

**THE BALANCE OF AFFORDABLE HOUSING IN NEW YORK CITY:
A SPATIAL ANALYSIS OF THE CITY'S ASSISTED AFFORDABLE HOUSING
LANDSCAPE AND WHETHER THE LOW-INCOME HOUSING TAX CREDIT
PROGRAM COMPROMISES THE POTENTIAL TO ACHIEVE A BALANCE**

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Trevor Shanklin

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Abstract

This study focuses on government assisted affordable rental housing development and policy in New York City. An initial survey of currently assisted affordable housing shares in the city sought to understand the trends of government sponsored developments to determine if there was a spatial imbalance of assisted affordable housing in the city. Pursuant to this survey an analysis of rental gaps between maximum rental ceilings as a derivative of area median incomes (AMI) and the Low-Income Housing Tax Credit (LIHTC) program, the most successful housing program in the expansion of assisted affordable housing units. Those found throughout the private marketplace were determined in an attempt to uncover inefficiencies in the LIHTC program that would compromise New York City's ability to achieve a spatial balance of assisted affordable housing in the future. Findings show that there is a failure in the current application of the LIHTC program in New York where negative rental gaps were found consistently throughout New York City. This fact limits the ability for the city to satisfy its affordable housing goals of both the New Housing Marketplace Plan and PlaNYC 2030 in a manner that maximizes benefits for all stakeholders. Recommendations were presented that included a revised AMI calculation method and locational targeting measures that would assist in correcting these inefficiencies.

Keywords: affordable housing, low-income housing tax credits, rental prices, housing policy

Introduction

The means to affordable housing is a topic that has perplexed policy makers for decades. Since the introduction of public housing measures in the United States beginning in the 1930's the concept remains one of the most important factors in providing basic human needs in our country. In 2010, the chief agency tasked in addressing the affordable housing issue in the US, the Department of Housing and Urban Development (HUD), was allocated approximately \$43 billion in its ongoing efforts to provide a sustainable solution to the affordable housing crisis. The issue of housing has grown to encompass an expanse of over 17% of the nation's GDP and has become the single largest expenditure of households (Stone, 1993). However, to this day the United States is unable to achieve an affordable housing equilibrium that satisfies demand.

The objective of affordable housing policy in the United States has been to provide disadvantaged citizens with suitable living conditions, and to eradicate, as much as possible, the potential for homelessness. Progressive thought has sought to meet the goal of providing housing through the removal of low-income individuals from environments of poverty to areas where more opportunities exist (Khadduri, 2001). Yet as history has shown, and is still evident today, affordable housing continues to be located in primarily destitute neighborhoods (Freeman, 2004). Deep-seeded problems that were by-products of the institutionalized practice of siting affordable housing brought into question the relative weakness and level of discrimination behind public policy decisions in their response to local housing issues.

It has only been in recent decades that there has been a shift away from primarily federal project-based assistance programs to the promotion and construction of scattered mixed-income housing options that have been coupled with subsidies to stimulate the spatial dispersal of affordable units (Popkin et al. 2004; Smith 2002). What was once a disconnected set of federally administered programs has now unfolded into a devolved effort on behalf of both state and local entities to enhance the effective mobilization of policy devices set to tackle regional housing dilemmas. Many of these measures involve partnerships with the private marketplace to expand the stock of government assisted affordable housing, including the Low-Income Housing Tax Credit (LIHTC) program.

The highly successful LIHTC program has produced roughly 1.8 million of affordable units during its enacted life (Ericksen, 2007). With it regions have been more capable of

significantly offsetting major social repercussions of affordable housing shortages in addition to avoiding clustering issues that were experienced with historical housing programs. The program works by incentivizing developers through the use of tax credits that they can sell to investors to receive funds to offset construction costs. Nevertheless, the question still looms as to if the ability to acutely address local housing issues through the siting of affordable housing produced by the LIHTC program is being executed at its most efficient level?

To best understand this program in its application New York City provides perhaps the most appropriate model to question the thought and the LIHTC program. Its dense urban fabric plays host to 8.275 million individuals all with the inherent need for housing. Throughout the city's history it has seen the subsidized development of over 235,000 subsidized rental units with 80,395 of these being sponsored by the LIHTC program¹. This figure is just 10% shy of the entire housing stock in the State of Wyoming². As of today over 171,000 of these assisted affordable units still receive some sort of direct federal subsidy³, but it is still not enough. Each year city housing agencies receive thousands of applicants seeking reprieve from high rental prices throughout the city. Sometimes only a few of these government-assisted affordable units become vacant at any given time.

Currently, only 64% of the housing stock in the city has been deemed affordable to median income households⁴. This fact created the impetus for Mayor Michael Bloomberg's New Housing Marketplace Plan (NHMP) in 2004. It serves as a monumental undertaking seeking to substantially expand the affordable housing stock in New York City, and will bear title throughout the United States as the single largest municipal affordable housing initiative in our nation's history - outpacing even Mayor Koch's housing plan in the 1980s. Questions arise as to if the city truly understands where the expansion of these units will take place given its current landscape or how given any further expansion in the level of affordable housing, likely to occur as a result of the LIHTC program, will either help or hinder the equitable and spatial balance of these affordable units throughout the city. This is what this paper sets out to investigate.

The purpose of this study is not to question the current level of affordable rental units that have been assisted through government subsidy currently present in New York City, nor to

¹ Source Furman Center of Real Estate & Urban Policy (2011).

² Source U.S. Census Bureau (2010).

³ Source Furman Center, *supra* note 1.

⁴ Source New Housing Marketplace Plan (NHMP) (2009).

critique the patterns and trends of development in their ability to address certain demographics as have been investigated in previous research. Instead, this paper looks to a two-tiered approach in the evaluation of New York City's current assisted affordable housing landscape to discover (1) if there is an spatial imbalance of government assisted affordable housing in New York City; and (2) whether rent levels evident in both the market and those publicly imposed compromise the ability for a balance to be achieved in the future. The intent of this approach is not to expose causality between rents and the imbalance of New York City's current state of assisted affordable housing landscape, but instead to serve as an understanding of one variable "rental gaps" that are partially affected by governmental manipulation and impose barriers on future affordable housing development. The result of which would compromise a balanced spatial distribution of affordable units throughout New York City.

I hypothesize that there will be a clear spatial imbalance of government assisted affordable housing in New York City. When conducting a rent gap analysis between LIHTC maximum ceiling levels and market rates of corresponding areas I expect to find there is a failure in the application of the LIHTC program in New York City due to variations in market rents throughout the city while LIHTC ceiling rents remain at a constant level.

Significance

This period of critical observation could not have come at a more applicable time for the United States. Currently, the US is experiencing a level of poverty that it has not witnessed since the early 1990s with a rate exceeding 16%⁵. The ability for many low-income individuals to rent units within an affordable range, usually specified as allocating 30% of household income to housing costs (Stone, 2009), has further been compromised by rising living costs and stagnate incomes.

This paper will take a unique route of the analysis of the New York City housing market through an evaluation of the current market indicator of what are known as “rental gaps”. This rental gap measure will expose a degree of need in specific regions throughout New York City. Using the method of market assessment a large gap will be bridged in affordability discussion between what New York City’s housing policy should attempt to strive for socially with the LIHTC program and how market forces have affected and therefore significantly guided the siting of these sponsored units. By the end of this paper, New York City will have a clear picture of the current landscape of assisted affordable housing present in New York City and will understand the relative efficiency of the LIHTC program in its policy goal of creating balanced mixed-income communities.

This study will further build upon previous research surrounding the spatial appropriateness of subsidized housing in New York City. Using Geographical Information Systems (GIS) as the primary research tool for data representation, coupled by quantitative analysis, this study will project the trends of LIHTC subsidized units and expose the potential markets for an increased affordability presence. New York City has recently moved forward with a number of plans attempting to provide a clear set of time-sensitive benchmarks to increase its affordable housing stock - the most notable of which is the New Housing Marketplace (NHMP). Originally intended to be in effect until 2009, it has since been extended by an additional five years in order to conjure up a larger needed supply of housing for the city⁶. However, the issue that arises is in the potential for shortsightedness of policymakers from a constricted scope of merely seeking a goal of expansion rather than the appropriateness for each additional unit. Elements of specific market characteristics of the local housing environment would significantly

⁵ Rate based upon newly revised poverty calculation formula.

⁶ See NHMP, *supra* note 4.

affect the overall success of the plan's efforts through the understanding of their immediate region's housing market in determining the best policy routes for focused development.

Considerable research has already been paid to the socially inequitable nature of the provision of affordable housing. However, the failure is that given the amount research that has been presented these findings have not been given serious thought by policymakers in the modification of the program, or whether the program should be modified at all. If more research were to be dedicated detailing the local trends LIHTC sponsored development siting then a much stronger argument may be established for retooling the LIHTC program to target it more efficiently in specific locales moving forward (Oakley, 2008). If a more progressive thought was taken into account that did not critique the past trends of what have already transpired but identified what the systematic failures currently in the program's application it would provide a case that could be paired with precedent research to define a clearly discernable nexus of *what has happened* with *why it may have occurred*.

Providing this information to affordable housing's stakeholders would create positive spillovers that would be to the advantage of many parties. Policymakers would have a better understanding of local market conditions, be able to respond to affordable housing demand with a targeted supply and better reshape an existing affordable housing presence. Developers would have specific regions identified along with neighborhood characteristics that best identify the potential to develop there. As a result of this new schema, tenants would be able to live in more economically diverse neighborhoods and gain access to amenities that were previously unattainable.

Lastly, this paper is more than anything an attempt to provide equity to the pool of stakeholders who depend primarily on the supply of affordable housing. The information presented in this paper is not intended merely to provide another level of research, but to provide a methodology as to what pieces of current policy can easily be modified to supply exponentially greater benefits to the individuals who require it. This is where the basis of balancing affordable housing in New York City is established. If a means to understanding how to reshape policy to construct affordable units in areas that best benefited society is achieved then the goal of housing policy in the United States would finally be realized.

Background

The Public Provision of Housing

Housing is one of the basic elements needed for life. Beyond being a factor of necessity it provides a haven for personal retreat, security and recreation. Its physical structure paints a charismatic homage to the individual who dwells within it while its placement and location create a linkage to society creating the catalyst for cities to develop and thrive, neighborhoods to be formed, and unique cultures to emerge and flourish. However, for much of society the means to a home, and to a larger extent the “American Dream”, has yet to be realized or may never even be achieved. It must be understood that every member of society will simply not be able to secure what national policy has persistently proclaimed as the nation’s goal to provide a “decent home and a suitable living environment for every American family”⁷. The private market simply does not have the capacity to provide housing for all people. Herein lies the failure in the general supply of housing in the US, which can be largely extrapolated as basic economic theory - with a scarcity of a particular good there is a natural undersupply available to satisfy individual needs. This concept leads to an understanding of a mismatch existing between income and the cost of living with regards to housing. To correct this ill, housing is oftentimes left up to the responsibility of the public sector to consummate what cannot originate from normal market functions. However, what justification is there for public intervention into a marketplace that is highly speculative and extremely personal to individuals?

In justifying the need for public intervention in the provision of housing Bryne and Diamond (2007) outline the concepts behind society’s devotion to the cause. First, housing is a basic need for all humans. Society looks to housing to fulfill the seemingly primordial functions of life: the supply of shelter, a haven for intimate family life and the comfort in feeling safe. Secondly, society cannot help but gravitate to a feeling of paternalism. We wish to help out in the improvement of the other person’s life so we provide housing as an altruistic endeavor. Third, the lack of available housing creates a situation of homelessness that has negative effects on others. As a way of combating homelessness public or substandard housing is often created that opens up large tracts of land to social ills attributed to a high concentration of low-income individuals. Lastly, and perhaps most important to this discussion, is that the market through its

⁷ *Source* Housing Act of 1949, Pub. L. No. 81-171, 63 Stat. 413 (codified at 42 U.S.C.A. § 1441).

natural workings simply cannot create the necessary level of housing to meet an area's needs. Exogenous factors driven from the public and private markets such as speculation, zoning, and land availability all contribute to development constraints. Therefore the need for affordable housing is recognized. The channel by which this public intervention has taken shape is with a mobilization of federal funding devoted to providing an allocation of sponsored, or assisted, affordable housing. Even this has been thwarted by a culmination of forces derived from a discordant mixture of income, race, politics, and individualist interests that have all distorted the progress of society in providing those less fortunate with a means to decent housing.

Housing Policy History

Throughout the history of government's involvement in housing efforts, it has played an important role in the expansion of affordable housing within reasonable economic reach of families throughout the nation. However, with these affordable housing efforts come many irrational and misguided decisions that challenged its success. Oakley (2008) discusses this shortsightedness by governing entities evident in that (1) nearly almost every administration since the creation of the Housing Act of 1937 has questioned the relative need for federal housing programs, (2) due to constant political administrative changes the allocations needed to sufficiently satisfy a suitable level of assisted low-income housing has been grossly misunderstood, and (3) there are ongoing debates surrounding the efficiency of the siting of these developments in disadvantaged areas.

The federal government has stood in its own way of providing appropriate levels of housing, but much can be attested to the additional hesitations of the specific assemblages of citizens keen on the decisions that will best benefit their own self-interests. This concept has been popularized by the term "NIMBY-ism"⁸. Such advocates of self-interest have only perpetuated the trend for these developments to be situated primarily in less affluent neighborhoods (Newman & Schnare, 1997; Rohe & Freeman, 2001) where less amenities and

⁸ See Dear (1992). The author defines the term as: "the protectionist attitudes of and oppositional tactics adopted by community groups facing an unwelcome development in their neighborhood. Such controversial developments encompass a wide range of land-use proposals, including many human service facilities, landfill sites, hazardous waste facilities, low-income housing, nuclear facilities, and airports. Residents usually concede that these "noxious" facilities are necessary, but not near their homes, hence the term "not in my back yard"."

opportunities exist. It has been a mixture of these factors that have led to the majority of contention surrounding the nation's housing programs.

Failures in the appropriation of affordable housing were not largely addressed until a shift occurred in housing policy beginning with a programmatic devolvement of development decisions to state and local government agencies in the 1960s. The benefit of this transitioning to state and local government agencies has led to a wider range of approaches in tackling local housing dilemmas without being burdened by federal oversight (Williams, 2003). This initially began in 1965 with the introduction of Section 23, an early version of the modern day housing choice voucher program, Section 8. This program placed a voucher in the hands of very low-income families to significantly offset the rental costs to maintain a level of affordability for the family. The significance of this single act marked the shift for the federal government from supply side construction of units to a more responsive demand side approach (McClure, 2008) allowing for a greater degree of tenant choice mobility. In the 1980s additional programs were to be introduced as supply side initiatives to penetrate mixed-income neighborhood to not only promote a greater dispersion of affordable housing (Smith, 2002), but to open a frontier for greater opportunities for low-income residents. The largest step in the devolvement to the state and local governments was the Low-Income Housing Tax Credit (LIHTC) program. First introduced under the Tax Reform Act of 1986 (TRA86) it quickly grew to become the leading subsidy program for the creation and preservation of low- and moderate-income housing in the United States (Cummings and DiPasquale, 1999; Freeman, 2004) and effectively marked the largest step in the devolvement of the nation's housing policy. As a result of the LIHTC program, an unprecedented level of expansion of affordable housing has occurred that has provided homes for millions of people across the United States.

