	29,400,000	Incl. Faridabad, Ghaziabad, Gurgaon
6	Manila	Philippine	25,200,000	Incl. Kalookan, Quezon city
7	Mumbai	India	24,700,000	Incl. Bhiwandi, Kalyan, Thane, Ulhasnagar, Vasai-Virar
7	Seoul	S. Korea	24,700,000	Incl. Bucheon, Goyang, Incheon, Seongnam, Suwon.
9	Mexico City	Mexico	22,800,000	Incl. Nezahualcoyotl, Ecatepec, Naucalpan
10	NYC	U.S.A	22,400,000	Incl. Bridgeport, Newark, New Haven

Source: www.citypopulation.de

By the way, South Korea including Seoul has faced drastic population challenges driven by low birth rate and rapid aging. Statistics Korea, a government bureau announced that the childbirth rate is drastically declining in Korea; the lifetime birth rate plummeted to 1.05 in 2017 from 2.99 in 1977. The number of annual newborn babies is projected to keep decreasing from 358,000 in 2017 to 212,000 in 2067. The annual population growth rate is also downwards; it peaked at 2.34 percent in 1967 and forecasted to reach minus 2.16 percent in 2067. As a result, the total population will dwindle to 39.29 million in 2067 after reaching its peak in 2027. Another demographic challenge is aging. The national statistics bureau warned that Korean people over 65 years of age in 2018 were 14.3 percent, but by 2050 the figure is expected to rise to 38.2 percent, which means that Korea will become the most aged society among OECD countries by 2050 (Statistics Korea).

Korea has been a single-ethnic nation over thousands of years of history, so the racial issue has not been brought up officially, but the number of households that became Korean via naturalization, international marriage, and legal immigration reached to 334,856, and the number has been increasing rapidly; therefore, it is necessary to keep vigilant on trend change.

Demographic Backgrounds: New York City

The United States is the world's biggest economy, and New York City is the harbinger city of the U.S. in terms of many aspects including finance and culture. New York State itself had $1.5 trillion GDP, which accounted for 8 percent of the whole country as of 2017 (NYS Comptroller). As of 2014, New York State's economy size was almost as big as South Korea's and Canada's. New York Metropolitan's GDP ranked the second with $1,403 billion after Tokyo Metropolitan with $1,617 billion (Brookings Institutes, 2015). The Oxford Economics projected that by 2035 New York Metropolitan would reach $2.5 trillion and surpass Tokyo, the world's wealthiest city. The New York Metropolitan area is the largest in the world including New York City-Newark-Bridgeport, NY, NJ, CT, and PA. According to Census (2013-2017 ACS 5-Year estimates), the Metropolitan Statistical Area had 20.2 million residents in 2017. Another report indicated that New York Metropolitan city including Bridgeport, Newark, and New haven attained the ranks of 10th in the world with 22.4 million residents. The population size of New York City is parallel with that of Seoul. As of 2017, New York City alone had 8,438,271 people, and the number of households was 3,159,674; population density was 28,188 per square miles. In 2016, the city had 3,463,870 housing units. But the population density is much lower than Seoul. The median household income of New Yorkers' reached $60,762 in 2018, and persons in poverty accounted for 18.9 percent (ACS, 2014-2018 5 years estimates), which outlines New York's the Janus-like stark contrasting facets: the extreme income disparity among the splendid richness.

American history cannot be explained without talking about racism and discrimination. Diversity is a big advantage of New York City, but at the same time, racial dissimilarity has been a big challenge to the city. The city composes of diverse races and ethnicities. Based on the 2019

American Community Survey (ACS), New Yorkers compose of 42.7 percent of Whites, 24.3 percent of Blacks, 13.9 percent of Asian, and others[3]. However, their socioeconomic status (SES) is not commensurate with the racial composition ratio. According to the Census data (2017), 19 percent of Latinos, 17 percent of Blacks, and 13 percent of Asians live in poverty while only 7 percent of Whites do. Lightfeldt (2015) outlined that Black and Latino families are the least likely to own their homes in New York City. Only 26.5 percent of Black households own houses, and Latino families' ownership was just 16.1 percent, whereas, the homeownership of White and Asian households was 41.4 percent and 41.6 percent respectively. The results are closely connected with financial discrimination. New York City's mortgage denial rate was around 18 percent, which was higher than the national average, 12 percent. Besides, the denial rate for black people was 34 percent, which was still far greater than the New York City average (Ibid.). Historically, the minority, particularly Black people have been discriminated de jure and de facto in terms of jobs, housing, education, and so forth. The phantoms of the Jim Crow laws from the late19th to early 20th centuries and Redlining by Federal Housing Administration (FHA) in the 1960s might have not gone yet.

Another demographical issue in New York might be a concern of population decline. The U.S. Census Bureau data showed that New York City is losing its residents. The bureau estimated that New York City's population was 8,398,748 as of July 1, 2018, and the number fell for two consecutive years from 8,438,271 in 2017 and 8,475,976 in 2016. The main reason why people left the city might be the high cost of living including relatively high taxes and extremely unaffordable housing costs. The ongoing housing crisis has been forcing people out of the city.

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[3] Hispanics account for 29.1%, but they maybe be of any races, so also are include in applicable race categories (The Census Bureau).

Home Affordability: Seoul

Homeownership

As of 2018, the city of Seoul had 3,682,384 housing units. Homeownership ratio was 49.2 percent in 2017, which was 7 percentage points lower than the national average, 56 percent. Housing supply ratio that calculated as housing inventory over the number of households has been incessantly increased, but in 2018 the ratio fell for the first time. It was mainly because the number of single households spiked despite the consistent supply of new housing into the market.

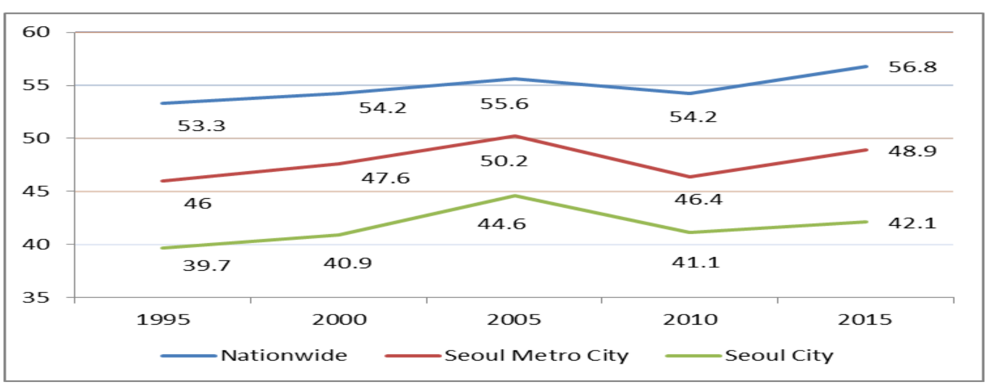
< Table 2. Housing supply ratio in Seoul (1,000 units) >

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Nation-wide	100.4	100.8	101.1	101.3	101.9	102.3	102.6	103.10%	104.2%
Seoul	94.4%	94.7%	94.8%	95.1%	96.0%	96.0%	96.3%	96.3%	95.9%
Households	3,646.46	3,673.38	3,700.63	3,728.24	3,756.18	3,784.49	3,784.70	3,813.30	3,839.76
Housing units	3,442.08	3,477.83	3,509.79	3,546.44	3,607.64	3,633.02	3,644.10	3,671.50	3,682.38

Source: http://stat.molit.go.kr/

Also, the owner-occupancy ratio was much lower. According to Statistics Korea, the home occupancy ratio in Seoul has increased from 39.7 percent in 1995 to 42.1 percent in 2015, but there was de facto no meaningful progress over the last 20 years.

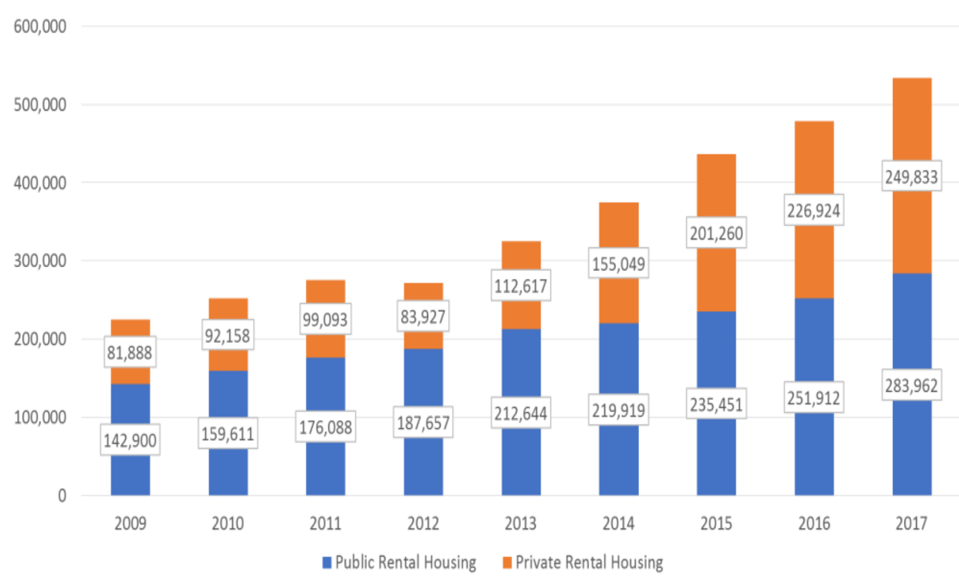
< Figure 1. Home owner-occupancy rate in Seoul (The Statistics Korea) >



Housing Market

As of November 2018, housing properties in South Korea consisted of 61.4 percent apartments, 22.4 percent detached housing, and 15 percent Rowhouse /Apartment units in a private house, and 1.2 percent housing within a commercial building. South Korea is the small nation in terms of the land territory, and as described above, the population density is so high that the construction of high-rise high-dense residential units was inevitable and necessary. The Korean housing market is apartments-oriented. For this reason, in general, when discussing the housing market regarding Seoul, most of the research is based on the apartments. Another distinguishable trait of the Korean housing market is that it is the ownership-oriented market. Seoul's registered rental residential units in 2017 were 533,795 units, which accounted for 18.4 percent of the total housing units, 2,894,078 (MOLIT[4]).

< Figure 2. Seoul's rental housing unit inventory >

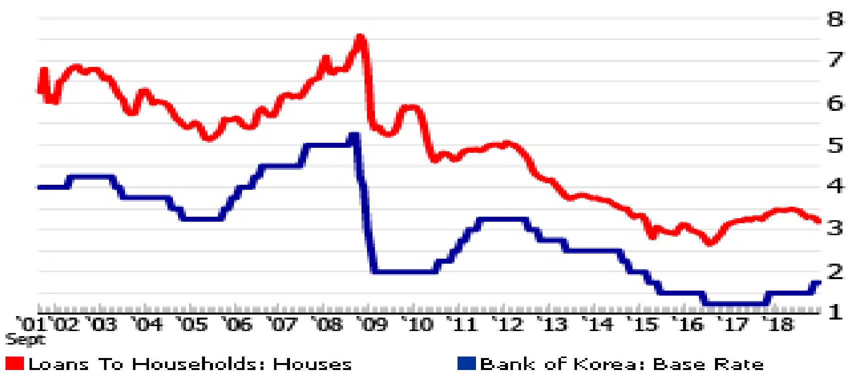


Source: MOLIT

4 Ministry of Land, Infrastructure, and Transport

The housing prices can be determined by the power dynamics of supply and demand on the properties as well as future market expectations. The interest rate is one of the primary factors to have an impact on the housing price change because it is closely related to the funding costs of housing construction and property purchases. The Bank of Korea (BOK) has kept lowering its base money rate and maintained it at the bottom level over the last ten years, which became a trigger to stimulate the housing price increase. In October 2019, the central bank dropped another quarter percent of the base rate and keeps it at a record low level of 1.25 percent.

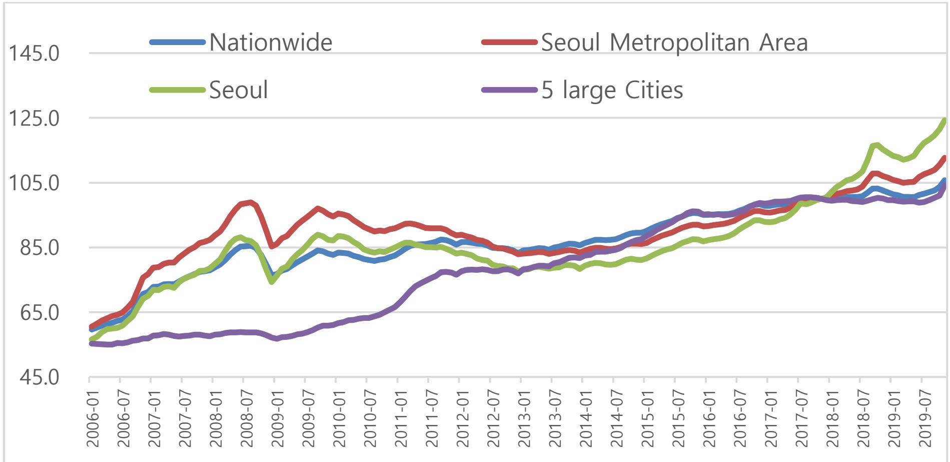
< Figure 3. BOK Key base rate and household loans rate >



Source: Global Property Guide

Housing affordability becomes worsening seriously in Seoul. The housing price index for apartments has been skyrocketing since the 2008 financial crisis. Over the last 10 years, the real property value of luxury condos in central Seoul more than doubled, and some properties even have tripled. According to the Real Estate 114, a real estate information provider, the annual sale prices growth in Seoul has soared: 8.9 percent for 2016, 12.6 percent for 2017, and 17.6 percent for 2018. The apartment price index explicitly shows how rapid the price increases are. The housing price index for multi-housing units in Seoul persistently and dramatically increased from 56.6 in January 2006 to 124.3 in November 2019.

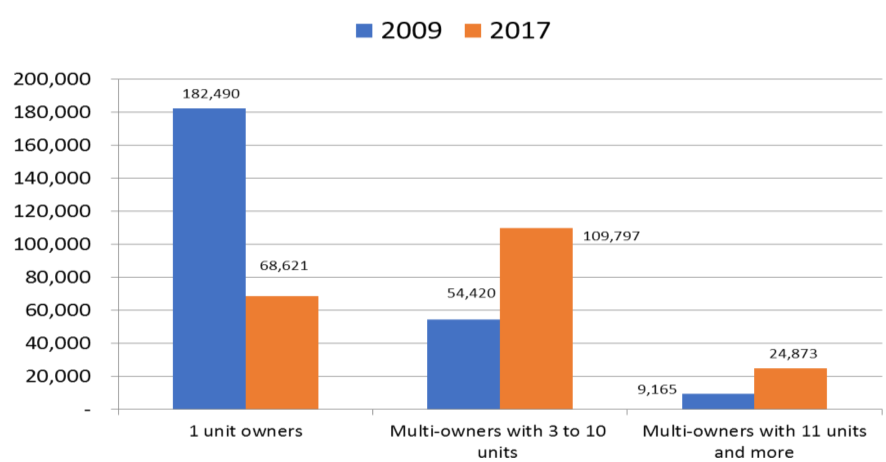
< Figure 4. Multi-units housing sales price index[5] >



Source: Korea Appraisal Board

The recent housing booms also brought up serious speculations in the residential property market. According to the data released by the Korean Assembly in 2019, the top 10 individuals owned 3,800 units with a value of $ 0.6 billion as of 2018. The top 1 percent of individuals owned 7 units on average, and the top 10 percent of persons owned averagely 3.5 dwelling units.

< Figure 5. The increase of multi- homeowners in Korea >



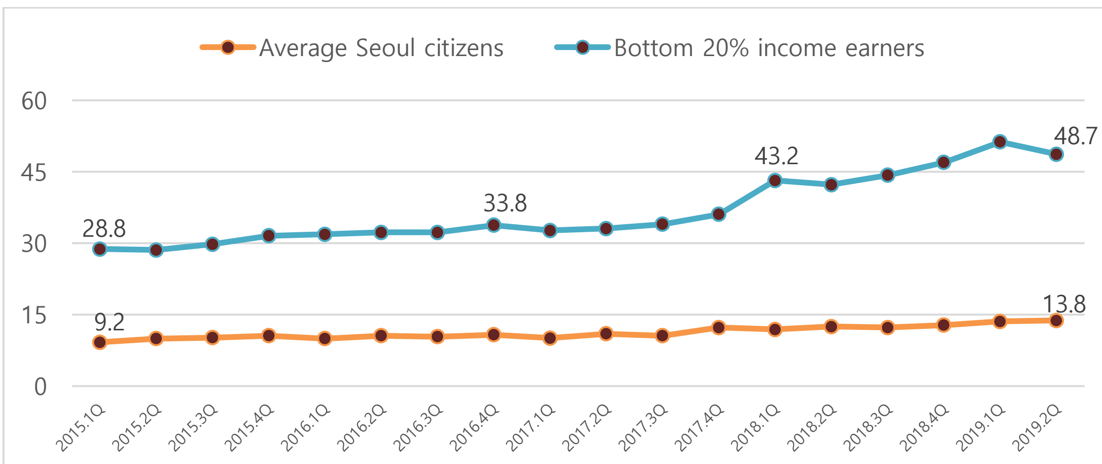
Source: Korean Assembly (2019)

[5] The index indicates that November 2017 = 100, including apartments and multi-family units.

Home Affordability

In Korea, as a measurement of housing affordability, three indices are generally used: Price to Income Ratio (PIR), Rent to Income Ratio (RIR), and Korea-Housing Affordability Index (K-HAI). PIR is measured as the average property value over average income. As of 2Q of 2019, PIR of Seoul was 14.1, but the bottom 20 percent income earners' PIR was 48.7, which means it takes 48.7 years for a low-income family to buy a market-price home without other spending.

< Figure 6. PIR change in Seoul (units: years) >



Source: Sang-Hun Kim, a legislator's office (2019)

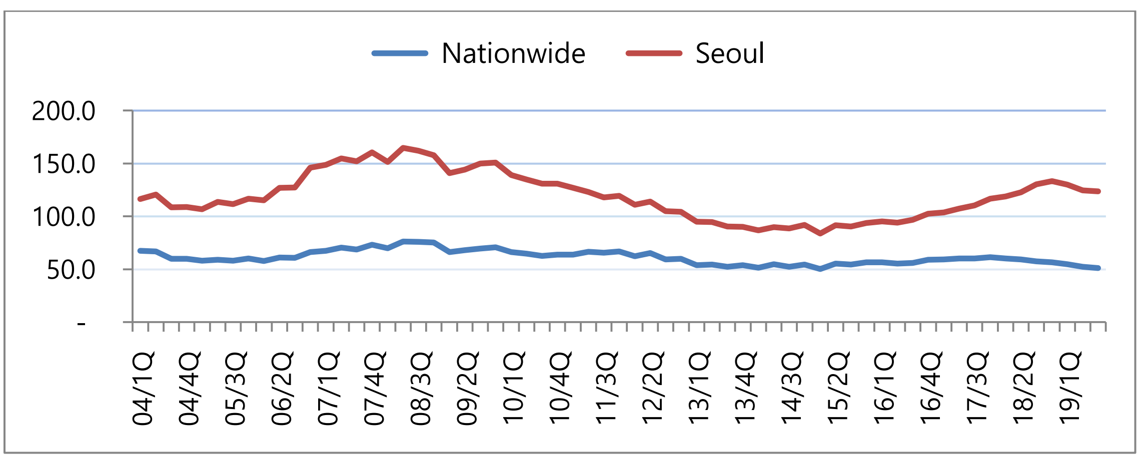
Rent to Income Ratio (RIR)[6] is a measurement for the monthly rent burden of median-income households, but the Korean monthly rent market is so small that RIR is not a meaningful indicator yet. It is because the Korean residential rental market is dominated by the lump-sum deposit lease system called "Jeonse". So, the index has been only used as an auxiliary tool. As of 2018, RIR in Seoul City alone showed a small improvement; its RIR has been slightly decreased from 19.9 in 2006 to 15.5 in 2018 (MOLIT).

[6] RIR = (Median monthly rent / median household income) * 100

Korea-Housing Affordability Index (K-HAI)[7] is an index to measure the housing loan payment burden of median income families to purchase a median-priced home with a standard loan. The higher K-HAI means the greater financial burdens regarding housing purchases. Based on the database from Korea Housing Finance Corporation (HF), as of 3Q 2019, K-HAI of Seoul was 123.6, which indicates that median-income families were paying 123.6 percent of adequate incomes[8] for their homes on average. Historically, the index peaked at 164.8 in 2Q 2008 and began to plummet. In 1Q 2015, it hit the bottom and bounced back; the current level of K-HAI is approaching the pre-crisis levels due to the steep housing price increase despite the recent record-low mortgage rates.

Contrarily, the national average has slightly decreased and plateaued. It is because the government's expansionary monetary policy lowered interest rates persistently. Simultaneously, the property values of small cities and rural areas have been stabilized due to the fewer demands.

< Figure 7. K-Housing Affordability Index (K-HAI) >



Source: Korea Housing Finance Corporation (HF)

[7] K-HAI is calculated quarterly by Korea Housing Finance Corporation since 2008. The formula is that K-HAI = Required available Income for Loan Repayment / Median Household Income * 100.

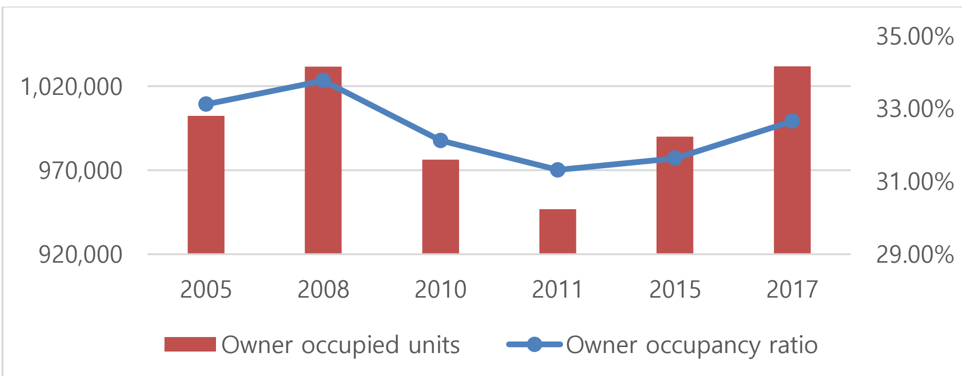
[8] K-HAI of 100 indicates that median income households spend adequate amount (25 percent) of their income for repaying housing debt.

Home Affordability: New York City

Homeownership

The number of owner-occupied units in New York City in 2017 was 1,031,793 units, which has been almost recovered to the pre-crisis level. However, given the population increase during the same period, New York City's homeownership has worsened. As of 2017, the city's owner-occupancy ratio was 32.7 percent. The rate peaked at 33.8 percent in 2008 and declined to the bottom level in 2011 due to the ensued subprime mortgage crisis. After that, the ratio began to climb up slowly, but it remains below the pre-crisis level.

< Figure 8. Owner-occupancy ratio change in NYC >



Source: Census Bureau, ACS 1-year estimates, each year

Specifically, at borough levels, the Bronx had the lowest owner occupancy of 19.15 percent, and the highest rate was given to Staten Island with 69.58 percent. The homeownership could depend on the housing prices level and the residents' income level; Manhattan shows off the most expensive property price, and the Bronx has the lowest average income[9].

[9] As of 2017, 47% of residents in the Bronx are very low- and low- income households (ACS).

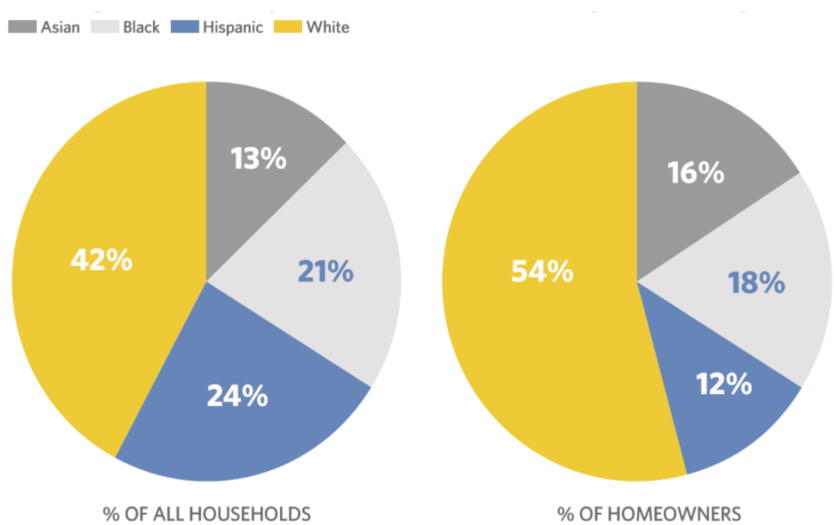
< Table 3. Owner occupancy ratio in New York City by Boroughs >

Borough	2005	2008	2010	2015	2017
Manhattan	22.79%	23.73%	22.26%	23.54%	24.66%
The Bronx	20.98%	21.56%	18.75%	18.74%	19.15%
Brooklyn	30.06%	30.78%	30.21%	28.72%	30.41%
Queens	45.78%	46.35%	43.84%	43.22%	44.27%
Staten Island	70.36%	70.91%	69.62%	68.86%	69.58%

Source: Census Bureau, ACS 1-year estimates, each year

Approximately one-third of New Yorkers have their own homes, and over 60 percent of homeowners are from Queens and Brooklyn: Queens 34 percent, Brooklyn 27 percent, Manhattan 18 percent, the Bronx 11 percent, and Staten Island 10 percent. In terms of race and ethnicity, the Blacks and Hispanic homeowners are still underrepresented in the homeownership market compared with Whites and Asian inhabitants (Baker et. al, 2018). The majority of homeowners in New York City are Whites, while Blacks take charge of only 12 percent of all homeowners, which was half of their racial composition.

< Figure 9. NYC Homeowners by race/ethnicity in 2017 >



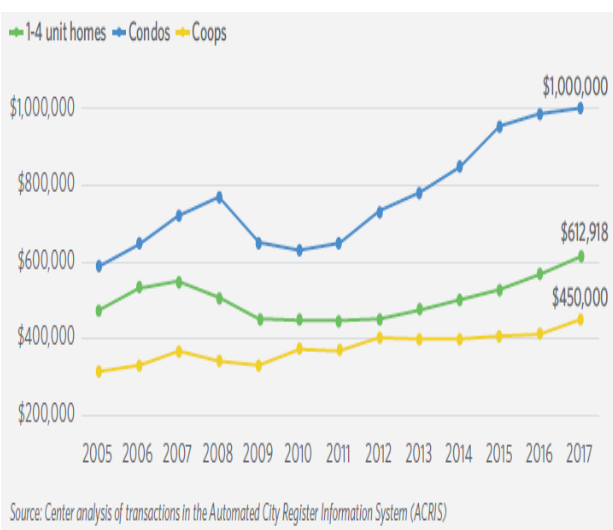
Source: Baker et. al. (2018)

Housing Market

The residential property price in New York City has kept increasing after the 2008 crash and has already surpassed the pre-crisis levels. The median sale price of condos reached $ 1 million in 2017 with an approximately 67 percent increase from $600 thousand in 2005 (Baker et. al, 2018). The NYU Furman Center's data indicates that the properties with five or more rental units show the largest sales value gains since 2000. Over the last 18 years, the multi-rental building price soared to almost 5.5 times that of 2000. Particularly, since the 2008 financial turmoil, the home sales price has skyrocketed dramatically; the property values more than doubled over the last 8 years. Aside from the multi-rental building, all types of homes experienced a similar pattern. All the five boroughs in New York City boast of its steep price increases. Among them, Manhattan showed the highest hike; Manhattan's housing price index spiked from 100 in 2000 to 340 in 2018. The speed of home sales price increases in New York City is too steep to stop worrying.

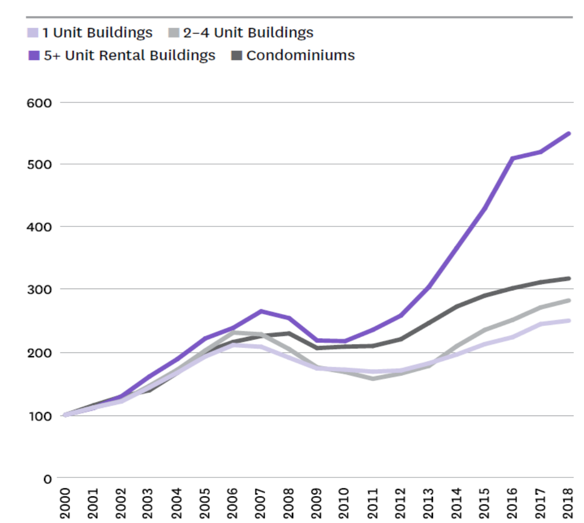
< Figure 10. Residential home prices change in NYC >

A)Median sale prices for residential homes



Source: Baker et. al. (2018)

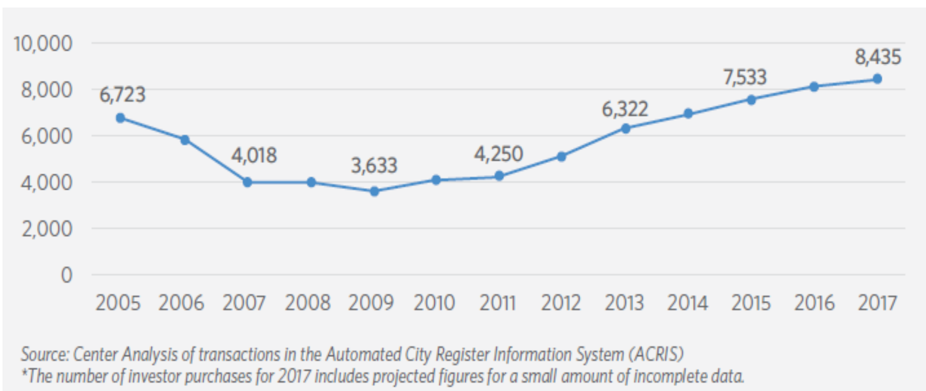
B)Index of housing price appreciation (100 in 2000)



Source: Furman center (2018)

Baker, et. al. (2018) pointed out that as of 2017, the number of residential properties purchased by investors in New York City more than doubled since 2008; 18 percent of all home purchases were by investors. The investors' purchase behaviors focused on the 1-4 family homes and condos market; in detail, 64 percent of the 1 to 4 units-family home sales were gone to investors; 23 percent for condos; and 4 percent for co-ops. The flipping[10] could inflate the home prices by acting as a pushing factor, which could infect nearby properties too and forfeit the chances of the first-time home buyers. The report insisted that on aggregate, the flippers sold homes at up to 50 percent higher prices than similar non-flip sales (Ibid.).

< Figure 11. Number of residential properties purchased by investors >



Source: Baker, et. al. (2018)

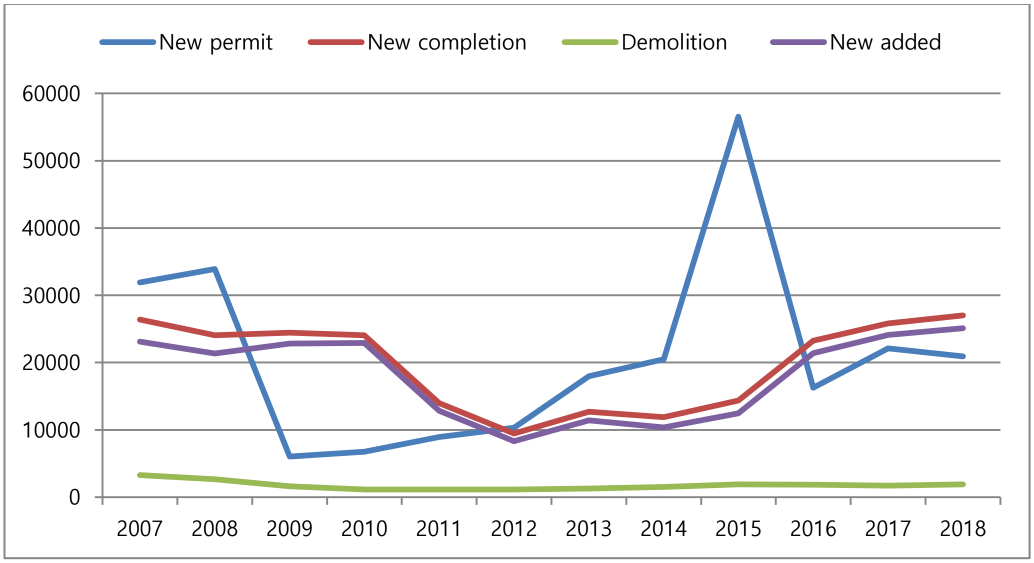
Another data also revealed that the number of young homeowners who are at and under 34 years old has tumbled by 34 percent from 2008 to 2017. On the contrary, the seniors aged 65 years and above have increased by 29 percent for the same period (Ibid.). It can be putatively postulated that the investment purpose demands for housing properties have increased while the real demands for the living places have diminished.