Sources of Contention in the Provision of Housing

Pulling apart the topic of affordable housing I believe that there are two inherently contentious questions that act as the root of all issues dealing with affordable housing. First, what demographic will receive affordable housing? There are various housing programs that target specific individuals and income groups, but do these programs capture the complete market of those who seek out affordable housing or the many individuals in need of affordable housing that are barred from accessing it. Secondly, where should affordable housing be developed be

built? Much emphasis is exhausted in merely adding to the affordable housing's total stock that little is spoken about where these units are actually placed⁹.

What Demographic Will Receive Affordable Housing?

The important question in the creation of affordable housing is to define the ultimate end-user of the good. To have a general goal to provide a “decent home and a suitable living environment for every American family”¹⁰ is laudable, but public intervention cannot be expected to have the capacity to provide housing for all of its citizens either by will or capacity. By providing a seemingly endless supply of affordable housing there would be no incentive for housing-seekers to invest in market rate units – a welfare state would ensue. In addition, government's capacity is limited by its ability to actually divest resources to these endeavors whether it is a workforce or by direct funding. There are simply too many constraints to allow for a full investment into affordable housing for all. Therefore it is the identification of a specific segment of the population that would realize the highest benefit from the reception of housing that intervention should seek to address. For many policymakers, the distinguishing factor to identify this need has been based on incomes of suggested recipients.

However, before progressing with this topic it is important to understand exactly what affordable housing means in its reference to its users. The generally accepted term for *affordability* as it applies to housing is the dedication of less than 30 percent of households' annual income to housing related expenditures. To further expound upon the definition, Anthony Downs (2004) presents a standard that has been used in research:

[...]”decent quality” housing that low-income households (those whose income is below the poverty level or below 50 percent of the median income for their area) can afford to occupy without spending more than 30 percent of their income or that households with slightly higher incomes (50 to 80 percent of the median income) can similarly afford.

The 30 percent level signifies an amount deemed to be an affordable level. As is evidenced with many cities, such as New York, this level is usually surpassed with burdens routinely exceeding

⁹ These questions obviously assume a scenario that government will ultimately be induced to intervene in affordable housing initiatives given a level of inefficiency in of the marketplace.

¹⁰ See Housing Act of 1949, *supra note 7*.

50 percent of a household's income¹¹. It is at this level that households are experiencing excessive rental burdens (Mimura, 2008; Stone, 2006; HUD, 2007).

However, affordable housing and assisted affordable housing can mean very different things. Affordable housing in the way that Downs defines it is a financially attainable accessibility to housing that does not impose significant financial burdens onto society. This could either be through government intervention or purely by way of the marketplace's housing costs being to a suitable level that does not impose a burden because they are at relatively inexpensive levels. Assisted affordable housing on the other hand is purely through government intervention that units are made affordable either by housing vouchers or through the development or preservation of units that under specific housing program guidelines maintain an affordable level.

The key to ensuring that assisted affordable housing reaches the correct tenants is by way of an income standard. By standardizing incomes at different levels of household sizes in various environments policymakers have insight as to the composition of their constituents. This scope provides the policymakers with an understanding of what their target recipient's income levels are and to what extent there is a need for these assisted housing developments. Traditionally, this has been done through what is known as the area median income (AMI) whereby the median income level of a given area is calculated by the US Census Bureau to be used for a number of government-oriented purposes. The establishment of this income standard allows policymakers to match various federally sponsored units with a household earning an annual income that is comparable to the specific stipulations for that subsidy program.

Each year the US Census Bureau computes income limits for metropolitan and non-metropolitan regions that together cover the full expanse of the United States' housing market. These two specific area types are largely dependent on a myriad of non-finite factors that consider population density, regional economic ties, and relative influence of the locations to the surrounding landscape. For regions that provide relatively large metropolitan centers they are categorized as a Metropolitan Statistical Area (MSA)¹² that is descriptive of large urban areas. An MSA is not any one particular city but a larger regional abstraction that takes into account a

¹¹ See New York City Rent Guidelines Board (2011). According to the New York City Rent Guidelines Board in their 2011 Income and Affordability Study, approximately 29.4% of all renters devote over 50% of their incomes to housing related expenditures. This 50% denotes a level of "severe" rent burdens on the household.

¹² The concept of the MSA is used almost exclusively by the US Census Bureau and additional agencies for the purposes of statistical analysis of the large population areas.

larger degree land area. Portions of an MSA typically include various cities, towns or counties within relative close proximity to each other. Statistical analysis is then conducted based upon the relative size that the Census Bureau has determined for that area. Once these areas are established an estimate of the median family income¹³ is defined based upon the total number of families in the respective area. This figure is then taken by HUD and published under the assumption that it is the 4-person AMI level.

This figure is published in conjunction with a series of AMI percentages that are applicable to various levels of population income segments (i.e. 80% for “low-income, 50% for “very low-income”, and 30% for “extremely low-income”). For example, as a requirement for receiving credits under the LIHTC program the developer must abide by affordability standards by renting to tenants who qualify for specific units within the income limitations of the specific programs. For the LIHTC program these income limits are set at levels that are 50% and 60% of the AMI determined for the area.

However, it is by way of this calculation that a number of problems arise. There are flaws in the methodology in calculating this figure that creates a natural bias in the results. A bias such as this brings about serious implications for the success and viability of the allocation of affordable housing since it largely affects the ultimate recipients of these units.

Where Should Affordable Housing be Built?

The second source of contention revolves around the question of where affordable housing should be placed in the city. Since the nation first began its provision of affordable housing in the 1930s a trend has been established involving the siting of affordable housing in low-income neighborhoods. The federal government almost exclusively oversaw subsidized housing with little regard to local needs or understanding. Officials had the power to choose many of these site locations; however, due to the pressure felt from NIMBY supporters in addition to a general lack of understanding of the locale itself the trend of isolating housing quickly spread. Siting would then be restricted to slum areas or where city owned land was present. This fact created a clustering effect¹⁴ that has more often than not resulted in subsidized

¹³ See Stone (2009). The term *family* in its application to median family income is defined as “two or more people related by birth, marriage or adoption”.

¹⁴ *Clustering* refers to a phenomenon of a group of affordable rate housing developments located within a close spatial proximity of one another.

projects being located in high levels of low-income concentrations (Newman & Schnare, 1997; Rohe & Freeman, 2001) since neighborhood opposition was found to be lesser than that in more affluent neighborhoods (McClure, 2008). It is this fact that proves housing policy has failed by contributing to a degrading of cities by isolating tenants both socially and economically through the mechanism of housing that essentially forced them to live in areas of less opportunity and amenities (Goering et al. 1997). This led to a number of social and economic ills that are still evident throughout the country today.

LIHTC's Role

The Low-Income Housing Tax Credit (LIHTC) is arguably the most successful housing policy program of the US and has effectively marked the single largest turning point in the nation's housing policy history¹⁵. Originally conceived as a temporary measure of the TRA86, it has since become a highly successful program in the creation of affordability by producing approximately 1.8 million new units throughout its 25 year legislative life (HUD, 2010) and produces an annual average of 100,000 newly constructed dwelling units per year (Burge, 2010). As a result, it holds the title of the single largest producer of subsidized housing in the United States (Williamson, 2011; Joint Center for Housing Studies, 2010; McClure, 2000; Schwartz, 2010; Freeman, 2004; Rohe and Freeman, 2001).

The LIHTC program is structured to be a multifaceted device that offers benefits to multiple stakeholders. The success of the LIHTC program lies in its ability to shift development responsibility from the federal government to individual or organizational developers through a complex stratagem that involves the disbursement of tax credits to offset investor federal income taxes. This ensures that states are able to offset at least some of their housing demand; prevents cities from being financially overrun by the servicing of low income housing needs; provides developers with the necessary leverage to secure construction and long term financing where in other circumstances they would be unable to do so; creates a route for investors to offset federal taxes along with diversification of their existing asset portfolios; and supplies housing for the disadvantaged. However, before progressing with the discussion of the LIHTC's role in affordable housing development it is important to understand its process:

¹⁵ Prior to this program the only other significant demand side legislation in providing an access to affordable housing on a national level were housing vouchers (i.e. Section 8).

The distribution of funds begins at the federal level with the allocation of tax credits being dispersed to each state by HUD standards in the total of \$2.00 per resident (as of 2010) of each respective state (Schwartz, 2010). However, the program's administration is a joint collaborative between the Internal Revenue Service and the individual state's housing finance agency (Bright 2005). The amount is a combination of two types of tax credits. The first type is a *competitive* 9% annual tax credit typically held for new construction or substantial rehabilitation projects. The credits for these projects translate roughly to 70% of total project costs. The second type of credit is what is called an *as-of-right* 4% credit for existing rehabilitation projects and those projects financed with an accompanying bond-financing schema. This credit differs itself from the *competitive* tax credit in that there is a limit of private activity bonds. All development projects have an equal chance to receive these credits whereas the *competitive* credits are allocated to states at a limited amount that developers must compete for.

The size of the credit to be disbursed to each project is based upon what HUD calls a *qualified basis*. Its amount is a standardized calculation based upon the relative amount that the developer will effectively pay in the creation of the development. In order to determine the qualified basis all eligible costs must be determined by what is known as an *eligible basis*. These costs include the project's hard and soft costs less the acquisition cost of the land. After this figure is calculated, an applicable percentage is applied to this number based upon the relative percentage of affordable units that are being produced at an affordable level within the development (known as the *applicable fraction*). Finally, this is applied to the credit size of either the 4% or 9% award. The result of which determines the qualified basis, or total tax credit award. However, if the project is located in a Qualified Census Tract (QCT)¹⁶ then the project will receive a basis boost of up to 30% of additional tax credits.

These tax credits are distributed in annualized streams of payments across a 10 year period. It is because of (1) the duration of the payments and (2) the "tax credit" itself that the need is created for a transfer of these credits into the hands of an investor in the first place. The duration of the credit causes a dilemma for the developer who needs to raise the immediate capital for the project's financing. The fact that the credit was created to offset investor federal taxation exposure makes it unappealing to many personal and non-profit developers who do not require the offsetting of taxes¹⁷. As a result, the developer will partner with an investor to transfer these credits either directly, or via the use of a syndicator¹⁸. The developer will then typically enter into a legal partnership in various formations with the investor to ensure that funds will be received by the investor and that the property is adequately maintained to avoid any compliance issues that are regulated to receive credit dispersal (Schwartz & Meléndez, 2008).

In accepting the credits the owner of the building has agreed to a compliance period for maintained affordability for the units that have received LIHTC funding. The stipulation of this term being that rents for the sponsored units will not exceed rent ceilings set at levels not to impose rent burdens, more than a 30% level of a tenant's income at one of the two income levels of either 50 or 60% of AMI.

¹⁶ Under section 42(d)(5)(C) of the Internal Revenue Code a *Qualified Census Tract* is deemed as "any census tract (or equivalent geographic area defined by the Bureau of the Census) in which at least 50 percent of households have an income less than 60 percent of the Area Median Gross Income (AMGI), or where the poverty rate is at least 25 percent and where the census tract is designated as a Qualified Census Tract by the Secretary of Housing and Urban Development."

¹⁷ Many developers who seek these credits are non-profit organizations who are tax exempt under section 501(c)(3) of the Internal Revenue Code.

¹⁸ A syndicator is an individual that searches for a grouping of investors seeking a sizable return on an investment and then connects them with the developer to purchase the tax credits.

The developer then enters into the necessary approvals to get the project underway. Since the investor has provided up-front capital funding to finance the project it then begins to take on characteristics similar to those of traditional developments. The location at which the developer chooses to develop is then only a matter of securing the necessary approvals needed for construction.

Since the state allots credits to projects whose location, timing and production are determined by private investment a relationship is created between the policymakers who disburse these funds and the private real estate investment industries that carry out the physical construction of these units (HUD 2000; McClure, 2008). This structure allows the program to be tailored to the areas where stakeholders are more in tune with local conditions (Bogdon & Can, 1997). From this understanding, LIHTC assisted units most closely match the development trends of rental housing at a higher rate than any other government sponsored initiative (Joint Center for Housing Studies, 2010). It serves as the most efficient of all subsidized housing programs from its nature in utilizing the private market; however, it is this fact that the LIHTC program is largely reliant on market determinants¹⁹ that should bring up some of the most critical questions for the program. Who should be the target market for this program and where should these developments be placed?

For all of the success that the LIHTC program has exhibited during its 25-year legislative life in no way should it be free from critique. No housing program can be created that achieves a complete balance between the housing that it creates and the cost to society for its construction and maintenance. After all, the LIHTC program is still a federal program generating annual tax expenditures in excess of five billion dollars. With this expenditure comes a constant transfer of cost burdens from the tenants who occupy these subsidized units to those who are taxed to fund the program's endeavors (Burge, 2010). For a housing program that stands at the forefront as the chief program to expand affordable housing in the US, it is still hindered by the fact that ultimately it is just a piece in a collection of infinitely variable housing programs all tasked with the responsibility to provide housing at an affordable price for those who cannot otherwise find it in the market. Therefore as a result of the LIHTC program's success it must be brought under

¹⁹ Market determinants that could limit the development trends of the LIHTC program include supply-side factors such as land when considering its price, availability, zoning, potential for disposition, density, deed restrictions, etc. In addition, there are many demand-side factors that affect the ability for these projects to be undertaken such as economic cycles that will affect the pool of potential investors and their willingness to pay for these credits along with the potential tenant pools that will fill the developments.

heavy scrutiny, perhaps more so than other housing programs²⁰, in order to make it as efficient as possible.

²⁰ Other housing programs that would be alternatives to the LIHTC program involve mortgage deductions for homeownership, Section 8 that allows for tenant mobility, and public housing for lower-income individuals.

Precedence

Previous research assessing the overall efficiency of the LIHTC program have taken a critical approach by attempting to prove that failures indeed exist within the fabric of the program's application. The majority of these studies have been focused on the questions previously posited in this paper²¹: *who receives this housing* and *where is it being built*.

Who Receives LIHTC Assisted Housing?

The question of *who* the LIHTC program is targeting is outlined in its regulations. The program attempts to expand the supply of affordable housing to low- to moderate-income earners, those earning 50-60% of AMI. The program was never intended to provide housing for extremely low-income individuals (McClure, 2000; Joint Center for Housing Studies, 2010). Due to this fact, a large percentage of poor individuals are shut out of the potential for this program's housing because of rental costs ironically being too high for them to afford. This notion has been established in terms of a relative measure of what is called a *rental burden*²². Discussed by Nelson (1994b) specifically in relation to the LIHTC program, the researcher explains that the program establishes rent ceiling limitations set at 30% of either 50% or 60% of AMI. However, these allowable rate ceilings are static across a specified geographical area, so tenants who may be earning substantially less than these income-ceiling levels will ultimately be devoting a larger proportional share of their income to housing related expenditures. This creates a distributable mismatch between costs being charged for these subsidized units and the incomes of those individuals seeking them; thus, exposing a gap of need (Nelson, 1994a; Bogdon, Silver & Turner, 1994).

The theory of a mismatch existing in rent levels was investigated by Cummings and DiPasquale (1999) who found that rent levels were many times out of an achievable financial range for their suggested recipients. This brought up further questions as to whether the program has even been successful in providing tenants with access to moderate and higher income neighborhoods. Additionally, it has been concluded that the supply of housing often created by

²¹ Refer to Background Section of this paper for a review of the discussion of the fundamental questions evoking housing policy debate.

²² See Basic Laws on Housing and Community Development of the Committee on Banking Finance and Urban Affairs (1981). The HUD benchmark for housing affordability is a 30% rent-to-income ratio. The concept of a rental burden and its various effects on tenants is discussed in a multitude of research with a rental burden on tenants being established when 30% or more of the individual's income is devoted to housing related expenditures.

the LIHTC program is not just unaffordable to many individuals, but in many cases that it is simply not needed at all given the area (Nelson, 1994b). This opens up serious concerns as to where these units should be placed or if they should even be developed in the area at all.

Where are LIHTC Developments Being Built?

Serious questions have been brought to light by research concerning the locational appropriateness and the relative extent at which such developments create mixed-income communities. There has been considerable research devoted to investigating the effectiveness of this program when considering clustering issues of historic housing programs. For example, in a survey involving the locational siting of LIHTC sponsored developments Rohe and Freeman (2001) found that development locations were often predicated on the percentage level of the African-American population in a neighborhood, the value of owner-occupied housing surrounding the community, and similar indicators. Additionally, Newman and Schnare (1997) found that LIHTC developments were primarily found in low-income neighborhoods. Lastly, Oakley (2008) in her sociospatial case analysis of LIHTC developments found that many developments in major metropolises exhibited similar clustering reminiscent of previous housing programs. This was especially true of developments located in QCT's²³.

These studies point out the geographical siting inefficiencies that exist with the program. In order to achieve a more efficient application of the program the majority of researchers claim that these subsidies should be directed to where it would best be able to augment supply. This is to be done by focusing tax credit development in areas outside of high-poverty regions where there is a lack of similar housing (Khadduri et al., 2003) in order to achieve a proper integration of mixed incomes in accordance with the LIHTC program's primary goal (Khadduri, Buron & Lam, 2004).

Research investigating the LIHTC program has painted a clearer picture of how the most successful housing program in the history of the government's intervention into the provision of housing is still subject to the same programmatic failures of its predecessors. As pointed out, the LIHTC program enables the creation of affordable units in depressed environments.

²³ It is interesting to note that this notion of a QCT is outlined directly in the program as an incentive measure to draw in the construction of developments, whose tenant base will be comprised largely of moderate income earners, into the QCT which are oftentimes the lowest income census tracts in the metropolitan area (Jewell, 2005). Whether this method has worked out to its full intention is not yet certain.

Fundamentally speaking, this seems to be the inverse of what the intended goals are for the program (Grigsby and Bourassa, 2004).

Although one of the program's goals is to create a balance of mixed-income communities (Khadduri, Buron & Lam, 2004) these examples show that this is not always the case. So how can this program be corrected to be more efficient? In order to mitigate, if not avoid all together, the negative consequences of low-income concentration these LIHTC sponsored units must first be targeted to more affluent neighborhoods (Malpezzi and Seah, 2002). However, there are currently no mechanisms to ensure that this will be guaranteed given the existing program. In order for policymakers to have the capacity to make the educated and well informed decisions needed to ensure the program's efficiency then they must be provided with up-to-date and reliable information as to current housing conditions (Bogdon and Can, 1997). What is needed is a route to open up the potential for a progression toward a path of a balanced affordable housing landscape by simple policy modifications.

Need for Balance

In discussing the proper balance of affordable housing it is must first be made clear exactly what is meant by this term. By balancing affordable housing it is understood that there is already a current stock of assisted affordable housing present in New York City. However, what complicates this study is that there are units throughout the city that are "affordable" to many individuals. Since incomes vary, it would be nearly impossible to determine all of the units that would be affordable to each individual, especially given the variation of rent prices throughout the city. Therefore, in order to best understand where affordable housing has been constructed in line with government intentions the total assisted affordable housing present in the city will be observed since it provides the best option for modifying development paths and expanded options moving forward.

This provides an immense challenge because an existing affordable housing stock is already in place in a unique housing market that forces policymakers to work with a city landscape that has already been influenced by affordable housing - subsidies have been distributed, buildings have been erected and carved out the physical landscape from the city, and neighborhoods have changed. As a result, any research warranting policy affecting the future development will have to pay deference to this understanding. Re-approaching the specific

meaning of the balance of affordable housing will pull its definition to be the essential goal of the LIHTC program to expand affordable housing and create “mixed-income communities” at equal levels throughout a given area without experiencing a state of either excessive or limited amounts of affordable housing. It is a goal-seeking endeavor to ensure the spread of these types of communities throughout the United States.

Why is the balance of affordable housing so important and why do we need it? Aside from the obvious answer that the provision of affordable housing in a balanced housing landscape ensures equal opportunities for low-income individuals throughout the entire region by creating an equal spread of eligible individuals within the work force pool that provides a better match of job seekers with opportunities that may exist near more affluent areas. What also transpires is a mixed-income environment where otherwise disadvantaged residents find themselves within the same neighborhood as a more affluent group with a greater probability to being housed near opportunities.

How Do We Do It

Now with the term defined and its justification in place, how is it that we can expect to achieve a proper balance of affordable housing? The fact is there are forces at work that are beyond much of our comprehension and that no one knows for sure (Katz, 2003) since there is no magic prescription to providing affordable housing. If there was then this paper’s research would obviously be in vain. There are really no opponents of balancing affordable housing *per se*, but there are numerous forces that come to account what ultimately deters affordable housing from achieving an evenly distributed state either spatially or by income.

Government assisted housing has shown the tendency to become clustered within close proximity to adjacent affordable housing as evidenced in both to past and present housing. The end result of this scenario brings about negative externalities that affect the individual, neighborhood and city at large. In order to ensure the balance of affordable housing the policy tools that are in place that dictate the residential composition must be set to the most efficient standards. If there is a failure in these explicit measurements then there will only be a failure in its application. Research helps to improve our discussions, but the fact remains that these are studies in exposing various forms of failure in the system that approach the topic from every conceivable angle. It has been said in the past, and is said currently, that the slated goal of

housing policy is “to provide every American family with the ability to afford a quality home in as suitable environment”²⁴. It is undoubtedly the case that the most obvious response would be to simply increase the supply of housing that is in the market currently, but a number of mechanisms are already in place that are meant to do just this. Why not seek to correct the problems afflicting the current system instead of risking another misguided effort at the expense of billions of dollars in taxpayer’s money? Enhancing these programs would provide a much greater service to society instead of merely throwing another level of complexity onto a series of housing programs that are not operating at full efficiency.

²⁴ See Low Income Housing Preservation and Resident Homeownership Act (1990), Pub. L. No. 101-625, Title VI (codified at 12 U.S.C. §§ 4101 *et seq.*).

Methodology

This paper will investigate where there are opportunities for the LIHTC program given the current shortfalls in the application of the LIHTC and current assisted affordable housing stock that is currently affordable. The analysis will be applied to the City of New York. This will be conducted by first investigating to the extent of unequal geographical distribution of government assisted affordable housing in the city. Once this landscape has been established an analysis will be conducted to see where in the city the LIHTC program is not fully capturing its intended target group²⁵. This will be investigated by determining whether the LIHTC program's implementation of rental price regulation exposes inefficiencies of the program and therefore compromise New York City's ability to transition towards a more spatially balanced affordable housing landscape.

Reasoning for the initial analysis is to understand the constraints that the LIHTC program must operate under given a rich history of government-assisted affordable housing program endeavors in New York City. However, the existence of affordable units that have been produced through various government assistance programs have generated a built landscape that would ultimately affect the benefits of siting future LIHTC-assisted affordable housing in that region. Regions with large shares of assisted affordable housing detail where affordable housing has inundated the community and may detract from the potential for mixed-income communities. Inversely, where it is found that there is an absence of assisted affordable housing it will demonstrate where affordable housing has not been focused and where opportunities exist. In addition, since it will only be observing the current state of assisted affordable housing in New York City there is no need to consider variables such as zoning, age of housing stock, overcrowding or vacancy, land availability or transit so they will not be included in this study. It is an exercise to determine where these sponsored units have already been developed. It does not attempt to investigate the reasons behind why these assisted affordable housing units were developed in those specific areas.

This analysis uses assisted affordable housing as an indicator of affordable housing development in the city. It should be noted that assisted affordable housing is different than that of affordable housing. Affordable housing describes a situation where tenants do not experience

²⁵ Given its still not clearly discernible exactly what the specific target group is, but for the purposes of this study I will assume a caveat that the LIHTC program will be available to all low-income individuals below a 60% of AMI level that reflects the maximum qualifying income limitation for the program.

significant housing cost burdens in renting units. This scenario may be a product of natural market workings where rents that are charged are at a low enough level that doesn't impinge rent burdens on the tenant, or may be artificial through government intervention that limits the amount of rent charged as stipulations for receiving capital benefits. On the other hand, government-assisted affordable housing are units that are currently receiving affordable housing funding. Assisted affordable housing will be researched to understand the result of government intervention as provider of housing, whether directly or indirectly, on New York City's housing landscape.

Significant thought was devoted to considering the best method to determine a market indicator to be used in the second analysis that would be sensitive to both location and the incomes of tenants while being shaped by the local housing market and LIHTC program. After consideration it was evident that monthly rent levels would provide the perfect case of analysis. By understanding both the rents dictated by the market and the LIHTC program, a better understanding will be achieved from (1) where private investor decisions come into play, (2) the insight gained from the trends that may have occurred by comparing where affordable housing has been placed and the rental characteristics of those areas, and perhaps most importantly (3) the exposing of any failures in the current method of establishing these LIHTC determined rent levels. From this review, evidence will be brought forward proving what is wrong with the current LIHTC system and a methodology of how best to revise it.

This analysis will be relying heavily on the use of spatial relationships in New York City. Quantitative analysis of affordable housing development has already been vastly researched, but the spatial representation of this information still remains in the infancy stages of examination. Assessed spatial aspects of housing have been generalized over the nation's housing stock or particular metropolitan regions. However, each city has its own distinct housing characteristics with fluctuating markets, differing topographies, unique housing stocks, and various sectors of local economic characteristics. This has led to a mere glazing of the assisted affordable housing landscapes for each city.

The premise by which spatial analysis operates is by the first law of geography. This law, made famous by Waldo Tobler, states that "everything is related to something else, but that near things are more related than distant things" serves as the basis for this study, and legitimizes spatial analysis as a field of study in general. It assumes that spatial autocorrelation automatically

exists because of the proximity that subjects share with one another. This thought lies at the basis of all urban economics in that a clustering will naturally occur with similar things. This translates into the housing market and its effect on development. Neighborhoods are neighborhoods because of an observed “likeness” that exists throughout the area. It is this assumption of housing’s spatial “likeness” that will be observed in this study. These indicators will assist in the identification of regions of true opportunity in New York City.

Analyses were considered that would best encapsulate what should be focused on based upon the purview of aligning goals amongst the stakeholders involved in the development of affordable housing in the city. The following indicators were selected as the basis for these subsequent examinations:

*Share of Assisted Affordable Housing*²⁶ - the share of current government sponsored affordable housing in census tracts to the respective census tract’s total housing unit stock.

-AND-

*Rental Gaps*²⁷ - the difference between median market rents (MR)²⁸ and the LIHTC maximum rent ceilings (LC)²⁹ for each census tract.

What led to the selection of each indicator was the identification that each offered its own insight as to what both policymakers have overlooked in the past in their ongoing struggle to achieve a suitable level of affordable housing and what developers could focus on in their ongoing pursuance of providing suitable housing for tenants.

²⁶ *Share of Assisted Affordable Housing*: as the portion of the census tract’s total housing stock that is currently assisted by housing program’s that ensure its affordability. The figure will be expressed in a percentage representing the relative share of affordable housing to the respective census tract’s total housing stock. The term “saturation” will be used interchangeably with the term “share”.

²⁷ Rental gaps are to be established as the ratio of MR-to-LC.

²⁸ *Median Market Rents*: negotiated rent within specific areas, in this instance will be observed at the census tract level, charged to tenants exclusively based upon private marketplace determinants.

²⁹ *LIHTC Maximum Rental Ceilings*: HUD determined maximum gross rent levels at the 60% of AMI qualified income level. Note: 60% AMI levels were selected for rent ceilings due to the assumption of 100% property affordability for the determination of affordable housing share of New York City.

Design

The design of this paper's investigation will follow a configuration of similar yet separate analyses with one largely drawing upon the other. Each subsequent level of analysis will expose details of the opportunities that exist for the ongoing affordable housing development in New York City.

The composition of this paper will begin with an initial survey of New York City's current affordable housing configuration. Pursuant to this analysis a "rental gap" analysis will follow and build off of the findings from the initial survey. The result of these efforts will determine the characteristics of census tracts throughout New York City by their relative saturation levels of affordable housing and the rental gaps that exist given the MR characteristic of each census tract. The formation of the analysis will follow the framework shown below:

First, the initial analysis detailing the saturation of government assisted affordable housing throughout New York City will be performed. The result of which will provide the basis for which to determine the spatial distribution, or balance, of the assisted affordable housing landscape throughout New York City.

Next, an analysis of rental gaps will be conducted in an attempt to uncover the reasons for this imbalance. This segment will look at the aforementioned factors and comprise the bulk of this paper in order to draw pertinent conclusions of the inefficiencies that inhibit New York City from achieving a proper balance of affordable housing.

These factors, devoid of the social, political and economic controls that research has previously investigated will determine, based on current market conditions, the imbalances of government-assisted affordable housing in New York City both spatially and through rental barriers, or the lack thereof. Although the analysis will be conducted at the census tract level trends are likely to be established that will spill over to adjacent census tracts to be assumed as a characteristic of the immediate "neighborhood". The analysis for each market indicator will be as such:

Share of Assisted Affordable Housing - The amount of current assisted affordable housing units in a census tract will be compared to the total housing stock of the same census tract to produce a share and relative saturation in a given area. It will expose general levels of affordable housing with emphasis being placed on the extreme ends of the distribution of

affordable housing in the City. It will expose regions where a spatial clustering, and ultimately where ghettoization may be occurring; and subsequently the lower saturation levels where a higher need for affordable housing may be established.