[10] Flipping refers to purchasing an asset with the intent of selling it for a quick profit rather than holding on for long-term appreciation

Housing Supply

New housing[11] units have been steadily supplied to the housing market inventory since 2012. The Housing Supply Report (2019) revealed that in 2018, the number of new housing construction permits, new completion, and demolition was 20,910, 26,992, and 1,888 units respectively. However, a housing permit, which is a measure of how many new housing units will enter the housing market, plummeted after the 2008 housing crisis and still failed to fully recover the pre-crisis levels. The number of permits authorized for new construction fell by a greater proportion, 13.6 percent between 2017 and 2018, while the average size of buildings receiving a permit rose 9.3 percent, which means that the new housing supply could be not enough to support the increasing housing needs for the coming years given its construction time lag and the number of existing units scheduled to be demolished.

< Figure 12. Housing supply trend in NYC >



Source: 2019 Housing Supply Report (2019)

[11] Calculated as new housing completion minus housing units demolition

Home Affordability

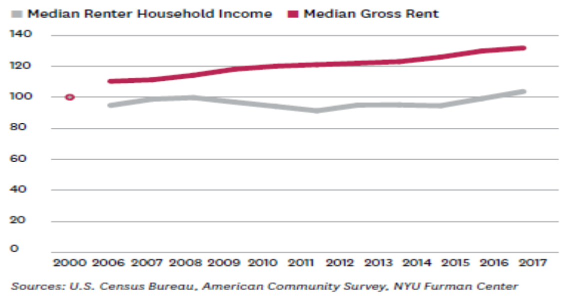
According to the 2019 “Demographia International Housing Affordability Survey” (DIHAS), which uses Price to Income Ratio (PIR) as methodology as an evaluating affordability index, New York Metropolitan area with 5.5 PIR ranked 243th among total 309 international metropolitan cities under its survey. The worst city was Hong Kong with 20.9 PIR. New York City showed better performance than other major U.S cities: e.g. San Francisco for 8.8, L.A for 9.2, and Santa Cruz for 9.6 (DIHAS, 2019). The national average of the U.S cities was just 3.5 PIR, which was the lowest among the eight countries that were surveyed.

The problem is that the average income of residents has not been modest enough to support the price change. Over the last 7 years, the median housing prices increased by more than 60 percent while incomes have not kept the pace. While the median gross rent continuously increased, the median renter’s household income has been decreased and plateaued, which means that low-income households’ purchasing power of housing was weakened.

However, according to the NYU Furman Center’s core data, the median household income of renters recently has been up rapidly with economic recovery from the 2008 bubble bust. The median rent of New York City has been up by 23.3 percent from 2000 to 2018, while the simultaneously median income of renters has also increased to 22.8 percent for the same period. The extent of rent increase was very limited given home price increase over the same observation period. It was owing to the rent stabilization policy in New York City. By the way, income level increase has tried to keep up with the rent increase, which is a comforting signal.

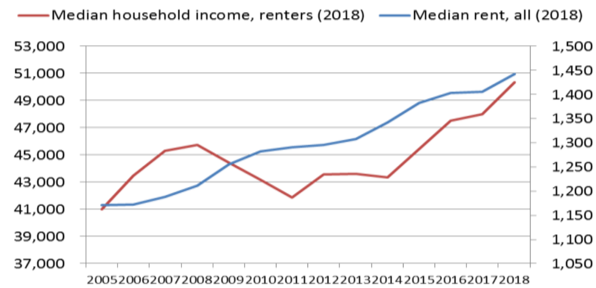
< Figure 13. Median rent and income change (renters) in NYC >

Index of real median income and rent (100 in 2000)



Source: Center for NYC Neighborhoods

Median rent and Median household income (renters)

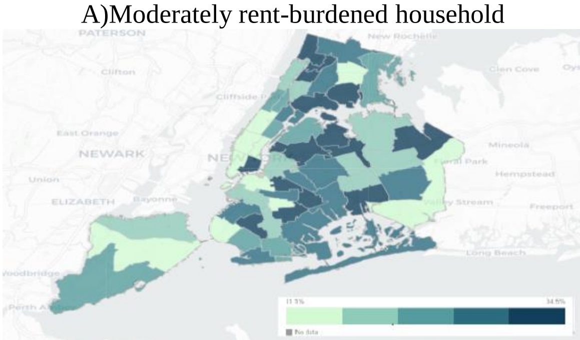


Source: Furman center (Core data)

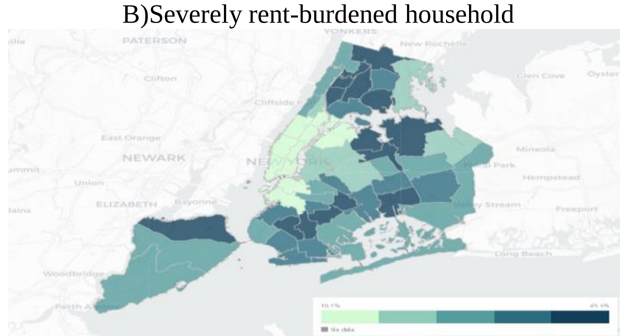
According to the NYU Furman Center, New York City's moderately rent-burdened household[12] explains of 24.51 percent in 2018, which has slightly increased from 23.83 percent in 2005. In contrast, severely rent-burdened households[13] occupied 28.09 percent of whole households, which indicates that approximately one-fourth of New Yorkers are spending more than 50 percent of their monthly income on rents. The figure has increased by 4.4 percentage points from 23.69 percent in 2000 over the last 18 years. Specifically, New Yorkers in the Bronx and the northern part of Brooklyn are still suffering from severe rent burdens despite the federal and municipal governments' mediating efforts to resolve the recent rent crisis.

< Figure 14. Rent burden in NYC (2018) >

A)Moderately rent-burdened household



B)Severely rent-burdened household



Source: Furman Center (Core data)

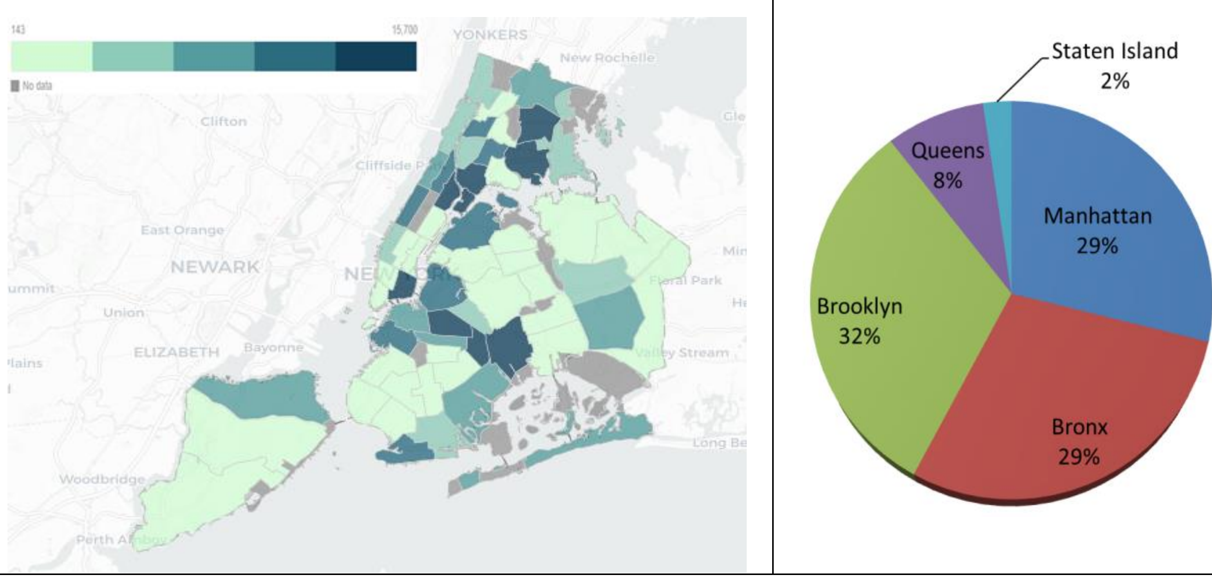
[12] Share of renter households whose gross rent made up at least 30 percent of their monthly pre-tax income
[13] Share of renter households whose gross rent made up at least 50 percent of their monthly pre-tax income.

Public Housing

According to the Furman center data, as of 2019 there existed 191,199 public housing units in New York City, and the New York City Housing Authority (NYCHA) has the largest portion of them**.** By boroughs, Brooklyn has the largest public housing (60,424 units or 32 percent), and there were relatively small public housing units in Queens (8 percent). Among them, 93.7 percent of the public housing units in New York City belonged to NYCHA. As of Jan 2019, NYCHA's units amounted to 179,177 units, which were homes to 393,966 low-income New Yorkers. Public housing represented 8 percent of housing stocks in New York City, and 181,090 families were on the waiting list for public housing as of March 2019. NYCHA provided 51 percent of all apartments in New York City with a rent of under $800 per month, and 74 percent of those were under $500 per month (NYCHA, 2015). The authority is known as the nation's oldest and largest public housing authority.

< Figure 15. Public housing in NYC >

A)The location of public housing | B)Distribution of public housing



Source: Furman Center (Core data)

CHAPTER 4. AFFORDABLE HOUSING POLICY IN NYC

A. History, Backgrounds, and Orientation

In May 2014, the De Blasio administration released a comprehensive plan called “Housing New York” to create and preserve 200,000 affordable housing units over the next ten years. Then in November 2017, New York City unveiled updated “Housing New York 2.0” with a new increased goal of 300,000 homes by 2026. The city’s new plan promised to commit more housing to seniors and extremely low-income households. The city concentrated on improving decaying existing home conditions as well as promoting mixed-income housing through Mandatory Inclusionary Housing (MIH), Mitchell-Lama reinvestment, New vacant land tax, Tiny homes, and so forth. The city’s new plan seems to be able to cover almost all of New York City’s housing issues, and this comprehensive plan shows citizens a strong leadership and the mayor’s will to address the housing crisis in New York City. The city of New York’s housing policy was a pioneering and highly innovative effort even though it could not always be a success during the past two decades. The city has the first titles of the tenement law and comprehensive zoning ordinance in the U.S (NYU Furman Center). For these reasons, the city of New York may be the best exemplary city to scrutinize and derive some seminal implications and lessons. However, New York City’s housing policy has not looked like this in the beginning.

Before the 20th Century, New York’s politicians were not yet to feel the necessity of supporting low-income households by providing subsidized housing. There were no tax abatements and cash grants for low-income housing at the time. Only a few lucky low-income families lived in low-cost tenements that were developed by some kind and wealthy philanthropists. The city leaders believed that the housing problem was personal (Bloom, 2015).

According to Richard Froehlich, first Executive Vice President and Chief Operating Officer of the New York City Housing Development Corporation (HDC), New York City started addressing affordability and habitability starting in the 1890s and then providing for affordable housing under Mayor La Guardia and the first public housing in the country. Essentially every mayor since then has had an affordable housing policy.

Since the 1910s, New York City's "housers" emerged and concentrated on the need and the importance of government subsidies for the improvement of low-income family's housing conditions. In 1926, Governor Alfred E. Smith passed the nation's first financial support program for below market urban housing, which was the beginning of New York's affordable housing policy (Bloom, 2015). The assortment of subsidies have become various and evolved to cash grants, mortgage loan at a below-market rate, and tax break over time. Before the Great Recession, the city targeted poor foreign immigrants living in substandard squalid conditions in East Side slums. The city's policy in the nascent stage concentrated on sanitation and health with the growing awareness of urban living conditions.

During the Great Depression, a lot of banks went bankrupt, which restricted working lower-income households' access to home credit loans. To address those urgent housing issues in the 1930s, the United States found the Federal Housing Administration (FHA), created in part under the National Housing Act of 1934. The federal agency aimed at the amelioration of housing standards and physical conditions as well as providing home financing schemes via mortgage insurance. The FHA came under fire of acute criticisms for practicing red-lining at the expense of black communities. Then in 1934, the New York City Housing Authority called NYCHA, the city agency was built with the aims of providing sufficient public housing units.

From the 1930s to the 1960s, as immigration waned and suburbanization exploded, city leaders broadened the city's role to cover the middle class. Housers concentrated on low-income public housing like Jacob Riis Houses (1949) and middle-income housing like Queensview (1950) to attract people leaving the city (Ibid.). In the years following World War II, to resolve acute housing shortage, Congress enacted the Housing Act of 1949, which extended federal financing for slum clearance, or what came to be known as urban renewal, as well as enhancing public housing and FHA mortgage insurance. Meanwhile, a severe criticism of poor planning was also brought up regarding the massive urban redevelopments: corruption and discrimination against the minorities. Poor working families living in the destroyed places were displaced, and more than 30 percent of whom could not return as promised. The federal government spent $13.5 billion on urban renewal and slum clearance projects between 1953 and 1986 (Rusk, 1999). James Baldwin, an African-American writer renamed the policy "Negro removal."

Since the 1970s, the housing policy faced monolithic political challenges. Policymakers had become more pessimistic on the effectiveness and efficiency of public housing projects, which was under the criticism that the subsidized housing was not sustainable and a waste of public budgets and public-oriented projects were a failure. Pruitt-Igoe in St. Louis (1956) and Robert Taylor Homes in Chicago (1962) are mostly cited cases as a policy failure of the public housing program. Public housing became the lawless places of a disorder occupied with extreme poverty, violence, and prostitution. Finally, in 1973, President Nixon placed a Moratorium on new public housing programs, and the ensuing Reagan Administration cut the federal budget for housing assistance. Influenced by the political complaints, in fact, NYCHA stopped an additional new supply of public housing since the early 1980s. In 1974, The Housing and Community

Development Act of 1974 consolidated diverse HUD’s funding streams into the Community Development Block Grant (CDBG) program (Bloom, 2015).

Another big challenge for New York City in the 1970s was that the city lost over 800,000 citizens because of the white flights to the suburban areas. Combined with rising maintenance costs and stagnant tenant's incomes, the city was obsessed with abandonment and arson. By 1979, the city’s housing agency, the Department of Housing Preservation and Development (HPD) established in 1977, had taken ownership of more than 60,000 units in vacant buildings and another 40,000 units in occupied and semi-occupied buildings through tax foreclosure (NYU Furman Center). Simultaneously, in 1977, Congress passed the Community Reinvestment Act, which required banks to report their lending practices in communities where deposits were gleaned to prohibit discriminatory lending practices like the Red-lining against low-income neighborhoods as well as in particular minorities.

From the 1980s, the U.S. housing policy has experienced a dramatic shift; the city’s affordable housing policy changed its orientation from a direct subsidy to indirect support through primarily Public-Private Partnership. The primary reason why this happened was that other programs were either too expensive or didn't work well. For instance, public housing was expensive and was branded as the concentration of violence and poverty. In 1983, the Housing and Urban-Rural Recovery Act introduced the Section 8 voucher program, which provided qualified low-income tenants with rental subsidies. In 1986, a breakthrough has come; Low Income Housing Tax Credit (LIHTC) was designed to provide private developers initiating the construction and rehabilitation project of low-income housing with lucrative tax credits. By the way, since the mid-1980s, housing prices and rents restarted to rise throughout the city. As a result, homelessness became prominent and pervasive, so the city was compelled to provide shelter houses for them. Moreover, foreign immigration resumed, and the displacement became a big social issue.

However, tax-foreclosed, or in-rem housing continued to deteriorate despite the largest expenditure of budget under the city's ownership. Particularly, disinvestment from the federal government led to a serious maintenance issue of public housing in New York City. In 1992, HUD stepped in again with a new program, the Urban Revitalization Demonstration Program or Home Opportunities for People Everywhere (HOPE) VI to resuscitate the moribund nation-wide public housing properties by proving grants to local governments. The typical HOPE VI was designed to tear down distressed public housing properties and rebuild new lower-rise, mixed-income townhouses as well as single-family homes. At the time, policymakers focused on the design and role of the buildings rather than systematic divestment and mismanagement on the properties. The author of defensible space theory, Oscar Newman, an architect and city planner provided them with a ground for the program. Oscar Newman argued that the poor architectural and alienating environmental design of high-rise public housing was a breeding ground for crime. Most of the American cities such as Chicago and Philadelphia received the grants and dismantled the problem by demolishing the old projects. From 1997-2000 the HUD had approved 120 demolition grants for over 50,000 public housing units across the U.S. (Khafagy, 2018).

Later, the Quality Housing and Work Responsibility Act of 1998 that adopted the policy accelerated demolition of public housing. According to the National Low-Income Housing Collation, between the mid-1990s and 2010, HOPE VI eradicated approximately 200,000 public housing units while replacing with about 50,000 low-income units and providing 57,000 former public housing residents with housing vouchers instead of housing replacements. In addition, after the rehabilitation, approximately one-third of former residents could not return to their homes and instead were displaced to other subsidized housing facilities, which broke the social fabric of the communities.

However, New York City approached the program in a different way. The city reluctantly was inactive for the program; the city only received three HOPE VI grants from the HUD accounting for only $88 million. One reason why NYCHA barely participated in the program was that the city wanted to preserve the public housing property. It was because it was almost not possible to rebuild low-density mixed-income public housing in New York with the federal grants given the extremely high costs of land and construction. But the condition of public housing in New York City had become worse and worse because of systematic underfunding, divestment, mismanagement, and neglect from the federal government.

In 2012, as an ultimate solution to the dilapidated public housing maintenance, HUD introduced the Rental Assistance Demonstration (RAD) program, which was designed to convert existing public housing projects into privately-managed properties funded by Section 8 vouchers. New York City was also reluctant to take part in the new public-private partnership program again. But, later in 2016, NYCHA participated in the RAD program through Ocean Bay, a 1,395-unit public housing complex on the Far Rockaway. NYCHA was authorized to leverage $560 million in the private sector and disaster recovery funds as long as all the units remain as affordable housing for the community (HUD).

B. Principal Affordable Housing Programs

New York City's housing prices are so high that the city has attempted various affordable housing support programs to address its citizens' housing burdens. New York City's housing programs are multi-scaled being divided into Federal, State, and City levels, and there are lots of diverse sorts of housing support programs in New York City: Zoning ordinance including Mandatory Inclusionary Housing (MIH), Mortgage loans for individuals' homeownership increase, and Mortgage-Backed Securities (MBS), etc. However, it is not possible to deal with all the programs of the city in this one paper at one sitting. So, this research will limit its scope to a handful of primary and important affordable housing finance tools: federal subsidy programs such as LIHTC and Section 8 as well as city-level incentive programs including J-51 and M2.

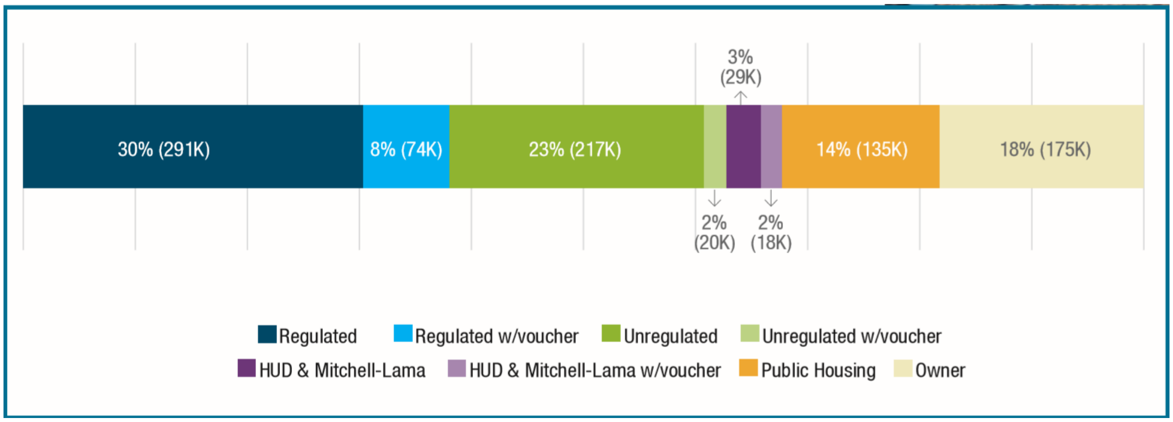
Rent Regulation

According to the National Multifamily Housing Council (NMHC), as of fall 2019, 32 states of the U.S prohibit rent-control. Only a few states such as Oregon, California, District of Columbia, Maryland, New York, and New Jersey are running the regulatory scheme[14], and New York City boasts of the most tenant-friendly and vigorous rent regulations. Nobody can deny that the city's well-established rent regulations contributed to its current relatively low PIR. Given the portion of rental housing units and the percentage of low-income households living in rent-regulated housing in New York, rent regulation scheme is pivotal without a doubt. Rent regulation is one of the unique staple marks of New York City housing and the real estate market. According to the 2017 New York City Housing Vacancy Survey (HVS), 365,000

[14] The rest of states have no rules: no rent control, no preemption.

families, or approximately 38 percent of low-income households[15] reside in regulated apartments (Miranova, 2019).

< Figure 16. Low-income households by housing type (2017) >



Source: Miranova (2019), CSS analysis of 2017 New York City Housing Vacancy Survey (HVS)

The first rent regulation was introduced in New York City in 1920 to tackle the housing shortage problem after World War I under the Emergency Rent Laws, but the laws could have not survived until later than1929. Later in 1942, the federal government passed the Emergency Price Control Act to tame inflation by the economic impact of World War Ⅱ. The Roosevelt government stepped in to set rent controls nationwide via the federal Office of Price Administration (OPA) established in 1943 (Ibid.). In response to the expiration of the act, Congress passed the Federal Housing and Rent Act of 1947, which exempted construction after 1947 from rent controls, but maintained the regulation for properties already completed by that date. After World War Ⅱ, the authority and responsibility for the rent control were devolved to the state level, and a lot of states abandoned rent regulation. However, New York State preserved rent regulation; the state took over the federal regulation program that ended in 1950.

15 CSS defines "low-income" as individuals and families whose earnings are at 200% of the federal poverty level (FPL), or $38,636 for a family of three.

In 1962, New York City began to administer its program, and rent regulation was put under the dual administration of New York City and the state government. But, just a few years later, in 1964, the responsibility of administering rent regulation in municipalities within New York City was transferred to the state department again: the Division of Housing and Community Renewal (DHCR). In 1969, the downturn of the construction business and the vacancy rates prompted the rent increase of the non-regulated housing units. As a countermeasure, New York State enacted the Rent Stabilization Law of 1969, which lifted the bar of the regulation on the units built after the 1947 cutoff for the application of the rent control. Around an additional 400,000 previously regulation-exempted apartments were added under the new regulation. But ensued several acts gradually deregulated the rent-controlled and rent-stabilized housing stock.

In 1970 and 1971, the new laws allowed landlords to pass the rent costs to the tenants upon vacancy and forfeited New York City's authority to regulate the rents. Increased tenants' concerns regarding landlord harassments and rent hikes caused the enactment of the Emergency Tenant Protection Act (ETPA) in 1974, which allowed applying the rent stabilization system in Nassau, Rockland, and Westchester counties; the rent stabilization can be applied to non-rent controlled apartments in buildings of six or more units built before January 1, 1974, in localities that have declared an emergency and adopted the ETPA.[16] The ETPA also affected the New York Rent Stabilization Law, thereby by re-regulating the decontrolled apartments and placing additional buildings under the regulation. However, the responsibility for administering New York City's rent regulation was still in the n-hands of the state's DHCR.

[16] In order for rents to be placed under regulation, there must be a rental vacancy rate of less than 5% for all or any class or classes of rental housing accommodations. Some municipalities limit ETPA to buildings of a specific size, for instance, buildings with 20 or more units.

In 1997, The Rent Regulation Reform Act was passed extending the Rent Stabilization Laws until 2003 and at the same time, broadening "luxury decontrol" to households earning more than $175,000[17] in two consecutive years with rents of $2,000 or more. And the law also had been amended further by the Rent Law of 2003, the Rent Act of 2011, and most recently with the Rent Act of 2015, which has extended New York's rental laws until 2019. Most recently in June 2019, New York State enacted the Housing Stability and Tenant Protection Act of 2019, which made rent regulation system permanent. This act strengthened the tenants' rights; the main modifications are like below (New York State Assembly, 2019).

1) Repealed the provisions that allow the removal of units from rent stabilization when the rent crosses a statutory high-rent threshold and the unit becomes vacant or the tenant's income is $200,000 or higher in the preceding two years
2) Repealed the "vacancy bonus" provision that permits a property owner to raise rents as much as 20 percent each time a unit becomes vacant
3) Prohibited owners who have offered tenants a "preferential rent" below the legal regulated rent from raising the rent to the full legal rent upon renewal
4) Lowered the rent increase cap for Major Capital Improvements (MCIs) from six percent to two percent in New York City

According to NYS DHCR, rent regulation is the policy to limit the extent that the landlords can increase the rent every year: frequency, timing, and amount of rent increase. The policy aims to protect the low-income tenants in the privately-owned residential building from the illegal rent increases as well as allowing the property owners to maintain their buildings

[17] Previously the income threshold was $250,000.

while realizing a reasonable profit.

There are two systems of rent regulation: rent control and rent stabilization. As aforementioned, the rent control only applies to buildings built before 1947. Rent control restricts the rent landlords from charging more rents and puts the limits on the right of the homeowners to evict their tenants. Under the rent control, the tenants can live in their apartments as long as they want as "statutory" tenants[18] without the renewal of the lease contract. However, even under the rent control, the rent increase is still possible, but the extent of increase is limited by the Maximum Base Rent (MBR) system, which is set by Rent Guidelines Board (RGB) [19] for each apartment and adjusted every two years to reflect changes in operating costs. At those intervals, the homeowners can raise the rents to 7.5 percent annually until the rents hit the MBR. The qualified owners are entitled to raise the rents at the lesser of either the average of the five most recent RGB's annual rent increases for one-year renewal leases or 7.5 percent each year until they reach MBR (NYS DHCR). The rent that a tenant ultimately pays is known as the Maximum Collectible Rent (MCR), and it can increase annually until it reaches MBR. New York City Local Law 30 of 1970 stipulates that MBR should be established for each apartment according to a formula to reflect real estate taxes, water and sewer charges, operating and maintenance expenses, return on capital value, and vacancy and collection loss allowance (Ibid.).

On the other hand, the rent stabilization covers the buildings of six or more units built after 1947 and before 1974 that are not subject to the rent control as well as the apartments

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[18] Tenants whose tenancy legally expired, but has the rights by statute to pay rent and occupy under rent contr ol forever without a lease

[19] The board is mandated to establish rent adjustments for rent stabilized residential units. The board consists of nine members, all of whom are appointed by the Mayor: 4 public members, two owners, tow tenants

removed from the rent control. It also includes pre-Mitchell Lama[20] housing units that have lost affordability protections, rent-controlled apartments and legally converted industrial lofts, and buildings that receive J-51, 421-a, 421c, 421-g, and article 11 tax benefits. The rent-stabilized apartments can exit the program when they meet one of the conditions below (Ibid.):

1) When the rent reaches $2,733 upon tenant vacancy (repealed in 2019).
2) Rent reaches $2,733 and tenants' income is higher than $200,000 (repealed in 2019)
3) The Building converts to a condo or co-op upon vacancy of tenant
4) The building is substantially renovated or converted to commercial/professional use
5) Temporary tax incentive expires
6) The building is condemned, demolished, or permanently removed in some other way.

The rent stabilization provides the tenants with several protections including rights to receiving required services, renewing leases, and not be evicted except on grounds allowed by law as well as limitations on rent increases. The rent-stabilized tenants have the right of succession. It is possible to inherit an apartment when the main tenant passes away or moves, and an immediate family member living in the home wants to stay in it constantly. Most tenants also can share and sublet their apartments with their landlord's permission.

As of 2017, 57 percent of rental housing was rent-regulated, most of which are rent-stabilized. The rent-controlled units accounted for 1 percent, and the rent-stabilized units were 44.2 percent. In 2018, 885,205 units were registered as rent-stabilized units (Curbed NY, 2018).

[20] The program was primarily designed to supply affordable housing for middle-income families. Roughly 75,000 rental apartments and 50,000 cooperative units were built under the program between the 1950's and the 1970's.

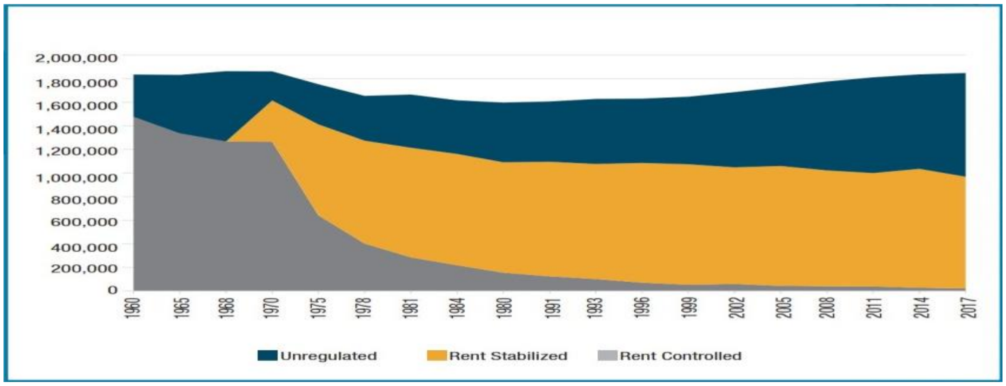
< Table 4. Rent regulation inventory in New York City (unit: thousands) >

Type	2002		2005		2008		2011		2017	
	Units	%	Units	%	Units	%	Units	%	Units	%
Non-regulated	665.0	31.9	697.4	33.3	772.7	36.0	849.8	39.1	936.0	42.9
Rent controlled	59.3	2.8	43.3	2.1	39.9	1.9	38.4	1.8	21.8	1.0
Rent Stabilized pre-1947	773.7	37.1	747.3	35.7	717.5	33.5	743.5	34.2	692.7	31.7
Rent Stabilized post-1946	240.3	11.5	296.3	14.2	305.8	14.3	243.3	11.2	273.8	12.5
Other regulated	346.5	16.6	308.0	14.7	308.6	14.4	297.6	13.7	258.0	11.8
Total	2,085	100	2,092	100	2,144	100	2,173	100	2,183	100

Source: Housing Supply Report (RGB)

A rent increase for the rent-stabilized units is determined by RGB in New York City. The RGB sets rates for rent increases in the stabilized apartments, and the rates are decided once a year and are effective for renewal leases beginning on or after October 1st of each year. RGB must consider the economic condition of the residential real estate industry in NYC including (i) real estate taxes and sewer and water rates, (ii) gross operating maintenance costs (including insurance rates, governmental fees, the cost of fuel, and labor charges), (iii) the costs and availability of financing (including effective rates of interest), and (iv) the overall supply of housing accommodations and overall vacancy rates (Ahe, 2018). RGB also should reflect relevant data from the current and the projected cost of living indexes for the affected area. The Rent Stabilization Law and City Charter require annual hearings before the adoption of rent guidelines. Based on the guideline by NYS DHCR, owners can also raise rents during the lease period in any one of three ways: 1) with the written consent of the tenant in occupancy, if the owner increases services or equipment, or makes improvements to an apartment; 2) with DHCR approval if the owner installs a building-wide major capital improvement, or 3) in cases of hardship with DHCR approval (NYS DHCR).

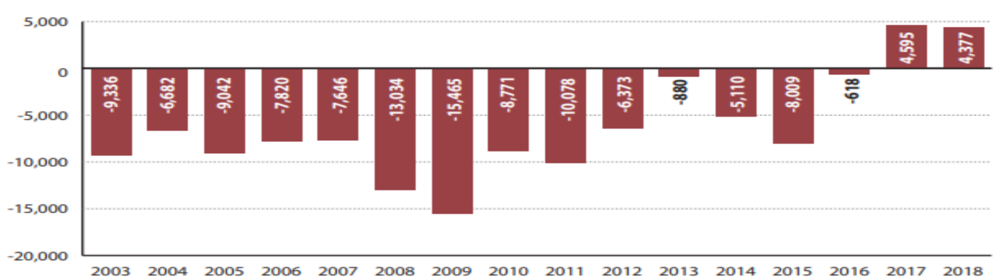
< Figure 17. The rise of rent stabilization >



Source: Miranova (2019)

Unregulated rental units continuously increased, while apartments under rent control dramatically have decreased. Specifically, from 1994 through 2018, 155,558 rent-stabilized units were added, but 298,426 rent-stabilized units were subtracted from the program over the same period (NYC RGB, 2019). The majority of additions were subsidized-housing under 421-a (88,495 units), and the next largest portion was housing that exited from the rent-control program (38,833 units). But over half of subtractions were caused by high-rent, high-income deregulation (160,292 units). Co-op and condo conversion (50,431 units) were followed. The only good news is that net rent-stabilized units have increased for the last two consecutive years.

< Figure 18. Annual net changes in rent-stabilized units 2018 >



Source: NYC RGB (2019)[21]

[21] Referred to "Changes to the rent stabilized housing stock in NYC in 2018".

However, not everyone advocates rent regulation. Rent regulation is also one of the controversial policy topics in the U.S. The primary concern is that the leasing regulation can discourage additional rental housing supply and lead to the decay of the property by prompting landlords to disinvest on building maintenance. The opponents believe that rent regulation has facilitated a housing shortage and housing quality deteriorations. Neoliberal economists including Edward Glaeser argue that deregulation and de-zoning are the only solutions to promote more housing supply into the market, which can lower the housing price level through the power of the invisible hand. They blame that the benefits of rent regulation can go to higher-income households because the regulation could limit the supply of market-rate rental housing, which drives up rents of the non-regulated apartments. They also insist that the too much safe shelter makes poor incumbent tenants rely on the rent-controlled apartments. The fact that the tenants can stay in the rent-regulated apartment as long as they want could make those people less diligent in economic activities. Also, it can deprive other vulnerable households of opportunities to share the benefits. In response to the grumblings, the city loosened the law, which caused the loss of thousands of regulated apartments.