Rental Gap - The MR will be compared to the LC set at the 60% ceiling level. From this comparison a ratio will be produced to show the magnitudinal degree at which MR levels exceed those of the LC for each unit size (i.e. studio, one, two, and three bedroom). The assumption of this ratio is that the larger the ratio observed the greater the need for affordable housing to be produced in the region as a goal of the LIHTC program to create a mixed-income community. The antithesis of this large ratio would be the smaller the ratio, or where LC's exceed the MR's of a given region, the less the need for affordable housing's placement. This stems from the understanding that where MR's fall below New York City's LC the total lack of need is established due to any affordable housing developed in the region would be unwarranted given current rental levels. In addition, this would establish a failure in the current LC determination method.

Data

Indicator #1 - Share of Affordable Housing

Collection

Affordable Housing Totals

The first indicator to be used in this study is of the share of the currently assisted affordable housing stock in each census tract throughout New York City. This figure will be found using data obtained from the Furman Center for Real Estate and Urban Policy's Subsidized Housing Information Project (SHIP) that was released in September of 2011. This data is the result of the intensive surveying of the affordable nature of New York City. It is derived from a number of sources that have included New York City's Department of Housing Preservation and Development (HPD), the New York City Housing Development Corporation (HDC), the New York State Homes and Community Renewal (HCR) and the US Department of Housing and Urban Development.

Information acquired from this dataset includes property characteristics for a collection of all disaggregated *privately owned*³⁰ assisted properties that have been built throughout New York City's affordable housing history. It differentiates those properties that are actively receiving subsidies from those that have exited their respective housing programs. For the purposes of this paper, only those projects actively receiving either state or local subsidization will be included in the analysis seeing as though they offer a snapshot of affordability in the city. The programs that are included within the dataset are HUD mortgages and insurance, project based rental assistance, Mitchell-Lama projects, and LIHTC subsidized properties. Since the percentage of units that are affordable within each development is impossible to determine given the omission of such information in current recordation practices a 100% unit mix of affordability for each property will be assumed.

The shortcoming of this dataset is its exclusion of other housing subsidy programs that exist in New York City. In addition to federal initiatives many housing agencies exist in New York City that provide assistance to developers and tenants alike to ensure that (1) affordable projects are developed and (2) that tenants have the ability to maintain affordable monthly rents.

³⁰ The term "privately owned" lends itself to being owned by the private sector. Private organizations claiming title to an affordable housing development may be either for-profit or non-profit organizations.

Publicly-owned properties had to be taken into consideration for this analysis so residential properties owned by HPD, HDC and the New York City Housing Authority (NYCHA) were found and included to determine as much as possible an accurate figure of affordable housing in New York City³¹. This information was sourced from the Department of City Planning's PLUTO data, which contains land use information and geographic identifiers of all tax lot parcels. To avoid the potential for administrative or commercial properties to be included in these counts only those properties that contain residential units were to be used. These units were identified via PLUTO data within the "Residential Unit" feature class and given the same assumption standard of 100% unit affordability totals for the property.

Market Housing Stock

The comparable figures to the affordable housing stock will be that of the remaining housing stock offered at market level rents in each respective census tract. The total amount of housing stock in the area will first be identified by 5-Year ACS (2006-2010) data observed at the census tract level. Total housing units of the given census tract will be used.

Issues

During the process of compiling the information to be used in the determination of the share of affordable housing a number of concerns and assumptions were made with each data set having its own issue. The first of which pertains to the SHIP data gathered. The database is only a partial study. It does not provide a complete inventory of all subsidized units in New York City that have been created from alternative housing programs of the city such as the 80/20 Program, Participation Loan Program, Neighborhood Entrepreneurs Program, National Equity Fund, and New Housing Opportunities Programs. With its great achievement in archiving all subsidized projects in New York City the Furman Center still does not detail the number of units per property that are specifically subject to affordability restrictions. There are many developments in New York City that take part in these subsidy programs whose rental mix is not entirely

³¹ Both HPD and HDC are lending and regulation agencies and are not involved with either managing or retaining properties. However, when investigating the amount of city-owned land it will likely be found that there will be a number of *in rem* that have undergone a reversion to the lending body that would have the primary lien on the property. These properties are likely only temporarily held by these agencies until they can be transferred to a sponsor willing to take claim to the property's title. If any of these properties are found then they will be used in the analysis because they will still likely be involved with the level of saturation in New York City.

comprised of affordable units. It is due to this fact that there will undoubtedly be some level of error in the results of this paper since a 100% affordable unit mix is assumed.

The market housing stock poses its own problems since this level is based on the combination of both homeowners and renters. Given there will be a high likelihood that the level of homeowners will be smaller, due to the urbanized setting of New York City, the fact remains that the vast majority of those occupants of these affordable units will be renters.

Indicator #2 – Rental Gap Ratio

Market Rental Rate (MR)

Collection and Standardization

MR's will be determined through a sampling of observations selected from a series of secondary sources of apartment rental information. The first of such sources is aggregated publicly available dynamic rental listing information provided from a popular crowdsourcing website³². This archived index of listing data has been acquired for a one year time period. The series of listings that will be used for this research will be for 2010 year alone. From this information the MR rent prices that exclude utility charges to tenants, or gross rents³³, will be used for each type of unit offered (i.e. studio, one, two, and three bedroom units).

The census tract will be the level at which this data will be observed due to the extent at which individual properties are recorded with geo-referenced information for its specific location. A median value will then be established for each census tract based upon the median value of all groups subdivided by unit size. Since these are listings of units having been publicly available for the 2010 time period the expanse of these observations will be limited from the lack of rental offerings in every census tract during the specified year.

³²Listing information was collected from the popular crowdsourced rental listing site www.Padmapper.com (Padmapper). Padmapper is a publicly accessible rental listing website that provides dynamic rental listing information in several metropolitan regions throughout the United States. The website collects its information by casual users who create their own rental listing advertisement and then post it on the site. When the user inputs the address of the unit it becomes "geo-tagged" and therefore is able to be used in spatial analysis. In addition, the website aggregates outside information from additional informal listing websites and includes these websites listings within its own as well. The information acquired provided critical characteristics of each rental property to assist in the formulation of NMRR in the area.

Amongst the categories of attributes featured in a typical property listing were a *description of the property, number of bedrooms, borough, latitude/longitude coordinates, date of listing, listing type, and rental price*. However, it must be stated that there is no accompanying information as to the personally identifiable information attached to the data gathered therefore no individual can be identified as a result of this research.

³³ The rents to be observed are exclusive of operating costs that may be charged to tenants in addition to the negotiated rent level. The most appropriate term for describing this would be "gross rents" where tenant pays no utilities.

Compiling and Cleaning of the Information

In order to ensure that the information gathered is free from distortion a series of filtering criteria was developed to reduce the data to its purest form free from errors. The anticipated typologies of dataset errors were largely based upon the derivative source of the listing information. The *crowdsourcing*³⁴ nature of the rental listing website where a casual user-initiated listing process allows for incomplete information regarding a property makes categorizing data difficult. Issues quickly became apparent while examining the raw data and discovering the duplicity of listings, renting of unoccupied rooms in an otherwise occupied dwelling, subletting situations, etc. The methods used to eradicate these types of observations from the final data set included the removal of the following items:

- *Free months of rent* - The inducement of free rent may alter tenant choice of where to live based upon the relative amount of free rent to offset higher valued rental levels.
- *Single rooms/sublets/seasonal* – Single room rental rates in an otherwise occupied unit are neither consistent nor reflective of typical neighborhood rental prices for a comparable unit that the potential tenant would otherwise have the option to occupy. It was assumed that similar situations of seasonal and sublet rooms would follow in a similar fashion.
- *Listings outside of New York City* – Observations were included within the dataset that did not fall within New York City boundaries. Instead, they were found in nearby regions such as Connecticut and New Jersey.
- *Duplicate observations* – Rental offering advertisements were often duplicated over the course of time by the crowdsourcer to ensure that they received ample exposure to their audience.
- *Commercial properties* – For obvious reasons, only residential properties were included in the study.

³⁴ See Estellés-Arolas & González-Ladrón-de-Guevara (2012). Authors define *crowdsourcing* as a “a type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilize to their advantage that what the user has brought to the venture, whose form will depend on the type of activity undertaken”.

- *Observations with errors in recordings* – Many items were found to have omitted information that was pertinent to this research. Since the entirety of the needed information was not present these observations were removed.

Validation of the Data

This data is subject to a higher level of scrutiny due to the nature of its collection method. From the fact that the information has been aggregated from a number of listing methods depending on the crowdsourcers themselves (i.e. owners, tenants, brokers and landlords) and their intent with each posting to list advertisements end in rents being charged/negotiated for levels that vary more than is reflective of comparable listings in the area. Anticipating these suspicious rent levels resulted in the cross-checking of the figures generated with alternative sources of information to achieve the most accurate measure of MR for this paper.

The method for validation was to compare those MR derived from the crowdsourced site with those of a more legitimate and comprehensive dataset to guarantee that rent levels would be accurate. The US Census Bureau's American Community Survey (ACS) was deemed as the best dataset for comparison. This ACS data comes at the result of a rolling survey that provides information on social, economic, financial and housing characteristics of households. Based upon the purposes of this paper and the availability of information a set of median gross rent estimates by dwelling size were extracted at the census tract level for use. A 5-year estimate series was used for the benefit of offsetting the crowdsourced data's potential of presenting variable rents that may have been either inflated or depressed from cyclical situations of New York City's housing marketplace. This larger scope in regards to the time series in observed rents will produce figures that are of the most reliable in nature and offer the best units of comparison to those units subject to affordability restrictions. Once values are determined they will be compared and averaged with the crowdsourced counterparts for each respective census tract. The result of this process will produce an accurate estimate of median rental rates for census tracts for each specific unit size. This will be the MR variable.

Issues

There is large potential for bias in the production of these MR levels. The crowdsourced data is derived from an informal market. Landlords, owners and even tenants are able to post rental offerings that do not abide by any particular rental restriction. Considering this fact, there is the potential for the presence of erratic rent levels that could ultimately oscillate given the state of the economy or the solicitor of the listings. In addition, there are implicit issues arising out of the sources of these rental opportunity solicitations. The pool of users may have pure market based rental units, but there is also a possibility that many of these units would fall under specific regulations that limit that amount that can be charged for them, such as the case for rent controlled or stabilized apartments. A large enough occurrence of these instances could drastically shift the median rental values observed for census tracts and therefore produce inaccurate results leading to the eventual findings of this paper. This is the risk faced with using crowdsourced information for research undertakings.

These factors could have been compared or even inclusive of various private brokerage rental market reports; however, many of these market driven reports are biased due to their data being based upon their internal client property list and irrespective of regular apartments that are dealt more informally. Although this data is made public, it oftentimes is unusable for research due to it being catered to the type of clientele that the organizations may be biased towards³⁵.

LIHTC Rent Ceilings (LC)

Collection

The LC levels to be used for comparison to MR's will not have to be calculated. These levels will be provided by estimate figures that have been calculated by HPD³⁶ for 2010 for various dwelling unit sizes. These are based on HUD's qualified income eligibility standards that were determined by the US Census Bureau's AMI calculation adjusted for family size. To standardize the comparison between MR's and LC's the 60% AMI income restriction level was used since it acts as the maximum allowable rent that can be charged to tenants throughout New York City.

³⁵ Market rental reports produced by brokerage firms such as Citi Habitats and MNS Real Estate were considered for use in this report. They were determined to be unusable due to the market data being a derivative of the rents that the firm witnessed in its own property list. These were avoided because of the potential for these rental prices that may have been catered to more affluent rental units, in addition to there being no available reports for the three boroughs of the Bronx, Queens or Staten Island.

³⁶ See New York City Department of Housing Preservation and Development (2010).

Table 1: 2010 LIHTC Maximum Rent Ceilings (at 60% AMI)³⁷

Apartment Size	Max Gross Rent	Average Household Size	60% of AMI
0	\$841	1	\$33,660
1	\$901	1.5	\$36,060
2	\$1,081	3	\$43,260
3	\$1,249	4.5	\$49,980
4	\$1,393	6	\$55,740
5	\$1,537	7.5	\$61,500

Source: NYC Department of Housing Preservation and Development

The Rental Gap Ratio

Once both MR and LC levels have been established for each census tract a ratio will be determined to best capture the magnitude of the rental gaps that are evident in each census tract. Once these ratios are determined for census tracts throughout New York City a relative measure of need will be established for each census tract. The theory being where MR levels exceed those of LC for a given area a rental gap exists that warrants the potential for development in the area. Inversely, where LC levels exceed MR it will be evident that there is no need for affordable housing targeting in the region and that a failure in policy is found

Whether it is market determined rents or those determined systemically by government oversight that exceed the level of the other it will generally expose areas of need, but the magnitude at which this rental gap exists in either direction will shed light on the overall efficiency of the system. Where it is observed that census tracts exhibit relatively miniscule differences in rental gaps it will prove that there is less of a need for affordable housing in the area. Subsequently, where a rental gap exists between two rent levels that is overtly large it will uncover another failure of the system.

³⁷ HPD, *supra* note 36.

Results

Analysis #1 - Share of Affordable Housing

Table 2 displays details as to current levels of assisted affordable housing unit totals throughout New York City’s five boroughs³⁸. Citywide, a total of 378,879 affordable units were found to be currently affordable with a total share of 11%. Among specific boroughs shares were found ranging from 2% in Queens to 26% in the Bronx, which exhibited the largest share of affordable housing in the city – over ¼th of its entire housing stock. In addition to Queens Staten Island also held a very low level of affordable housing (3%) and the lowest number of physical units than any borough (5,821).

Table 2: Snapshot of Government Assisted Units Present in New York City, 2010

	New York City	Bronx	Brooklyn	Manhattan	Queens	Staten Island
Total housing stock	3,421,871	553,395	1,008,697	847,811	835,312	176,656
Total current assisted housing stock	378,879	143,738	100,232	112,214	16,874	5,821
<i>Share of assisted affordable housing stock</i>	11%	26%	10%	13%	2%	3%

Source: Furman Center of Real Estate & Urban Policy

Figure 1 displays each borough’s share of affordable housing as it relates to New York City’s total affordable housing stock. The three boroughs that were revealed to have the largest shares of affordable housing were the Bronx, Manhattan and Brooklyn with levels of 38, 30 and 26% respectively. Together these accounted for 94% of the city’s stock of assisted affordable housing.

³⁸ When referring to the term “borough” the phrase will be in reference to the five counties that comprise New York City: Bronx, Kings, Queens, New York, and Richmond that are translated as the more widely known borough terms of: Bronx, Brooklyn, Queens, Manhattan, and Staten Island respectively. The terms counties and boroughs will be used interchangeably for the remainder of this paper.

Figure 1: Share of Assisted Affordable Housing by Borough

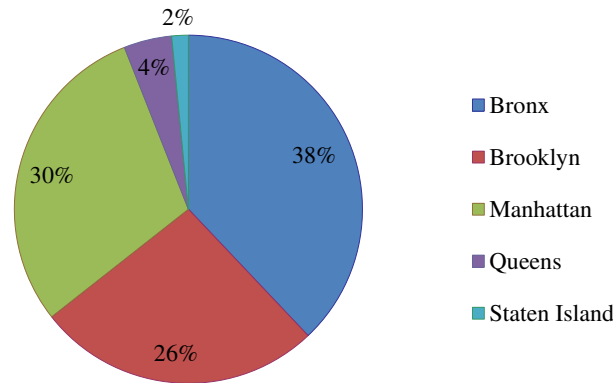
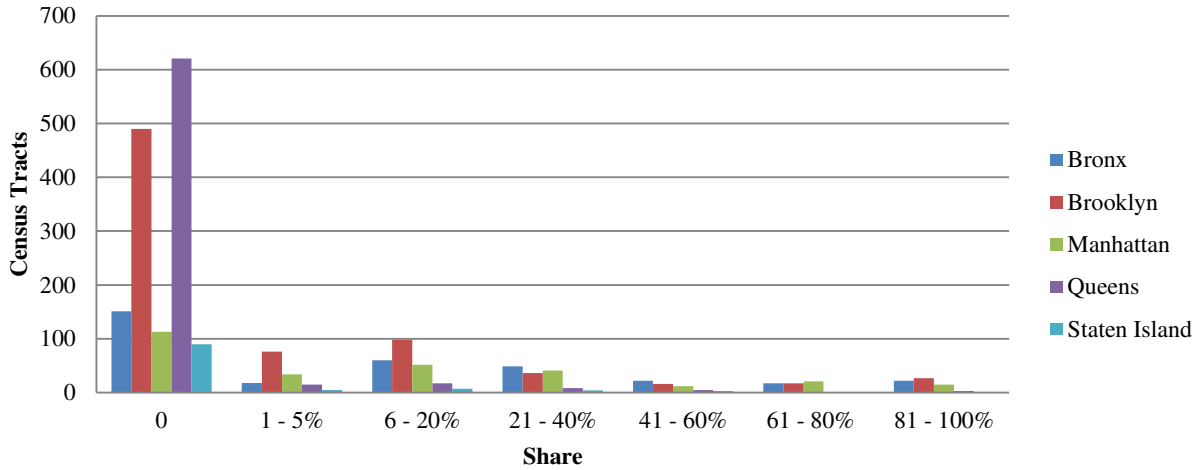


Table 3 displays the share levels, or the saturation, for the census tracts of each borough (the table is further supplemented by Figure 2 which presents the restricted grouping of affordable housing saturated tracts). This table provides evidence of the relative dispersal of affordable units across each borough and its census tracts. New York City in its entirety contains affordable housing in approximately 32% of its total census tracts. Amongst the individual boroughs, Manhattan was found to have the greatest distribution with 61% of its 288 census tracts found with a presence of an affordable stock. Likewise, the Bronx also experienced a high measure with 55% of its census tracts containing a presence of assisted affordable housing options. Oppositely, Queens experienced the least dispersal with only 48 of 669 census tracts, or 7%, having some portion of an affordable housing component.

Table 3: Current Shares of Assisted Affordable Housing

	New York City		Bronx		Brooklyn		Manhattan		Queens		Staten Island	
Census tracts (total)	2166		339		760		288		669		110	
Census tracts (with an affordable stock)	701		188		270		175		48		20	
<i>Relative Dispersal</i>	32.36%		55.46%		35.53%		60.76%		7.17%		18.18%	
Assisted Affordable Housing Shares:	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>
0%	1465	67.64%	151	44.54%	490	64.47%	113	39.24%	621	92.83%	90	81.82%
1 - 5%	148	6.83%	18	5.31%	76	10.00%	34	11.81%	15	2.24%	5	4.55%
6 - 20%	234	10.80%	60	17.70%	98	12.89%	52	18.06%	17	2.54%	7	6.36%
21 - 40%	138	6.37%	49	14.45%	36	4.74%	41	14.24%	8	1.20%	4	3.64%
41 - 60%	58	2.68%	22	6.49%	16	2.11%	12	4.17%	5	0.75%	3	2.73%
61 - 80%	55	2.54%	17	5.01%	17	2.24%	21	7.29%	0	0.00%	0	0.00%
81 - 100%	68	3.14%	22	6.49%	27	3.55%	15	5.21%	3	0.45%	1	0.91%
<i>Mean Share</i>	9.38%		19.32%		9.13%		18.73%		1.44%		4.37%	
<i>Standard Deviation</i>	21.34%		27.45%		21.61%		26.65%		8.32%		13.84%	

Figure 2: Current Shares of Affordable Housing



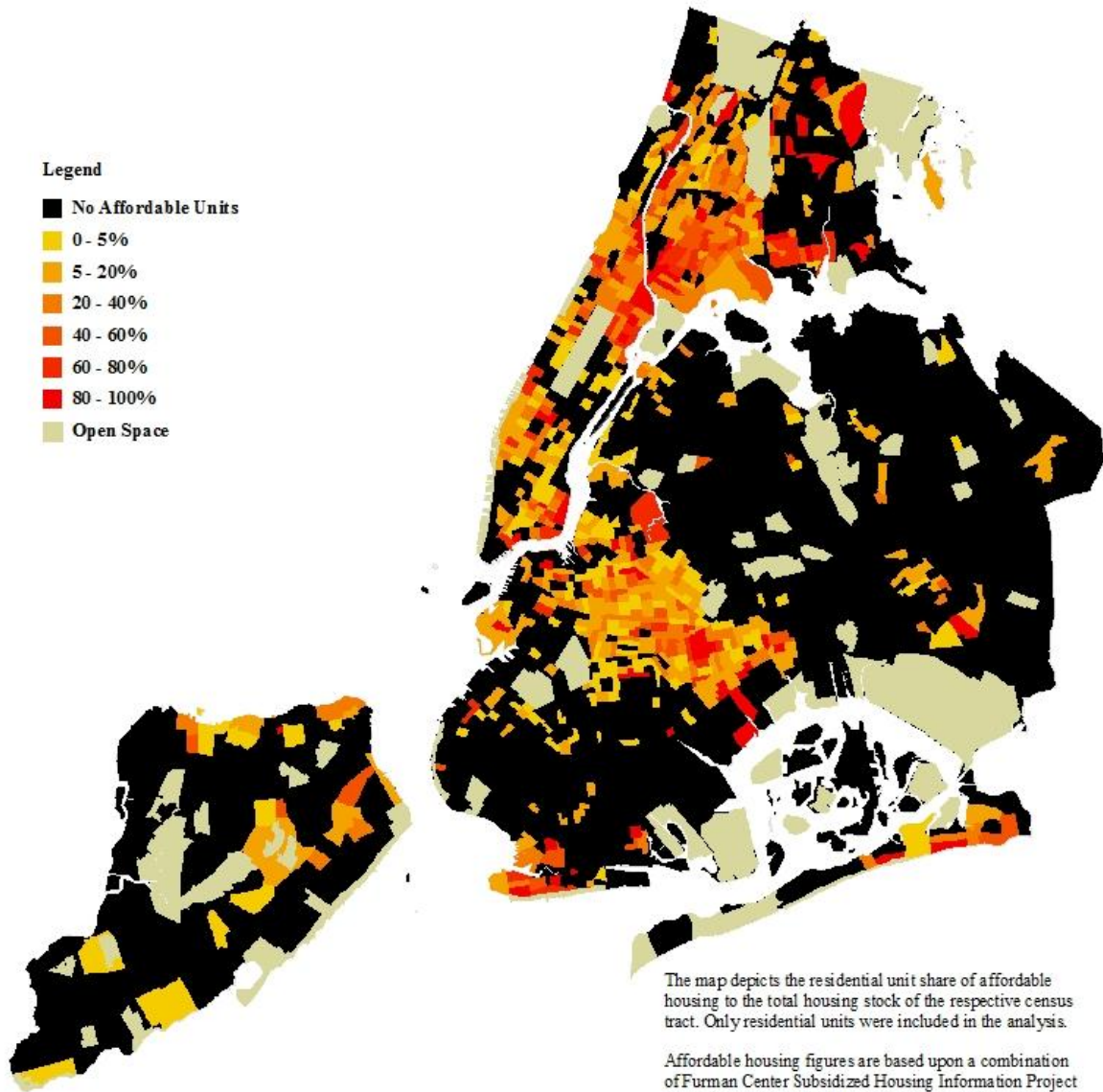
This table and figure also present the share levels for the city. The share range that was determined to be most frequent across New York City was a 0% level. A determination of 67.64% of census tracts in the city were completely absent of an affordable housing presence. This figure of 67.64% serves as the inverse of the relative dispersal figure aforementioned in the discussion of Table 3. The next largest share range is that from 6-20% with 10.80% of the city’s census tracts falling within this range; however, across New York City the mean share of affordable housing found was at a rate of 9.38%. The Bronx’s large share of affordable stock is well dispersed across the range series with not one range, irrespective of a 0% share scenario, either exceeding a 17.70% saturation level or falling below a level of 5.01%. Similarly, the Bronx held the largest share of units with a mean share of 19.32%. Brooklyn did not exhibit a large variation in share sizes with no count of census tracts falling within share range exceeding 98 tracts. Queens and Staten Island had the lowest established mean shares of 1.44% and 4.37% respectively in addition to the lowest deviations of the boroughs with 8.32% and 13.84%. The interesting thing to note about the two boroughs is that both had share levels below 1% once they reached a 60% saturation range.

Map 1 gives a spatial representation of the information described in the tables. This sheds an interesting light onto the trend of affordable housing development in the city. The high levels of dispersal of the Bronx and Manhattan, 55.46% and 60.76% respectively, are immediately evident from the map. In the Bronx, the majority of the census tracts found with an assisted affordable housing presence held the trend of being grouped closer to the borough’s southern and

southwestern neighborhoods³⁹. Whereas in Manhattan although affordable housing is well dispersed, there are observable trends with large majorities of saturated census tracts being located towards the northern section of the borough in the Harlem, Hamilton Heights and Lenox Hill neighborhoods. In addition, a large second collection is found further downtown in the areas immediately surrounding Hudson Yards/Chelsea and the Lower East Side neighborhoods. Brooklyn showed the highest contained trend in its saturation with the majority of affordable tracts grouped near the northern portion of the borough's boundary. Queens and Staten Island contained affordable tracts; however, due to the lack of significant numbers these showed no spatial trend of close proximity to one another.

³⁹ From this point forward refer to the Neighborhood Reference Guide and corresponding table found in the Appendix for a list of neighborhoods and their locations for any discussion referring to specific neighborhoods.

Map 1: Share of Affordable Housing

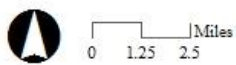


The map depicts the residential unit share of affordable housing to the total housing stock of the respective census tract. Only residential units were included in the analysis.

Affordable housing figures are based upon a combination of Furman Center Subsidized Housing Information Project (SHIP) and NYC PLUTO information. Total unit housing stock was derived from 2010 Census information.

Mean Share = 9.38%

Source: Furman Center for Real Estate and Urban Policy - SHIP dataset; US Census Bureau (2010)



Discussion

From the results it is uncomplicated to determine that the share of affordable housing throughout New York City is not evenly dispersed. Although I was not expecting to witness equal distributions of affordable housing throughout the city I had not anticipated large portions of Queens, South Brooklyn and Staten Island to be barren of affordable housing in large portions of their area. Given, there are undoubtedly state- and locally-initiated programs aforementioned in this paper, such as the 80/20 program, that would offset these results. The findings displayed here are interesting when assuming that these development trends are most likely very close to reality⁴⁰. The question still looms as to if these shares present a landscape that is unbalanced? Extracting this question to a more abstract scale I questioned as to what was a proper balance to be expected?

Establishing the Standard

Previously discussed in this paper were the concepts of why balancing assisted affordable housing was important. However, the question was never poised as to what that balance should look like. In addition, it was never assumed what a proper measurement, or factor of analysis, would do best to describe a *balanced affordable housing landscape scenario* since there are no finite levels having been established. Due to this fact a standard must be established in order to make the determination as to if New York City is to an adequate spatial balance of assisted affordable housing.

The relative dispersal displayed the number amount of census tracts that are touched by assisted affordable housing. The smallest rate of occurrences found was in Queens where there was only 7.17% of all of the borough's 669 census tracts that contained a share of assisted affordable housing previously identified in the methodology of this paper. Inversely, in the case of Manhattan it was found that approximately 60% of all census tracts contained at least some presence of assisted affordable housing. The results of this showed that there were large dispersal issues in specific boroughs such as Queens and to a lesser extent of Staten Island (18.18%).

⁴⁰ These affordable housing saturation levels are likely very close to actual levels since they are the most prevalent housing programs put into use in the creation of affordable housing in New York City. Other state and locally derived programs are in current use to create affordable housing in the city; however, these are oftentimes channeled through the methods of inclusionary zoning or tax abatements. In addition, some decentralized programs are also catered toward owner-occupied dwelling units as opposed to the category of affordable rental units that this paper focuses on in its analysis.

The mean share of affordable housing saturation for each borough was the next item to be analyzed. It was found that the ranges of these mean shares varied between the largest values of 19.32%, found in the Bronx, to the smallest value of 1.44% that was once again found in Queens. This survey found that even the specific amount of affordable housing was not of a relatively high level with the mean affordable share across the city itself being just 9.38% of its housing stock⁴¹. This is a particularly low figure when considering that many stipulations of current housing policy programs offer subsidies for developments that must abide by at least 40% of units being made affordable, such as the case of the LIHTC program.

The last portion to understanding this notion of the balance of assisted housing was the deviation about the mean share of 9.38% that was found amongst the census tracts of the boroughs. New York City itself experienced a standard deviation of 21.34% showing that it is not necessarily restricted to one particular series of ranges. In addition this figure remained relatively constant throughout the three boroughs of the Bronx, Brooklyn and Manhattan (27.45, 21.61 and 26.65% respectively); however, Queens and Staten Island fell short once more with deviation levels of 8.32 and 13.84% respectively. Furthermore, the mean that these deviations surrounded were of relatively low levels to begin with (1.44 and 4.37% for Queens and Staten Island respectively). In fact, over 92.83% of all census tracts identified for Queens had no presence of affordable housing while the same measure for Staten Island presented a value of 81.82%. Not only does this prove that the areas had little affordable housing rates initially, but it also shows that the spread amongst the various levels of affordability are at low levels.

However, although dispersal and deviation figures are useful to back my claim that there is a present scenario of New York City experiencing a situation of an unbalanced assisted affordable housing landscape I decided that the only measure to truly use as a determination of an appropriate share of assisted housing was the mean share of 9.39% found for the city earlier in this paper. It is this figure that can be used to definitely state as a standard for each census tract in order to maintain an adequate share of assisted housing within its boundaries.

Determining a Balance

This survey to distinguish whether New York City's affordable landscape was balanced provides no conclusive evidence to support the claim that there is any spatial balance existing in

⁴¹ See Map 1.

New York City with respect to shares of assisted affordable housing. Although the ability to achieve an equal saturation of affordable housing is largely infeasible given a multitude of factors that include budgetary constraints, land availability, zoning, etc. it should still be a measure to strive for in order to ensure that there are no regions either overrun by affordable housing or total absent of its presence. Mean shares were in no way close to that of the city average of 9.39% as was found in nearly all cases except for Brooklyn. However, not even this could provide an accurate measure because it is on a spatial scale to that of an entire borough. There were many instances for each particular borough where census tracts were found that did not have a presence of government assisted units that would obviously not be representative of the borough's specific mean share.