However, if zoning ordinances and rent regulation were repealed, will housing prices be stabilized? Unfortunately, it would not happen like that. In June 2019, most recently, RGB raised rents by 1.5 percent for a one-year renewal lease and 2.5 percent for a two-year renewal lease, which is effective October 1, 2019 through September 30, 2020. The board initially contemplated 6.75 percent of rent increase to reflect landlords' recent operating cost increase of 5.5 percent from March 2018 to March 2019. But the board finally decided this year's rent increase at the same level as the previous year (NYC RGB). The board also has approved a rent freeze for a one-year lease for the first time in 2015 and 2016 consecutively. The board's decision weighs on housing equity and tenant protection over property owners' profits. The city needs a brake to tame skyrocketing market rents to make the city a livable habitat. If rent regulation is the main reason for the affordable housing shortage, Hong Kong must not have the most expensive housing market in the world. Rent control in Hong Kong was adopted during the British ruling period in 1973 but abolished it in 1998 after the Asian financial crisis. Rent regulation is working, and historically, rent regulation has contributed to reining the rent increase in New York City.

Rental Assistance Program: Section 8 housing choice voucher (HCV)

Section 8 is a federally-funded rental subsidy program that is designed to assist low-income families to lease decent private housing. In New York City, the program is administered through several agencies. There are two types of section 8 programs: people-based voucher, which gives the eligible tenants portable vouchers and project-based voucher, which only allows being used in specific housing apartments. HCV is managed at multi-scales by federal, state, and city agencies under their own application process and rules. The federal Department of Housing and Urban Development (HUD) oversees a project-based Section 8 program in New York City. A state agency, the Division of Housing and Community Renewal (DHCR), and two city agencies such as NYCHA and HPD administer the program.

DHCR directly runs the HCV Program in New York City through its Subsidy Services Bureau, and the statewide average monthly voucher assistance payment is currently $725 with a range from $8 to $2,446 based on the region and family income (DHCR). However, a new application for the voucher is closed now. At the same time, the state agency runs the HCR

Section 8 Voucher Home Ownership Program, which helps current voucher holders obtain a home of their own. The households are required to be an HCR Section 8 participant for one year or more and have no previous home ownership records or single-parent displaced homemakers.

NYCHA, the nation's largest PHA, administers the largest Section 8 program in the country as well. According to the NYCHA fact sheet (2019), as of Dec 2018, the city agency supported 185,127 low-income residents in 83,225 apartments. Also, 2,991 Section 8 households lived in the RAD developments. The average household income was $17,150 and the average monthly rent was $360. NYCHA's Project-Based Voucher (PBV) accounted for only a small portion; as of 2019, there were only 8,736 units, and NYCHA had 24,954 private landlord partners. The NYCHA program is also not available now; the waitlist for NYCHA Section 8 is currently closed, and 138,705 families are waiting for the vouchers.

The city's HPD also administers Section 8. According to HPD, as of June 2019, 39,965 households and 81,606 people are having benefits of Section 8 housing voucher program: specifically, Regular voucher 60%, Enhanced 13.5%, and others. In terms of race, most of them are white (49.0%) including Hispanics (39.75%) and Blacks (46.4%). 81.7 percent fall on extremely low-income class with $17,656.94 of average gross income, and average rent and subsidy are $ 1,444.72 and $1,043.58 respectively. The total landlords who participated in the voucher program numbered 8,397. Unfortunately, HPD also currently stopped receiving new applications. Instead, the agency runs other programs including Emergency Housing Services, which helps displaced renters by fires or city-issued vacate orders.

< Table 5. Section 8 Housing Voucher programs (As of June 2019) >

Borough	Units
Bronx	13,448
Manhattan	11,197
Brooklyn	11,138
Queens	2,627
Staten Island	1,266
Others	2898
Total	39,965

Types	Units
Regular	23,974
Enhanced	5,409
PBV	3,935
SPC	2,910
SRO	1,971
Mod-Rehab	1,766
Total	39,965

Source: NYC HPD, Section 8 program indicators

It should be noted again that each agency might have a different set of rules; however, to understand the program components more in detail, HPD’s section 8 program briefing book will be referred to for the investigation in this paper. NYC HPD issues a voucher to the eligible households and the families can choose their homes among the participating houses that the requirements are met. HPD directly pays the landlords of the property the rents subsidy on behalf of the voucher holders. The program aims to keep the tenants’ share of the rent at 30 percent of their monthly adjusted income by paying the difference from “Fair Market Rent (FMR)[22]”, which is calculated by HUD annually in a Metropolitan area. Originally, FMR was determined based on an entire Metropolitan area at the 40th percentile of rents paid by recent movers. But FMR was calculated lower by including far away cheaper suburban areas; therefore, in practice, the voucher holders had difficulty to find a conforming housing in the city. Responding to the criticism that the inaccurate calculation kept the voucher-holders in the poor neighborhoods, since Jan 17, 2017, HUD adopted a new formula, called “Small Area Fair Market Rent”

[22] FMR is determined through the survey via phone and mail questionnaires (100 surveys are made)

(SAFMR), in which rents are determined based on ZIP[23] codes for the Metropolitan area.

The voucher size (the number of bedrooms) is determined by the subsidy standards reflecting the number of family members, sex, and age, etc. The voucher holders should search for the proper houses conforming to the subsidy standards within 120 days. Regarding house search, the qualified tenant can select a housing unit where the gross rent is higher than the Payment Standard[24] (unit size and rent) that is determined by HPD. However, the maximum rent payment cannot exceed 40 percent of the tenant's monthly adjusted income. HCV program also requires tenants to complete and report annual recertification, and HPD will reexamine voucher holders' income and family composition review their eligibility. The tenants who fail to report the changes will lose the government subsidy.

What if the owners of the building and rental house determined to leave the housing subsidy program? "Conversion" can happen when private owners terminate the rental assistance program at the end of the contract term. Public Housing Authority (PHA) can end the contract, or the landlords pay off the subsidized mortgage before the due date. When conversion happens, rental assistance deemed "Enhanced Voucher" (or Sticky voucher) can be provided to protect the existing tenants who lived in the subsidized housing such as Mitchell-Lama from the rent increases and make them remain in the property as long as the unit continues to be used for the rental purpose. In this case, a tenant can have two options as either an Enhanced Voucher to stay or Housing Choice Voucher to move. The enhanced Voucher program, also known as sticky

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[23] ZIP Code areas are small enough to reflect differences of communities within a metropolitan area.

[24] HPD sets the Payment Standard at 110% of the HUD Fair Market Rent (FMR) for the New York City metropolitan region, which is determined as the lower of the Payment Standard amount for your voucher size or the Payment Standard amount for the size of the unit that you rent. (NYC HPD)

vouchers, provides a more generous income limit and higher payment standards to cover the increased rent due to conversion. The income standards for Enhanced voucher are below 95 percent of Area Median Income (AMI)[25], instead of the 50 percent limit for the regular voucher.

Aside from the tenant-based Voucher aforementioned, there also exists a project-based voucher, which requires the tenants to move into the specific apartment assigned by HPD. Voucher holders do not need to search for the conforming housing, but at the same time, they forfeited the discretionary authority. Voucher holders must live in the designated apartment at least for one year before moving to another apartment while meeting family responsibility as tenants. There are several forms of project-based voucher: Moderate Rehabilitation (Mod Rehab), Moderate-Single Room Occupancy (Mod SRO), and Shelter Plus Care (SPC). These programs provide rental assistance to the qualified low-income households and individuals to dwell in specifically designated housing, particularly apartments. The big differences from the tenant-based voucher are that 1) the rental subsidy is tied to the apartment, and tenants must live in the assigned units and cannot move to another house with the subsidy, or tenants will lose the subsidy. 2) Vouchers will not be issued. 3) It is prohibited to add additional family members without prior approval (NYC HPD). These programs already expired, so the assistance is limited to properties that were previously rehabilitated pursuant to the rent assistance contract between PHA and private owners.

Specifically, the Moderate Rehabilitation (Mod Rehab) program incorporated Housing Choice Voucher (HCV) into the rehabilitated privately-owned housing units (The program was repealed in 1991). Moderate Single Room Occupancy (SRO) and Shelter Plus Care (SPC) are

[25] The AMI is the income level to be used to determine income qualification for affordable housing program, which is determined based on household median income of American Community Survey (ACS). The figure is measured by the U.S. Department of Housing and Urban Development annually.

rental assistance programs for homeless people. SRO assists very low-income, unaccompanied, homeless individuals who rent a small, furnished room. The rental assistance payments cover the difference between the tenant's income (normally 30%) and the market rent. The rental assistance for SRO units is provided up to 10 years with subsequent renewal terms. SPC also serves homeless individuals with disabilities and their families, most of whom are those with serious mental illness, chronic problems with alcohol and drugs, and HIV/AIDS. In 2009, the Homeless Emergency Assistance and Rapid Transition to Housing Act called the HEARTH Act, consolidated the three separate McKinney-Vento homeless assistance programs into a single grant program known as the Continuum of Care (CoC) Program. SRO and SPC no longer exist; however, their components are still alive under the umbrella of CoC (HUD Exchange).

Public Housing

Although New York City does not have a tile of the first public housing in the U.S.[26], the city has the largest inventory of public housing as well as the nation's largest Public Housing Authority, known as NYCHA in the U.S. As of Jan 2017, the agency has 173,762 public housing apartments, which represent 7.9 percent of the city's rental apartments stock and 4.4 percent of the population of the city. NYCHA serves 166,870 families and 381,159 authorized residents of New York City (NYCHA, 2019).

Despite the reputation and its incessant needs, public housing has waned incessantly nationwide including New York City. According to the Center on Budget and Policy Priorities

[26] Atlanta, Georgia's Techwood Homes in 1935 was known as the U.S' first public housing project.

(2017), the public housing inventory loss in the U.S. has totaled more than 250,000 units since the mid-1990s, and only a small percentage of demolished units have been replaced with new housing. Moreover, the deteriorating condition of public housing has become a big burden to both the city government and residents in public housing. The public housing program in America is the same as the European social housing system in that they both received government subsidy or owned by the public sector. But they are different from each other in terms of the service target scope. The U.S. public housing model concentrates only on the poor and the elderly as well as the disabled. HUD defines that public housing is established to provide decent and safe rental housings for eligible low-income families, the elderly, and persons with disabilities. On the other hand, generally social housing includes the middle class as well as the poor at the same time. Then what made the difference? We can find some clues in history.

The public housing program first came out to the world with the Housing Act of 1937. The program originally targeted on providing more sanitary cheap housing for working-class people temporarily suffering from the Great Depression as well as stimulating job creation and economic growth. In response to the concerns of socialism, the encroachment of local government's discretion, and crowding out effect on the private market, the federal act restricted that public housing properties should be constructed and owned only by state-charted or locally managed public housing authorities (PHAs). The act also gave the states and municipalities the right to create PHAs in order not to encroach the local government's sovereignty. So, the statue set the income restriction of qualified residents in public housing by limiting the family income not to exceed five times the rents and required to eliminate unsafe or unsanitary units. Not long after that, during World War Ⅱ, The Lanham Act of 1940 halted new public housing constructions to fund housing for war workers.

Soon, the public housing program restarted by the Housing Act of 1949, which authorized the Urban Renewal program by setting new policy goal of "a decent home and suitable living environment for every American family." The priority for public housing was given to the households displaced with urban renewal policy. The law expanded the size of public housing development (800,000 units by 1954) and instituted some important guidelines: construction cost limit and requirement of rent (at least 20 percent below the prevailing market rents). However, political issues such as the Korean War and the antagonism from local communities restricted the supply of public housing only to 210,000 units by 1957 (McCarty, 2014). From this act, the policy focus of public housing changed gear to families of low income and color. From 1952 to 1962, the number of families living in public housing while receiving income from private or public assistance programs rose from 29 percent to 46 percent (Ibid.). In conclusion, the 1949 housing act scooped up the resistance from the white dominant communities, the negative stigmatization of the subsidized housing, and the perpetuation of segregation in public housing. The concentration of poverty also led to the slumnization of public housing, which negatively branded it as a core of violence, prostitute, and drug dealing.

In the 1960s, in response to the criticism and the increasing construction cost of public housing, the federal government changed the policy orientation from creating publicly-owned public housing to subsidizing privately-owned properties. For example, the Section 23 allowed PHAs to utilize the private units for leasing to qualified households. Particularly by the 1960s, the new Turnkey model, in which private developers build the property on their land and sell them to PHAs for the public housing usage, became popular (Muth, 1973). Another big concern was the concentration of poverty in public housing. In response to that, in the 1960s, the Supreme Court made it illegal to discriminate public housing applicants and to segregate public housing residents by race. The growing concerns about the economic segregation in public housing properties led to the Housing and Urban Development Act of 1968, which preempted the construction of new high-rise public housing (McCarty, 2014). Following the 1969 Brooke Amendment established tenants' contribution cap at 25 percent of family income to make programs more affordable from the perspective of a low-income family, and HUD began to provide an operating cost subsidy to PHAs to fill the finance gap. But ironically, the policy change forced the program to focus more on the extremely low-income class, which worsened the financial and operational burden of PHAs. The federal subsidy and rent revenues were not sufficient enough to meet the maintenance cost. Finally, that caused serious disinvestment and disrepair, which was the starting point to drive the vulnerable program to the cul-de-sac.

Since 1970, the negative responses to the efficiency of public housing construction became dominant. The federal government also felt burdened on the cost of public housing development and its maintenance. As a quicker and less costly alternative, housing policy began to concentrate on the utilization of existing housing stocks rather than the new construction of public housing. The Housing and Urban Development Act of 1970 required to utilize at least 30 percent of new public housing via the Section 23, and authorized the Experimental Housing Allowance Program to test the feasibility of housing allowance program instead of public housing provision. Finally, in 1973, President Nixon imposed a moratorium on housing construction commitments except for the section 202 Elderly housing program. After the moratorium, the orientation of the federal housing assistance program transitioned from the new construction of public housing to the utilization of existing stocks and private markets (Ibid.). To avoid the aforementioned criticisms, the federal government chose an alternative; the Housing and Community Development Act of 1974 authorized the section 8 program to provide people-based subsidies for the privately-owned property.

Since the 1981 Omnibus Reconciliation Act of 1981, housing policy preference has more stuck to the assistance of the homeless, the severely rent-burdened, and people under substandard housing. The act also raised the tenants' contribution ratio from 25 percent to the current 30 percent of the household income and focused on families with income below 50 percent of AMI. The Urban-Rural Recovery Act of 1983 almost prohibited new public housing construction by restricting the conditions of new construction and authorized the section 8 voucher demonstration, which was later made permanent in 1988. Furthermore, with the passage of the Housing and Community Development Act of 1987, new public housing construction was further confined only to cases where section 8 could not meet the housing needs (Ibid.).

The National Affordable Housing Act of 1990 authorized the Family Self Sufficient program to provide incentives for assisted families to increase their employment. At the same time, the formal PHA management assessment system was installed. In 1992, the Housing and Community Development Act brought up the Revitalization of Severely Distressed Public Housing program, named HOPE VI, which was a competitive grant for PHAs to implement redevelopment of distressed public housing projects. Also, the Quality Housing and Work Opportunity Act of 1988 provided PHAs with the power to convert public housing stock to the voucher program and allowed them to use the leverage in funding the properties. But, no funds have been given to construct new public housing since the mid-1990s.

Public housing properties started aging and deteriorating rapidly due to mismanagement, disinvestment, and funding lack from the federal government. The cost of repairs and replacements increased to the unmanageable level. In response to the public housing crisis, in

2012 Congress began the Rental Assistance Demonstration (RAD), which was designed to convert existing public housing projects into privately-managed properties funded by Section 8 vouchers. RAD is generally perceived as a sustainable alternative to address worsening repair backlog problems. But at the same time, it prompts another controversy of the privatization of public assets, given the high values and preferential locations of public housing portfolio. This topic will be dealt with more precisely in a later chapter.

Based on the brief history of public housing, from now on, I will dive into how the current public housing system works more in detail. The governance structure of PHAs seems democratic. To incorporate participatory planning in the planning process, PHAs are required to have at least one resident in the governance board and must run Resident Advisory Boards. The residents of public housing also have a right to organize a resident council, and PHAs have to champion the activities. Currently, to get permission to enter public housing, the applicants must meet some requirements: family gross income must be at or below 80 percent of AMI,[27] and family members should be citizens or eligible non-residents. PHAs aim the two contradictory pillars of goals: servicing the neediest families and the de-concentration of poverty. PHAs should ensure that a minimum of 40 percent of public housing in a year be assigned to extremely low-income families who have income at or below 30 percent of AMI. However, PHAs are also obliged to facilitate the de-concentration of poverty and income mixing; they are required to report the admission policy to HUD (MaCarty, 2014).

Under these requirements, public housing rents are determined at the level of no more than 30 percent of the family's monthly adjustable income based on the definition of "affordable"

[27] All Metropolitan areas and counties publish AMI every year.

under Federal Housing Law. Rent is calculated as the highest of the following: 1) 30 percent of the family's monthly adjusted[28] income, 2) 10 percent of the family's gross monthly income, 3) welfare rent if receiving welfare payment, 4) a minimum rent up to $50 set by PHAs (Ibid.). A family who expects income increase for the near future could choose market comparable "Flat rents" option that is notified by PHAs each year. PHAs have to reexamine tenant families' household composition and income every year. However, it is for annual rent adjustment. The tenants also have some obligations to abide by. The tenants are required to report the relevant information to determine rents, and the general tenants also have to participate in eight hours per month of either community service or economic self-sufficiency activities to maintain the public housing residency. In terms of tenure, there are no federal rules and limitations in public housing. As long as the tenants wish to stay as long as they follow rules and keep paying rents, they can stay continually. Theoretically, PHAs can vacate them if a family income surpasses the income qualification; however, in reality, PHAs do not necessarily oust them; PHAs cannot kick out the tenants solely for being "over-income" in case that they are participating in the Family Self Sufficiency program or are receiving the earned income disregard. Also, in some cases, although the tenancy is terminated, the unit may be considered unassisted while it is occupied by an ineligible family without eviction (Ibid.). But PHAs are encouraged to set stricter eviction grounds such as sex offender and criminal conduct.

As noted above, the public housing program runs under the contract with the federal government, HUD; therefore, PHAs' sovereignty is highly limited in reality. Specifically, PHAs need to get permission from HUD to get rid of public housing units. Also, HUD strengthened the control over PHAs through Public Housing Assessment System (PHAS), under which PHAs

[28] Adjustable income means total family income minus deductions (e.g. $480 for each dependent).

could be placed in receivership in case of its default. In late 2018, HUD tried to declare NYCHA in substantial default and placed the agency into receivership, but NYCHA announced "NYCHA 2.0" and finally HUD and NYC reached an agreement to appoint a federal monitor[29] to NYCHA instead. The agency in trouble must prepare action plans to address the repair issues. The U.S. is struggling with a serious public housing crisis; HUD currently has a $35 billion repair backlog for 1.2 million poor families' shelters. The biggest PHA in America, NYCHA's projection is more pessimistic. According to NYCHA[30], the average age of its properties is 60 years, and 70 percent of the portfolio was built before 1970. The agency projected that as of 2017, the total cost[31] of repair and replacement for the decrepit properties over the next five years numbered $31.8 billion and $45.2 billion over 20 years.

As a solution, RAD was authorized as a demonstration program by the Consolidated and Further Continuing Appropriations Act of 2012.[32] RAD has two separate components. The first component, which is competitive, allows the portfolio funded by the public housing program to convert to the long term Section 8 rental assistance contracts. PHAs can choose one between project-based vouchers (PBVs) or project-based rental assistance (PBRA) as a form of Section 8 Housing Assistance Payment (HAP) Contracts. PHAs can convert their assistance at the current subsidy level without incremental funds. Congress[33] lifted the unit cap from 60,000 units to 455,000 units in May 2018. The second component describes the conversion of Section 8

[29] The monitor will engage with NYCHA stakeholders, convene board meetings, and report to the federal government about NYCHA business activities.

[30] NYCHA Physical Needs Assessment 2017

[31] Net present values of the future cost as of 2017 dollars

[32] RAD will sunset if not made permanent or reauthorized before September 30, 2020.

[33] The FY 2018 Appropriations Act

Moderate Rehabilitation (Mod Rehab) projects, which is non-competitive and without a cap. Technically, HUD allows the transfer of ownership of the public housing projects to the private entity to facilitate the use of tax credits for the converted project, which is a big concern of the RAD program. But NYCHA pledged not to transfer the ownership of projects to private developers while maintaining principle control over the project. But as a result, as of Oct 2018 over 100,000 obsolete public housing units across the nation were converted to the section 8 program under RAD, while $12.6 billion was funded nationwide through this (HUD, 2019). HUD (2019) released the survey result to indicate that 80 percent of residents in surveyed properties said they were happy with the repairs, and more than 95 percent of residents have returned to the same building after the repair process[34].

In Feb 2016, NYCHA also passed over the management burden of the Ocean Bay public housing project with 24 building and 1,400 units in the Far Rockaway to the hands of the private management firms to cover the cost of about $174 million in major improvements and upgrades over the next 20 years, which was NYC's first RAD project using a combination of public and private tools including tax-exempt bonds, housing tax credits, and federal subsidies. After that, in June 2016, NYC introduced "Permanent Affordability Commitment Together" (PACT) aiming to renovate 178 public housing buildings with 5,200 units that have fallen into disrepair via RAD Program. In Nov. 2018, NYC announced a plan to renovate 62,000 dilapidated apartments benefitting 142,000 residents while anticipating a $12.8 billion capital raise by 2028.

RAD program is applauded as a solution to insufficient funding by using the public-private partnership approach for other housing using bonds, and tax credits for the proper

[34] Cited from "the evaluation of HUD's rental assistance demonstration" (RAD, 2019).

maintenance of the subsidized housing. Theoretically, PHAs can sell the properties to private developers and asset management companies, so existing residents worry about displacement because they do not believe government and private landlords. Unfortunately these concerns have deep roots in past misbehaviors. Low-income tenants and social activists remember exactly what happened from the 1990s to the 2000s. They have a previous trauma regarding HOPEⅥ program. Under the public housing revitalization program, almost one-third of original residents were displaced; HUD and PHAs promised the tenants that all of them could return to their home after reconstruction was completed as long as the residents want because they had the priority, but the authorities did not keep the words. It was not possible to trace where they had gone either.

Low Income Housing Tax Credit (LIHTC)

One substantial breakthrough as an addition to the affordable housing finance scheme was the introduction of the Low Income Housing Tax Credit (LIHTC), which was established under the Tax Reform Act of 1986. LIHTC provides private developers with a tax-based subsidy to facilitate the investment in affordable rental housing for low-income households. Since the mid-1990s, LIHTC helped to develop more than 110,000 affordable housing stocks each year, totally the number reached more than 2 million units. These days, around 90 percent of affordable housing development projects are known to use this tax benefit scheme (New York Times, 2012).

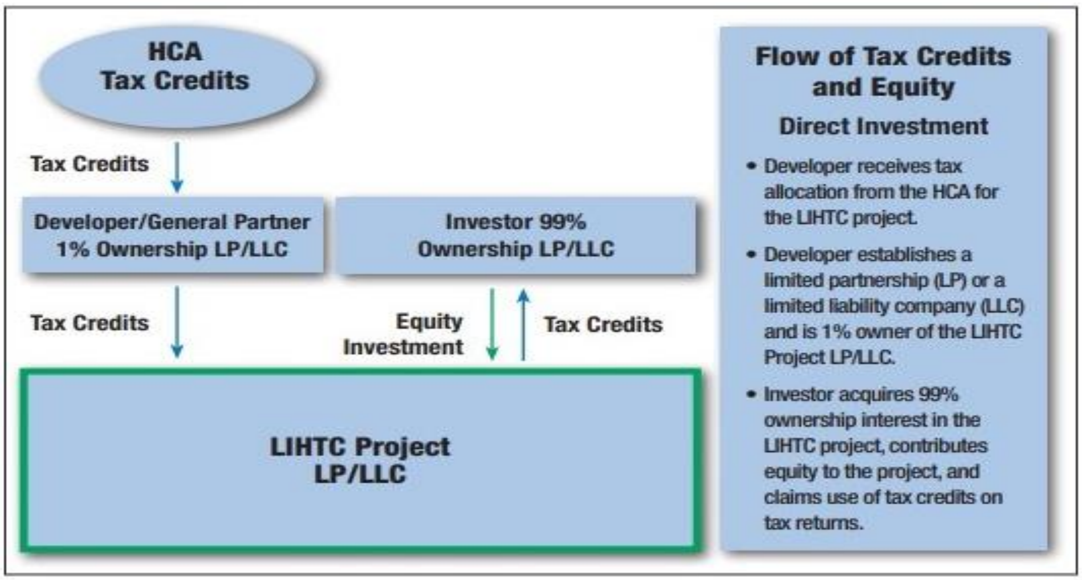
There are two types of LIHTCs; 9 percent credit generally subsidizes new construction of affordable housing, instead, 4 percent credit is reserved for rehabilitation and new construction project that is funded with tax-exempt bonds. 9 percent credit is allocated to each state based on each state's population size. The Internal Revenue Service (IRS) allocates federal tax credits to State Housing Credit Agencies (HCAs), and HCAs award tax credits to eligible affordable housing projects. In 2019, $2.75625 per person of the tax credit was distributed to the states, with a minimum allocation of $3,166,875 (Congressional Research Service, 2019). On the other hand, 4 percent tax credits are non-competitive as of right one, so the state allocation limits are not applied here; the credits are automatically packaged with tax-exempt bonds that financed projects. In this paper, I will elaborate on the structure of 9 percent tax credits more in detail.

LIHTC program provides equity that is used by developers to subsidize the construction and rehabilitation cost of affordable rental housing. During annual funding rounds, the developers can apply for the tax credits. Under IRC Section 42[35], HPD administers the tax credit program in New York City. HPD evaluates the tax credit applications under its Qualified Allocation Plan (QAP) on a competitive basis. QAP sets out the state's priorities and eligibility criteria for awarding 9 percent tax credits. Preference goes to the projects that 1) serve the lowest-income residents, 2) serve for the longest time, 3) be located in qualified census tracts. Project "readiness" is an important element for the selection. It requires developers to incur at least 10 percent of the project costs no later than six months after the allocation date or by the close of the allocation year. Once a project received an allocation of credits, the developer sells the credits to market investors and acquires the equity capital to cover the portion of the development. Investors such as banks purchase the tax credits to lower federal corporate tax liability. Developers generally construct LIHTC projects as Limited Partnership (LPs) or Limited Liability Companies (LLCs) and provide the banks with limited liability, which allows investors

[35] Under IRC Section 42, state HCAs may delegate authority to local agencies.

to receive tax credit benefits and passive losses. It is because, under federal income tax law, legal property owners[36] with the benefits and burdens of ownership can take LIHTC (Comptroller of the Currency Administration of National Banks, 2008). For instance, a bank that has 99 percent of ownership in a limited partnership can receive 99 percent of the tax credits and passive losses including depreciation and interest expenses.

< Figure 19. A typical legal structure of LIHTC: direct investment >



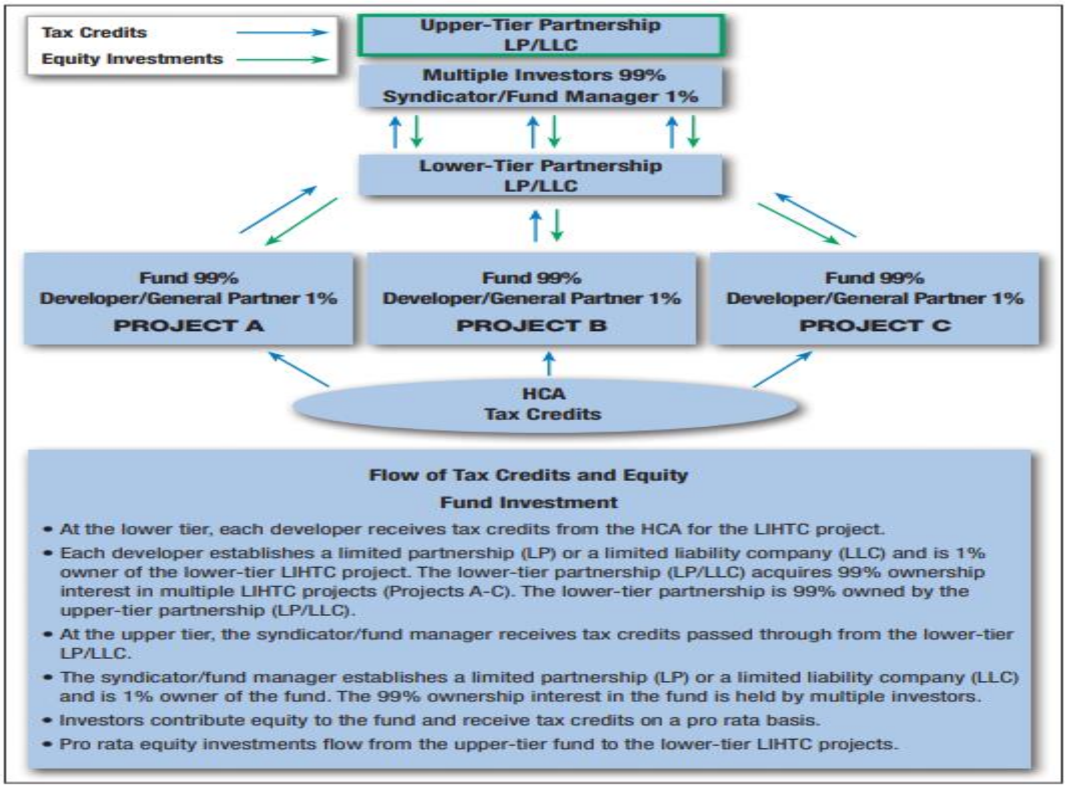
Source: Comptroller of the Currency Administration of National Banks (2008)

Fund investment structure combining multiple LIHTC projects is also available. The upper-tier LP/LLC includes multiple investors with 99 percent fund ownership and syndicator/fund manager (fund) with 1 percent ownership. The lower-tier has ownerships of several projects, and the fund possesses 99 percent ownership in each project, while the developer/general partner owns 1 percent ownership. Tax credit distributions equate to the investor's share of ownership in the upper-tier investment fund; the investors can reduce their

[36] This includes LPs, LLC owners, and other equity investors in the building.

corporate federal income tax bills for ten years via the tax credits. It is known that syndications typically have a minimum investment amount of $ 1million or less. The investors often participate via the pooled equity funds raised by the syndicators, such as the New York Equity Fund and the Enterprise Community Investment, Inc.

< Figure 20. A typical legal structure of LIHTC: fund investment >

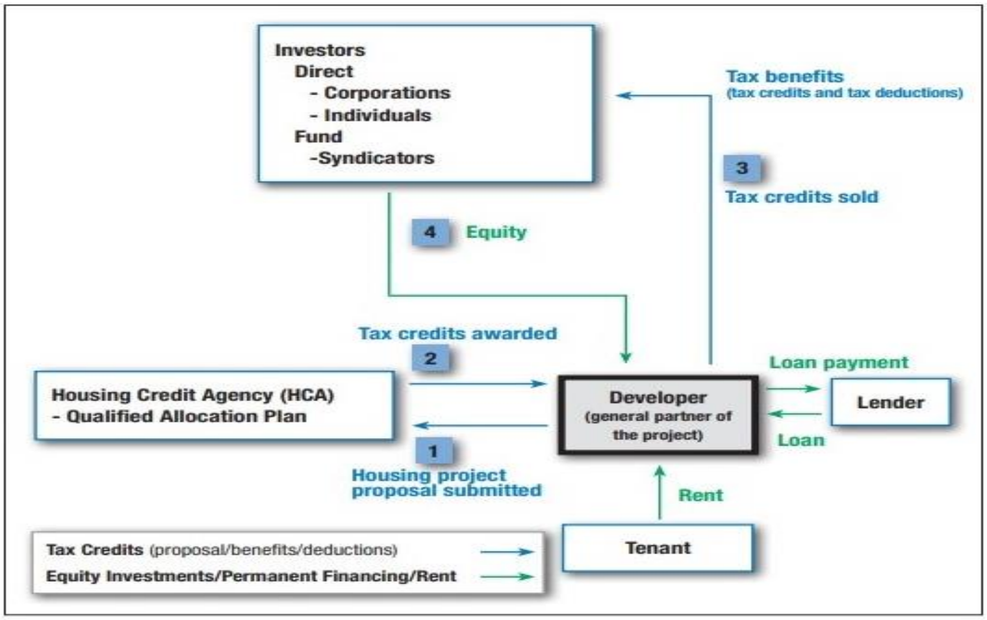


Source: Comptroller of the Currency Administration of National Banks (2008)

Developers who are selected to receive tax credits can claim federal tax credits over the 10-year time frame, called “credit period,” which begins either the same taxable year in which the property is placed in service (or ready for occupancy) or the following taxable year. In place of that, developers are obliged to follow the tax credit law to keep the project in compliance over 15 years, which is known as “compliance period” Aside from that, the property is required to maintain affordable rents for at least 30 years (Ibid.). The additional period is named as the "extended compliance period." If generally, developers fail to keep the compliance period, tax credits benefits may be recaptured. So typically, investors have a tendency to exit the investment as soon as 15 year-compliance period ends.

There are two types of tax credits in the LIHTC program: 9 percent and 4 percent tax credit. The 9 percent tax credit is made to cover 70 percent present value of the eligible costs of affordable housing development projects. The tax credits are allocated on a competitive basis.

< Figure 21. The flow of 9 percent LIHTC investment >



Source: Comptroller of the Currency Administration of National Banks (2008)

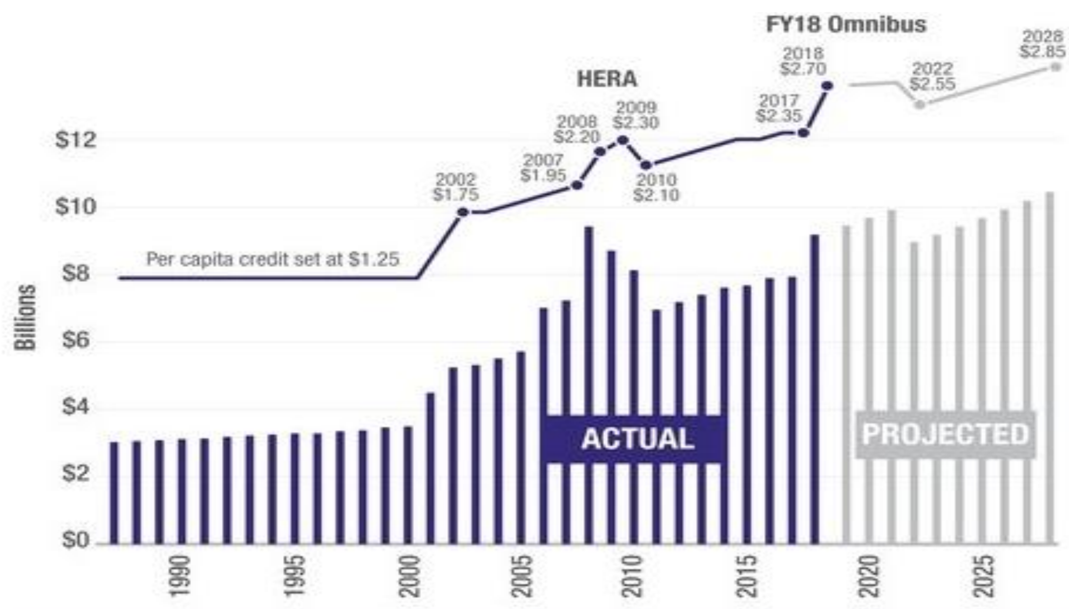
Despite the name of 9 percent tax credit, in practice, the actual tax credit rate is not exactly 9 percent. The rate is referred to as a monthly Applicable Federal Rate (AFR)[37], which is indexed to 10-year U.S. Treasury note yields. Since 1986, the 4 percent credit rate has ranged between 3.15 percent and 3.97 percent, and the 9 percent credit has moved between 7.35 percent

[37] The monthly AFRs are available in table4 at https://www.irs.gov/pub/irs-drop/rr-20-03.pdf

and 9.27 percent. In 2008, a floor under the 9 percent credit was set, which prevents new construction credit rate from falling below the threshold (Congressional Research Service, 2019).

But each state is subjective to the annual 9 percent tax credit volume cap allocated by the federal government based on population size. The cap is a product of a fixed per capita rate multiplied by the population of a state. Novogradac & Company LLP (2018) estimated that 9 percent LIHTC allocation is projected to steadily increase to above the $ 10 billion by 2025, based on the historical increase of per capita credit and population growth speed.

< Figure 22. 9 percent LIHTC allocation >



Source: Novogradac & Company LLP (2018)

The 4 percent tax credit is designed to support 30 percent present value of eligible costs for the acquisition of existing buildings for rehabilitation and new construction financed by tax-exempt bonds. When 50 percent or more of the project's eligible costs are funded with tax-exempt private activity bonds, 4 percent LIHTC can be awarded to developers on an "as of right," non-competitive basis, in which tax credits are not limited by the state's cap allocation. The bonds that have been used to finance land or building construction costs are included in the numerator of the 50 percent calculation. Developers that are seeking 4 percent tax credits can utilize other funding sources including federal programs such as Community Development Block Grant, and 4 percent tax credits do not compete with projects pursuing 9 percent tax credits, which are the biggest benefit and convenience.

In order to become eligible for the tax credits, the housing project must meet the requirement that either 20 percent of the units are rent-restricted and rented to the households with income at or below 50 percent of the area median income (AMI), or 40 percent of the units are rent-restricted and rented to the households whose income is 60 percent or less of AMI. The rents for LIHTC are determined at 30 percent of AMI, but the rents are set by the target AMI levels tied to the unit, not a tenant's income levels. Households who are included in the same target percentage of AMI are required to pay the same rents. NYC HPD annually announces the table of AMI based on family size and percentage of AMI[38]. According to the AMI table (HPD, 2019), 50 percent AMI for a one-person household is $37,350 and $42,700 for two-person households. Then let's assume that there is a family of 1.5 people who are eligible for the housing units targeted for 50 percent of AMI; in the case, the monthly rent is calculated as $501.[39] As a result, despite the substantial increase in household income, the existing tenant's rent will not change. Besides, tenants are still allowed to stay in their residence even if the income increase goes above the unit's income requirements to promote tenants' earning and

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[38] https://www1.nyc.gov/site/hpd/services-and-information/area-median-income.page

[39] {(1person 50% AMI 37,350+2person 50% AMI 42,700)/2}*Target AMI 50%*Rent set 30%/12 months

wealth increases. If the tenants' incomes increase to more than 140 percent of the income limit (e.g. 140 percent above 50 percent of AMI), the "creeper units" can be counted as low-income units only when following conditions are met: 1) the units are continuously under rent-restriction and 2) the next available unit of comparable or smaller size in the same building is rented to a low-income family[40]. This is called as "the Next Available Unit Rule (NAUR)" or 140% Rule[41].

Another issue regarding LIHTC is Income averaging (IA), which is a new occupancy set-aside option set by the Consolidated Appropriations Act in 2018. With IA, developers can have more options to allocate housing units. At least 40 percent of the units must be LIHTC with 60 percent of AMI, and the designated imputed income limitations should be in 10 percent increments from 20 percent to 80 percent. It means that under this new rule, affordable units can be rented to tenants with 80 percent or less of AMI, and the actual income of tenants is not tracked and averaged annually for the IA test if collective average income meets the 60 percent of AMI standard. IA can provide developers with a better opportunity for offsetting rents of higher AMI with that of extremely low-income residents, which means that higher rent units for the tenants with higher AMI can have a cross-subsidizing effect for very lower-income households through IA mechanism. IA could be efficient in that it could benefit poorer households with the same tax credits, and at the same time, it could lead to mixed-income development with a broader income spectrum. However, there remains a criticism that it is not desirable to provide a subsidy to higher-income households. Now it is permitted that median-income households with 80 percent of AMI can live in affordable housing.

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[40] Michigan LIHTC Compliance Manual, Chapter 8 (April 2013).

[41] When a building is restricted to 100% Housing Credit, this rule does not typically affect the building of 100% Housing Credits, and it is possible to avoid via bifurcation.

Private Activity Bonds (Municipal Bonds)

State and local governments have a lot of diverse and capital projects for the commonwealth of the public such as roads, sewer systems, schools, and other public works. But the problem is always money. The primary funding source for the municipalities to finance public projects is through the issuance of municipal bonds. Municipal bonds, known as “Munis” are debt securities issued by states, cities, counties, and other governmental entities for financing capital projects (U.S. Securities and Exchange Commission). The significant benefit of munis to bond investors is the interests earned from the municipal bonds are tax-exempt from the federal income tax, and local residents in the state where the bond is issued may have tax exemption from state and local taxes too. The demand for municipal bonds is generally high despite the relatively lower interest rates because of this tax benefit. According to SEC, as of 2019, about two-thirds of the approximately $2.8 trillion of U.S municipal bonds outstanding are owned by individual investors either directly or indirectly through mutual funds and other investments.

Municipal bonds have two kinds of types: General Obligation bond and Revenue bonds. General obligation bonds are backed by the “full faith and credit[42]” of the municipality as an issuer, which is a taxing power to pay the debt without collateral assets or mortgage. Revenue bonds are secured by the revenues from a specific project such as highway tolls or lease fees, and certain taxes such as sales tax and hotel occupancy taxes. Revenue bonds usually are non-recourse, meaning that if the revenue stream dries up, the bondholders do not have a claim on the underlying revenue source (SEC). State and local governments are also able to issue revenue bonds in which the proceeds can be loaned to a private entity such as non-profit college.

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[42] It relies on government entity’s taxing power to their residents for paying debts.

By the way, the federal tax code also allows the state and local government entities to issue tax-exempt bonds for the qualified private activities that are conducted by the private entity. The federal tax code classifies municipal bonds as either government bonds or private activity bonds. Aside from government bonds, qualified private bonds can also have tax exemption benefits under federal tax law[43]. The principal reason why the government began to utilize the tax incentive is that tax exemption benefits can slash borrowing costs for the eligible projects. Private activity bonds, as a form of conduit bond, are used for non-government projects; therefore, Congress limited the volume of tax-exempt bonds with the concerns[44]. Primary concerns were: 1) bonds facilitate an inefficient allocation of capital, 2) mount the cost of financing traditional governmental activities, 2) provide higher-income persons with tax avoidance employing tax-exempt investments, 4) to contribute to increase federal revenue losses (Maguire et al., 2018).

In response to the worries and criticisms, the federal government set the cap on the issuance volume of private activity bonds. The federal authority put an annual state volume cap on 14 qualified private activities among 27 activities[45]. The volume cap is determined as a form of dollars per capita based on a state's population size and adjusted for inflation every year. The current annual state volume cap is the greater of $105 per capita or $311.38 million each calendar year, which is an apparatus to ensure the minimum volume for small states. According to IRS, New York's volume cap in 2020 is around $2 billion. Typically, each state has its various pools for the allocation of volumes, and the volume capacity is distributed at each state's

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[43] The Revenue and Expenditure Control Act of 1968 set up the basic definition and rule for the PAB

[44] Deficit Reduction Act of 1984

[45] See appendix 3 for details

discretion based on the state's preference. The PAB volume cap is not permanent and generally has to be issued during the year of an endowment. If the cap is not used during the year that cap is given, municipalities have an option to carry forward the unused cap for up to coming three years. In this case, a special filing with the IRS is necessary. Unless issuers do carry forward or assign the remained issuing capacity to other eligible issuers, the unused bond capacity expires.

Second, in general, private activity bonds are included in the Alternative Minimum Tax (AMT), which is an income tax scheme that is intended to make sure that taxpayers pay a minimum income in taxes. If a taxpayer is subject to the AMT, then certain deductions are no longer permitted. Qualified private activities are strictly controlled by the federal government because of its federal tax-exemption benefits. As of 2019, Federal authority made the list of 27 qualified activities that can acquire the supports of the program. At the same time, to meet the eligibility, at least 95 percent of the net bond should be used for qualified purposes (Maguire et al., 2018). However, the tax-exempt interest on housing bonds was exempted from AMT in 2008 through the Housing and Economic Recovery Act of 2008. But, the exemption can apply to interest on refunding bonds only if the interest on the refunded bonds was a tax preference item.

Aside from that, there are several minor guidelines to regulate the issuance of the bonds; 1) The maturity of the bonds must be at or below 120 percent of the economic life of the asset purchased with the bonds; 2) Less than 25 percent of the bond proceeds can be used to acquire land (except for qualified first-time farmers); 3) Proceeds of the bond issue cannot be used to purchase existing property unless greater than 15 percent of the cost of acquiring the property is spent on rehabilitating the property; 4) Public approval of bonds, either through public hearing and notice or voter referendum, is required for private activity bonds; 5) Issuance costs cannot be any greater than 2 percent of the bond proceeds (3.5 percent for mortgage bond issues of less than $20 million), and 6) Private activity bonds are prevented from advance refunding[46] (refers to the issuance of new bonds for longer than 90 days prior to the maturity of old bonds). IRS monitors the tax-exempt status of outstanding bonds for qualified private activities, and if the eligibility expired, tax benefits provided must be recaptured by the Treasury.

Local-Level Mixed-Income Housing Finance Tools

Primary housing support programs such as LIHTC, RAD, Public housing, and Section 8 Housing Voucher are representative federal-level subsidy tools in the U.S. However, those are not all. New York State and New York City have their own affordable housing programs as well. The New York State runs the Mitchell-Lama program to support affordable housing for the middle-income class from 1955. Besides, the State of New York Mortgage Agency (SONYMA) provides low and moderate-income residents with loans to help expand access to affordable homeownership. The Affordable Housing Corporation (AHC) also supplies grants to local governmental, not-for-profit organizations for the promotion of homeownership of low and medium-income households. The New York State's Community Development Block Grant (CDBG) program provides financial assistance to eligible cities and counties to support economic development including affordable housing development.

New York City also runs its own various city-level strong subsidy programs as well. Representative housing support programs are tax incentive programs such as J-51 Tax Incentive,

[46] It is designed to prevent arbitrage transactions with municipal bonds.

420-a Tax Incentive, 420-c Tax Incentive, and 421-a Tax incentive. Those tax abatement programs assist residential rehabilitation or conversion to multi-family housing as well as new construction of affordable rental units. The specific details are summarized below.

< Table 6. Local-level affordable housing programs >

Program	Program explanation	Units (2017)
J-51 Tax Incentive	An as-of-right real estate tax exemption and abatement for residential rehabilitation or conversion to multi-family housing.	6,566 properties
420-a Tax Incentive	A complete real estate tax exemption for properties owned by Housing Development Fund Corporations (HDFCs), which is subject to an agreement requiring use as low-income housing and units for homelessness and people with special needs.	N/A
420-c Tax Incentive	A complete or partial property tax exemption for a term of up to 60 years for low-income housing owned by HDFCs. The program can only be used in properties currently or formerly financed with federal LIHTC.	1,545 properties, 59,648 units
421-a Tax incentive	Provide partial property tax exemption for new multifamily housing construction in exchange for 25 or 30% of affordable rentals units.	4,635 properties, 159,583 units[47]

Source: NYU Furman center (Dictionary of NYC housing programs & Core Data)

Other than that, NYC HPD has a unique program to dispossess tax-foreclosed, or in-rem buildings and turn illegal squatters into legal homesteaders: the Mutual Housing Association of New York (MHANY). MHANY receives land titles to existing sites that squatters occupied from the city and can transfer ownership to homesteaders that had worked on the rehabilitation of buildings they occupied (NYC HPD). Also, NYC HDC operates the Affordable Housing

[47] It included both market-rate and affordable unit. Furman Center found that in 2016, properties containing 50.9 percent of the units supported at least some on-site or off-site affordable units.

Permanent Loan Program (AHPLP) from 1991, which provides small, permanent, below-market-rate first mortgage loans on projects primarily developed under programs sponsored by HPD from a pool of Housing Development Corporation (HDC) funds. In 2014, HDC launched a new Mixed Middle-Income program, known as “M2”, which is a financing program for the new construction of multi-family rental housing for low- and medium-income households with incomes of up to 165 percent of AMI. M2 is the latest version of the HDCP’s various mixed-income programs.

Mixed-income housing is one of the important policy pillars of the current U.S. housing policy. This policy aims to eliminate the long-term problems of U.S. history: concentration of poverty and residential segregation, which derived from the aching lessons of the public housing program. The city pursues to build an income-inclusive community that diverse income groups can live side by side together. The mixed-income housing development is set as a goal of federal government policy, and states and city-level governments also follow the same initiative. New York City’s M2 program was also born based on these policy needs. Producing affordable housing programs for low -income New Yorkers is an essential job of the city government given that New York City is infamous for expensive housing prices. However, the city’s budget and financial capacity are limited, so most of the affordable and mixed-income projects utilize both federal sources and city sources at the same time all together.

M2 program subsidizes the development of new construction, renovation, and conversion of non-residential buildings on an as-of-right basis. A minimum of 100 residential units must be built, smaller developments with 50 units and more may be considered on a case-by-case basis. M2 is a 50/30/20 model that requires a specific allocation of units based on income levels. According to NYC HDC, 20 percent of the units should be sent to families with incomes at or below 50 percent of AMI, or alternatively, 25 percent of the units must be affordable to households earning up to 60 percent AMI. A minimum of 30 percent of the units must be affordable to moderate-income households earning between 80 percent and 130 percent AMI, and a maximum of 50 percent of units must go to middle-income households earning at or lower 165 percent AMI. If rents are above 130 percent of the market rent will not receive a subsidy (NYC HDC).

M2 program consists of three mortgage loans; a first mortgage is funded with proceeds from the sale of tax-exempt bonds (Municipal bonds), a second mortgage is funded by NYC HDC corporate reserves, and the third mortgage is a subsidy loan from NYC HPD. HDC and HPD's subsidy loans support the project as well, but the contribution levels differ from affordability levels, land costs, and services. Various municipal government subsidy programs are applied for the program. The tax-exempt first mortgage is generally financed with both private activity bonds and recycled bonds. Private activity bond is qualified with as-of-right 4 percent LIHTC for the low-income units, and recycled bods provide a tax-exempt rate for the moderate and middle-income units. In practice, NYC HDC requires pass 50% test on the low-income units first, and then the remainder may be financed with recycled bonds (NYC HDC). During construction, tax-exempt bonds may be available for up to 50 percent of the aggregate basis of the project's low-income portion, and permanent first mortgage loan amount can be decided on HDC's specific underwriting rules. For instance, Loan To Value (LTV) must be within 85 percent, loans have 30-year permanent terms with 30-year amortization schedule, and interest rates can be permanent fixed-rate or weekly tax-exempt variable rate (Ibid.).

According to NYC HDC, as for the second mortgage, NYC HDC will provide a subordinated loan of $85,000 to $95,000 per affordable unit, capped at $15 million per project; 1) Up to $85,000 per affordable dwelling unit without rental subsidy; this requires moderate-income units to be underwritten at or below 100 percent AMI. Any units with Project-Based Section 8 or another rental subsidy will receive $75,000 per unit. Or 2) Up to $95,000 per affordable dwelling unit without rental subsidy; this requires moderate-income units to be underwritten at or below 80 percent AMI. Any units with Project-Based Section 8 or other rental subsidies will receive $85,000 per unit. The second mortgage has also 30-year permanent term or same term with the first mortgage with a simple interest rate of the Applicable Federal Rate.

As for credit enhancement, in the case of open resolution transactions, a standby letter of credit (LOC) for the bonds is necessary during the construction period, and mortgage insurance ensued during the permanent mortgage period. The general mortgage insurers include REMIC, SONYMA, or HUD. Besides, there are some overall restrictions; the overall LTV of combined first and second mortgage must be within 95 percent; Loan to Cost may not exceed 90 percent; Debt Service Coverage Ratio: 1.15 times overall; and Income to Expense Ratio: 1.05 to 1.00 or greater on all financing. The developers must maintain a minimum of 30 year occupancy period (Ibid.). Moreover, in circumstances that are subject to the Mandatory or Voluntary Inclusionary Program, they might be required to maintain permanent affordability. Also, to increase rents for any income-level tenants, developers are required to get approval from HDC.

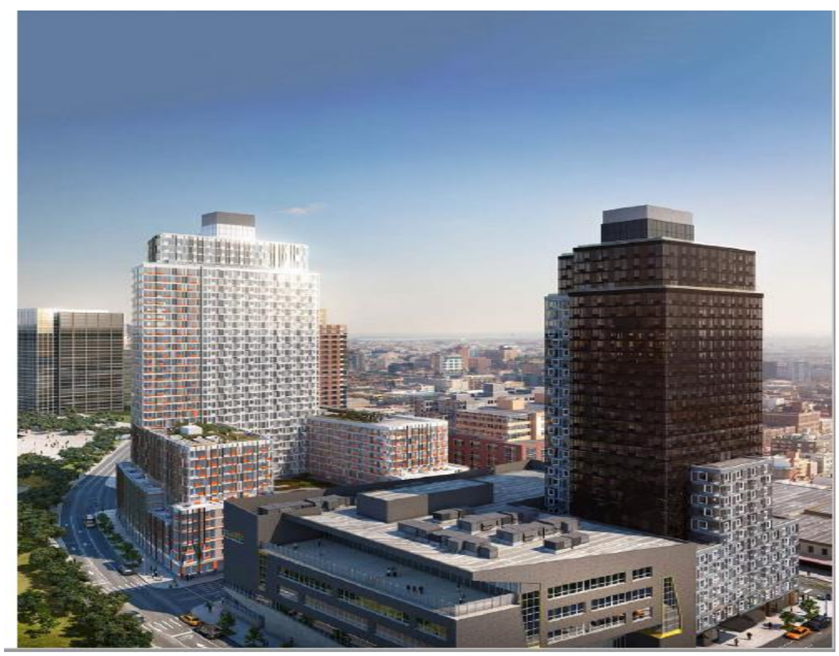
As for a developer’s fee, developers can enjoy the fee when tax credits are utilized or funds are combined with public subsidy programs permitting such fees. Under the HPD Qualified Action Plan (QAP), 15 percent of improvement costs are the maximum developer fee, and 10 percent of acquisition costs for tax credit projects. When calculating improvement costs, developer fees, reserves, and syndication and partnership expenses are not included. Also, HDC puts limits on the payment of the developer fee. Up to 10 percent of the paid fee of developers can be paid at closing. At the same time, developers cannot withdraw unpaid developer fees, which must be deferred during construction and covered by cash flow from the project. Lastly, HPD and HDC also impose some design guidelines, building green community standards, and marketing guidelines that eligible developers must comply with. In order to see how the program works in real projects, I will introduce two development cases From here.

Case study 1: Hunts Point South (HPS) - North Tower and South Tower

According to HDC, the agency financed 25 housing developments and subsidized 7,730 residential units via the M2 program since 2018. Here, I will introduce one representative development project under the M2 program: Hunts Point South (HPS), whose site is located in Long Island City in Queens. The two newly constructed buildings are mixed-use, mixed-income towers with 1,194 mixed-income affordable and market-rate rental apartments. 100 units are used for Affordable Independent Residences for Seniors (AIRS). The 719 permanently affordable apartments will serve very low- to middle-income households. The development includes retail space, a community facility, parking, and public open space. The project is built on the vacant land owned by the City of New York and was a formerly industrial district in Queens. 30 units affordable to very low-income households earning up to 40 percent of AMI, 210 units affordable to low-income households earning up to 50 percent of AMI, 130 middle-income units for households earning up to 130% of AMI, 349 middle-income units for households earning up to 165 percent of AMI, and 473 market rent units (NYC HDC).

South Tower's total development cost was $237,336,935. Specifically, it was funded by a participation loan from JPM Chase, a $59 million HDC loan through recycled bonds, a $14.415 million HDC loan via new issue volume cap bonds, a $33.3 million HPD loan via City Capital funds, LIHTC equity in an amount of $18.051 million, and $69.984 million developer equity. As for North Tower, diverse funding sources are used: a participation loan from Wells Fargo, a $103.805 million HDC loan, a $125 million HDC loan via recycled bonds, a $32.795 million HDC loan via new issue volume cap bonds, an HPD loan in an amount of $96.120 million financed via City Capital funds, $22.192 million LIHTC equity, and $93.562 million of developer equity. The total cost for the north tower development was $469,333,549 (NYC HDC).

< Figure 23: Hunts Point South (HPS) >



Source: NYC HDC

Case study 2: One East Harlem

One East Harlem development is 19-story, 404 units of mixed-use, mixed-income new construction. 295 units are assigned to be permanently affordable. 49 units affordable to very low-income households earning at and below 40 percent of AMI, 52 units affordable to very low-income households earning up to 50 percent of AMI. Instead, 101 units are distributed to moderate-income households earning up to 100 percent of AMI, and 66 units for households earning up to 130 percent of AMI. One East Harlem includes approximately 62,000 square feet of retail space such as a new supermarket (NYC HDC).

As for financing for One East Harlem, the city provides a $63.5 million taxable participation loan. NYC HDC supports roughly $74 million in tax-exempt bonds and another $15 million in corporate reserves. HPD contributes $33 million in subsidy. The project also benefits from Low-Income Housing Tax Credits (LIHTC) totaling $16.7 million in tax credit equity.

< Figure 24: One East Harlem >

Source: NYC HDC

The potential benefits of mixed-income housing programs are grandiose. First, it is possible to cross-subsidize between low-income households and medium-income earners. The wealthier income tenants who pay more rents can allow including poorer and more very poor residents in the project. Second, it can provide better incentives for the maintenance of affordable housing. It is because proper upkeep is inevitable to attract medium-income families. Third, via mixed-income housing, lower-income households can have access to better social services and amenities. Lastly, a more important upside is that mixed-income housing can facilitate interaction between different income groups. Given these benefits of mixed-income housing development, NYC HDC's M2 program can be a frontier to prompt affordable housing supply as well as increasing social cohesion among diverse income classes. Furthermore, the M2 program utilizes diverse funding sources from the federal, state, and city government as well as private investors. But, there exists a possibility to bring about criticism to say that it could not be appropriate to support medium-income housing units with public resources. However, it is a matter of value decision and everything has a trade-off. Considering the failure of the public housing program and the lack of section 8 housing voucher program budgets, the economic aspect and efficiency of housing finance program also cannot be underestimated. That can justify the mixed- usage of financing sources as well as a public-private partnership.

On the other hand, there are small concerns about the M2 program as well. The first one is that majority of affordable units are assigned for middle-income households. When it comes to the Hunts Point South case, among 1,194 rental apartments, 100 units are used as affordable units for seniors, and 719 permanently affordable apartments are assigned for very low- to middle-income households. Around 68 percent of total housing units developed are used in low- and middle-income classes. However, specifically, only 30 units are assigned for very low-income people with up to 40 percent AMI, and 210 units are leased for low-income tenants with at or below 50 percent AMI. The rest goes to middle-income families. One East Harlem project shows steeper skewness toward to medium-income households. Only 101 units among the total 404 units are built for very low-income households. Approximately three-thirds of the total units are assigned to households earning up to 130 percent of AMI.

However, given that around 60 percent of the total financing sources were from government expenditures, it seems necessary to increase the M2 program's contribution to very low- and low-income renters more significantly. To some extent, it is understandable to consider the developers' risks and efforts for the developments as well as their minimum profits; however, I still wonder whether the developer profits are at appropriate levels.

CHAPTER 5. AFFORDABLE HOUSING POLICY IN SEOUL

A. History, Backgrounds, and Orientation

South Korea is the world's 11^{th} largest economy in the world with a nominal GDP of $1.53 trillion (IMF, 2019). Korea has received a good appraisal of miracle-like rapid economic development from other countries, because Korea's economy has grown fast over the just past 70 years since the liberation from Japan (1945) and Korean War (1950~1953). Seoul, the capital of South Korea is a big city with a population of 9.6 million as of 2017. This rapid growth also caused the negative externalities in Korean; corruption, income inequality, and housing unaffordability. One of the serious social and economic issues in Seoul has been and will be the lack of affordable housing.

After the liberation from the colonization, a large group of refugees from North Korea and adjacent countries, especially China, had returned and informally settled down in South Korea, and most of them moved into Seoul in chaotic times. They just occupied open lands and constructed their shelters without approval. From the late 1950s and early 1960s, the Korean government started to address this illegal informal settlement by relocating them into the nearby outskirt of the Seoul area, but it failed to accommodate them because of the inefficient infrastructure built and the lack of workplaces. Unprecedented industrialization and economic development during the 1960s and 1970s caused rural people's wave of migration into the urban big cities. The percentage of the urban population living in a slum and squatting settlements was estimated 20 to 30 percent between the 1960s and 1970s in Korea (Ha, 1994). And then since the early 1970s, the Korean government changed its strategy to demolish informal settlement and rebuild new high-rise, high-density multi-family housing for low-incomers. The Korean government tended to focus on medium-income households' homeownership rather than affordable rental housing for low-income class. Seoul's situation was worse, the population of Seoul quadrupled from 2.4 million in 1960 to 9.6 million in 1985 (Park, 2015). The 1988 Seoul Olympic fueled rapid economic development, which acted as a trigger to push up housing prices rapidly. In response to the ruling party's failure in the national assembly election in 1988, the national government put a new 2 million housing supply plan including public housing on the table to soothe citizens.

Korea National Housing Corporation (KNHC), which was established in 1961, took the initiative to supply apartments for low and medium-income families, and from 1962 to 1989, KHNC constructed 536,755 housing units, 65 percent of which were subsidized housing for sale, and long term and permanent housing were just 6.5 percent (35,026 units) (Ha, 1994). Since the

1960s, housing and land price began to skyrocket unprecedentedly due to land development, housing shortage, the influx of new people, and rapid economic expansion. According to the Korea Appraisal office, the land price index soared from 100 in May 1963 to 225 in June 1965; the Land price had doubled just over 2 years, which led to serious speculations on housing and land market (HF, 2016). Faced with the issue, the Korean government implemented a new tax reform in 1967 to levy 50 percent of heavy taxes on sales profits from housing and land. The speculation curb tax was transformed into the sales capital gain tax later in 1974, which became the prototype of the current real estate tax system in Korea (Ibid.). Since the 1970s, the nuclear family and the concentration of population became pandemic, which prompted housing shortage and price climbs. The annual real estate price increase in Seoul showed 135.7 percent in 1978[48] (Ibid.).

The housing shortage caused other housing and public health issues in Seoul. Low-class workers who moved into Seoul and could not afford housing costs occupied empty space below bridge and hillsides, and eventually formed informal settlements by using found materials. At the time, this kind of informal settlement accounted for approximately 20 to 30 percent of total housing units in Seoul (Ibid.). However, Seoul City and the national government eradicated informal settlements in inner-city for the urban renewal and relocated around 300,000 squatters to the outskirt of the city from 1958 through 1972. As a method, the city chose the formalization of the informality as a solution. The city distributed small parcels of land for free, subsidizing the moving cost, and built citizen apartment for squatters with cheap construction material in cheap land. But that was not enough to address the issue.

[48] The official statistics on housing price released from 1986, so no housing price change in 1970s is available.

Finally in 1980, the national government acknowledged the ownership of the squatters on the illegal housing units and occupied lands, which ignited another social issue between new landlords and their tenants (Ibid.). Since the 1970s, the government strengthened the regulation on real estate speculations. In 1978, the national government announced the comprehensive countermeasure for cubing real estate speculations and stabilizing land prices. Under the policy, capital gain tax on housing and land transaction was raise to 50 percent, additional taxes were levied on the short sales within 2 years from buying properties, and 100 percent tax was imposed to the unreported transactions (Ibid.). The housing construction facilitation law of 1972 set up a new platform for systemic policy intervention to galvanize non-homeowners and the construction industry. In 1977, price regulation for newly–built housing allowed the government to intervene in the housing market.

From the perspective of housing finance, since 1969, Korea Housing Bank (KHB) played an important role in providing financial support by lending money and providing credit guarantee to housing construction projects. KHB collaborated with KNHC by providing long-term mortgage loans with a maturity of 20 years at the below-market rate for the first-time home buyers of KNHC housing. These two institutions worked as two pivotal pillars to support low-income housing policy for several decades in Korea. KHB's main role was to manage the National Housing Fund (NHF), which was funded by three main sources: national housing pre-emption subscription deposits, national housing bonds, and housing lottery. NHF is earmarked for the contributors and subscribers who are eligible for the purchase of government-subsidized housing units. Despite the intensive supports, housing affordability was not addressed. The government recommitted to permanent public housing program from the late 1980s (Ha, 1994).

After the 1997 IMF bailout, Korea has changed the housing market and housing finance system thoroughly; according to the Neo-liberal IMF's diktat, the Korean government opened its financial market to global investors. The first thing was to privatize KHB and to outsource the management of KHF to commercial banks. The housing market was restructured into a private bank's dominant-market with minimum government intervention. In 2015, KHF was reformed into National Housing and Urban Fund (NHUF) and diversified its role including credit guarantee and equity investment on housing and urban redevelopment project; the management was transferred to Korea Housing & Urban Guarantee Corporation (HUG). As of 2017, the total asset of NHUF was $163.3 billion. Second, the Korean government-employed new cutting-edge housing finance system such as Mortgage-Backed Securities (MBS) in 1999, Real Estate Investment Trust (REITs) in 2001, and Project Finance in 2007 (KHFC, 2016). In 2004, Korea Housing Finance Corporation (HF) was established and led the secondary mortgage market. HF provides subsidized mortgage to low-income households and supports the prime long-term fixed-rate mortgage loans for the homeownership increase of moderate-income families as well. HF also supplies credit guarantee for "Jeonse" loan with below-market rates for low-income households as well as for home equity conversion mortgage for the retired seniors with the age of more than 65 years old to counter the imminent aging issue.

B. Principal Affordable Housing Programs

Seoul's affordable housing policy has relatively a short history compared with New York. But Korea confronted a lot of challenges while experiencing rapid economic expansion as negative externalities and side effects. Most of the affordable housing programs are national programs like

New York City, but these policies were mostly utilized and experimented in Seoul, so here the analyses will be conducted primarily from the aspect of Seoul. Also, Seoul has very diverse and complex programs, so it is not possible to sift through all programs here; therefore, only some representative affordable housing policies will be examined.

Public Housing

In response to the housing price increase and the exponential explosion of citizens derived by rapid economic development in the 1980s, Seoul City broke ground the first permanent public rental housing in 1989.[49] In the beginning, under the city's housing improvement & redevelopment program, the city constructed a new public housing on city-owned land via the contracted construction companies, which passed over the property to Seoul Housing & Community Corporation. By the late 1990s, the city began to notice increasing construction and maintenance costs. As a response, the city relied on private partnerships via tax incentives and subsidy as well as reducing supports. In 1993, Seoul put out the 50-year public housing program, which reduced the city's burden. At the time, 50-year rental housing was financed by the mixed sources; Seoul City (50 percent), the tenants (30 percent), and the National housing fund (20 percent). As the city's financial burden got worse, the lease term of public rental housing also decreased step by step. By 1998, the aftermath of the financial crisis occurred in 1997, 10-year and 20-year lease public housing projects came out instead. And after the recovery from the crisis, 30-year term rental public housing started in 2002, and the government burden was alleviated to 10 to 40 percent of total costs (Park, 2015). Another challenge was the shortage of

[49] The national first public housing project was constructed in Mapo-gu, Seoul in 1962

empty lands to build public housing, so the city turned to the existing housing market. In 2002, the city initiated the purchasing public housing program to acquire existing homes and renovate for rental purposes.