Since no borough was consistent in its mean share across all of its census tracts it is determined that there is a spatial imbalance of assisted affordable housing in New York City. Not only does this prove that there is a situation of biasness in the siting of assisted affordable housing, since specific regions have experienced higher shares of assisted affordable housing than others, but also that in the progression forward that there needs to be a heightened degree of interest in where these units are being sited that could (1) better allocate sponsored affordable units to places of greater need, and (2) to deter the siting of units in those areas that already have excessive shares of assisted affordable housing

Instances where particularly low levels of assisted housing are present may be explained by heightened levels of homeownership in comparison to the rental stock found throughout the city, particularly in boroughs outside of Manhattan. However, the fact that homeownership is more prevalent in particular areas where assisted affordable housing is absent should not detract from the fact that they are still lacking in a level of affordable housing options that should be expected of every census tract regardless of the housing typology found within the area.

Referring to Map 1 of the Appendix, homeownership levels were found to be at excessively high levels in the very regions that were experiencing miniscule levels of assisted affordable housing. Using this map in conjunction with Map 2 of the Appendix provides the reasoning for this in that areas with a higher presence of single-family homes and subsequently higher homeownership levels point to a fact that these are areas of established neighborhoods with low-density characteristics. It has consistently been found that these types of communities have traditionally barred many affordable housing endeavors through various regulations and

policies that do not explicitly deter affordable housing's development in their these neighborhoods *per se*, but do so indirectly through their applications of building standards/codes, zoning, voter base, and racial segregation (Downs, 1999). From this it is only expected that there would be a severe lack of assisted housing in these areas. This fundamental understanding only adds to the argument that there is a clear spatial imbalance of assisted affordable housing in New York City.

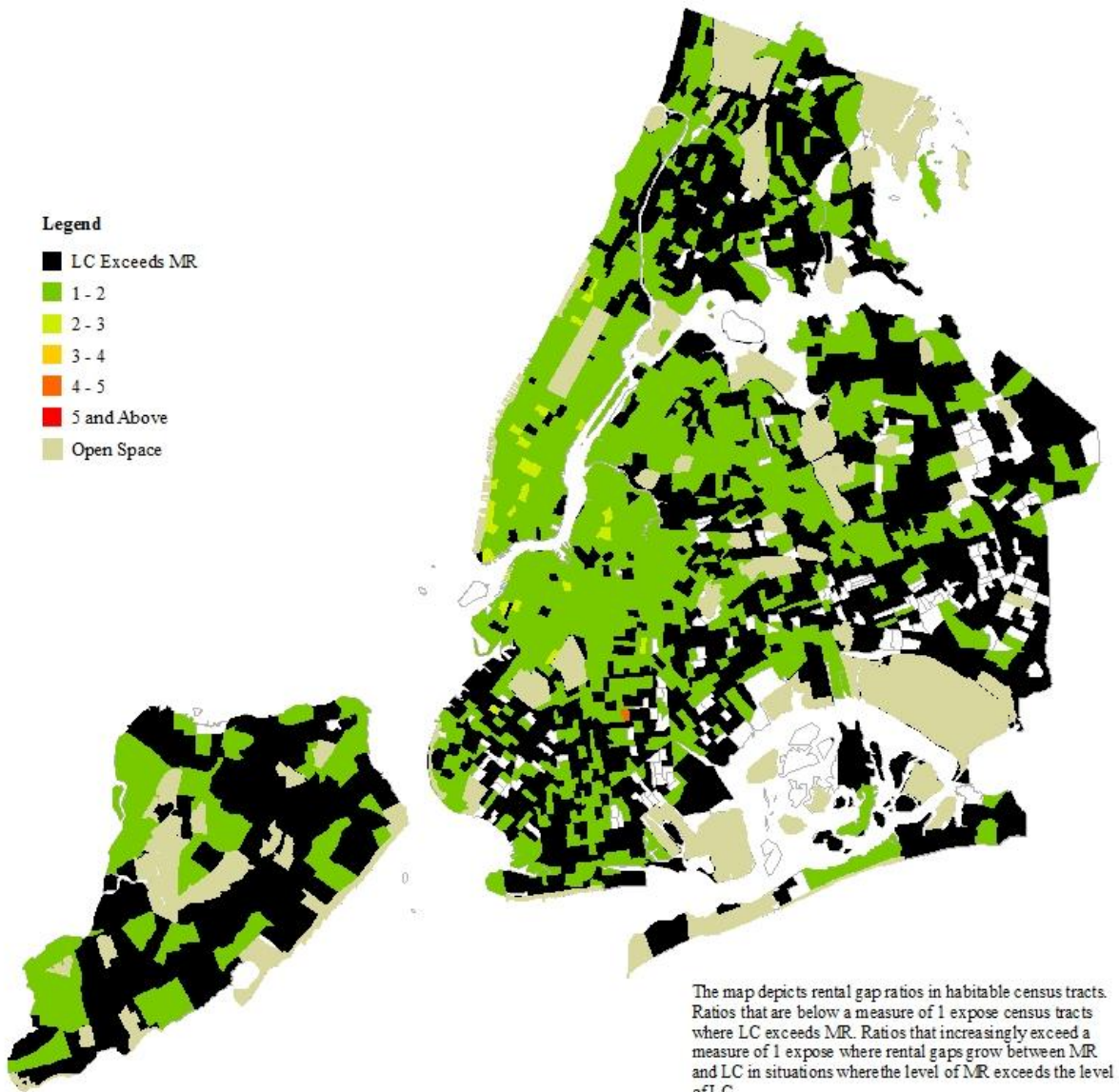
Analysis #2 – Rental Gaps

Map 2 displays the findings from the rental gap analysis of studio units⁴². The immediate results are shocking with approximately 42% of census tracts of the city having a negative rent gap situation⁴³. There is an easily discernible trend of where these negative rental gap tracts exist which are found in the boroughs outside of Manhattan. This trend details a movement from these outer boroughs towards Manhattan where positive rent gaps levels finally begin to emerge as the discernible majority of census tracts. Amongst those tracts that fall within a positive rent gap situation are found within a “1-2” range. As previously stated, these are found in a more frequent fashion the closer one gets to Manhattan. These positive rental gap ratios begin to exceed a ratio of 2 in a few areas in both Manhattan and Brooklyn. Specifically, the areas identified are in a few western neighborhoods of Brooklyn, and the Midtown and Morningside Heights neighborhoods in Manhattan.

⁴² Refer to Appendix Table 1 for Negative Rental Gap Count and Growth Levels.

⁴³ Where gaps exist with MR exceeding LC then the term “positive” will be used to describe the case. Likewise, in instances where LC exceeds MR then the term “negative” rent gaps will be used.

Map 2: Studio Rental Gaps



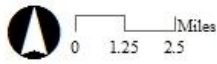
- Legend**
- LC Exceeds MR
 - 1 - 2
 - 2 - 3
 - 3 - 4
 - 4 - 5
 - 5 and Above
 - Open Space

The map depicts rental gap ratios in habitable census tracts. Ratios that are below a measure of 1 expose census tracts where LC exceeds MR. Ratios that increasingly exceed a measure of 1 expose where rental gaps grow between MR and LC in situations where the level of MR exceeds the level of LC.

Studio MR = \$783
Studio LC = \$841

*Rental Gap Ratios: the magnitudinal difference existing between Neighborhood Median Market Rents (MR) and LIHTC Gross Max Rent Ceilings (LC) per respective unit size.

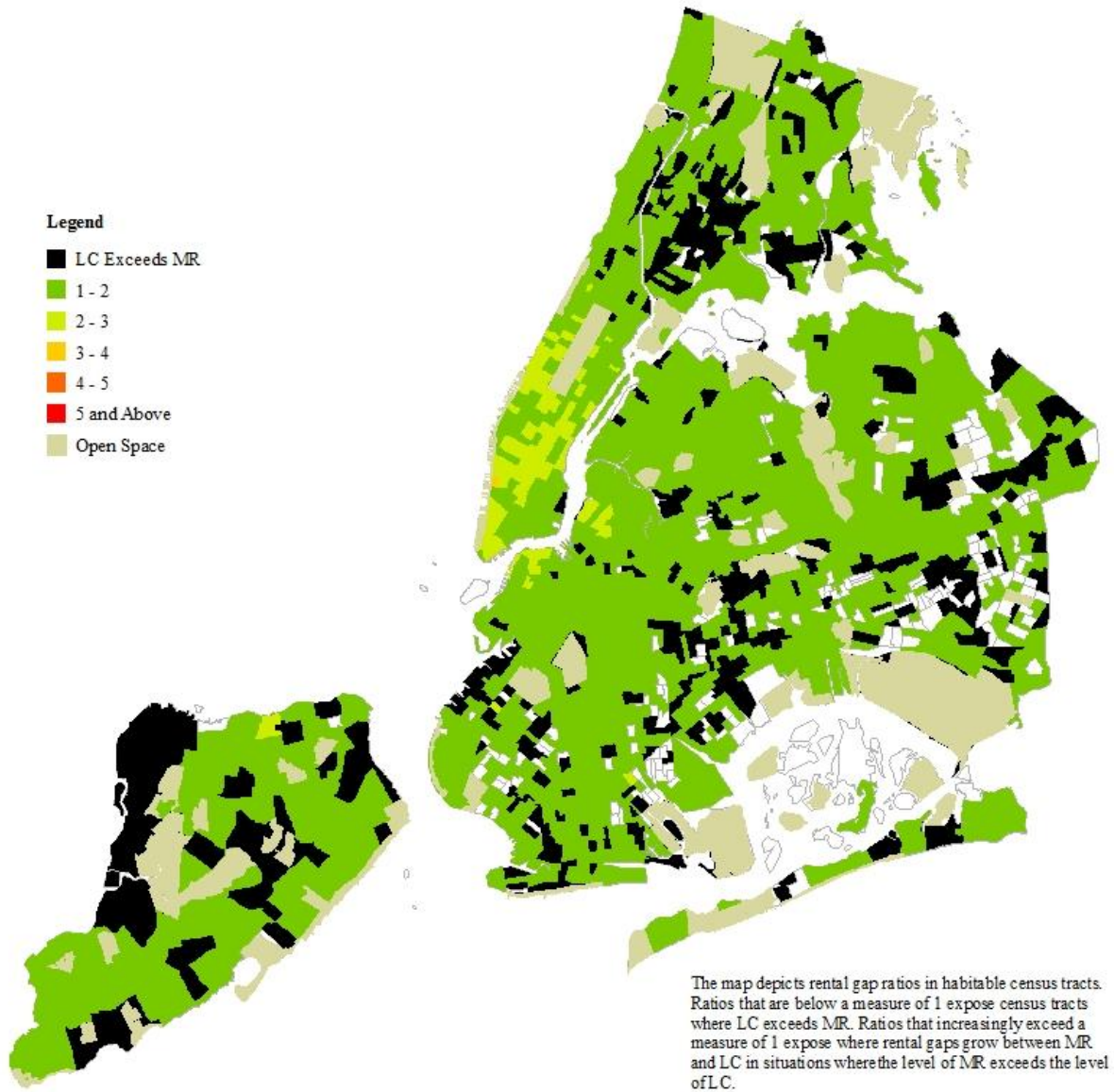
Source: Padmapper; US Census Bureau (2010)



The one-bedroom rental gap levels found in Map 3 begin to trace how this trend changes with a unit size increase. The amount of negative rental gap census tracts that were evident throughout the city's census tracts dropped by 491 instances. Observing the map the landscape seems more balanced; however, a growing level of rental gaps in excess of 2 begins to emerge in the Midtown area of Manhattan. This was evident at the studio unit scenario, but now it has begun to expand and spread further uptown into neighborhoods such as Lincoln Square and the Upper West Side to the west and the East Midtown area further to the east. Likewise, there is a presence found in the Battery Park City and Tribeca neighborhoods and even in western parts of Brooklyn closer to the waterfront.

Switching the analysis to the reduction of rent gaps a large portion of Staten Island where there has been a drop in the amount from a level of 75 to 35 tracts. In fact, all boroughs with the exception of the Bronx experienced a reduction in the number of negative rent gap tracts by over 50%, which witnessed only a figure of 45%. Specific regions where these areas were found to decrease were largely the regions of the boroughs outside of Manhattan in their outer regions (i.e. eastern portions of Queens, southern Brooklyn, northern Bronx).

Map 3: One-Bedroom Rental Gaps



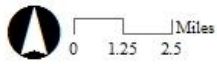
- Legend**
- LC Exceeds MR
 - 1 - 2
 - 2 - 3
 - 3 - 4
 - 4 - 5
 - 5 and Above
 - Open Space

The map depicts rental gap ratios in habitable census tracts. Ratios that are below a measure of 1 expose census tracts where LC exceeds MR. Ratios that increasingly exceed a measure of 1 expose where rental gaps grow between MR and LC in situations where the level of MR exceeds the level of LC.