Seoul’s public rental housing, which was constructed or serviced via government subsidy, amounted to 284,257 units as of 2018. Public rental housing consisted of approximately 40 percent of Seoul’s total rental housing inventory (714,853 units) (MOLIT, 2019). Korea has several types of public housings, which differ based on the policy targets and rent periods. As aforementioned, the Korean rental market is dominated by a lump sum money deposit called Jeonse, so rental assistances also focus on the mixture of monthly rents and Jeonse. Long-term rental assistance with a maturity of more than 30 years still consists of 58 percent of the total.

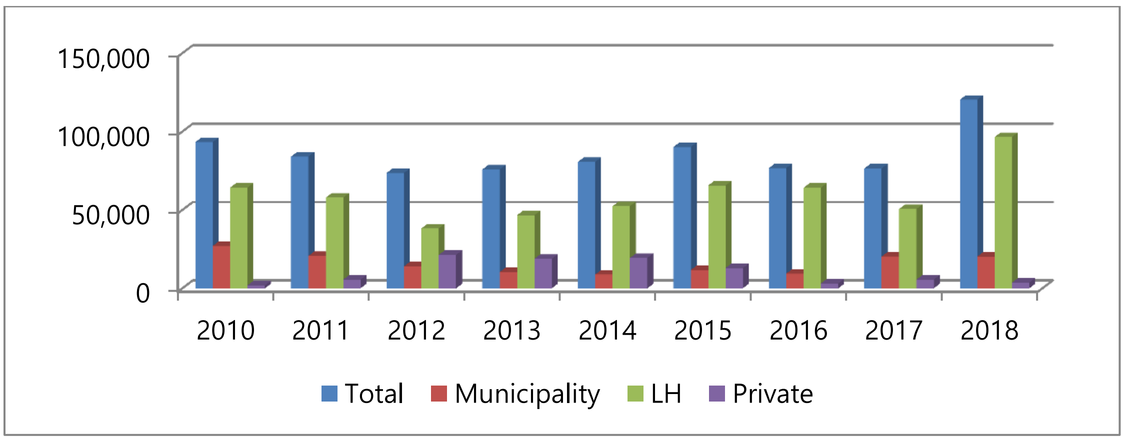
< Table 7. Public rental housing inventory in Seoul (as of 2018) >

Public Housing Type	Program Summary	Units
Permanent rental housing	Since ’89, 85% of cost subsidized	46,782
50yrs Public rental housing	Since ’92, 50% budget, 20% NHF subsidized	85,043
National rental housing (30yrs)	Since ’98, 10 ~ 40% subsidized	23,600
10yrs Public rental housing	Subsidized by NHF or built on public lands	2,260
5yrs Public rental housing	Subsidized by NHF or built on public lands	-
Long-term “Jeonse” housing	Up to 20yrs rent with “Jeonse” deposit	30,945
“Jeonse” sublease housing	Government, Seoul City, and LH rent existing private housing and sublet to low-incomers	56,013
Purchasing rental housing	Government, Seoul City, and LH acquire existing housing and rent	30,738
Happy housing	Lower rent small housing for Newlyweds, students, inductees, young workers, and seniors	8,876
Total		284,257

Source: MOLIT

However, LH stopped providing permanent rental housing after 2014, when only 92 permanent housing units were newly sanctioned. Instead, because of the skyrocketing land property values and construction costs, the Korean government authorities has increased the dependence on shorter-term public housing projects that required less subsidy as well as a buying and leasing program, which purchases the existing residential property and rents it to a low-income family. Public housing construction approval has been stabilized over the last 8 years despite increasing demand for affordable housing. It could be one factor of an affordable housing shortage.

< Figure 25. Public rental housing construction approval (Nationwide) >



Source: Index Korea, MOLIT

Seoul City provides diverse types of public housing with different lease terms, eligible home sizes, and income levels, etc. Public rental housing for low-income families can be classified into four types: Permanent rental housing, Public rental housing, National rental housing, and purchased rental housing.

First, Permanent rental housing was launched in 1989 as the first de jure public rental purpose housing with small unit size for low-income families. The unit size ranged from 26.34

m^2 to 42.68 m^2. Maximum 85 percent of costs are supported by the central government, and the rest is covered by tenants' rents. Between 1989 and 1993, around 190,000 units were supplied; 140,000 by the national government (via LH) and 50,000 by municipalities, and 47,000 among them were built in Seoul (Park, 2015). This program focuses on the poorest class, and rents are limited to a maximum of 30 percent of market rents. The priority is given to the extremely low-income class, known as "National Basic Livelihood Security Benefit recipients." 10 percent of the total rental supply is exclusively allocated to recipients of National Basic Livelihood Security Benefit voucher with less than 5 years' marital status and at least one child. The second tier groups are poor single-parented families, the persons of national merit, refugees from North Korea, the disabled persons, and non-home owners with less than 50 percent of the average monthly income for urban workers in the previous year. Rents are determined based on regional standard rents.

The Permanent rental housing had typical problems of public housing projects: remote location from the city center, the lack of infrastructure, and too small-unit size not enough to accommodate large families. Also most of the permanent rental housing projects were constructed in the periphery of the city. Seoul's public housing properties have some similarities and disparities at the same time with New York City projects. The main differences are that NYCHA units are on the large side and have more family-sized units. Additionally, many of the properties are located in the inner city and nearby public transportation hubs. It was because many of them were built a long time ago; 84 developments are more than 60 years old. That's some reason why it would be hard to replace them.

To address the issues of Seoul's public housing properties, permanent rental housing also leased commercial space within the apartment complex, and the revenues from it are used for the maintenance of the affiliated public housing, which could reduce the tenants' rent burdens and keep affordability to some extent. Besides that, LH provided some beneficiary facilities such as job information centers, workplaces for females, pollution-free apartment type-factories for residents to help to find jobs and income sources (Ibid.). But this program was suspended in 1993 because of the funding problem. Later in 2008 it began to resume, but the supply of new lease units is currently very limited. Unfortunately, the engine of the permanent rental program for extremely low-income households in Seoul was de facto, if not de jure turned off.

Second, Public rental housing has three types according to the lease term: 5-year / 10-year lease, monthly payment lease, and 50-year lease. The 5/10 year public lease and monthly payment lease are designed to be sold to tenants after the lease term expires. The qualifications for the programs are loose: as of 2019, anyone who does not own homes with real estate assets valued below around KRW 215.5 million ($180,000) and cars valued less than KRW 27.99 million ($23,000) can apply for this public housing; there is no income limit. The winners are determined by the lottery system among applicants. The unit area sizes are limited to 85 m^2, and the rents are decided at 90 percent of market rents. One controversial point is that the sale price after the termination of the lease term is determined differently according to the program contract. 5-year lease's sale price is calculated as (construction cost + appraisal value)/2, but a 10-year lease's sale price is decided at the appraisal value at the time of the transaction, which was an apparatus to hedge developer' long-term risk regarding housing price fluctuation in the future. However, as a result, this big difference made the 10-year program tenants angry because housing prices dramatically soared over the last 10 years. The tenants could not afford the recent housing prices levels unless the purchase prices were not adjusted to half of the market price.

Instead, a 50-year lease is not for sale, which was introduced to replace the permanent rental program in 1992. Unit sizes are limited to 50 m^2, but there existed no limits on income and assets; only homeownership of the applicants was checked. It means that anyone without home under their names can be qualified for this public housing. In the beginning, the program was primarily funded by the national government (50 percent); national housing fund supported 20 percent, the program entity (LH) 10 percent, and the tenants for 20 percent. But later from 1994, the government changed the needle to the private market and stopped funding. For this reason, NHF supported up to 70 percent of costs. But LH suspended a 50-year public housing program after the completion of 39,000 units in 1995. After that, Seoul City keeps providing its 50-year public housing through the city's housing redevelopment program. But this program targeted mostly the evicted tenants from the redevelopment projects regardless of income levels. Later in 2003, Seoul City changed the eligibility to embrace the qualified applicants on the permanent rental housing waitlist and 50-year public housing waitlist. Currently, the city government has no plan for additional supply for 50-year lease housing (Park, 2015).

Third, the National rental housing program was launched in 1998 to promote the dwelling welfare of low-income households who are in the bottom quartile of income. The eligible tenants must satisfy the conditions: non-homeowners whose earning is up to 70 percent of the average monthly income for urban workers in the previous year, which is approximately $3,600 for a family of four as of 2018. At the same time, the net asset value owned must not be greater than $233,000 and car values owned must be below $21,000. The maximum net area is limited to 60 m^2, and the rent price is determined at the level of 60 ~ 80 percent of the market rate (LH). The National Lease Housing Program can be financed via several participants; government (30 percent), NHF (40 percent), tenants (20 percent), and the program entity (10 percent) (Ibid.).

Finally, Purchased rental housing is the program that was initiated by Seoul City in 2001. The mechanism is that the city-owned local housing authority, known as SH Corporation, buys the disinvested housing units from the private market and leases them after renovation to citizens at a below-market rate, but the difficulty of financial and management suspended this program soon. Later in 2004, the central government adopted this model and conducted a pilot project. LH and the local government can also purchase and lease multi-units housing, unsold apartments, and houses owned by bankrupted entities. There are many kinds of housings according to apartment type and target class: lease for young people, lease for newlyweds, orphans without parents, and underserved people such as persons who lived in inns and container boxes, etc. Income and asset limits exist as eligibility requirements; income limits range from 50 to 70 percent of the average monthly income for the urban dwellers. The leasing period ranges from 10 to 30 years. Rents are usually at a maximum of 30 percent of the market rate.

Seoul City programs support the leasing up to 10 years with every 2 years renewal. The types of housing by Seoul City include multi-household (for households), studio (for singles), and “Hope housing” (for students). Multi-household housing primarily focuses on an extremely low-income class such as the recipients of the National Basic Livelihood Security Benefit and single-parent families. Households with up to 50 percent of the average monthly income for urban dwellers can have the second priority. The studio is designed for singles in Seoul with income levels up to 70 percent of the average monthly income for urban dwellers. Hope housing is provided for college students from low-income households such as the recipients of the National Basic Livelihood Security Benefit, children whose parents’ incomes are in the lowest income percentile, and children whose families earn no greater than 50 percent of the average monthly income for urban dwellers (Park, 2015). This program’s other big issue is high maintenance costs because of the regional dispersion of the properties. A large complex is more efficient in terms of the costs due to the economies of scale. Initially, public housing programs focused on the informal settlers and extremely low-income households, but now the programs tend to try to cover young workers, newlyweds, and people of low socioeconomic status as well as seniors. It must be a good approach from the perspective of Utilitarianism to maximize more people's happiness and well-being, but it could not be effective and efficient.

Rental Assistance with a Partnership with Private Sector

In 2017, the Korean government announced the new rental market stabilization program to vitalize the rental market by providing registered individuals and corporate landlords with tax incentives. The tax abatements comprehensively include purchase tax, property tax, rental income tax, capital gain tax, and comprehensive real estate holding tax as well as national insurance premiums. For instance, if landlords can meet the requirements described below, they can enjoy up to 70% capital gain tax deduction (MOLIT).

1) Registered as a long-term lease housing for at least 8 years
2) Leased period must be more than 10 years after registration
3) Maximum monthly rents increases are restricted to 5% when renewing the contract.
4) Housing property prices must be no greater than KRW 600million ($500,000) within Seoul Metropolitan areas and KRW 300 million ($250,000) for other regions

< Table 8. Tax incentives for a rental business (as of Feb 2020) >

Tax types	Tax benefits are given	Conditions
Purchase tax	-Area size <= 60m^2: 100% exemption up to KRW 2 MN, 85% for above KRW 2 MN -Area size 60~85m^2: 50% exemption	-When acquired newly built housing.
Property tax	-Short-term & Area size <= 60m^2: 50% exempt, -Short-term & Area size 60~85m^2:75% exempt, -Long-term/public: up to 50% exemption	-Differ based on lease term and area size
Rental income tax	-Short-term: 30% exemption -Long-term/public: 75% exemption	-Housing price must be below KRW 600 MN -less than 85 m^2 in Seoul
Capital gain tax	-Non-registered: up to 30% deduction -Short-term: up to 40% deduction -Long-term/public: up to 70% deduction	-Differ based on ownership period (maximum 10 yrs)
Comprehensive property tax	-Excluded in the tax calculation	- When certain area size, property value, and lease term limits meet

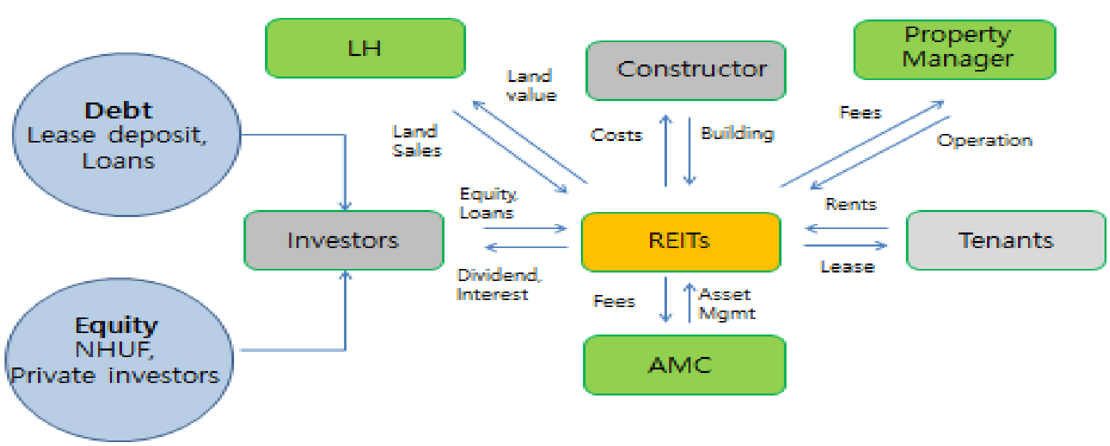
Source: https://www.renthome.go.kr/webportal/cont/rgstBenefitGdncView.open

These rental tax benefits for landlords can be very controversial because originally, there is no regulation on the beginning rent, which means that landlords can lease their homes at or above market rates. The program is also perceived as a trigger to the recent steep housing price increase; a lot of real estate agents and investors bought out a bunch of housing units and leased the properties at market rates with the help of government subsidy. The program is under stricture on the ground that it was used as a conduit for speculation.

In 2015, in response to the lack of Jeonse rental units, the central government introduced another new policy, called a" New Stay" for providing more monthly rental housing as a public-private partnership program. There were several kinds of business structures: private developers' business suggestions and LH's public offering, etc. In the beginning, the New Stay program was initiated by private developers' suggestions for housing development projects. The government via HUG and NHUF participated in as a partnership by way of contributing land and providing low-interest loans as an investor as well. This program was designed to utilize the private money for the supply of rental housing because historically private real estate companies mainly focused on home sales and office lease rather than the rental housing market. Developers are allowed to raise rents only up to 5 percent per year and have to lease the property at least 8 years; but this program does not have any regulations and limits on tenants such as income and equity. In terms of program structure, this program incorporated the REITs structure.

LH's public offering model is as followed. NHUF and private developers jointly form REITs. The REITs buy out the land for development from LH, construct housing complex on the land, and lease rental units to the tenants for more than 8 years. LH is responsible for the RFP and developer selection process, NHUF participates in the project as a financial investor, and HUG provides credit guarantee for the private loans. Private investors typically are a consortium of a construction company, asset management company (AMC), and final investors.

< Figure 26. New Stay business structure (LH public offering model) >



Source: MOLIT & Lee, et al. (2016)

New Stay program provides sturdy tax incentives and subsidy to the private investors and developers to attract private sector involvement. In 2015, the central government increased the loan amount and lowered the interest rate of loans from NHUF for developers. Acquisition tax, capital gain tax and income, corporate income tax for the New Stay project were also alleviated. In 2017, MOLIT announced a new model, called a private proposal project. It aimed to look for the project that immediate development is possible without modification of the city planning such as zoning ordinance. However, the New Stay program was under harsh fire in that the program benefited private developers too much than the developers' contribution to the housing affordability. To make the business lucrative, the city purveyed publicly-owned lands that were located in marketable areas of the city center at a lower price to REITs, and private developers earned a huge amount of profits with the recent real estate market frenzy.

Housing Voucher Subsidy Program

In 2002, the city of Seoul first introduced a housing voucher program, known as "Monthly rent aid" aiming to fill the financing gap of the low-income family' funding sources for monthly rents. That was a political response to the housing price increase and the lack of affordable Jeonse housing units since the 2000s. The program was funded by Seoul City's own budget account, called "housing assistance account of the social welfare fund" (Park, 2017). Seoul housing voucher program targets only those households whose incomes are within the bottom 20 percent of the income bracket (within 150 percent of the criteria for selecting beneficiaries under the "National Basic Living Security Act") while residing in private rental houses and paying monthly rents. Household's annual income must be below 60 percent of the median income.

But, the subsidy recipients under the "National Basic Living Security Act" and households whose current rent value (when the rent is converted to the value of lump-sum deposit) exceeds KRW 95 million ($80,000) cannot receive the housing voucher. Seoul’s housing voucher program provides qualified tenants with a fixed amount of subsidy without issuing a voucher. The subsidy can differ according to the family size; as of 2020, KRW 80,000 ($67) for a one-person household with KRW 5,000 ($4) incremental per person up to KRW 105,000 ($88) for a six-person household. The subsidy directly is passed through to the lessor’s account to prevent the inappropriate use of subsidy. Over the last 3 years, the city spent around KRW 16 billion ($13.3 million) to support 22,600 households’ stable dwelling. The amounts of vouchers and the number of beneficiaries were a pittance given the size of the city population and average income levels.

< Table 9. Seoul housing voucher assistance over the last 3 years >

Year	2017	2018	2019
Beneficiary households	10,270	6,975	5,355
Subsidy amounts	KRW 6.642 billion ($5.5 million)	KRW 6.564 billion ($5.5 million)	KRW 3.042 billion ($2.5 million)

Source: Seoul City, housing voucher subsidy (2020)

In 2019, Seoul City announced a new monthly rental subsidy for the young millennials. The city promises to support KRW 200,000 ($167) per month for up to 10 months with a plan to help 5,000 persons in 2020 and a total of 45,000 persons by 2022. According to the statistics released by Seoul City, the number of single households in Seoul reached 580,000, 63.7 percent of whom live in monthly rental housing. Young residents under the age of 29 years old in Seoul earn around KRW 2 million ($1,670,000) per month, and pay KRW 492,000 ($410,000) for rents, Rent to Income ratio can be calculated around 25 percent. Rent subsidy idea for young unemployed was brought up with this background. Specific eligible applicants for the subsidy are singe households whose income represented less than 120 percent of the median income[50] with an age range of 19 to 39 years old. Besides, the city assists low-interest Jeonse deposit loan up to KRW 70 million ($58,000) and subsidizes up to 90 percent of interest on Jeonse loans to the young working class, whose annual income is below KRW 40 million ($33,000) and their parents earn less than KRW 70 million ($58,000) a year (Seoul City).

Besides that, the central government offers the income tax deduction for monthly rent payments when the income earners meet some conditions: unit area size less than 85m^2, non-homeowners, annual income less than KRW 70million, and registered to live at the address of rental units. For the convenience of tenants, the landlord's consent is not required. With growing concerns from housing market change and housing affordability crisis, the government tries to implement diverse preemptive countermeasures, and this approach must be appraised; however, it looks like spontaneous. It is recommended to examine New York City's more systematic rental assistance tools, which are generally federal tools before the experimentation of various options in the real world.

Rental Housing Market Regulation

In Jan 2020, the Korean government announced a new regulation in the housing market; no longer can the tenants whose rental housing values are above KRW 0.9 billion borrow the money for Jeonse deposit from the banks. Moreover, when the borrowers currently using rental deposit

[50] This is the government's income standard to decide subsidy recipients. Say total population is 100, median income mean 50th largest income among the whole income distribution.

loans want to purchase housing, the existing Jeonse loan must be paid back immediately; the government prohibited the credit guarantee service for expensive luxury housing. It was because the criticism that Jeonse loans were utilized as a catalyst to the housing speculation was suggested. In Korea, Jeonse loans are guaranteed with 100 percent coverage by two government agencies: HF and HUG, and a private insurer, Seoul Guarantee Insurance (SGI). The credit guarantee is used as a primary credit enhancement tool for private banks to cover the relatively higher default risk of Jeonse loan borrowers, whose income and credit scores are very low. At the same time, the guarantee can lower the interest rates of housing loans of low-income borrowers. But, in years, Jeonse loans, which have lower interest rates owing to the credit enhancement by agencies, are alleged to have been used for the speculation purpose, so-called "gap investment", which can occur when the disparity between housing price and Jeonse deposit is narrow enough. Say, when the housing value of an apartment is $1,000, and Jeonse deposit is $700, then an investor can purchase the housing with just $300 equity. In that case, the landlords should reimburse the deposit when the tenant moves out. Typically investors utilize the Jeonse scheme when housing prices are expected to appreciate and get a capital gain through leveraging.

Like the case above, in order to curb the housing price increase and stabilize the rental market, the Korean government typically has utilized diverse regulations, particularly through strict and frequent constraints on housing finance tools. Currently the Korean government does not employ rent regulations on private properties and owners except for public housing and subsidized housing. Instead, the national government regulates private banks' loans for Jeonse and mortgage loans to discourage the speculation on the housing market and to prevent overheats of the market. In 2019, the government strengthened the financial regulations on the housing lending market. The government, for instance prohibited new mortgage loans underwriting for the expensive luxury apartments. Simultaneously, the authority tightened Loan To Value ratio (LTV) for the housing units with the values of more than KRW 0.9 billion ($ 750,000) and put a limit on Rent to Income Ratio (RIR) for an individual rental business entity, etc.

Direct Subsidized Loans for Private Entities

The national government provides the two tracks of financing: for individuals and private construction companies. The main tools are direct subsidized loans through the government fund and credit guarantee service for private low-income class and housing constructors. Major game markers in the program are NHUF, KHFC, and HUG. Among them, the primary source of funding for housing affordability enhancement is the government fund, or National Housing & Urban Fund (NHUF), which is the former National Housing Fund. The fund is primarily used to enhance the homeownership of medium-income households and provide subsidy to fill the finance gap between rent and income of low-income households as well as underserved people. First of all, it is necessary to overview NHUF briefly before looking into the specific programs.

In 2015, the national government enacted the new law, called the “National Housing and Urban Fund Act”, which reformed the formerly existing the National Housing Fund. The primary points of restructuring the fund were 1) the expansion of fund’s scope from housing to city revitalization, 2) the diversification of support programs from direct loans to the combination of loans, investment, finance, and guarantee, and 3) the designation of the fund operator or HUG. The fund consists of two accounts: Housing account and City account. Housing account is used for providing a subsidy for the improvement of housing conditions and inventory increase for low- and medium-income families. City account, whereas it is to support urban regeneration and revitalization. The principal funding sources for the fund are national housing bonds, the national lottery fund, housing subscription savings accounts[51] , and so forth. NHUF historically contributed a lot to the increase of homeownership and the improvement of housing affordability in Korean society since its installment in 1981.

< Table 10. Resources and usage of the NHUF >

Accounts	Resources	Usage
Housing Account	- National Housing Bond - Housing subscription savings accounts - Self-raised Finance (Recover finances, investment, loans, asset securitization, interest revenue on loans) - Money transferred from the general account (National lottery fund, etc.)	- Rental housing construction loan - Pre-sale housing construction loan - Housing purchase loan - Jeonse deposit loan - Housing remodeling loan - Finance for rental housing
City Account	- Money transferred/borrowed from housing account - Self-raised Finance (Recover finances, investment, loans, asset securitization, interest revenue on loans) - Money transferred / Borrowed from regional development special account, etc.	- Urban renewal project loan - [Economic Base Type] Rehabilitation, industrial complex, ports, station areas developments - [Community Regeneration Type] Redevelop run-down commercial areas and residential areas

Source: HUG

As of 2018, NHUF had KRW 171.31 trillion ($143 billion) of assets, which were composed of KRW 20.8 trillion ($17.5 billion) of equity and KRW 150.5 trillion ($125.5 billion) of debt. The asset size has unceasingly increased while debts have soared by around 50 percent

[51] In Korea, only qualified individuals can apply for purchasing a newly built apartment, and through lottery system, the owners are selected. Applicants must meet some conditions: 1) all household members are non-home owners, 2) an applicant should open a “housing subscription savings account” and maintain deposit balance in a bank.

over the last 5 years. The biggest change came from the growing issuance of nation housing bonds and the increase in the number of housing subscription savings accounts.

< Table 11. The financial status of NHUF (KRW trillion) >

Type	2014	2015	2016	2017	2018
Assets	117.38	136.22	148.87	163.34	171.31
Debts	102.31	120.90	132.42	143.38	150.50
Equity	15.07	15.32	16.45	19.96	20.81

Source: HUG

NHUF serves many diverse programs to cover a wide range of income spectrums from the extremely low-income to medium-income earners. One difference from the New York case might be a rental subsidy for newlyweds and young employees working in small- and medium-sized- companies. This is the reflection of social problems in Korean society. As described earlier, Korea has been suffering from rapid aging and the record-low birth rate due to late marriage and no children sentiment among the young generation. The young generation began to feel the burdens to run marital status and rear babies owing to the widening income disparity and the increasing costs of child care. Based on the perception, the Korean government began to provide incentives[52] to galvanize more marriage and baby pregnancy. Most of the rental assistance is Jeonse support programs because people prefer this, and interest rates range from 1.2 to 2.7 percent per year based on the loan period and income level.

[52] Some small cities with serious population loss provide approximately KRW 18,000,000 ($15,000) to parents with more than 3 children as a grateful gift.

< Table 12. Rent supportive direct loans for individuals in Korea (as of Feb 2020)[53] >

Program	Eligibility	Loans
Rental deposit loan for young employees of small companies	-Annual income less than KRW 50 MN -Employees of Small and medium-sized company -Aged from 19 to 34 years old	-The interest rate of 1.2% -Max. KRW 100 MN -Up to 10 years
Guaranteed monthly rent loan for young people	-Annual income less than KRW 20 MN -Net assets below KRW 288 MN -Aged from 19 to 34 years old	-Deposit 1.5%, Rent 1.8% -Deposit KRW 35 MN, Rent KRW 9.6 MN -Up to 10 years
Supportive Jeonse loan for young people	-Annual income less than KRW 50 MN -Net assets below KRW 288 MN -Aged from 19 to 25 years old	-The interest rate of 2.3 ~2.7% -Max. KRW 35 MN (to 80%) -Up to 10 years
Monthly rent loan for stable dwelling	-Special type) low-income voucher recipients, newly recruited young people, etc. -General type) Annual income less than KRW 50 MN / Net assets below 288 MN	-Special 1.5%, General 2.5% -Max. KRW 9.6 MN - Up to 10 years
Jeonse loan for newlyweds	-Annual income less than KRW 60 MN -Net assets below KRW 288 MN -Within 7 years after marriage	-The interest rate of 2.3 ~2.7% -Max. (up to 80%): Seoul Metro regions KRW 200 MN, Others 160 MN -Up to 10 years
Supportive Jeonse loan	-Annual income less than KRW 50 MN -Net assets below KRW 288 MN	-The interest rate of 2.3 ~2.9% -Seoul Metro regions KRW 120 MN, Others KRW 80 MN -Up to 10 years

Source: NHUF

NHUF also provides an assortment of financial tools to support private institutions to further the supply of small-size rental housing units for low- and medium-income families. Most of the rental housing programs put limits on the area size and the maximum loan amounts as well as the lease terms. The direct loans typically have below-market interest rates, which are very attractive to construction companies and real estate developers.

[53] Mortgage loans to support home ownership of medium income families are excluded.

< Table 13. Rent supportive direct loans for private companies in Korea (as of Feb 2020)[54] >

Program	Eligibility	Loans
Public Rental housing construction loan	-Registered constructors, landowners, etc -Areas size less than 85 m^2 -Floating rate by the fun operation plan -Require guarantee by HF/HUG as a collateral -At least 5 years of the Rent period	- Areas size <=60 m^2: interest rate 2.3% Loan less than KRW 5,500 per unit - Areas size > 60 m^2: interest rate 2.8% Loan less than KRW 5,500 per unit -Loan maturity 30 years 10yrs for interest only, 20 years for amortization
Private Rental housing construction loan	-Registered rent business entity -Areas size less than 85 m^2 -At least 4 years of the Rent period	-Maximum loan amount: KRW 50MN to 100 MN (on area size) -Interest rate: 2~4% -Loan term: 6 or 12 years -Balloon payment at maturity
Private Rental housing purchase loan	-Rent business entity -Areas size less than 85 m^2 -At least 4 or 8 years of the rental period	-Maximum loan amount: KRW 50 MN to 100 MN (on area size) -Interest rate: 2~4% -Loan term: 4 or 8 years -Balloon payment at maturity
Non-profit rental housing construction loan	-Non-profit organization -Areas size less than 85 m^2 -At least 15 years of the rental period -Lease at below-market rents	-Maximum loan amount: KRW 100 MN -Interest rate: 2~2.8% -Loan term: 12, 16, 20 years
Non-profit rental housing purchase loan	-Non-profit organization -Areas size less than 85 m^2 -At least 15 years of the rental period -Lease at below-market rents	-Maximum loan amount: KRW 100MN -Interest rate: 2~2.8% -Loan term: 8, 16, 20 years

Source: NHUF

NHUF also provides direct loans for sales purpose housing construction to private builders. The typical interest rates for the loans range from 3.6 to 4.6 percent based on the entity, which means that it differs based on public vs. private and the area size of housing units, etc. A detailed explanation of financial support programs for sales-purpose housing development projects is omitted here because those programs are only for medium-income households.

[54] Mortgage loans to support home ownership of medium income families are excluded.

Housing Credit Guarantee Program

Another prominent housing finance program for low-income families is the housing finance credit guarantee. The representative national credit guarantee program is supported by the "Housing Finance Credit Guarantee Fund", which is managed and operated by Korea Housing Finance Corporation (HF). Since the installation in 1988[55], the fund serviced KRW 343.87 trillion ($286.6 billion) guarantees to 10.74 million low-income families. Approximately 48 percent of the beneficiaries have annual incomes of no greater than KRW 30 million ($25,000). In 2017, the fund totaled KRW 36.67 trillion ($30 billion) housing finance guarantee balance, 94 percent of which was provided to individuals.

< Table 14. Annual performance of credit guarantee fund >

(Unit: 100 million KRW)

Division	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Individual	31,321	41,657	35,870	44,787	58,564	87,040	111,402	200,351	268,255	255,159	308,780	354,230	376,842	344,600
House builder	7,195	6,397	5,344	6,102	9,039	9,505	3,501	6,349	7,331	10,649	9,992	20,542	24,131	22,077
Total	38,516	48,054	41,214	50,889	67,603	96,545	114,903	206,700	275,586	265,808	318,772	374,772	400,973	366,677

Source: Korea Housing Finance Corporation (HF)

Housing Finance Credit Guarantee program also covers a wide range of customers from extremely low-income households to medium-income families. HF's housing finance credit guarantee program can be classified into guarantees for individuals and housing builders. Guarantee for individuals comprises of various guarantee programs such as Jeonse assistance, Special Jeonse assistance for the underprivileged class, Monthly rental assistance, Housing retrofitting assistance, Intermediate payment assistance, and Mortgage credit guarantee. Among

[55] Korea Housing credit guarantee fund was transfer to under the management of Korea Housing Finance Corporation in 2004, when the corporation was established.

them, Special Jeonse guarantee for the underprivileged class and Monthly rent guarantee program specifically targeted the low-income households as defined below in table 16. According to HF, as of 2017, 68.9 percent of guarantee for individuals were Jeonse deposit guarantee, and 25.7 percent of them served Intermediate payment guarantee, which ensures the interim amortized payments of home purchasing debts. Here I would like to introduce the guarantee programs that target only low-income households excluding the programs with a focus on the medium-income earners. The general Jeonse guarantee program's eligibility is so broad that even homeowners with housing with a value up to $750,000 can apply for the rental deposit subsidy program. It is a controversial issue to allow homeowners to use public finance subsidy.

< Table 15. Housing Finance Credit Guarantee balance by the products (KRW 100 MN) >

Division	Types	2017	Ratio (%)
Guarantee for Individuals	Financing for home purchases	18,215	5.3%
	Intermediate payments	88,451	25.7%
	Jeonse deposits	237,258	68.9%
	Others	675	0.2%
	Sub-total	344,599	100.0%
Guarantee for Builders	Financing for home construction	11,843	53.6%
	Project Financing	9954	45.1%
	Purchased rental	280	1.3%
	Sub-total	22,077	100.0%
Total		366,676	

Source: HF, the annual report (2017)

Special Jeonse guarantee program for the underprivileged class provides beneficiary credit enhancements to the class who need the most social care to make them afford rental housing at below-market rates. The class includes young working class who are earning low income, housing with a severely-disabled family member, North Korea refugees, permanent public rental housing tenants, the recipients of the National Basic Livelihood Security Benefit, children head of households, a person who is repaying debts after credit default.