Studio MR = \$1103
Studio LC = \$901

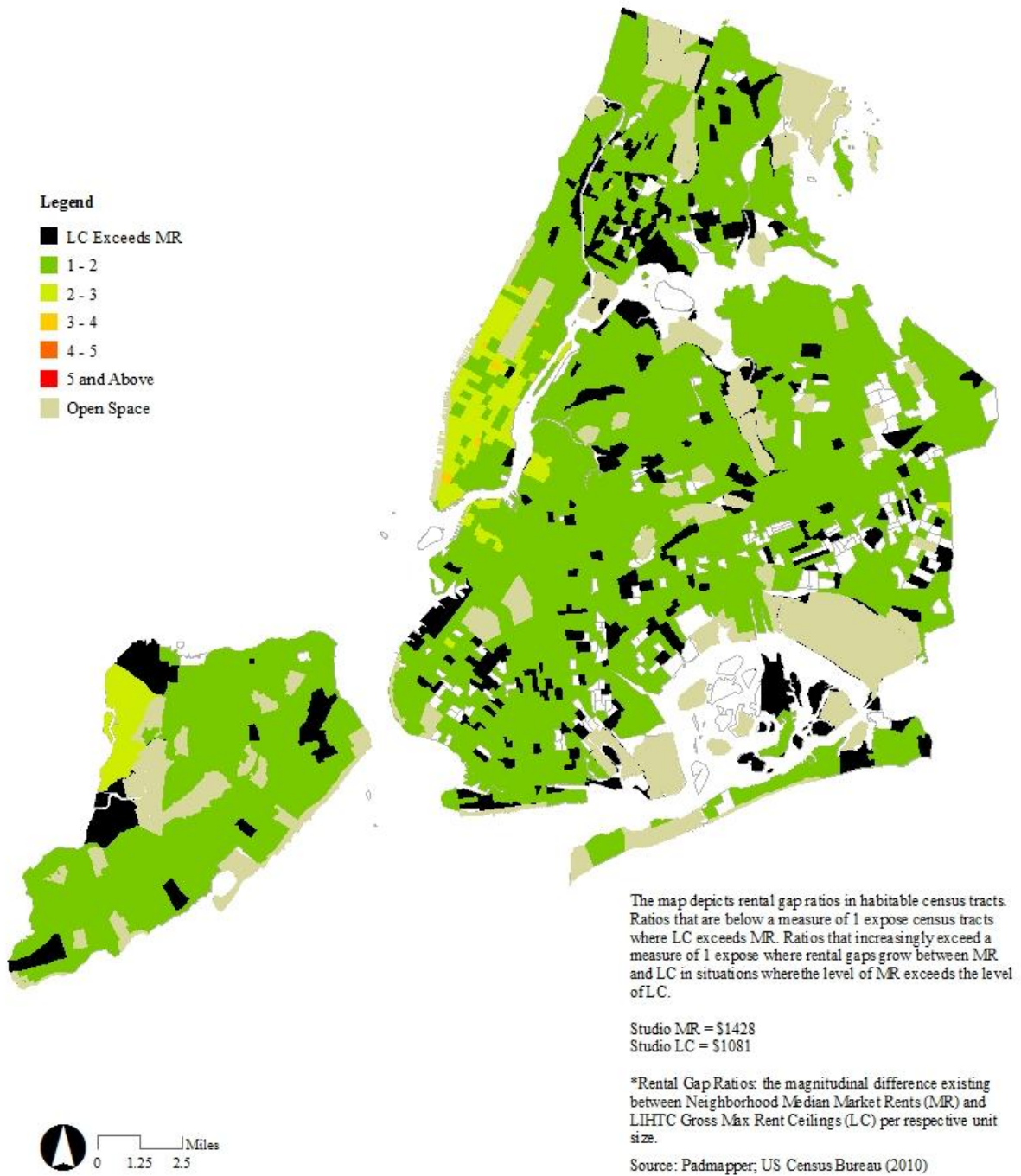
*Rental Gap Ratios: the magnitudinal difference existing between Neighborhood Median Market Rents (MR) and LIHTC Gross Max Rent Ceilings (LC) per respective unit size.

Source: Padmapper, US Census Bureau (2010)



The trend of negative rent gap diminishment continues when observing the two-bedroom unit scenario. Presented in Map 4 the negative rent gap levels have dropped once more by 114 units, or a 27.87% decrease in total observations. At the two-bedroom level, negative rent gaps have reached their count levels for every borough. The landscape now witnessed is much more balanced with negative rent gap tracts existing in greater spatial distribution amongst all boroughs. Although the clusters that were evident in both the studio and one-bedroom scenarios were largely dissolved when moving into a two-bedroom scenario there are still traces of groupings in the South Bronx and East Brooklyn neighborhoods. Both Manhattan and Staten Island were found to have the lowest levels of negative rent gap tracts with a total number of 13 each. Once again, the spread of positive rent gaps within the “2-3” range continued to expand in the Midtown area of Manhattan, and now tracts are beginning to penetrate the “3-4” rent gap range with a total of 6 observations throughout Manhattan.

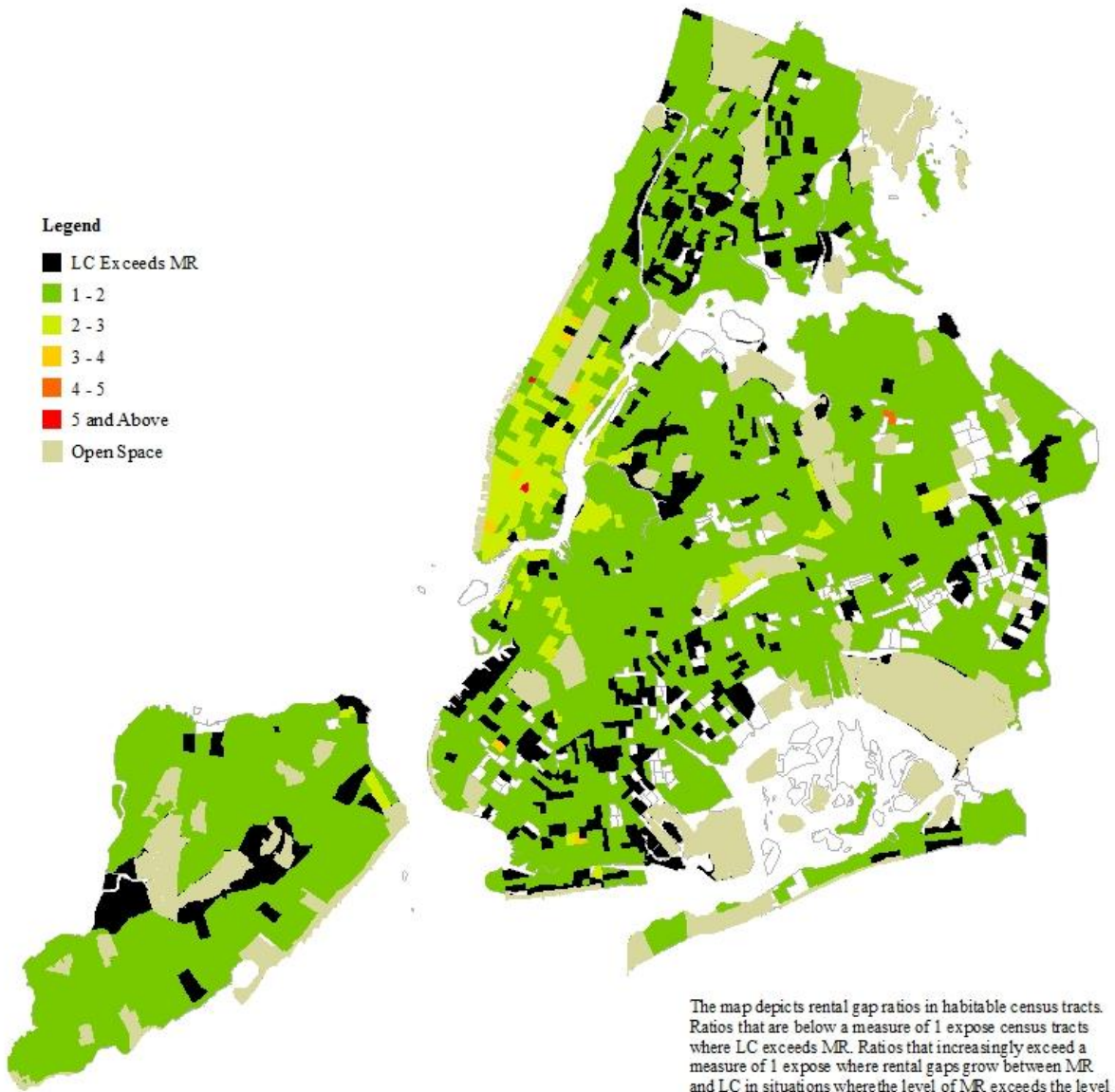
Map 4: Two-Bedroom Rental Gaps



Lastly, the three-bedroom scenario is detailed in Map 5. It shows a different trend than previously identified in smaller unit sizes with both observable positive rent gaps having increased in magnitude while the total number of negative rent gap tracts increased by 30.51%. Even with these figures growing there still remains a relative dispersal of these tracts throughout the city; however, traces of these grouped tracts that were identified in the two-bedroom situation continued to grow in prominence along the eastern portions of Queens and Brooklyn along with the South Bronx.

The degree of positive rent levels reaches their highest in the three-bedroom scenario. While the frequency of rent gaps in the “2-3” and “3-4” ranges continued to grow, census tracts began to emerge that exceeded a ratio of 5 in Manhattan. In addition, there was one instance of a tract falling within a range exceeding 4 in the East Flushing neighborhood of Queens that was likely a result of data error.

Map 5: Three-Bedroom Rental Gaps



The map depicts rental gap ratios in habitable census tracts. Ratios that are below a measure of 1 expose census tracts where LC exceeds MR. Ratios that increasingly exceed a measure of 1 expose where rental gaps grow between MR and LC in situations where the level of MR exceeds the level of LC.

Studio MR = \$1679
Studio LC = \$1249

*Rental Gap Ratios: the magnitudinal difference existing between Neighborhood Median Market Rents (MR) and LIHTC Gross Max Rent Ceilings (LC) per respective unit size.

Source: Padmapper; US Census Bureau (2010)



Discussion

These findings can tell us many things about the LIHTC program and the current efficiency of providing affordable housing. The main points that can be concluded are (1) that there is a failure in housing policy as applied to a large metropolitan area such as New York City, (2) given the current rental and policy system in place there are areas in the city where it “theoretically” would be best to focus development efforts moving forward, and (3) how the potential for balancing affordable housing is currently being compromised by this state of policy.

The first item that we can gather is that the mere presence of negative rent gaps existing in the city provides the necessary evidence to support the claim that there is inefficiency present in the LIHTC stipulated max rents deemed as “affordable” for New York City. Although it must first be said that just because a negative rent gap ratio exists does not necessarily mean that the landlord operating these units could charge more for a LIHTC sponsored unit, operating under the LC guidelines, rather than a market rate unit⁴⁴. However, at the very least it shows that specific census tracts exhibit the potential for affordable rental units to be on the same rent scale as a market rate unit. This creates a problem for both the US government and potential tenants because if developments are placed in areas that exhibit a negative rent gap then the federal government is providing considerable public financing to projects that do not benefit society, but are at its expense. The city is unable to escape from this cycle because it is locked into its own housing initiatives, such as the NHMP. This places pressure on city housing agencies to continue to produce housing regardless of the locations that these developments are being placed. Yes, these projects are providing the assistance of expanding supply, but as these results show there are areas where this would not be beneficial given their potential to be located in census tracts exhibiting negative rental gaps. This creates the ultimate problem with its application.

In an attempt to understand how an oversight such as this is possible these LC values can be traced back to an error in the methodology forming their established values. Aforementioned in this paper, LC levels were noted to be a derivative of the area’s AMI calculation. For the particular case of New York City, the city’s calculated AMI is the same throughout its MSA⁴⁵,

⁴⁴ This thought comes from the understanding that the LIHTC stipulated max rent ceilings are the “allowable” maximum rents that may be charged and will not necessarily be charged by every landlord of a LIHTC sponsored property. When there is a situation where a negative rent gap level exists it is likely that the rent to be charged will be that of a similar level of comparable rents for that unit size in the immediate area. Otherwise, there would be absolutely no incentive for the tenant to rent this affordable unit when a market rate unit exists nearby at a lower rent cost.

⁴⁵ New York City is part of the New York-Northern New Jersey-Long Island, NY-NJ-PA Metropolitan Statistical Area.

which includes portions of northern New Jersey, Pennsylvania, and adjacent New York State counties in Long Island, New York. From this fact the median incomes for all counties are likely to be very divergent resulting in an AMI calculation that is not accurately matched to those smaller counties comprising the MSA. Therefore, LC levels are calculated that may be depressed or inflated given the realistic rent burdens that can be assumed for the area in which they are applied. This produces a landscape that is reflected in the maps that have been presented in this paper. It is from the error in AMI calculation that negative rent gaps exist.

In addition, this error in the calculation also sheds light on a discussion of exactly who receives these rent levels provided by society. Looking at these maps it is easy to discern that there are trends that exist where three-bedroom LIHTC units have a greater benefit than a studio LIHTC unit both for the fact that it provides larger housing units for a greater amount of individuals as well as induces a familial aspect into communities that otherwise would be of a smaller character with smaller household sizes. This fact stems from the consideration of typical unit sizes found throughout New York City⁴⁶, which on average is a 2.07-bedroom size. These smaller average unit sizes are found in Manhattan more so than the other boroughs. With respect to the larger bedrooms the inverse is found where larger bedrooms are in areas where unit sizes experienced larger decreases in negative rent gaps as the size of the unit increased. Due to this understanding it is unclear as to if policy is biased to larger bedroom sizes.

The second item that can be extrapolated from the series of rent gap maps are areas in which specific targeting initiatives can be employed to offset the increasing degree of positive rent gaps found in parts of New York City. Previously mentioned, there are areas of the city that were found to have positive rent gaps that only increased with a corresponding increase in unit size. Areas that exhibited the largest positive rent gaps would presumably be the same areas that policymakers should look to place LIHTC assisted units to achieve the highest social benefit for its constituency. This would also speak to the overarching axiom of the LIHTC program to create mixed-income communities given the reasonable assumption that areas where higher rents exist are also areas of higher incomes and greater amenities. To make best use of the LIHTC program it would be best served to focus development in these areas where positive rent gaps are the largest for each unit size.

⁴⁶ Refer to Appendix Map 2 for Average Unit Bedroom Sizes.

The last point is in direct response to the original question posited by this thesis: *Do rents inhibit the ability for New York City to achieve a balanced affordable housing landscape?* My answer to this question would be *yes*. The item to be said about these findings is that there is a failure in the system that *could* ultimately affect the potential for spatial balance in affordable housing levels throughout the city. If developers are privy to where they would be able to locate developments given (1) where land costs are inexpensive and (2) where rent levels can be maximized and even to a level equal to rent levels of the market. As a result, affordable housing balance efforts could be compromised. It can be said that these rent levels present a problem that must be addressed in order to curtail the foreseen abuse of the program by developers.

Policy Recommendations

Given these findings, I propose a series of policy recommendations poised to be implemented to enhance the LIHTC program. This will ensure that the most successful program in housing policy history is given the proper tools needed not simply for the creation of affordable housing, but does so in the most efficient manner possible. These recommendations are outlined to include (1) a new methodology in the calculation of AMI, and (2) locational targeting of LIHTC developments.

1) New Methods for AMI Calculation

Previously mentioned in this paper was the methodology behind the calculation of AMI throughout the United States. The issue has been presented in this paper in the case of New York City that the calculation of AMI is incorrect from its determination being drawn from the overtly large MSA level. Flaws in the calculation can be traced back to (1) the relative size of the area included in the calculation and (2) the lack of understanding of the impositions on households in relation to the unit sizes that they occupy across various density environments.

The first flaw of this method of calculating AMI is the size of observation. The spatial expanses of MSA's are inclusive of many counties with their own unique characteristics with income being most topical to this discussion. The AMI established for a MSA derives income information from a much broader region than should be included in the formulaic conceptualization of AMI figures. As a result, the US Census Bureau's stated AMI levels are often imbalanced and irrespective of the intra-regional segments that comprise the pieces of the larger MSA.