< Table 16. Representative Housing Credit Guarantee for low-income individuals >

Program	Eligibility	Guarantee
General Jeonse guarantee	-Rental deposit: up to KRW 500 MN ($400,000) in Seoul, other regions are allowed up to KRW 300 MN -Non-home owners or one homeowner with housing value less than KRW 900 MN ($750,000) -No more than KRW 100 MN ($83,300) of annual household income	-Up to 200 KRW MN ($58,300) -0.05 ~ 0.30% guarantee fee for a year depending based on deposit size and special preferential class.
Jeonse guarantee for a young generation	-Age: at or less than 34 years old -Rental deposit: up to KRW 500 MN ($400,000) in Seoul, other regions up to 300 MN -No more than 70 KRW ($58,300) of Annual household income	-Up to 70 % of the total deposit -Up to KRW 70 MN ($58,300)
Jeonse guarantee for the underprivileged class	-Mixed-ethnic family, a household with retired senior parents, housing with a severely-disabled family member, North Korean refugees, permanent public rental housing tenants, National Basic Livelihood Security Benefit recipients, children head of household, etc. -Rental deposit: up to KRW 500 MN ($400,000) in Seoul, other regions are for 300 MN -Non-home owners or one homeowner with housing value less than KRW 900 MN ($750,000) -No more than KRW 100 MN ($83,300) of annual household income	-Up to 100 % of the total deposit -Up to KRW 45 MN ($37,500) when a deposit is provided as collateral. If not, up to KRW 30 MN ($25,000)
Jeonse guarantee for credit recovering class	-Persons recovering credit by repaying debts after credit default -Rental deposit: up to 500 million ($400,000) in Seoul, other regions are for 300 million -Non-home owners and one homeowner with housing value less than KRW 900 million or $750,000 -No more than 100million ($83,300) of annual household income	-Up to 80 % of the total deposit -Up to KRW 45 MN ($37,500) when a deposit is provided as collateral. If not, up to KRW 30 MN ($25,000)
Stepping stone Jeonse guarantee	-Persons who are using Jeonse loan from non-monetary institutions -Rental deposit: up to 500 million ($400,000) in Seoul, other regions are for 300 million -Non-home owners and one homeowner with housing value less than KRW 900 million or $750,000 - Less than or equal to 70million ($58,300) of annual household income	-Up to KRW 150 MN ($125,000) -Up to 80 % of the total deposit -0.05 % guarantee fee for a year
Credit guarantee on monthly rents for young workers	-Aged less than 34 years old -Contracted deposit is less than or equal to KRW 100 MN, and monthly rent is less than or equal to KRW 700,000 ($583) -Less than or equal to KRW 70 MN ($58,300) of annual household income	-Up to KRW 12 MN ($10,000) -Up to 13 years guarantee; 8 years of a grace period, amortized over 5 years -0.05 % guarantee fee for a year

Source: HF

CHAPTER 6. POLICY IMPLICATIONS

A. Cross-sectional Comparison between Two Cities

So far, I have portrayed the trajectory of housing policy in New York City and Seoul. Both have their own set of diverse housing tools, which were developed based on their idiosyncratic socio-economic traits and historical backgrounds. For example, New York City is a representative melting-pot city of diverse races and ethnicities as well as an epitome of free market and autonomy. Under the social and political background, New York City's affordable housing policy has been selected for addressing specific issues; the current housing policies are the combined results of the efforts to address the housing crisis and to adapt to the city's urban environment changes. New York City focused on resolving income disparity based on the socio-economic status (SES) and housing inequality for minorities, particularly Black people, while minimizing market distortion by government interventions, and efficiently utilizing private funding sources; the laissez-faire approach and increasing costs issue must be critical reasons why policy orientation in New York has shifted to a primarily indirect conduit role and facilitator rather than a direct participant in the housing and financial market. Most supports are federal in both NYC and Seoul. New York City efforts are additive. The Federal government plays a primary role in providing rental assistance and homeowner tax subsidies and finance tools.

In contrast, Seoul, a single-ethnicity city has walked a different path. Since 1953, when the Korean War ended, Korea has rapidly developed economically over the past 70 years, led by its government. Now, Korea is applauded for its successful development model. Based on this experience, Korean society has a deeper reliance on and expectations for the public sector's intervention and the government's role rather than market autonomy. The Korean government's comprehensive top-down development strategy was successful in terms of economic vitalization, but negative externalities such as income disparity and speculation on the housing market became serious domestic issues. In the past, because the city's economic infrastructure was not self-sufficient, the government tried to manage the whole market and system as a "visible hand". The government-controlled the housing supply through zoning and construction permits while curbing demands by imposing restrictions on the mortgage lending market. The distinctive differences in history and socioeconomic background made the big difference between the two cities' housing policies even if there also have existed some overlaps and similarities. The two cities have adopted different approaches to their similar housing affordability problems in finding solutions and filling the housing finance gap.

I humbly admit that there are a number of issues limiting the comparison of data, which makes it very hard to operationalize and characterize the main traits of each city's housing support programs. However, based on the knowledge from the prior chapters, I would try to schematize and generalize the two cities' affordable housing programs.

< Table 17. Brief contrasts in terms of housing policy orientations >

New York City	Seoul
Indirect (conduit)	Direct (provider)
Efficiency	Effectiveness
Equality-oriented	Development-oriented
Public-Private Partnership	Public sector-driven
Bottom-Up	Top-Down
Multi-Scales (Fed, State, City)	Mostly National Scale
Constant	Flexible

New York City's housing policy can be summarized by the role of a conduit, market autonomy, efficiency, racial equality, Public-Private Partnership, community engagement, and multi-scales. New York City primarily pursues the operational smoothness with a strong reliance on private money and market efficiency while minimizing the direct involvement in the market. The U.S has a big trauma in racial discrimination historically; therefore, New York City's housing policies also have a relatively vigorous preference for addressing racial equality and the concentration of poverty. Their policymaking process is more democratic and participatory. Rent decisions and recertification processes are quite a bit transparent. Rent Guideline boards described earlier in detail could be a good example of this. Another big discrepancy is the governing structure. The U.S. has a federal system and a broader territory, so it could be very hard to manage and control the whole nation with one size fit all policy tools, which led to the multi-scaled housing policy and its diversity in detail. At the same time, a part of the relevant challenge is distinguishing between NYC initiatives and using Federal tools. New York's policy is relatively simple and constant. Once a rule is set, it has not changed frequently but lasted for a long time. For example, 30 percent of the tenants' contribution ratio is applied to every affordable housing unit including public housing, and the figure remains the same since 1981. LIHTC has almost 35 years' long history without a big change in its program structure.

In stark contrast, Seoul places more values on direct engagement, speed and effectiveness, development-orientation, public-initiatives, top-down comprehensiveness, national-level plan, and policy flexibility. Based on the experience of government-led fast economic development, the Korean government has had strong leadership in dealing with the affordable housing policy. The city of Seoul still focuses on the provision of direct financing programs for affordable housing development with mostly national resources: the ongoing provision of public housing, direct below-market-rate loans from the government fund, and a housing credit guarantee program via agencies for housing developers and the socially-disadvantaged class. It was not long ago that the Korean government began to enhance collaboration with private investors through tax subsidies. For example, “The New Stay” was installed in 2015, and a tax abatement program for registered private landlords was implemented around just several years ago, but it is still in the nascent phase compared with the U.S. Korea has small territory and its economic size is commensurate with New York State, so most of the housing programs are run by the national government and national agencies. Seoul City also operates its city level housing agencies, whose capacities and roles are limited because of the city’s lack of budget and sovereignty.

Another trait is that Seoul’s rent decision process and mechanism for subsidized rental housing is not transparent enough. Even though government and agencies tried to reflect communities’ voices via hearing and more formal participation processes, the extent is not enough yet. Tenants and landlords have difficulty to have access to the raw data that is used for the rents decision. Some government officials decide the level of the appropriate rent according to their already-set rules and guidelines. The process, in particular lacks grassroots participation from the community and tenants. Lastly, the Korean housing policy is flexible. The versatility could be a good value sometimes on the ground that it is possible to change policy as quickly as the environment changes. But in terms of policy coherence, it must not be a bad aspect. If the government policy is too whimsical, the market can be exposed to more uncertainty, and at the same time, market participants do not trust the government announcements. That must be a critical reason why the Korean government’s powerful regulations have not worked well to control housing market fluctuations.

Given the complexity and mixture of housing policy tools in play, it is not easy to differentiate and generalize the main characteristics of the affordable housing finance policies of the two cities without proper tools. Based on the necessity, I tried to find some seminal aspects to be considered when developing housing policy from the background and history research in previous sections. I found the five major components to explain the current housing policy traits of the two cities, and made the model: SMART comparison principles. SMART stands for the combination of abbreviations of five comparative elements: **S**ubject class, target **M**arket, policy **A**pproach, **R**egulation intensity, and policy **T**ools. The order of the components does not reflect the priority, and all factors have the same weights. Utilizing this model, I categorize each city's current housing policy traits and elaborate on the differences of them more in detail one by one by the component respectively.

< Figure 27. The SMART housing policy comparison principles >

Source: Ju Hwa Jung (2020)

Under the comparison model, the distinguishable discrepancy between the two cities can be summarized below (see table 18). New York City's affordable housing policy can be primarily characterized like this: more precisely targeted at low-income earners, mainly through mixed-income developments, in the monthly rental market, primarily as an indirect conduit role, in a more market-friendly way, and through tax abatements. On the other hand, Seoul principally covers a broader range of targets, in the money deposit market with more focus on homeownership, as a direct participant, with relatively strong market regulations, and though the direct loans and public housing. The details will be examined according to the five analysis components one by one from here.

< Table 18. The comparisons of Primary housing policy by SMART >

Categories	New York City	Evidence	Seoul	Evidence
Primary Policy Target **Subject**	Low-income, Mixed-income	Clear income target	Mid-income, Young people	Broader eligibility
Primary Policy Target **Market**	Monthly Rental market	LIHTC, Section 8	Deposit Lease market	Jeonse, Money deposit
Primary Policy **Approach**	Role as a Conduit via Partnership	LIHTC, J-51, 421a	Keep Direct Involvement	Public housing, Direct loans
Primary Policy **Regulation**	Mostly Market friendly	Rent regulation	Strong Curb on market	Control on price, supply, finance
Primary Policy **Tools**	Indirect Tax incentives, munis	LIHTC, Section 8	Direct Loans Credit Guarantee	NHUF, HF

First, from the perspective of the policy target subject, New York City more specifically targets low-income households. New York City mainly zeroes in on the low-income households with income at or below 60 percent AMI and minorities who live below the poverty line. Besides, the Small Area FMR, which fathoms the more accurate average market rate at the ZIP code scale, helped the policymakers to focus on the most vulnerable class in the city with the crystal clear policy goals. The city put the amelioration of the poverty disparity as its first policy priority and spent its budget on it, which is a very efficient tactic in terms of resource allocation.

At the same time, another notable point of New York City’s housing developments is that most of the affordable housing projects in the city are mixed-income developments. From the perspective of funding sources, new construction projects employ diverse subsidy tools including LIHTC, PABs, a subsidized mortgage from city agencies, and local property tax incentives such as 421-a. But, this approach is still controversial because the unneglectable amount of government tax expenditures are used for middle-income earners as well.

New York City is also implementing the strongest rent stabilization policy in the U.S. even though rent regulation is a controversial topic across the country. I am saying that the New York City PHAs do not provide housing supports programs for middle-income households. The city also has run diverse programs such as mortgage interest rate deduction and mixed-income housing development as well as FHA insurance for first home buyers. However, the majority of the primary government resources are centered on helping extremely low- and low-income individuals. It also should be noted that there is no stated racial requirement for any housing programs; apparently, it's purely income. However, the majority of low-income people under the poverty line are Blacks and Hispanics; therefore, poverty affordable housing issues in the U.S. might be closely related to race even though it is not programmatic.

New York also has very mighty tenant protection measures. According to the LIHTC compliance, for instance the owners cannot evict the existing tenants of any low-income units without good cause throughout the entire commitment period; the good cause excludes over income. Once the initial verification is finished and the Tenant Income Certification (TIC) is signed by the applicant and the owner, no recertification process on income eligibility is followed, which means that the tenants who pass the initial income eligibility can reside in their affordable unit as long as they want regardless of their income increase. IRS Revenue Procedure requires the owners to certify that no tenants were evicted and a gross rent increase concerning low-income units did not occur. Public housing is the case too. NYCHA does not necessarily terminate the tenancy of low-income households even if their incomes are above the qualification limit.

On the opposite side, as seen in the previous chapter, public housing programs in Seoul tend to concentrate more on medium income-households and other financially-struggling class as well as low-income classes. The policy support subjects include newlyweds, college students, and young rookies working for small-sized companies. This policy trend could be explained with contemporary social phenomena and issues in South Korea. In 2018, 1-person and 2-person households comprise 56.5 percent of the total households, and the portion has kept increasing from 34.6 percent in 2000 (Statistics Korea, 2018). Especially, the public housing programs that have been run by Seoul City seem to be designed for medium-income households like the social housing model of European countries.

For example, the permanent rental housing, which is de facto an authentic public housing program, almost stopped new projects since 1993. 50-year lease public housing, which was launched to replace permanent rental housing, is not actively used these days either because of the increasing construction costs. Instead, the eligibility standards for public rental housing have become so generous that now non-home owners with other real estate assets valued up to $180,000 could live in some of the public rental housings regardless of their income levels.

Another example is “New Stay” rental housing. The program had not had any limits on the tenants’ eligibility including income and assets until 2017 when the program was reformed to “publicly support private rental housing.” Currently, the program enhanced requirement; the initial rents must be at a maximum of 90 ~ 95 percent of market rents for general tenants, and 70 to 85 percent of market rates for young people and newlyweds. Also, the priority of the tenancy goes to non-homeowners, and income limits were adopted too. Granted that the alterations improved the “publicness” of this program, it is still not enough. Only 20 percent of total housing units are allocated to special care classes such as young singles, newlyweds, and seniors. Moreover, the income limit, which restricts tenants’ income within 120 percent of the average income of urban area workers, is applied only to the special care class. It means that 80 percent of the total tenants are still exempt from the income limit. The properties that were funded by this program are filled with medium-income households.

Second, in terms of the policy target market, New York City puts more weight on the monthly rental market. Given the average income of policy target class and high level of housing prices, it might be natural for the city to focus on the rental market rather than the sales market. As I have already noted early, the majority of the housing market in the city is the monthly rental market. New York City’s severe income disparity and the high level of living costs made it almost impossible for low-income households to purchase their own homes in reality. Price to Income Ratio (PIR) in New York also keeps waxing. For this reason, New York City’s housing policy focused on filling the rent gap between incomes and monthly rents. The representative programs such as LIHTC, Section 8 Housing Choice Voucher, PAB, its use of real property tax exemptions, and rent regulation are the measures to mitigate the tenants’ rents burden.

Seoul also concentrates on the rental market to alleviate the housing cost burden of low-income households. But there is a big difference between the two cities, which came from the disparate rental housing market structure of the two cities. Aforementioned, Seoul's housing market is different from New York. Approximately 61.4 percent of housing units are apartments; therefore, apartments do not be branded as s poverty in Seoul. The more distinguishable characteristic of the Seoul rental market is the lump-sum deposit lease market, called "Jeonse". Seoul's rental market is dominated by the money deposit market, so the government also primarily focuses on the money deposit lease market. The typical deposit rate is known as 70 percent of the property's market price in Seoul, which is a big burden to the low-income working class. So most of the low-income tenants have to borrow money from the banks in the case, but banks are reluctant to lend loans to low-income households because of their high risk of default.

Under this circumstance, the government intervenes as a mediator by lending direct Jeonse loans with far lower interest rates from the government fund, or by providing credit guarantee service as a credit enhancement for the vulnerable class. The national government also focuses on the homeownership increase of low-income households by providing subsidized mortgage loans. As of March 2020, the typical interest rate of the subsidized mortgages ranges from 2 to 3 percent according to maturities and income brackets. In addition, the Korean government also provided public housing units for sales to low-income families; therefore, the tenants who saved enough seed money while living in public housing could purchase their homes after 5 years of initial move-in at around half of the market rate. The Korean policymakers believe that just subsidizing the rents cannot help them escape from poverty, and it is necessary to support them to have their own homes, which could function as a stepping stone to climb the social ladder even though it is a small property. Being homeowners might be magic because it could be a dream to the urbanites in lower socioeconomic status. It could be a tough job for low-income families to pay back monthly amortized mortgages; however, the interest is affordably low, and eventually they would accumulate the minimum wealth and secured shelter for their beloved families after 30 years. That is the reason why Seoul cannot be off the hook from the homeownership increase of low-income earners.

Third, as for the policy approach, New York City has relied more on private investments and for-profit companies' technology through the public-private partnership. New York City provides a lot of capital as a subsidy using more than 10% of the cap budget for affordable housing. Also, the city supports the supply of affordable housing through land use tools such as re inclusionary housing and real property tax tools such as article 11, J-51, and 421-a. But those are not direct tools, but indirect subsidies for private developers. The city stopped the direct involvement via public housing in the housing market, instead, the policy orientation skewed to the role of a finance conduit and supporter. This approach may be understandable given the history and background of the U.S. housing market and housing policy. Particularly public housing programs in the U.S. showed the typical trajectory of the demise of the direct housing finance tool; the federal government stopped new public housing. The public housing program has confronted serious criticisms and suffered from the severe lack of funding for maintaining the properties and running a business properly until its sunset in 1986. To get a budget funding from the federal government was the intricate political power dynamics; the government officials in municipalities had to have difficulties to negotiate and persuade the federal government, and the federal government also had to convince Congress to receive the budget sanction for the public housing program every year.

Another issue was the lack of public empty land parcels. In the early 20^{th} century, there were a lot of undeveloped parcels of lands that were owned by the government, so a large scale of public housing projects was possible at cheaper costs. The PHAs could conduct development projects on their lands without additional land costs. However, nowadays, the scarcity of empty lands required NYCHA to buy lands for housing developments from the private market. The increasing construction cost also became a burden to NYCHA. The soaring maintenance costs of existing public housing inventory also became a problem. What is worse, the federal government had cut the relevant public housing budget. As a result, public housing finally lost its ambition, and policymakers chose the alternative; it was the tax credit program. New York City relinquished its role as a direct participant in the affordable housing market. The government authority, de facto have stayed one step away from housing issues by abandoning de jure public housing program decades ago. Instead, the city government has tried to make up for the gap of public housing with other policy tools such as Mandatory Inclusionary Zoning ordinance and property tax subsidies to pair with private developers.

Similarly, the federal government including HUD handed over the responsibility for the continuous supply and keep-up of affordable housing to the private sectors via diverse tax break schemes such as LIHTC and RAD. As we already scrutinized in an earlier chapter, the U.S. lost more than 250,000 units of the public housing inventory from the mid-1990s through 2017, and only a small percentage of the demolished units have been replaced with new housing units. Instead, since the mid-1990s, around 110,000 affordable housing stocks were constructed under the help of LIHTC each year, which more than 2 million units. Of course there still exist some direct subsidy programs including Section 8 Housing Vouchers, direct loans by city agencies for private constructors, and rent regulation; however, the mainstream in affordable housing policy is the tax abatement program.

Seoul also faced a similar impasse while following the same trajectory of New York City public housing. Seoul's public housing program began in 1989 when it was three years after LIHTC's launch. At the time Korean economic development was at its peak time owing to the 1988 Seoul Olympic boom and government-led comprehensive expansion plan. In the beginning, the government-led housing development projects were such success that NHF and LH have expanded its capacity a lot to accommodate increasing demands on affordable housing. The Korean government also built a lot of public housing on publicly-owned empty lands in and out of the cities. But their efforts could not meet the ever-soaring demands due to skyrocketing land values and construction costs as well as the shortage of the brownfields.

Even though Seoul city faced the same issues with New York, but chose the different pathway. In place of abandoning public housing programs, government authorities modified the program by reducing benefits; for example, the government shortened the tenancy period by introducing 50 years and 30 years of public housing while stopping new permanent public housing. At the same time, the Korean government began to utilize private sectors. But specific methodology was different from the U.S. Policymakers focused on direct subsidized loans and credit guarantee for construction companies and low-income individuals rather than tax abatements. Current National Housing and Urban Fund (NHUF) has been a major source to supply subsidized loans, and Housing Finance Credit Guarantee Fund (HFCGF) has been the major contributor.

In addition, since 2015, the central government set out to induce private investors including banks and construction companies to participate in the monthly rental market to expand the monthly rental market size. Through the "Publicly-support private rental housing" program, the former "New Stay," the national agencies and NHUF participate in the rental housing projects as a financing equity partner. The government offered lucrative tax incentives. In 2017, the Korean government adopted a tax exemption program for the registered individual landlords and corporate entities. The tax abatements comprehensively include purchase tax, property tax, rental income tax, capital gain tax, and comprehensive real estate holding tax as well as a national insurance premium. The most distinguishable stark difference is that Seoul keeps providing public housing, although no permanent rental housing has been built recently. By the way, both cities also have shared common values. New York City and Seoul City are implementing a mixed approach including place-based and people-based approaches at the same time. LIHTC, RAD, and Munis are place-based subsidies, and Section 8 housing voucher is a representative people-based program. Seoul also runs public housing and direct low-interest rate loans from NHUF as a place-based approach, and simultaneously, the Jeonse credit guarantee and housing voucher program, and subsidized mortgages are available as a people-based one.

Fourth, the two cities demonstrated the stark discrepancy in the intensity of regulation. The U.S. is one of the countries that admire the free market and the autonomy of market participants. Among cities in the U.S, New York City is the leading city as a financial hub of the country. New York City showed the inclination to minimize government interventions while acting as a facilitator by providing the least market regulation and subsidizing for the private actors. There is only one exception: rent regulation. Rent regulation is still a big controversial issue in the U.S, but New York boasts of the stubborn stance on it, and New York State made it permanent last year by passing the Housing Stability & Tenant Protection Act of 2019 (HSTPA). The new law also resolved some loopholes of rent stabilization that worked in tandem to displace low-income tenants; the vacancy bonus, Major Capital Improvements (MCI), Individual Apartment Improvements (IAIs), preferential rents, and vacancy decontrol have either been abolished or reformed. Except for this strong rent regulation, it is hard to find a meaningful substantial regulation on the housing market. Affordable housing programs including LIHTC, RAD, and Section 8 have the basic guideline for landlords and tenants, but most of the cases just delineate the fundamental frameworks and requirements of the programs. Besides that, the federal government and the city do not get involved in the private housing market. Despite that housing prices rocket up, no immediate policy reactions are enacted; policymakers just rely on the market while monitoring the market, looking for the Achilles heel, and implementing the countermeasure. The city's housing policy lacks the elasticity to a sudden environmental change, but it could be more resilient intrinsically because of its less regulation on the market function.

Conversely, Seoul has imposed strong comprehensive precepts on the housing market. The national government tried to get involved in the private market as a judge and gave a remedy for any symptoms found; the central government actively controlled the housing supply. The tools include frequent alteration of zoning, construction permit, setting a price ceiling on the newly built apartments for sales, levying heavier tax on multiple homeowners, and the manipulation of the maximum loan amounts of mortgage and mortgage interest rates through finance agencies such as HF; the underlying guidelines for a long-term fixed-rate mortgage and its interest rates are de facto determined by the central government. The Korean housing market is not fully nurtured; therefore it is more subjective to market volatility intrigued by re-echoed speculations. Policymakers think that the housing disparity is a sort of market failure, so the policing power must intervene and correct it in a fast and effective way. But it is still under debate whether this enforced regulation functions well. Seoul's regulation on the housing market is relatively so drastic and oftentimes whimsical that its effectiveness might be limited, and the side-effects of the stalwart directive could distort self-correcting resiliency of the free market.

Last but the least, as for policy tools, New York City and Seoul have a similarity on the ground that both cities have adopted various mixed-tools including tax abatements, direct rent voucher, subsidized low-interest rate loans, and market regulation even if each city has the different extent and operational details. The two cities also have implemented both place-based tools and people-based tools at the same time. But when it comes to the primary tool and its availability, they diverged to the different paths; New York City mainly focused on tax credits program for the affordable housing finance tool, whereas, Seoul still adheres to direct subsidy programs such as public housing and credit guarantee program. That makes a meaningful chasm between the two cities. Some agencies including NYCHA indeed administer Section 8 housing voucher program as a direct subsidy, and over 20% of renters receive direct subsidy support in New York City. However, as of today, all section 8 programs are not open, and all the agencies do not have a plan yet on when they will reopen the program. It is an appraisable effort to keep providing existing low-income families with rent subsidies amid financial restrictions; however, it has been around 13 years since NYCHA's Section 8 program was closed.

New York has utilized LIHTC, RAD, PABs, and rent regulation as place-based tools. In terms of people-based tools, the city employed section 8 housing vouchers as well. The city agencies including NYC HDC and NYC HPD for instance, provide direct subsidized loans to qualified affordable housing developers through the issuance of municipal bonds while subsidizing eligible low-income tenants with housing vouchers. But New York City primarily emphasizes tax saving schemes such as LIHTC, RAD, 420-a, and 420-c to mobilize private investors' active participation in the affordable housing development market. As aforementioned, approximately 90 percent of the affordable housing developments were subsidized by the LIHTC program, and other tools are used as supportive tools. Besides, the dependence on LIHTC keeps increasing. Many developers and advocates for the tax credit program insist that without LIHTC, New York City cannot provide new affordable housing units even though the situation of New York City is better than other cities in terms of the availability of alternative housing tools and budgets; most housing units preserved within the city don't use LIHTC.

They also argue that it is inevitable for Congress to eliminate the RAD cap, which limits the number of units that could be converted, to renovate the extant obsolete or deteriorating huge amounts of public housing units across the five boroughs. In an interview, Shola Olatoye, the former CEO of NYCHA and current director of Oakland's Housing and Community Development Department, confessed that NYCHA does not have the capacity to construct new housing property anymore, and tax incentive programs including LIHTC and RAD are de facto the only resort to the new construction of affordable housing.

Seoul also has mixed tools about affordable housing policy. As for the place-based tools, the city adopted public housing, subsidized loans, housing finance credit guarantee for constructors, and tax exemption. Besides that, there are housing credit guarantee, monthly rent vouchers, tax exemption for first-time home buyers, and subsidized mortgage loans for low-income individuals with regards to people-based tools. But the main tool of the Seoul case is direct subsidized loans from the nation's biggest housing fund, known as NHUF. LH, the largest national public housing constructor in Korea utilizes the fund in supplying new public housing units for low-income earners. So far, almost all of the affordable housing projects have been subsidized by the national fund. However, as the debt amount of the fund has increased persistently, the role of the fund seemed to diminish. So, to improve the financial soundness of the fund by slashing relevant credit risk, NHUF typically requires the developers to acquire a housing credit guarantee from the national financial agencies such as HF and HUG.

Another major tool is the housing credit guarantee program with aims to support credit enhancement for poor individuals and private developers. Credit enhancement through the credit guarantee allows builders and individuals to get a collateralized loan that otherwise could not be sanctioned from banks, or to get lower interest rates with higher loan amounts from the banks. This credit guarantee program covers a wide spectrum of residential projects including public housing development, the construction of private rental housing, home mortgage loan, Jeonse deposit loan, and monthly rent assistance. South Korea has also endeavored to increase private rental housing by way of the public-private partnership by offering tax exemptions as an incentive. “New stay” program could be the evidence for the efforts; however, private participations have not been that active yet because of the market structure and regulation.

B. Lessons and Suggestions for NYC

Suggestion 1) Revisit public housing policy as the last resort for low-income households

New York City housing authorities lost the lust for providing public housing for low-income housing since the 1980s, and then once in a blue moon, few new public housing projects were built. According to the official NYCHA map 2019, the final new development project by NYCHA was the “Stanton Street” project, which was completed in December 2003 in Lower East Side of Manhattan. After the housing policy orientation in New York transitioned to the utilization of private sectors via tax abatement program, NYCHA focused on the maintenance of the existing public housing properties, which are 179,247 units as of Jan 2019. However, NYCHA has experienced a cumulative federal capital grant funding loss of $1.5 billion since 2001, mainly because of the federal government’s budget cut and the steady increase of operating costs. Despite the deficiency of funding, direct or indirect funding to ease development costs and maintenance expenses must have been continued. So, as a solution, the federal government forged the strategic alliance with private developers and investors: the RAD.

Nobody can deny that RAD is the epitome of the public-private partnership model. The federal government could get away with the annual political burdens to persuade Congress to get approval for new construction and maintenance budgets for public housing. At the same time, the government authorities passed the responsibility to manage residents’ pent-up waves of anger and address diverse maintenance issues to the private developers’ hands. Now the local PHAs do not need to worry about costs, complaints, and borrowing money. Currently the RAD program is also so popular that a lot of states are asking Congress to expand the unit limits and make the program permanent. When the RAD as a saver of the cash-strapped PHAs was first launched in 2012, many states actively jumped in this program to rehabilitate the nation’s aging and disinvested housing stock. NYCHA that has been reluctant to join the program because of some related issues and concerns also joined the RAD by handing over the management responsibility for the Ocean Bay property to the private management company in 2016. The New York Times estimated that approximately 38 percent of the nation’s public housing stock will be transferred into private firms. Nobody can debate that tax abatement programs such as LIHTC and RAD are one of the efficient tools for the continuous supply of affordable housing. But the policymakers might have too strong myths on the tax credit scheme even though the scheme has some controversial loopholes and limitations.

First, the advent of the RAD program stands for de jure the end of the federal government's public housing policy. It is a matter of time to change most of the existing public housing units into Section 8 housing vouchers under the ownership of private landlords.
The federal government and PHAs are relinquishing the control of public housing properties by stopping public housing construction and its operation. However, it must be noted that the tax credit tools that utilize private partners as a booster might be "sustainable" in terms of efficiency, while they could be "unsustainable" from the perspective of its permanency. The LIHTC can only harness the private developers at a maximum of 30 years including an extended compliance period. After the required period, the developers will try to exit the program and realize the profit by raising rents to market rents and selling the properties at a good price. They are for-profit investors, so it is not possible to expect them to sustain affordable rents and keep the low-income tenants forever. Even if it might be possible, in exchange for their patience, the federal government should provide the private partners with more and more lucrative and attractive incentives such as zoning benefits, property tax abatements, and extra below market rate loans.

Adam Weinstein, the CEO of Phipps houses, the oldest and largest not-for-profit affordable housing developer in New York City, suggested an agreement of a right of first refusal as a solution. It could help preserve the current affordable rental housing by conferring a priority consideration on mission-driven organizations such as tenant associations, local government agencies, and nonprofit developers. However, even in the case, the non-for-profit new buyers might have to pay the high market values to acquire the properties. Other than that, Richard Froehlich, first Executive Vice President and Chief Operating Officer of NYC HDC insisted that the use of city subsidy and requirement to pay back such loans with interest works as an anchor to maintain affordability. It could work; however, the private developers might ask for more sufficient compensation for the risks taken over the last 30 years of long-term investments. We should keep in mind that the solidarity of this strategic alliance between public sectors and private sectors is so weak that the cohesion could be terminated by either side anytime. Intrinsically, there exist no trusts between participants under the strategic alliance.

Another concern is that private sectors could stop the affordable housing development projects at any time; particularly when the housing market declines or the economy enters a recession. Private money always pursues sufficient profits, which can only maneuver their actions. To clarify this issue, I tried to find the relevant data to check whether private developers using LIHTC had stopped new affordable housing projects or not during the prior economic recessions, but unfortunately I could not have access to the data. But private developers whom I interviewed for this paper mostly agreed that they could be likely to stop new development projects because of the uncertainty of economic condition and housing market. However, affordable housing must be supplied persistently regardless of the economic outlooks. Especially the pause of affordable housing supply when the economy is weak might be the same with the deprivation of umbrella when heavy rains are pouring. In the economic downturn, the economically fragile people need more helps to weather the turmoil than in normal and economic boom; many of the low-income classes could be furloughed and could not afford the rents. At the time, the private landlords could evict them when the rents are in arrears. It can be understandable on the ground that the private developers also need amounts of cash to pay back loans, manage the property maintenance costs, and paying company overhead costs including employee salaries. Regulation on the eviction policy might be thought of as a solution, but I cannot be ensured that it could work given the policymakers and developers' inclination toward the regulation-averse market-friendly attitude. I do not blame that their behaviors are merciless, but what I want to tell is that it is the fundamental and intrinsic limitation of private developers as a landlord.

However, if affordable housing is put under the control of public sectors, it could be a different story. Generally, the governments do not halt the supply of public housing during the economic recession even if the government could temporarily reduce the development plan and business size because of the tight budgets. Also, the PHAs can be more flexible in terms of rent collection; typically the rent payment of the tenants living in public housing can be deferred during the economic turmoil or late fees are exempt. A private developer who is the current CEO of the largest private for-profit housing development firm advocated the LIHTC program by saying that the public sectors also should suspend all housing development projects during a recession, but he was wrong. According to the NYCHA Map (2019), despite the OPEC oil shock in 1973, the NYCHA never stopped the provision of new public housing construction. The magnitude of new supply diminished, but the city agency supplied 2,608 public housing units from 1975 through 1977. Also, in the middle of the Great Depression, the NYCHA added 9,189 units from 1937 to 1940 ceaselessly except for the year 1939.

< Table 19. The NYHCA’s new public housing supply during recession >

Big Crisis	Occupancy completion year	Properties	Units
OPEC Oil Shock (1973)	1973	16	5,011
	1974	9	2,220
	1975	6	1,719
	1976	2	365
	1977	7	524
Great Depression (1929-39)	1937	1	574
	1938	2	3,255
	1939	N/A	N/A
	1940	5	5,360

Source: NYCHA, (2019 NYCHA Map)

That is one of the primary reasons why other advanced economies including Seoul, London, and Tokyo do not abandon its public housing program even though they also have struggled with relevant difficulties including financial problems. It is without a doubt, an arduous work to keep the public housing projects afloat above the water given the increasing development and maintenance costs. That being said, as the last resort, the public housing program needs to be maintained at the minimum levels along with running the tax credit programs as a major tool. I suggest the dual-track approach to pursue two primary pillars: LIHTC and Public housing at the same time to sustain the housing affordability in New York City. Congress, the federal government, and the local government should get involved more in housing affordability issues. Just providing funding is not their role.

Suggestion 2) Conduct the feasibility study again on Tax abatements programs

A lot of general people in the U.S. seem to be likely to perceive that the tax abatement programs such as LIHTC are free. Policymakers and Congress also can feel comfortable with this program because the LIHTC and RAD are not included in the official annual government budget balance book. I agree that they do look at the costs and benefits, and any modification is scored to see what the cost is for tax expenditures as well. But the tax expenditure could be less political and easier to reach an agreement among political parties rather than the annual direct budget spending. But it is necessary not to be forgotten that the tax credit program is not free. As of the fiscal year 2018, the federal budget deficit totaled $779 billion, which is 3.8 percent of the national GDP (COB, 2018). In 2018, $2.40 per resident or a minimum of nearly $3 million tax credits were given to private developers per state, and states will be endowed an additional 12.5 percent in funding every year from 2018 through 2021 under the 2018 Consolidated Appropriations Act; the tax expenditure for the LIHTC would rise over time (ibid.). In response, the Joint Committee on Taxation (JCT) estimated that without the LIHTC, $49 billion tax revenues would be raised further from 2019 through 2028.

Adam Weinstein, the CEO of Phipps houses and Adjunct professor of Columbia University explained that private developers could be more nimble to environmental change and efficient than public sectors in terms of the costs. In addition, the appropriate margins should cover the developers' risks of future uncertainty and compensate for their contribution of knowledge and skill (refers to human resources). I thoroughly agree with the idea. That is a business and economy. However, if the effect of the tax subsidy might be lesser than expected, and a meaningful portion of tax expenditures could go to the developers' pockets without going to the bricks and tars of public housing, it could be a problem from the viewpoint of the efficient allocation of public resources. In this case, it is necessary to revisit the current level of subsidy.

Overall, the empirical pieces of evidence on LIHTC's effectiveness are surprisingly thin. Private developers' return on investment might be too high for their contribution to affordable housing. Sullivan & Anderson (2017) revealed that the number of housing units provided under LIHTC has become fewer over the last 20 years, whereas taxpayers' burdens in tax credits after inflation rose 66 percent more. National Council of State Housing Agencies showed that in 1997, more than 70,000 housing units were built by the program, but in 2014, were fewer than 59,000 units were added. These could be partially explained with the assumption that construction and operating costs have risen much faster than inflation. But the excuse is not enough to assuage the relevant concerns and questions on the program's efficiency.

Also, the Congressional Budget Office (CBO) (1992) analyzed that the outlays of $3 billion per year could support 555,000 households with vouchers program at 1992 levels. LIHTC, however, is unlikely to assist even half as many households with the same money. The report also insisted that section 8 housing vouchers, which act as a cash subsidy, directly benefit low-income households, but the tax credit programs may allow private investors to take advantage of more benefits for themselves than their poor renters.

The primary responsibility could go to the lack of federal oversight. Government Accountability Office (2015) reported that only seven audits of the 58 state and local housing agencies have been held since 1986 and most of the housing agencies across the country have never been properly examined. So, it is necessary to trace the tax credits of LIHTC properties upward to syndicators to ensure the profit structure and how much they have in their pockets

(Sullivan & Anderson, 2017). Developers' returns are partly from the fees that developers and syndicators earn for their work. It is not possible to know exactly how much developers earn from the projects. The recommended maximum fees by the association of state agencies are up to 15 percent, and syndicators earned more than $300 million in fees in 2016 (Ibid.). According to an NYC HDC, the total developer fee is not to exceed 15 percent of improvement costs and 10% percent of acquisition costs for tax credit projects. The improvement costs do not include developer fees, reserves, and syndication and partnership expenses. 10 percent of the developer fee, a "paid fee", is allowed to be released at closing. It is apt to set a threshold on the fees to prevent excessive benefits to the private sectors. It could be still controversial whether 15 percent is appropriate. It is the time to check its suitability given affordable housing is a public good.

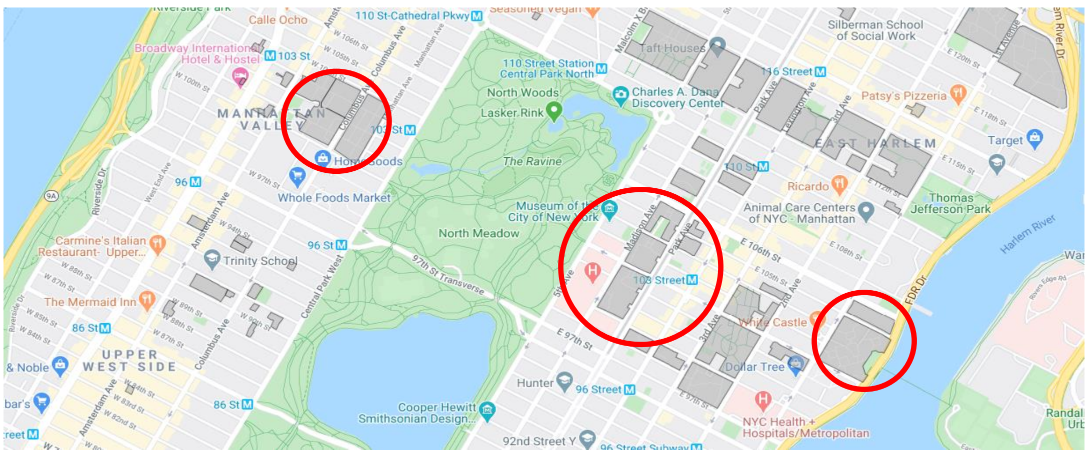
Another critic of LIHTC is that the bigger developers can have more tax benefits: the concentration of benefits. Given the rising popularity of LIHTC and RAD, it is seminal to evaluate the benefits and drawbacks of these tax credit programs thoroughly from the zero bases again. There is a possibility that the new evaluation result might belie policymakers' notion that LIHTC is the only hope to keep supplying affordable housing. Moreover, New York City could utilize existing homes inventory through housing vouchers or public housing programs by way of purchasing existing abandoned homes such as Zombie homes at cheaper prices from landlords in financial troubles, which could be more economical than the current tax credits.

Suggestion 3) Preserve valuable NYCHA properties for future usage

Under the RAD conversion, the ownership of public housing can be technically transferred to the hands of private developers and property managers. As soon as the program was installed, many cities rushed to pass over the ownership of the public housing to private sector participants. It was because the cities have struggled a lot with the financial problems related to the maintenance of existing public housing. HUD and PHAs promise existing tenants' right that we can come back and persistently reside in their current homes after the rehabilitation of the obsolete housing properties plagued with severe physical repair problems was completed. However, different stories were told from the current RAD conversion cases; unwonted evictions have happened and the reasons were diverse. Most of the cases were related to the violation of HUD guidelines and compliances by private property management. Some tenants were evicted because of their income increase, and others were forced to waive their rights to return to home and federal housing vouchers. It reminds us of the *Déjà vu* of HOPE VI program in the 1990s, in which around 30 percent of original tenants were displaced and never been returned to their homes with the mass rehabilitation process of public housing. The new program keeps pushing people in society's margins out of their homes.

Another truth to be noted here is that private developers set their eyes on the land value of the existing public housing properties rather than income revenues from the tenants. Given that some of the NYCHA's public housing properties are located in the city center including expensive areas near subway stations. Referring to the NYC (Open Data, 2019), public housing properties are located in diverse areas, some of which are sitting in neighborhoods with high investment values such as near the Central park or waterfront areas. More specifically, the apartment complex, known as "Douglass 1", which consists of 1,302 rental apartments, is located in West 100th to 104th St. just one block distance from the Central Park. On the opposite side, "Carver" that houses 1,244 residential units resides in East 99th to 106th St, just five-minute walking distance away from the park, and between them, luxury apartments, Museum of the City of New York, and Sinai hospital and medicine schools are located. Some NYCHA apartments including “East River” in 102 St. that houses 1,156 residential units are located in the waterfronts area with better amenities and infrastructure such as chic restaurants and hospitals. Some apartments could be the properties that some private developers might have an eye on. Given the recent housing market boom and lack of empty spaces for lucrative developments, the developers might have more interest in the land values of the obsolete public housing properties rather than affordable housing rental business itself despite its not small tax breaks incentives.

< Figure. 26. The geographical location of NYCHA developments in upper Manhattan >



Source: NYC Open Data (as of July 2019)

It should be kept in mind that private developers do not have any interest in public benefits; they pursue money, and they work only for maximizing their profits. To put that into perspective, RAD can be a good lucrative business opportunity for private investors. Sometimes they can sacrifice small short-term profits for the bigger profits in the future. When government subsidy ends or compliance period is terminated, the partners will exit the program freely and eventually raise rents or sell the properties at more expensive market prices, which can promise them more profits. Rad can require an extension of the section8 contract, but it is not possible to bind and detain the private developers within the program forever. From the perspective of property value, renovated buildings also can explode in value when the current real estate market boom continues. It must be a good investment to developers given the risk such as the uncertainty of future market conditions that the developers should take for exchange.

Public housing properties should be remained under the ownership of local government and utilized entirely for the public welfares. Fortunately, New York City decided not to transfer the ownership of the properties to the private developers, which was a great policy decision. Instead, the city signs a 99-year lease contract with a private property managing company even though the NYCHA also participates in the RAD under the name of the PACT. However, the majority of other states endeavor to sell their burdensome housing properties to the market. On the flip side, it is understandable that the authorities have to deal with a lot of and diverse tenants' complaints and the building workers they hired. Oftentimes the maintenance workers union became the impasse to the renovation of PHAs. One private developer confessed that the NYCHA has ever tried to reform their business structure and make the maintenance operation more efficient, but the attempt failed because of the strong resistance of building workers' labor union, who denied changing their work schedules and additional workloads. He asserted that that is one reason why PHAs' change is difficult. All component members in the public housing business must self-support each other and share the pains and responsibilities to help the agency cope with the current financial issues well. At the same time, Congress and HUD also have to restart provide the necessary minimum budget for the public housing projects. Or, instead, the federal government should let the hands-off from the local housing issues and give the local governments the leeway. Labor unions also without a doubt have to co-operate with the PHAs with regards to public housing renovations and organization restructuring.

Suggestion 4) Formalize the informal housing tool as a new affordable housing tool

New York City has been suffering from a more serious affordable housing shortage than any other cities together with San Francisco in the U.S. However, increasing land value and construction costs have impeded the new supply of cheap dwelling rental units. Furthermore, policymakers have to pay attention to the demographic change: household composition. The share of one-person households has steadily increased in New York City. As of 2017, the single person households comprised of 32.4 percent (l 1,017,368 households) of total households, but the total number of studio and one-bed housing units was only 926,770 units: studio 186,718 units and one-bedroom 740,053 units (ACS 2012-2017, 5years estimates). The figure accounted for 26.8 percent of the total housing units in New York City. Granted that it was relatively higher than other cities in the U.S, there still exists a big mismatch between the demand and the supply of small housing units. Based on these conditions and environments, I suggest facilitating the supply of the smaller-sized micro-housing units as a solution: Single Room Occupancy (SRO) and Accessary Dwelling Unit (ADU). Mathew Wambua, the former commissioner of NYC HPD, also agreed that Micro units and SRO could be a good alternative to address the supply lag over the larges demand on affordable housing for young singles in New York City, given the lack of empty parcel of lands and extremely high construction costs in the city.

SRO indicates a room without a bathroom and a kitchen, or a bed without a room. It typically means a smaller sized-apartment room that is occupied by a single person while sharing other facilities with other residents. SRO has been a popular housing for industry workers, immigrants, and day workers. It also worked as a platform for immigrants' social cohesion in New York City from the late 19th century through the early 2000s. SRO was the last resort for low-income workers and immigrants at the time. In particular, after the World War Ⅱ, the demand for SRO dramatically increased because of the inflows of returning soldiers; the number of SRO in New York City reached to 200,000 units by the 1950s, which accounted for over 10 percent of the city's rental stock at the time (Aberg-Riger, 2018).

Unfortunately, SRO followed the same trajectory of public housing. SRO started to be stigmatized as poor people's housing. Finally, in 1955, New York City banned the new construction of SRO and made it illegal. The city instead, gave the landlords tax incentives to convert SROs to "normal" larger apartments. As a result, between the mid-1930s to 1990s, approximately one million SRO units were demolished nationwide. New York City also lost 60 percent of its units between 1975 through 1981 (Ibid). Because of the city's regulation, the supply of SRO units declined over the past two decades. In the earlier 20th century, New York City alone had more than 100,000 SRO units, but now it is estimated as 30,000 units as of 2014 (NYU Furman Center, 2018).

However, the prohibition and regulations on SRO cannot alleviate the demand on SRO at all. If anything, the legal constraint forces low-income tenants exposed to more severe public health and safety risks. SRO has independent access and independent lease contract, in which SRO can ensure tenants' privacy and independence. That makes the big difference from traditional shared apartments, and that might be the driving force of strong demand for it. Increasing housing rents in New York City also kept forcing young single people to seek for cheaper living places: "illegal" SRO. Simultaneously, in response to the increasing demands on cheaper small dwelling units, some landlords illegally converted an apartment into several smaller rooms and lease them to low-income tenants. In August 2019, the NYC Department of Building caught two apartment owners who split the condos in half horizontally into 18 smaller rooms in Lower East Side of

Manhattan. The doors are half-sized, small stairs are attached, and ceilings are around 5 feet, which are low enough to kneel to enter the room. Each room size was 70 square feet and costs $600 per month (Chappell, 2019).

Accessory Dwelling Unit (ADU) can be another option to fulfill this strong affordable housing demand. According to the HUD, ADUs are defined as units added to existing residential buildings, which are also called in-law units, cottages, accessory apartments, or granny flats. ADU is an independent residence unit that has its kitchen and bathroom. AUD is not a new and complex idea; in the early 20th century, ADU was a common feature in the U.S. Originally, ADU was popular because it could meet the social demand of families who want to live together across generations while maintaining independent space. But after the Second World War, the rapid suburbanization reinforced the high demand for lower-density development in inner-city, which ultimately led local jurisdictions to have banned ADU construction (HUD, 2008).

By the way, the primary goal of contemporary ADU is to provide more affordable housing in the neighborhoods. Especially young single tenants can have benefits to live in the city where they work at lower rents. Homeowners also can earn supplementary incomes by developing and leasing ADU on underused or vacant lots with small costs. In September 2016, San Francisco passed legislation that enables the development of Accessory Dwelling Units. San Francisco is also confronting the most serious housing price increases and affordable housing shortage in the U.S. with a regional economic boom. So San Francisco Municipality accepted these demographical, social, and economic demands for the type of housing. San Francisco municipality legalized ADU to support the high housing needs of a certain specific class in the area: lower-income couples without kids, singles, the elderly, empty nesters, and new immigrants.

While permitting ADU, instead San Francisco City clarified the building code including safety requirements: rescue windows, noise insulation, light, ventilation, and seismic upgrade, etc.

New York City also could allow building small residence units in the basement, on the top roof, in the garage, and adjacent to primary housing units if the developers' or landlords' construction plans meet fundamental requirements including safety standards and minimum density regulation. It is necessary to check and consider other frontier cities' new normalcy on ADU such as Portland, Austin, Vancouver, and San Francisco already. Manhattan might not be appropriate for ADU addition given the urban fabric of the borough, but other boroughs including Staten Island could have room to accommodate the new affordable housing scheme.

Considering the current housing affordability crisis and ever-soaring demands on smaller affordable housing, it is the right time to contemplate the legalization of the informal settlements including SRO as a solution to the current housing crisis. Through the formalization of the informality, the government can provide more affordable housing units conforming to demographic demand change. At the same time, an illegal conversion that could put people at physical risks can be prevented systemically. To incentivize the legalization process, the government should consider providing financial supports including zoning benefits and subsidies for restoration, renovation, and new construction of those types of micro-units. Of course, the subsidized SROs must be under the control of rent regulations for exchange for the benefits received. It is time to rethink about the discrepancy between illegality and informality.

Suggestion 5) Strengthen the tenure maintenance rules of public housing

New York City has a well-established public housing system that is commensurate with a long history. Every year PHAs reexamine tenant families' household composition and income. But this process seems meaningless to a point; there are no limitations on the occupant's tenancy. The tenants can stay almost persistently as long as they wish despite that they come to "over-income" while following basic rules and keeping paying rents. Theoretically, PHAs can vacate them if a family income surpasses the income qualification; however, in reality PHAs do not necessarily oust them. In other words, PHAs do not want to push their tenants out just because tenants work harder and earn more money as a result of their arduous economic effort. The displaced tenants, otherwise, could feel distressed for being exposed to other risks to look for new appropriate affordable housing commensurate with their increased income levels.

Granting the above caring and solicitude for the existing tenants, that is a too strong protection measure for the tenants. It is, no doubt, necessary for PHAs to apply stricter eviction grounds such as sex offender and criminal conduct as NYCHA already applied. Not to mention it, the PHAs need to set more systemic eviction rules on tenants' eligibility. If the tenants' economic conditions become improved much better above the income thresholds of affordable housing, they are obliged to moving out voluntarily for other poorer workers on the waitlist. Another loophole is to allow the tenants and their families to live forever in the same homes. In some cases, the tenancy of public housing is inherited to offspring, which might be one reason why public housing is not opened to other people on the waitlist. It also can disincentivize and discourage tenants' efforts to escape from confinement to poverty and abject living conditions. It is time to consider limits on tenure.

The waitlist for Section 8 Housing Choice Voucher is currently closed, and there is no reopen schedule yet; the last open was in May 2007[56]. According to NYCHA[57], as of March 2019, 181,090 households are on the waiting list for public housing, and 138,705 families are waiting for Section 8 vouchers. The turn-over rate for public housing units during the year 2018 was just 2.5 percent. In New York City, there are decent well-organized affordable housing programs, but there are de facto no programs available.

For reference, in Seoul, tenure restriction is much stronger than in New York. Housing agencies crosscheck their tenants' annual incomes and assets every two years. It is a similar rule with New York City's one, but Seoul's recertification process is more systematic and done online through the national tax system. Tenants do not need to report their income and assets changes in papers. Government agencies are authorized to access to the government database and check the subject individuals' tax data reported by their employers and individuals with prior consents as well as registered family compositions. Instead, tenants have the right to ask the agencies to identify and correct their information, if they find the wrong information. The point is that if tenants are proved to be overqualified or disqualified for eligibility, they have to leave homes within the given grace period. At the same time, some portion of subsidized housing is allocated for sales. The tenants who become could wealthier can exercise a privileged option to purchase their homes under the contracts with housing agencies at below-market rates. Some public housing programs confer the tenants with the right of first refusal.

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[56] https://affordablehousingonline.com/housing-authority/New-York/New-York-City-Housing-Authority/NY005

[57] NYCHA 2019 fact Sheet

Suggestion 6) Consider setting an asset limit as a component of LIHTC tenants' eligibility

When it comes to determining tenants' income eligibility for LIHTC, income calculation methodology looks very specific and reasonable. Total cash values from family assets are also included for calculation as well as employment income. Also, if net family assets exceed $5,000, imputed income[58] from assets is applied for income justice. For example, if an applicant has real estate property, to begin with, the net cash value of the property is calculated by subtracting selling cost from net market value and is multiplied by 0.02. Then, the greater of the imputed income from the asset or the actual income from the asset is included in annual income calculation (HUD Occupancy handbook). The income determination schemes of the LIHTC program are very delicate and well-organized enough not to dispute.

That being said, one possible shortfall of income eligibility may be that there exist no asset limits for tenant qualifications. It means that the person who has multiple luxury condos in downtown Manhattan could be a LIHTC tenant if the person has a small amount of official income. Besides, 2 percent of the HUD passbook rate, which is set by HUD, might not be enough to properly reflect the real property value. Seoul had the same issues too until several years ago; there were no asset limits in tenant qualifications for some subsidized housings. Therefore, it was possible for retired seniors to own a luxury car and luxury commercial building to live in the subsidized affordable housing if they have very limited formal cash inflows. It was possible because the government rules only checked the formal income level while ignoring other assets. Could it be justifiable to allow for rich persons to live in government-funded housing? After receiving the heavy rebuke against the issue from the general public and the

[58] Imputed income indicates the interest that the assets would earn when they were invested in savings account.

media, the Korean national government strengthened the eligibility rules on every publicly subsidized property. New York also needs to revisit the tenants' asset standards rules regarding affordable housing properties from the beginning. It should not be forgotten that the welfare of taxpayers can be justified only if they value the social benefits of policy more than their taxes.

C. Lessons and Suggestions for SEOUL

Suggestion 1) Enforce the "publicness" of housing support system

Public rental housing units that were subsidized by the government regardless of the formats and the modus operandi of subsidies including tax abatement, direct loans, or credit guarantees should serve the public good. Individual projects that received benefits from the public fund must contribute to the society and the local community at any scale in exchange for the benefits that were given to them. However, some of the subsidized housings in Seoul do not have rent limits or have broader income brackets to embrace non-vulnerable classes. Medium or higher income earners also could occupy the units despite their wealth levels and wealth. It has been a long historical debate about whether the government should take care of medium-income households as well. In principle, it is acceptable and understandable to embrace up to the medium-income households, because the government intrinsically cares about politics and votes. But if a whole rental housing development project is designed for medium- and high-income households, it could not be justifiable in terms of both efficient and effective usage of limited government resources. Public resources should be carefully used for mainly addressing iniquitous housing and income disparity of our society as well as correcting the market failure.

To put that in perspective, subsidized housing projects including the “New Stay” program that have not had or had loose tenant's eligibility restriction cannot avoid rebukes. New Stay was also blamed as a program for corporate landlords and private developers. Despite the government subsidy provided, the rents were expensive and decided at the market rate. It was fortunate that the new administration reformed the program to reinforce the publicness. New Stay was rechristened as “Public subsidized private rental housing” in 2018; currently, the required rental period is extended to up to 8 years, unit size is limited to $85m^2$, and rents are restricted at 90-95 percent of and 70-85 percent of market-rate rents for general tenants and special care class including young workers and newlyweds respectively. However, it is not substantial yet compared in New York City programs that require developers to provide 20 to 40 percent of units for 50 to 60 percent of AMI at below-market affordable rates.

But not everyone agrees with the idea. Sang-won Yoon, a senior manager of LH, for example, advocated the program on the ground that "current Korean monthly rental housing market is too small for private investors to make enough profits; therefore, it is not easy to entice the investors into affordable housing if the program has stricter requirements.” It is true; the Korean rental housing market is dominated by its unique money deposit system, called Jeonse. But as noted earlier, given the skyrocketing housing price increase, the Jeonse market will reach its ceiling soon. Then the monthly rental market would become more vital, which could attract the private investors’ economic libido. At the same time, private investors have to contribute more than benefits from taxpayers. The government should make a mechanism and system to ensure that poor people can have more access to the monthly rental market and relieve the housing finance distress.

The alterations and the transition also can facilitate mixed-income housing development in the urban fabric of Seoul City. Not to mention it, direct loans and housing credit guarantee programs also must require the funding recipients to provide rental housing at below-market rents. At the same time, the lease term to maintain the affordable rents must be prolonged up to at least 10 years or more. However, some subsidy programs including public rental housing construction loan and private rental housing construction loan just obliged the construction companies to lease the property for 4 or 5 years in exchange for the subsidy. It means that developers or landlords can push the tenants out of the rental properties, and they can sell the properties at market rate to realize the profits. The lease terms of affordable housing are too short compared with New York's 30 years of LIHTC.

Moreover, originally, starting rents on subsidized housing in Seoul has not regulated efficiently, and there have been explicit restrictions only at the time of renewal of the lease contracts. It means that the property owners could charge above market-rate rents at the initial move-in. Besides that, HF's housing finance credit programs also have a publicness issue. Stepping stone Jeonse guarantee is available to non-home owners and one-home owners with a housing value of less than KRW 900 million ($750,000). Hwajun Lee, a senior manager in HF, the housing finance agency in Korea explained that the reason why the credit guarantee program includes one-property owners is to cover the temporal demands on Jesonse loans. For instance, if a person who has a family living in Busan has no choice but to move to Seoul because of works, the person might need some deposit money to rent his home in Seoul. In that case, HF supports him to have a Jeonse loan from banks at below-market rates. But if the person of a case already has a housing with a value up to KRW 900 million ($750,000), the person is not the poor anymore. That might be one case of manifest loopholes of current affordable housing systems. The limited resources must be used more efficiently with crystal clear targeting at the neediest.

Fortunately, in 2018, the Korean government realigned the affordable housing programs to make it mandatory to put limits on every housing project that is subsidized by the public money in terms of tenants' eligibility and rents. However, it is not the level of significance yet. Policymakers must check the fact that as of 2018, the Korean government invested 0.5 percent of GDP on support to social rental housing[59], which was the highest among 14 OECD countries that responded to the survey including the U.S. (OECD, 2019). Although government authorities have kept investing a huge amount of budget on affordable housing, the meaningful amelioration of the housing affordability has yet to come.

Suggestion 2) Consolidate similar and overlapped public housing programs

As aforementioned, public housing programs in Seoul have overlapped in many ways. There are many reasons why this phenomenon happened. First, the subsidy programs do not have clear ultimate targets per se. Originally each program may have its own a clear target, but as time goes by, a lot of alterations were made to include various additional needs as the environment change. The result is the current status; target costumers or beneficiaries are similar and overlapped holistically. There are uncountable numbers of public housing programs and rental finance

[59] The data was based on the 2019 OECD Questionnaire on Affordable and Social Housing, The amount accounts for the total expenditures on social rental housing at the central governments level with the exceptions; Australia, Austria, and Korea included regional level funding. It included expenditures on direct provision of social rental housing and subsidies to non-government providers while excluding personal benefits to social housing tenants (OECD).

assistance. Some programs even look similar in terms of target clients, program eligibility, and even program names.

Another point is that affordable housing policy tools have been frequently used for political purposes, not for its original purposes. In every election season and the beginning of new administration, new generous beneficial policies were repeatedly and competitively came out. Politicians both strategically and tactically utilized housing policies as critical propaganda because people, particularly Seoul citizens were very sensitive to the housing issues.

Lastly, competition between agencies facilitated current overlapping duplicities. Agencies typically set challenging corporate business goals and become enticed to ease the regulations of their programs. Each agency has the vision to expand its business size and broaden the business scope to increase its power in the market and governmental relationships. For this reason, some agencies sometimes intruded into other agencies' business domains. It is a complicated and multidisciplinary issue as well as political. For instance, traditionally, HF has run the housing credit guarantee business for low-income individuals, and instead, HUG has focused on housing completion guarantee service for construction companies. But several years ago, HUG changed it's the article of association and infringed the HF's business domain, the credit guarantee service for individuals. It was because the agency had struggled with increasing the default rate of its corporate customers and suffered from accumulating losses. In the private market, the entrance barrier could be impasse to business development and market efficiency. But in public sectors, it is a waste of resources to have multiple players who have the same political roles. Imagine that NYCHA jumps in the housing finance market that NYC HDC is the major player because NYCHA has passed the toughest time of its history with budget issues.

Seoul has so many and diverse housing programs that it is really hard to discern the difference of the applicant qualifications of each program due to its complexity and duplicity. The real problem is that the overlap of business model among agencies and subsidized programs can lead to the inefficient usage of government budget; therefore, it is required to examine the whole current subsidized housing programs universally in terms of targets class, beneficiaries, target market, methodologies, and policy aims, etc. Based on the results of the assessments, the affordable housing policy must be re-categorized and integrated. The overlapped parts among programs must be minimized or purged according to policy priority and the level of impacts. An incumbent loan agent who has dealt with housing subsidy programs for years in a private bank in Seoul confessed he also oftentimes made mistakes to provide customers with wrong information. How can general people understand the programs' details and choose their best-suitable program by themselves? LH insisted that they have tried to simplify the complex and overlapped diverse programs, but they failed to show meaningful improvements. The information dissymmetry in subsidized housing programs should be reduced entirely through the merge process to improve the accessibility to the social benefits of target beneficiaries. Simultaneously, it must be kept in mind that unless subaltern groups are not specifically targeted, iniquitous housing support tools may increase housing disparity.

Suggestion 3) Keep policy consistency and coherence persistently

There is a long debating questioning about the effectiveness of housing policy in Seoul. Even though Seoul has various and relatively strong market regulations in a comprehensive way including new apartments price ceiling, finance restrictions, and taxes, it cannot be said that the national government and the Seoul City succeeded in putting the housing market under control and properly manage housing inequality issues. Housing prices in Seoul skyrocketed over the last 5 years and kept soaring despite that Seoul's population has slightly decreased and plateaued since its peak in 1990. The capital gains by the short sales of less than 3 years tenure from 2013 to 2017 were KRW 22.98 trillion. In 2017, capital gain income numbered KRW 84.8trillion (Ohmynews, 2019). Given the recent statistics, one of the drivers that pushed up the housing prices might not be real demands on a decent residence, but speculations or investments on housing properties. That is, exchange values crowded out the usage value in the Seoul housing market. It cannot be denied that the Korean government's quantitative easing policy such as the real estate tax cut for private landlords became a facilitator of the rapid property price rise.

Last year, the national government tightened the rules to slash the tax benefits for the private landlords in reaction to the criticism. Simultaneously, the government promised to raise property tax for multi-home buyers and luxury homeowners to curb apartment prices without reins. However, the belated efforts just short-lived; after a couple of months of sluggish increase, housing prices started to gallop again. The primary reason why the regulation would not work is those market participants have strong anticipation that government regulation would not last long. They knew this trend from experience. When new election season comes, politicians, without a doubt, tried to utilize the housing tools regardless of their political colors in attracting voters. Typically, the government lowered property tax and alleviated the regulations. The market knew the politicians' behavioral patterns, so they just wait without responding.

This inconsistency of policymakers' whims enervates their housing policy effectiveness. The Korean government, particularly in terms of real estate policy, has already lost the policy reliability from the market participants of all developers, tenants, and landlords. To stabilize the housing market, the government must have the long-term, unwavering principals and philosophy along with clear policy goals and visions. And even when they are confronted with any political compressions and the conflict of interests, the principles of significance must not be forfeited and remain untouchable persistently. That is the only way to recover the policing power of public authority and policy impacts on unruly market participants. Policymakers are obliged to focus on what the marginalized people need, not politicians do. Policymakers should beware of the new populism, which doesn't promise the market trust. I suggest stopping the schizophrenic policy stance toward the housing market. Unfortunately, the new Assembly election is scheduled this month, and the ruling party pledged to slash housing-related tax again, which lasted just less than 6 months since they promulgated it.

Suggestion 4) Develop new blue oceans and expand the role of housing agencies

As we explored so far, Seoul City is also struggling with budget shortage and backlog with regard to public housing and affordable housing just like New York. MOLIT and LH are doing their best to keep up with the funding gap between the need and the funding capacity. LH is suffering from a serious deficit; the agency has been under the water for a long time. It is known that LH has lost more than KRW 100 million ($83,000) per public rental unit that they built from 2014 through 2018 (Korea Housing Institute, 2019). It is definitely because the increases in land values, construction costs, labor costs, inflation, and so forth have not been reflected enough in the government subsidy for the agency. This is the same issue with New York as we already scrutinized in the earlier chapter. What options does the Seoul City have as a solution then? Is it the best strategy to follow the Big Apple's trajectory? As we have already delved into, it could be a good tactic to soothe financial concerns to use affluent private liquidity. But policymakers must be vigilant that too much reliance on the public money could be a shackle; there is no free lunch. Based on the lesson from New York, a more sustainable affordable housing model is required.

Someone can think of the role of NHUF again as a solution. Yes, NHUF is the biggest fund source for affordable housing development in Seoul; however, it must be noted that most of NHUF consist of debts, which mostly are housing bonds and individual housing subscribers' deposits. As of 2018, the fund has KRW 150.5 trillion ($ 125.4 billion) debts, which account for 87.9 percent of total assets. It means that the funding must be paid back someday in the future, and the financial soundness of the fund is of significance given its very limited equity. That is the primary reason why the fund's role is limited and not easy to support public housing further. While the housing burdens of vulnerable population groups are ongoing, the available capacity and the span of policy effects of the biggest housing fund are diminishing.

However, there is a dark horse for the sustainable housing finance market; Housing Finance Credit Guarantee Fund (HFCGF) could shed new light upon the current bleak projection. The fund is a national fund that is used to support affordable housing developments and housing affordability of low-income people by way of providing credit guarantee service to commercial banks in lieu of its customers. The fund was launched in 1988 and was originally administered by a national agency, Korea Credit Guarantee Fund, and later its management was transferred to HF in 2004 when HF, a new housing finance-specialized institution y was established. Since its installment in 1988, the accumulated credit guarantee numbered KRW 343.87 trillion in 2017. The fund supported a total of 10.74 million low-income households. Net guarantee balance reached KRW 93.17 trillion ($ 77.6 billion) as of 2019, but the default rate of its customer remains at a low level: 0.5 percent for individuals and zero percent for corporate clients in 2019.

The funding sources consist of government equity, banks' contributions, collecting from defaulted loans, guarantee fees, and interest earned.

Owing to the sound business performances and sufficient contributions[60] from banks, HFCGF's net equity amounts to KRW 8.17 trillion ($ 6.8 billion) without debts as of 2019. I suggest utilizing the fund's capacity for affordable housing projects. HFCGF can participate as an equity investor in affordable housing developments that are initiated by LH and local housing agencies as well as Seoul City itself. For instance, Seoul City launches new legal entities such as REITs together with HF, and HF contributes its equity as a financial partner. Then the REITs can construct or purchase affordable rental housing properties for low-income households at below-market rates. Structurally it is plausible and feasible because HF does not pursue profits as a national housing finance agency, which will make the big difference from private investors in terms of publicness and sustainability as well as permanency. Profits from public development will go back to the public's hands again.

Suggestion 5) Facilitate Community-led housing Development tools

Korean government as well as the Seoul City government traditionally focused on government-led housing developments. The largest national developer, LH has provided public housing for low- and medium-income families while subsidizing private developers' rental housing provision through diverse finance tools including subsidized loans from NHUF and credit guarantee. However, soaring construction costs became an impediment to the agency's ongoing new

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[60] Under the Korea Housing Finance Corporation Act, commercial banks are required to contribute a certain portion of fees based on the mortgage loans balance in exchange for the benefits from credit guarantee service of HFCGF.

housing supply too like New York City. Given the current high level of land value in Seoul, contemporary government-oriented initiatives might not be sustainable anymore. Instead, the Korean government needs to think about various alternatives, one of which would be a community-based development scheme, known as Community Land Trust (CLT). I have not dealt with the development models in detail in this paper because those tools are not a formal public finance tool but a sort of alternative housing development model. Even though this model has not been that popular these days in New York City because of several reasons, it could bring up a meaningful message and insight into Korean Society.

CLT is an independent non-profit organization that community members form and run by themselves while sharing the values from the properties together. CLT model deals with the land as a public good, not a personal asset. Under the community-controlled model, land title is split from the title of the building on the land. Community members transfer the ownership of land to CLT and share all the benefits from the land developments. CLT can build affordable housing for community members, develop public spaces and community gardening, and steward commercial spaces on behalf of a community. One important point of this model is that CLT retains an option to repurchase housing from the individual owners. The existing owners cannot sell their residential units at market prices according to the ground lease because the land is owned by CLT. Through this mechanism, CLT can maintain housing affordability in perpetuity. This mechanism can work because of its community-led governance. To make important decisions on running the entity, CLT operates its unique board of directors system, called “tripartite board,” whose members consist of CLT residents, non-resident community members, and public representatives. Public representatives typically include government officials, housing agencies, and funders. The community-based planning and benefit-sharing structure are a core value of this program.

There is another specific model for housing, called the Mutual Housing Association (MHA), which is also a non-profit community-based corporation that owns and administers housing. The basic structure is similar to CLT, and the difference is that MHA shares the housing not land. MHA can rent affordable housing permanently for low-income community members. Housing is owned by MHA, so it is not possible to realize profits by selling. MHA can reduce rents by subsidizing operating costs via commercial rents and buying supplies and services in bulk as well as self-management (NYCCLI). CLT and MHA program can not only provide sustainable affordable housing but also enhance social cohesion and collective efficacy among community members. New York City's oldest CLT is the Cooper Square CLT and MHA, which started in 1991. To date, the Cooper Square has operated 400 apartments and 20 small businesses (Splvack, 2019). These models depend on active community engagement and social solidarity for the community developments in a way to meet communities' real needs. The philosophy underneath is very similar to the Korean "Saemaul movement", which is a grassroots community-led revitalization that began in the 1970s. So, CLT and MHA models can easily apply to the Korean community too. This housing policy that favors people over profit could benefit Korean as well.

But the community ownership model also has two big issues: one is how to finance the project, and the other is who should get the subsidy from the government. CLT model could be popular from the 1960s through the 1980s because there exited abundant empty land and abandoned housing stocks in New York City mainly because of the white flight and deindustrialization of the city. So, the communities could have access to the city-owned land at a very low price or for free. But now given the current exorbitant land price and scarcity of public land in the city, the ownership-sharing model might not easy to succeed like decades ago. That is the reason why the local government should provide some funding and subsidy for them.

Suggestion 6) Promote a cost-effective Public-Private Partnership

The Korean government also has tried to utilize private sectors and market investors to expand the housing supply, particularly the monthly rental market. Policymakers in Korea struggled to support private sector activities in the housing market through diverse finance tools including direct subsidized loans, credit guarantees, and tax incentives as well as Inclusionary zoning codes. The approach was quite similar to the U.S in terms of its kind. It was because the Korean government realized the limitation of direct subsidy programs given their budget limits and current housing market prices as well. Despite the funding difficulty, the Korean government maintains public housing program while focusing on purchasing existing cheaper homes rather than constructing new residential units. This effort must be applauded without a doubt.

However, Korean policymakers' efforts seem not to be enough compared with New York City Cases. They have a long way to go yet. It is important and necessary for the Korean government to diversify the funding sources and prepare for additional sustainable programs to help provide affordable housing continuously. As we have already seen, New York City can provide some implications and lessons that the Korean government can refer to with regard to expanding the public-private partnership scheme in Korea. New York City operates substantial tax incentive programs as well as direct subsidy under the strong public-private partnership with private developers and financial investors instead of stopping public housing programs. Public sectors de jure stopped the supply of affordable housing by themselves, and instead they support private developers with diverse funding sources including LIHTC, RAD, 51-J, 420-a/c, 421-a, PABs, and subsidized mortgage loans from HDC, etc. That is an efficient way of funding. One important point that we should note from the New York case might be the clear requirements to ask developers to dedicate at least some portion of units to very low- and low- income households in exchange for the benefits that the developers could have.

For instance, every housing project that is subsidized by LIHTC should meet the requirement that either 20 percent of the units are rented to the families with income at or below 50 percent of AMI, or 40 percent of the units are rented to the households whose income is up to 60 percent of AMI. Moreover, the rents for qualified marginalized families should be below 30 percent of AMI. That fundamental mechanism also applies to mixed-income development even though mixed-income developers can have more leeway and discretionary authority to modify the portion of units dedicated to low-income people because of Income Averaging (IA).

But unfortunately, most of the housing finance support tools in Seoul only concentrate on the supply of rental housing through private sectors while neglecting the efficient allocation of housing units for low-income households. Currently, private developers are asked to set aside any residential units for marginalized households. The only requirement of developers is the residential unit size; policymakers request to provide smaller-sized units less than $85m^2$ for low-income earners. It means that for-profit developers can rent all of their apartments at market-rate rents to anyone who can afford the rents regardless of the financial rewards that they received from the government. It might be neither a fair and nor good policy decision in terms of efficient and just usage of limited government funding resources.

Another instance might be the “New Stay” project. The new recent funding form of public-private partnership that was launched in2015 originally did have no limits on the tenants’ eligibility including income and assets until 2017 when the program was reformed to “publicly support private rental housing.” Currently, the program enhanced requirements, but it is not still enough to dispel worries of the tax-payers. For example, only 20 percent of total housing units are allocated to special care classes such as young singles, newlyweds, and seniors. Additionally, tenants’ income limit is 120 percent of the average income of urban area workers; rents are also set at a maximum of 90 ~ 95 percent of market rents for general tenants, and 70 to 85 percent of market rates for young people and newlyweds. That is definitely for middle-income households.

The reason why policymakers made the requirements so loose might be that the private residential monthly rental markets are relatively less-developed. The Jeonse-dominant money deposit market may not be lucrative from the point of private developers because Jeonse cannot generate enough cash inflow from the rental properties. At the same time, the monthly rental market is very small in Seoul, so average monthly rents are also relatively low. For example, if a landlord leases a three-bedroom, 135m^2 apartment valued at \$1,000,000, it is not easy to receive more than \$1,500 per month in Seoul. But, the average monthly rent for 65.3m^{2-}apartment in Manhattan, New York amounts to \$4,208 because New York City is the monthly rental market.

Even though we admit the market difference between the two cities, it is necessary to keep in mind that just providing small-sized rental housing is not enough. At least a certain percentage of new residential units must be dedicated to the very low- and low- income households. To solve the relevant issue, I suggest setting a minimum limit on the allocation of units for marginalized households just like New York City’s case. Instead, the extent of subsidy benefits for the developers could be enhanced further.

CHAPTER 7. CONCLUSIONS

In this paper, I examined the trajectory of uneven housing affordability and efforts for redressing the worsening housing disparity in both New York City and Seoul City. Each city has shown its idiosyncratic housing tools that are adaptive to its cultural and economic background. No one can judge whose program is better or worse because every affordable housing program has its ontological validity. Affordable housing policies have been acclimated to environmental changes in situ like a living organ; therefore, the current policy might be the best model that reflects its unique contemporary market and socioeconomic conditions. That is, no panacea exists that can be applied to every nook and cranny. But urban planners and policymakers have to learn from the past because urban history is full of lessons on how to navigate multifarious challenges.

In summary, New York City has primarily focused on indirect subsidy rather than direct sponsorship to the disadvantaged classes. While utilizing the cutting-edge financial technique as a forte of global financial hub city, NYC zeroes in on public-private partnerships by providing mainly tax incentives and subsidies to private participants. LIHTC is the best example of this trend; developers can finance a maximum of 70 percent of their affordable housing development costs by selling awarded tax credits from the government to investors in the financial market. Even if New York City also subsidizes people-based supports such as housing vouchers, it is not the mainstream. On the other hand, Seoul City still concentrates on direct subsidy scheme. The national government and local municipality keep providing public housing while promoting the expansion of the private rental market. Also, the government subsidizes direct loans with below-market interest rates to private constructors and developers through National Housing Urban Fund (NHUF) as well as Housing Finance Credit Guarantee Funds (HFCGF) for housing.

Both cities' affordable housing finance tools have clear pros and cons. Seoul tries to embrace a wide range of classes and centers on the direct regulatory intervention that could have more impact. However, at the same time, it means that each policy is not specifically targeted to low-income households, and the "visible hand" could have the possibility to distort the autonomous power of the "invisible hand". Contrarily, New York tries to maximize policy efficiency through deregulation and private expertise. Instead, the city increases the reliance on a strategic alliance with private partners too much, which could weaken the authorities' control on the market. Policymakers can be criticized for being off the hook from active interventions to the abject life of the marginalized class struggling with pervasive marginality and unsecured habitat. It is because the authorities handed over the responsibility to private managers and developers' hands just while supplying tax credits and money to private developers. The government confidently asserted that they could control the private sectors; however, a caveat must be put on that there are still many grumblings about misbehaviors of private property managers and developers regarding RAD and LIHTC.

As for takeaways, here I give some policy recommendations in common for both cities. First, the government authorities must stay in the front line and on the hook for the underserved classes. The current housing crisis is a matter of "housing inequality," not just "housing disparity." Housing unaffordability is a systemic problem driven by market failure and policy mistakes in some points. It is not natural and not unavoidable. To resolve this crisis, the government has to put down desires to embrace every single person under the beneficiary policy umbrella, which is not possible with limited budget resources. Affordable housing policy must select and concentrate on specific targets such as marginalized people including extremely low-income households. Particularly, Seoul's recent housing policy seems to have an overambitious political tendency; the unscrupulous use of a politician's authority must refrain. The government should take responsibility for housing issues. Just the provision of funding to private developers is not enough; money does not always talk. Housing issues must not be understood from the perspective of a business. Housing quality and dwelling security are closely related to other social issues including income disparity, health inequality, crime concentration, social exclusion, physical segregation (known as ghettoization), and so forth. If at least one of them cannot be met, our cities can be put under unstable conditions or at risk. The government must not step away from the everyday scenes; they should get involved more proactively. That is the reason why the government exists.

Second, the public housing program must be maintained as the last resort for the extremely-low income class. Policymakers' concern can be understandable on the ground that it costs a lot of budgets and arduous works to maintain the quality of public properties as landlords. Moreover, particularly in the U.S, public housing was branded as a center of crime, prostitution, drug dealing, and poverty. The poor design and cookie-cutter development of traditional public housing and the disinvestment of social infrastructure were perceived as principal actors of the failure of public housing programs, which led to racial segregation and the concentration of poverty. Conversely, Seoul's public housing model was not that bad; the public housing program in Seoul helped low-income households' home security and did not evoke social issues like in New York. The problems are the construction costs increase and maintenance issues regarding public housing projects; LH, the largest national public housing provider has been under the water for decades because of the increasing business costs.

Granted that both cities are struggling with the cost challenge, I suggest that, at all costs, the minimum levels of public housing must keep being supplied by the government's hands. Given skyrocketing housing prices, it seems not plausible to build new properties at acceptable prices, but instead, purchasing existing homes and turning them into public rental housing could still work. Especially, abandoned deteriorated homes such as Zombie homes can be acquired at cheaper prices from landlords in financial troubles. It can be an option for PHAs to consider. NYC HPD estimates New York City currently has approximately more than 3,000 Zombie homes across the five boroughs, which were occupied by the homeless and squatters without permission. Regarding maintenance issues, the government must set aside more funding to cover the necessary costs. At the same time, property management works can be outsourced through contracts with private management. I believe that this could cost less and be more efficient than just giving private developers tax abatements.

Third, housing speculation must be curbed. As examined in an earlier chapter, one of the main actors of the current housing crisis may be speculators, or investors in the housing market. Even though the population in New York has not increased over the past few years, housing prices steeply soared. It was the same in Seoul. Instead, the number of multi-homeowners drastically increased. As we all already know, New York is a rent-dominant market; more than 60 percent of housings are for rental, which means that two-thirds of housing units are owned by multi-home investors. Rich people and retired seniors purchased more housing units and enjoyed housing price appreciation as well as higher rental incomes. The spurious demand with speculation purposes became a trigger to run short of housing inventory in the market and drove the housing property prices up. There are no clear shreds of evidence that real demand pushed the price up according to fundamental economic theory. Housing ownership in New York remains still below the pre-crisis level, but housing prices already surpassed and hit the record high. Without speculation, this phenomenon cannot be explained. Based on this, housing speculation on median-priced and affordable housing units must be under control.

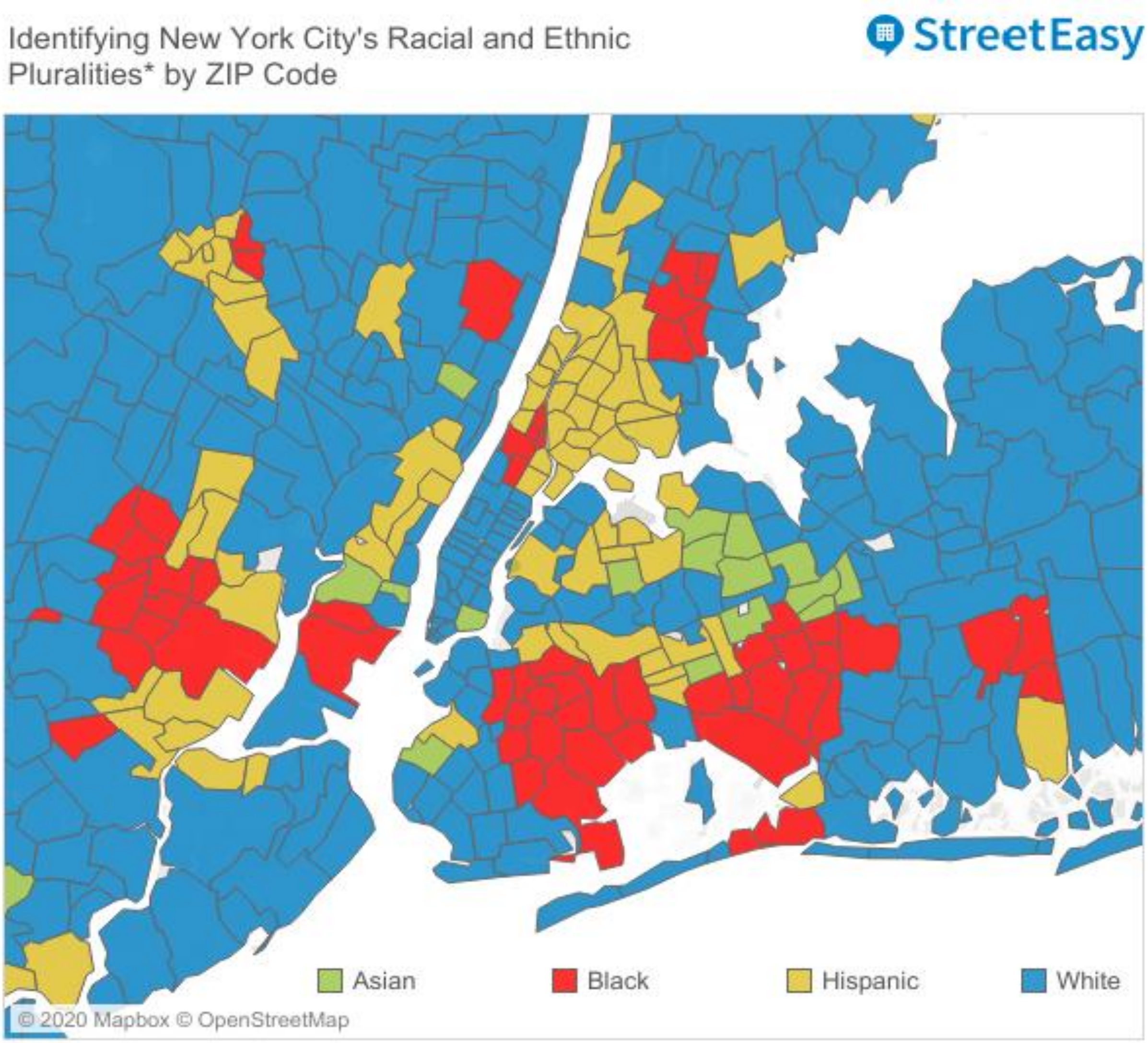
Seoul was the same, housing speculation by record-low interest rate and the government tax relief for multi-homeowners spurred a series of housing investments, and finally transformed a lot of the general public as housing speculators. In particular, private real estate agents and media instigated nation-wide housing investments to instill people with concerns about the further housing price increase. However, the government has not done anything effective enough to curb the frenzy. That is a government policy failure. Last year, the Korean government finally announced new regulations to wage a war against housing speculation by tightening financial tools such as raising the property tax for multi homeowners and putting limits on mortgage loan capacity. Unfortunately, the regulation would not work as expected, because it is too late to put brake surging housing prices due to the inertia. Essentially, housing policy is a matter of reliability. Once the government loses the trust from the market, no policy remedies would work. The government must send the market strong and consistent signals for the market stabilization. Flexibility on the housing finance policy oftentimes can create more dangers.

In conclusion, affordable housing is very complex as an everyday life issue that is intertwined with varied factors such as built environment, public health, equality, community development, security, races, economy, and social cohesion, etc. But the uneven distribution of resources and the rise of spatial inequalities in the urban fabric have widened the housing gap in urban areas. As a result, urbanites have suffered and would suffer from a serious housing crisis persistently. The perpetuating vicious loop that looks like a “Möbius strip” must be cut to end housing inequality and reach the balance. The invisible hand alone never can address this; therefore, the public sectors' role is undoubtedly significant, and the broader, integrated, grassroots and more health-aware approach to the poor community development must be followed. Public authorities have to get involved in housing issues more preemptively with their clear philosophy and clear policy goals. That being said, at the same time it should not be forgotten that the interventions must be adjusted over time and flexible instead of pursuing one-size-fits-all rules. Any theoretical or armchair pondering could not work; the government authorities should keep listening to the small voice of the vulnerable people.

As Henri Lefebvre insisted, everyone urbanite has "the right to the city", and the vulnerable classes also have the "right to the housing." However, unfortunately, the low-income classes cannot make a necessary voice because they have no capacity to participate in the planning process due to everyday menial works they participated in and the lack of knowledge on the issues. That is the reason why most of the community board members in Manhattan are old white males with hoary hairs; they cannot represent the whole community, particularly lower-income households; it is a systematic problem of new urbanism and neoliberalism. Politicians, the city government, urban planners, community members, and all other stakeholders must remember that political interference and bureaucratic bungling can spoil the game. Affordable housing is life itself to people in the marginal edge of urban structure. The point I want to make is that housing must be but "the place for making a life", not "the place for investment". Affordable housing policy must transition from the view that affordable housing is a kind of business model to the epistemology that "affordable housing is a human right,"

APPENDICES

A. Geographical distribution of races in NYC



*ZIPs are categorized by race/ethnic group according to the racial or ethinic group with the largest share of the population.

B. Rent stabilization additions and subtractions in NYC (1994 -2018)

1. Additions to the stabilized housing stocks (1994-2018)

Year	421-a	J-51	Mitchell-Lama Buyouts		Lofts	421-g	420-cΩ	Article 11/14/15	Formerly Controlled	Total†
			State	City						
1994	-	114	0	0	-	-	-	-	-	114
1995	-	88	306	0	-	-	-	-	-	394
1996	-	8	0	0	-	-	-	-	-	8
1997	-	38	323	0	-	-	-	-	-	361
1998	-	135	574	1,263	64	-	-	-	-	2,036
1999	-	33	286	0	71	-	-	-	-	390
2000	-	224	0	0	96	-	-	-	-	320
2001	-	494	0	0	56	-	-	-	-	550
2002	-	260	0	232	16	-	-	-	-	508
1994-2002	20,240	1,394	1,489	1,495	303	865	5,500	-	31,159	62,445
2003	1,929	171	0	279	20	41	0	-	916	3,356†
2004	4,941	142	0	229	129	188	0	-	706	6,335†
2005	3,380	25	251	481	66	79	0	-	721	5,003†
2006	2,264	130	285	2,755	81	5	0	-	634	6,154†
2007	2,838	135	2,227	290	35	441	0	-	592	6,558†
2008	1,856	55	0	101	35	865	0	-	887	3,799†
2009	2,438	18	112	0	36	0	0	-	519	3,123†
2010	7,596	80	0	0	9	0	0	-	451	8,136†
2011	3,155	498	0	0	6	0	0	-	438	4,097†
2012	2,509	108	132	0	17	0	0	-	360	3,126†
2013	5,975	407	0	0	26	0	0	-	309	6,717†
2014	3,110	243	318	0	21	0	0	-	211	3,903†
2015	2,515	0	0	0	18	0	0	-	270	2,803
2016	4,921	59*	0	716	5	0	0	828	377	6,906*
2017	9,376	208*	143	90	10	0	0	1,283	142	11,252*
2018	9,452	309	0	0	43	0	0	1,900	141	11,845
Total	**88,495**	**3,982**	**4,957**	**6,436**	**860**	**2,484**	**5,500**	**4,011**	**38,833**	**155,558**

Ω Figures for 2003-2014 have been revised from those reported in prior reports, due to the removal of 420-c program units. See *Changes to the Rent Stabilized Housing Stock in NYC in 2015*, for more information: http://www1.nyc.gov/assets/rentguidelinesboard/pdf/changes16.pdf.

† Totals have been revised from those reported in prior years due to the removal of 420-c additions. See above note.
* Number of J-51 units revised from prior year. See Endnote 1.

421-a Notes: Between 1994-2002, a count of 26,987 421-a units includes co-op and condo units that were created under the 421-a program. Analysis of the Real Property Asset Database (RPAD) shows that on average from 1994 to 2002, 25% of 421-a units were owner units and 75% were rental units. Therefore an estimated 20,240 units were added to the rent stabilized stock. Since 2003, 421-a data is obtained from HCR, which provides 12 months worth of data from April 1 to March 31 of the following year, as shown above.

J-51 Notes: The numbers represent units that were not rent stabilized prior to entering the J-51 Program. Most units participating in the J-51 Program were rent stabilized prior to their J-51 status and therefore are not considered additions to the rent stabilized stock.

Article 11, 14 and 15 Notes: Data prior to 2016 not available.

Loft Notes: Loft conversion counts are not available from 1994 to 1997.

421-g, 420-c and Rent Controlled Notes: Counts for individual years between 1994 and 2002 are not available; only an aggregate is available.

421-g Note: The 421-g tax incentive program provides a 14-year tax exemption and abatement benefits for the conversion of commercial buildings to multiple dwellings in the Lower Manhattan Abatement Zone, generally defined as the area south of the centerline of Murray, Frankfort and Dover Streets, excluding Battery Park City and the piers. All rental units in the project become subject to rent stabilization for the duration of the benefits. No additional units will be added since the program required that building permits be dated on or before June 30, 2006.

Sources: NYC Department of Housing Preservation and Development (HPD), Tax Incentive Programs and Division of Housing Supervision (Mitchell-Lama Developments); NYS Homes and Community Renewal (HCR), Office of Rent Administration, annual registration data, and Office of Housing Operations; and NYC Loft Board.

2. Subtractions to the stabilized housing stocks (1994-2018)

Year	High-Rent High-Income Deregulation	High-Rent Vacancy Deregulation	Co-op/Condo Conversion	421-a Expiration	J-51 Expiration	Substantial Rehab	Commercial/ Professional Conversion	Other	Total
1994	904	565	5,584	2,005	1,345	332	139	1,904	12,778
1995	346	1,047	4,784	990	1,440	334	113	1,670	10,724
1996	185	1,325	4,733	693	1,393	601	117	1,341	10,388
1997	160	1,204	3,723	1,483	1,340	368	109	1,365	9,752
1998	372	2,384	3,940	2,150	1,412	713	78	1,916	12,965
1999	283	3,785	2,822	3,514	1,227	760	110	1,335	13,836
2000	230	2,934	3,147	3,030	884	476	729	1,372	12,802
2001	214	4,982	2,153	770	1,066	399	88	1,083	10,755
2002	262	6,144	1,774	653	1,081	508	45	954	11,421
2003	198	8,204	1,474	651	854	340	59	912	12,692
2004	194	8,856	1,564	493	609	268	79	954	13,017
2005	265	9,272	1,692	451	545	692	111	1,017	14,045
2006	301	9,983	1,567	263	236	350	135	1,139	13,974
2007	309	10,342	1,455	161	270	297	66	1,304	14,204
2008	278	12,800	1,405	376	176	421	56	1,321	16,833
2009	457	13,557	1,153	1,075	286	441	62	1,557	18,588
2010	336	12,911	1,130	657	143	274	32	1,424	16,907
2011	212	11,364	1,098	415	230	174	29	653	14,175
2012	165	6,713	924	336	244	481	74	562	9,499
2013	127	4,801	774	757	188	308	31	611	7,597
2014	186	6,235	789	1,011	137	226	13	416	9,013
2015	109	8,049	618	1,079	287	288	13	369	10,812
2016	146	4,690	665	749	460	216	160	438	7,524
2017	107	3,517	672	1,363	363	211	24	400	6,657
2018	109	4,628	791	1,016	375	209	7	333	7,468
Total	6,455	160,292	50,431	26,141	16,591	9,687	2,479	26,350	298,426

Co-op/Condo Note: Subtractions from the stabilized stock in co-ops and condos are due to two factors: (1) stabilized tenants vacating rental units in previously converted buildings and (2) new conversions of stabilized rental units to ownership.

High-Rent Vacancy Deregulation Note: Prior to 2014, registration of deregulated units with HCR was voluntary. These totals therefore represent a 'floor' or minimum count of the actual number of deregulated units in these years. Since 2014, the annual apartment registration must indicate that an apartment is permanently exempt. See "High-Rent Vacancy Deregulation" section on page 7 for more information.

Source: NYS Homes and Community Renewal (HCR), Office of Rent Administration, annual registration data.

3. Qualified Private Activities

Table 2. Qualified Private Activities

Internal Revenue Code Section	Type of Private Activity (Italicized activities must be owned by the issuing government to qualify)	Subject to Volume Cap	Year Established
§142	**Exempt facility bonds**		
§142(c)	*Airports*	No	1968
§142(c)	*Docks and wharves*	No	1968
§142(c)	*Mass commuting facilities*	Yes	1981
§142(e)	Water furnishing facilities	Yes	1968
§142(a)(5)	Sewage facilities	Yes	1968
§142(a)(6)	Solid waste disposal facilities (government owned)	No	1968
§142(a)(6)	Solid waste disposal facilities (private owned)	Yes	1968
§142(d)	Qualified residential rental projects	Yes	1968
§142(f)	Local electric energy or gas furnishing facility	Yes	1968
§142(g)	Local district heating and cooling facilities	Yes	1982
§142(h)	Qualified hazardous waste facilities	Yes	1986
§142(l)	High-speed intercity rail facilities (government)	No	1988
§142(l)	High-speed intercity rail facilities (private)	Yes[a]	1988
§142(j)	*Environmental enhancements of hydroelectric generating facilities*	No	1992
§142(k)	Qualified public educational facilities	No	2001
§142(l)	Qualified green building and sustainable design projects	No	2005
§142(m)	Qualified highway and surface freight transfer facilities	No	2005
§1400U-3	Recovery zone facility bonds	No	2009
§1394	New empowerment zone facilities	No	1994
§143	**Mortgage revenue bonds**		
§143(a)	Qualified mortgage bond	Yes	1968
§143(b)	Qualified veterans' mortgage bond	No	1968
§144(a)	**Qualified small issue bond**	Yes	1968
§144(b)	**Qualified student loan bond**	Yes	1976
§144(c)	**Qualified redevelopment bond**	Yes	1968
§145	**Qualified 501(c)(3) bond**	No	1968
§150	**Current refunding bonds not exceeding outstanding amount of refunding bonds**	No[b]	1968
§150	**Current refunding bonds exceeding outstanding amount of refunding bonds**	Yes	1968

[35] See the following IRS website for more information on tax-exempt bond rulings and findings: http://www.irs.gov/compliance/index.html.

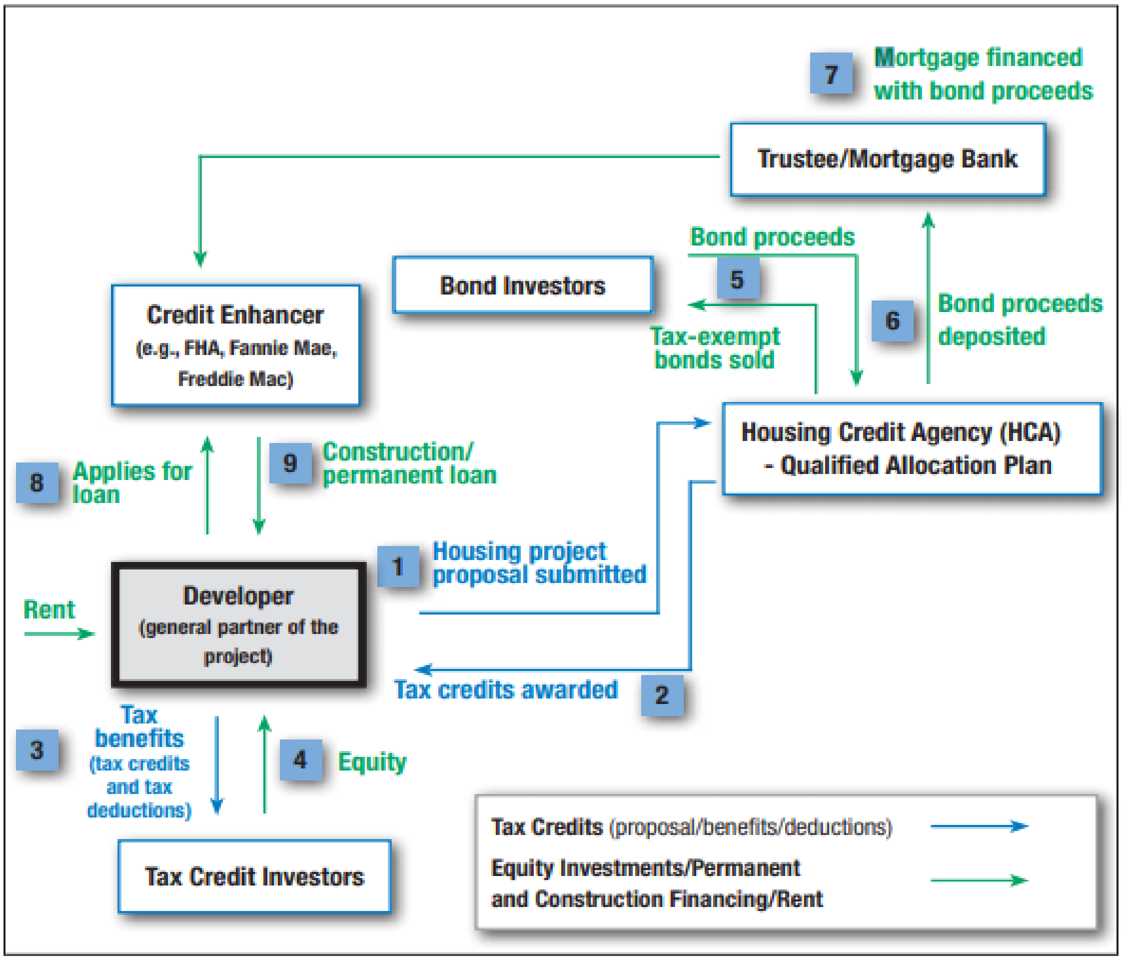
[36] 26 U.S.C. 146.

Source: IRS Publication 4078.

a. 25% of the bond issue is included in the cap. In addition, the owner must elect not to claim any depreciation deductions or investment tax credits with respect to the property financed with the bonds

b. Maturity limitations apply for refundings of qualified mortgage revenue bonds and qualified student loan bonds.

4. The flow of 4 percent Tax credits, Equity Investments, and permanent financing



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