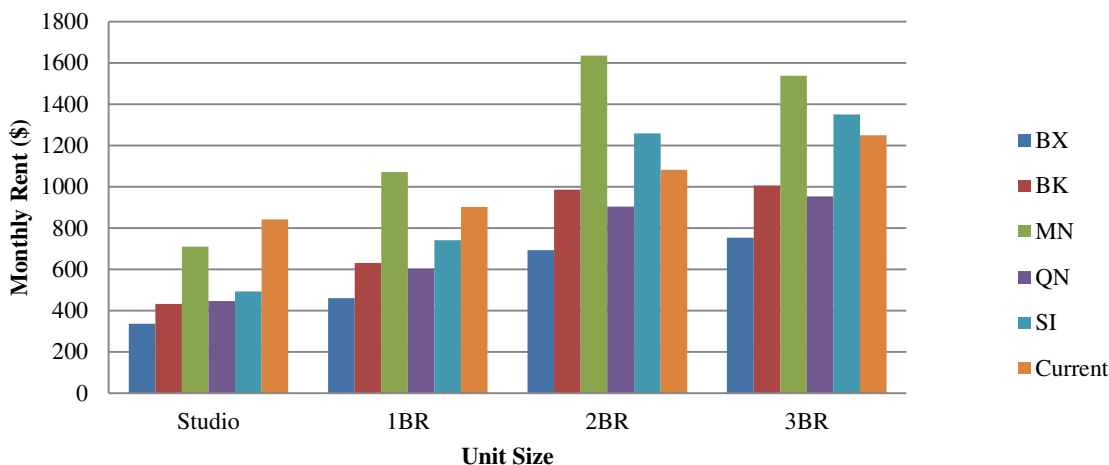
Lastly, is to address the lack of understanding of what the characteristics of built environment exist for each of these MSA's. Each MSA is likely to have various environments that will either allow or constrict the size of the unit or household. In more suburban communities where land is oftentimes less expensive and there is more flexibility for families to have additional bedrooms. Whereas in highly urban environments, such as New York City, households are largely restricted from space constrictions and housing cost limitations to where they must fully occupy, if not overcrowd, their immediate living quarters. The current AMI does not account for these nuances across differing built environments.

Research has already begun positing alternative methods of the establishment for a new

and more accurate AMI calculation method. One method has been considered that uses the US Census Bureau’s American Community Survey (ACS) estimations to assist in the calculation of AMI at a much smaller level. This method provides an opportunity for policymakers to observe incomes on a much more acute scale to prescribe a more accurate AMI for various neighborhoods that may be constricted by a larger disparity than others (Stone, 2009).

Taking into account all of these flaws a retooled AMI calculation would produce a more finite number consistent of the incomes found within the immediate area that housing agencies are attempting to create housing for. Using these flaws as a guide for a reshaping of the methodology a new LC would also be determined as a result. Conducting a recalculation of AMI on a borough-by-borough case would provide a much more suitable LC given New York City. Recalculated figures from these understandings are found to be⁴⁷:

Figure 3: Recalculated LIHTC Maximum Rent Ceilings, 2010



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These newly indexed figures provide a realization of the current miscalculation of rents and at what the rental level would be instead given the immediate characteristics of each of the five boroughs of New York City.

This modification of AMI is not creating further disparities by way of consumer choice but bringing a market rate consumer choice model to an affordable level. The benefit of such an initiative is that renters will have the mobility to seek out with greater ease those desirable areas

⁴⁷ Refer to Appendix Table 2 for supplemental Recalculated Rent Levels.

⁴⁸ Legend entries are abbreviations of borough names (i.e. BX = Bronx, BK = Brooklyn, MN = Manhattan, QN = Queens, SI = Staten Island).

in which they wish to live based upon their own ability to afford them with subsidized rents. Parallels with this approach can be drawn from the use of the Section 8 tenant voucher, which allows tenants to select market rate units where they wish to live and provides them with a voucher to offset their costs. Similarly with this recommendation it will eradicate non-biasness that currently occurs with rental cost choice from the singular LC across New York City for each respective unit size so that tenants will choose where to live based upon both cost and neighborhood.

2) *Locational Targeting*

Although the LIHTC program has been intended to be implemented by market players it has still shown to follow siting inefficiencies of previous housing programs. These improper siting practices have been heavily researched⁴⁹ over the life of the program and have largely been the result of a multitude of attributing factors. However, if specific policy interventions take place then a focused targeting of LIHTC developments could be integrated into LIHTC policy to ensure locational development patterns are best tailored to areas identified by policymakers as most deserving of assisted affordable housing development. This does not necessarily have to come in the form of completely regulated government determination of where LIHTC units should be placed, as was the failure of early housing policy, but through incentives to incentivize private markets further to increase the feasibility potential of these projects to be sited in a wider variety of areas. There are already inducements offered to developers in the form of eligible *basis boosts* affecting the total amount that one could receive in tax credits currently within the LIHTC program to entice development in QCT's. If the incentives to develop low- to moderate-income housing in low-income neighborhoods, to foster mixed-income neighborhoods, are in place then why would there not be the same logical incentive to place these same low- to moderate-income units in overtly high income areas to produce mixed-income communities? By initiating this measure policymakers would be better suited to place units in different neighborhoods of varying income levels throughout the city.

The first policy measure I call for is an incentive measure similar to the QCT approach that would provide a relative *basis boost* for those developments seeking a project site in higher-

⁴⁹ Refer to Precedent Section of this paper.

income areas, or areas that are characterized by higher rents. This incentive would help to offset the land costs likely assumed to come about in accordance with the higher income and rent values that are associated with these neighborhoods. This relationship can be assumed by referring back to the rental gap maps previously presented in this document. By looking at the areas where the largest degree of positive rent gaps were found the area surrounding Midtown Manhattan and a small selection of western Brooklyn census tracts were found to have the highest levels positive rent gap levels. If you cross-reference these areas with the Assessed Residential Property Value map found in the Appendix⁵⁰ serious conclusions can be drawn that would substantiate the claim that further public incentives would have to be added to the LIHTC program to offset the land cost increase associated with these high rent gap areas.

This may be fine for certain areas throughout New York City where assisted affordable housing development has already been found to be viable in those areas; however, as stated previously in this paper there is an issue when considering areas of high homeownership. In order to ensure an increased amount of assisted affordable housing is developed in outer-borough regions where suburbanization has taken place and single-family households currently dominate the landscape there will have to be a series of policy initiatives that must take place to provide the catalyst for this cause. This could be achieved chiefly through the relaxing of zoning regulations that impose unit totals and height limitations on developments in less dense communities. This must happen in order to allow for higher density residential development potential to occur to achieve an economy of scale when producing new subsidized units that can only be achieved through denser development.

⁵⁰ Refer to Appendix Map 3 for Assessed Property Values.

Potential Ramifications

Recommendations previously stated do not come without potential ramifications that must be considered when determining the potential for their employment as a suitable method for modifying facets of the LIHTC program. Providing a scrutiny of the recommendations posed in the previous section of this paper will provide a larger weight to the legitimacy of the recommended items.

In particular reference to the modification to the calculation method of AMI many negative factors could arise as a result of this event. First, varying AMI's will contribute to vastly divergent rent levels between boroughs. It is hypothesized that the reason for currently equalizing AMI across large geographic regions inclusive of both low- and high-income regions will result in rent levels normalized and are representative for the entire population. This provides the best fit to place varying income communities on a same level. If the recommendations previously cited were to be implemented a problem would arise due to the need for larger capital subsidies that will undoubtedly be needed in order to offset diminished revenue streams⁵¹ across the operating lifecycle of the building that make these assisted affordable housing developments financially feasible for the sponsoring party of the development.

Building off of this claim it must be understood that developers need higher rents to offset high land costs pervasive throughout New York City. Otherwise there would be no incentive for the developer to construct affordable housing. However, another problem may very well arise out of city governments stipulating rents at a lower level. This will be alleviating many low-income residents of significant rental burdens, but the situation may create an inverse situation of creating pockets of ghettoization adversely affecting land values that would only be perpetuated due to land prices being largely inexpensive and therefore the only viable areas for development to be financially feasible.

⁵¹ A smaller revenue stream is the direct result of smaller rents being charged because of the recalculation method in all boroughs outside of Manhattan. Refer to Figure 3 of this paper for recalculated rent levels.

Further Research

This research provides the groundwork by which to base continued efforts to assist in the understanding of the LIHTC program. This paper has taken the analysis route to conduct essentially two separate analyses that creates discussion on separate topics. The first is that of constraints that influence the LIHTC program's effectiveness due to an existing assisted affordable housing stock being currently in place that already inhibits the spatial balance of affordable housing. Secondly, it details the rental landscape throughout the city that affects the effectiveness of the program in its ability to sponsor the creation and preservation of "affordable housing". Yet for as much as research has been presented in this paper and subsequent research endeavors surrounding affordable housing this paper added to efforts by shedding a new understanding on a topic that has escaped much scrutiny of academia – limitations of current landscapes and rental gaps. This opens discussions into new realms of analysis.

Although an assisted affordable housing landscape has been presented in this paper it can be built upon. This paper was irrespective of actual affordable housing that is available to residents through natural financial accessibility. In addition, many influences of the urban landscape of New York City that will undoubtedly be present in comparable cities are variables such as land availability and its cost; the age of the current housing stock; access to transportation; the role of zoning; and constriction factors such as the presence of vacancies and a state of overcrowding. These variables must be considered to accurately weigh this study's recommendations against real-world constraints.

The topic of rents should be focused on with ongoing analysis. Since an elongated selection of annual rental information was not available, this paper did not consider rental price changes across time. It would be well advised to understand the trends of rental price changes across expanded periods of time to see where opportunities to develop assisted affordable housing will be sustainable given inevitable housing market trends. In addition, this could provide alternative research that would aid in policy decisions regarding rental prices in New York City in a much broader context of information sharing of current rental prices.

To substantiate the policy modifications presented in this paper much research would be needed prior to their consideration by governing bodies. The first would be how a revision of the AMI levels would reflect a change in the level of rental gaps found in the city. Secondly, would be the identification of the high-income areas that should be focused on in targeting efforts

described in the recommendations and to the barriers that are likely to be encountered with doing so. If more research was dedicated to these subjects then a better understanding of the market will be established for policymakers.

Conclusion

This paper has been an investigation of the spatial balance that exists with the current affordable housing landscape in New York City; and whether the relationship between rent levels found in the market and those publicly imposed risk compromising the ability for a balance to occur in the future. Rent levels to be analyzed were those set by the standards established under the LIHTC maximum rent ceilings for New York City. It was hypothesized that there would be a spatial imbalance present in the city and that rent gaps existing between LC and MR levels could affect the future potential for success in not being to the most efficient standards. From the findings, both parts of this hypothesis were deemed to be true with the former being established by the researcher while the latter being due to an observable failure in policy. These results have challenged the current system by exposing the programmatic failures of the LIHTC program. With the identification of these failures recommendations were made calling for policy modifications. Among the recommendations made was a request for a new methodology for AMI calculation and for incentives to be used for penetrating higher-income neighborhoods with targeting specific neighborhoods apt for affordable housing development.

City characteristics place limitations on the ability for the LIHTC program to displace an existing state of assisted affordable housing clustering to achieve a balance of affordable housing in New York City. Perhaps the most significant of these are those of the city's physical landscape and the application of the LIHTC program to the city. Further expansion of affordable housing by the LIHTC program will only be restricted by these factors. In New York City's case, its history of affordable housing has imposed constraints on further expansion and the siting of affordable units by the LIHTC program whereas rents that are implemented as a result of the program's regulations prove the program's inefficient application. Inherent policy limitations in the application of the LIHTC program affect its ability to move away from the clustering failures of previous affordable housing programs to assist in the furtherance of expansion of affordable housing in an equitable assisted affordable housing landscape.

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Appendix

Neighborhood Reference Guide



Source: New York City Department of City Planning - PLUTO 2010

Supplemental Neighborhood Classification Guide

Neighborhood Classification Guide

Label	Neighborhood Name	Borough
0	Lenox Hill - Roosevelt Island	Manhattan
1	East Harlem South	Manhattan
2	Upper West Side	Manhattan
3	Stuyvesant Town - Cooper Village	Manhattan
4	Murray Hill - Inwood	Manhattan
5	SoHo - Tribeca - Civic Center - Little Italy	Manhattan
6	Central Harlem North - Polo Grounds	Manhattan
7	Union Square	Manhattan
8	Midtown South	Manhattan
9	East Harlem North	Manhattan
10	Yorkville	Manhattan
11	Washington Heights North	Manhattan
12	Lincoln Square	Manhattan
13	Turtle Bay - East Midtown	Manhattan
14	Gramercy	Manhattan
15	Upper East Side - Carnegie Hill	Manhattan
16	West Village	Manhattan
17	Lower East Side	Manhattan
18	East Village	Manhattan
19	Central Harlem South	Manhattan
20	East Village	Manhattan
21	Hudson Yards - Chelsea - Flatiron - Union Square	Manhattan
22	Washington Heights South	Manhattan
23	Park - Cemetery - Etc. (MN)	Manhattan
24	Murray Hill - Kips Bay	Manhattan
25	Battery Park City - Lower Manhattan	Manhattan
26	Hamilton Heights	Manhattan
27	Woodsburgh Heights	Manhattan
28	East Harlem	Manhattan
29	Morningside - Marcos	Manhattan
30	Parkchester	The Bronx
31	Park - Cemetery - Etc. (BX)	The Bronx
32	Mott Haven - Fort Morris	The Bronx
33	West Farms - Bronx River	The Bronx
34	Fordham South	The Bronx
35	Van Cortlandt Village	The Bronx
36	Woodlawn - Wakefield	The Bronx
37	Nonwood	The Bronx
38	Eastchester	The Bronx
39	Brantford - Bathpage	The Bronx
40	Palmer Park - County Club - City Island	The Bronx
41	University Heights - Morris Heights	The Bronx
42	Soundview - Castle Hill - Classon Point - Harding Park	The Bronx
43	East Concourse - Concourse Village	The Bronx
44	Spaulden Duval - Kinnsbridge	The Bronx
45	Co-Op City	The Bronx
46	Westchester - Unionport	The Bronx
47	Eastford Park - Fordham North	The Bronx
48	Longwood	The Bronx
49	St. Ann's - St. Ann's - St. Ann's	The Bronx
50	Montrose	The Bronx
51	North Riverdale - Fieldston - Riverdale	The Bronx
52	Van Nest - Morris Park - Westchester Square	The Bronx
53	Kingsbridge Heights	The Bronx
54	Bermont	The Bronx
55	Hinckley	The Bronx
56	Melrose South - Mott Haven North	The Bronx
57	Felham Parkway	The Bronx
58	Williamsbridge - Olinville	The Bronx
59	Eastchester - Pelham	The Bronx
60	South Concourse - Pelham	The Bronx
61	Eastchester - Edenwald - Baychester	The Bronx
62	Corona Park East	The Bronx
63	Schuylerville - Throgs Neck - Edgewater Park	The Bronx
64	Allerton - Pelham Gardens	The Bronx

Label	Neighborhood Name	Borough
65	Bronxville	The Bronx
66	Hunts Point	The Bronx
67	Sunset Park West	Brooklyn
68	Frosted - Lefferts Garden - Wing	Brooklyn
69	Bushwick South	Brooklyn
70	Cantarsie	Brooklyn
71	West Brighton	Brooklyn
72	East New York (Part B)	Brooklyn
73	East New York (Part A)	Brooklyn
74	Bensonhurst East	Brooklyn
75	Erasmus	Brooklyn
76	Bay Ridge	Brooklyn
77	Crown Heights North	Brooklyn
78	Brooklyn Heights - Cobble	Brooklyn
79	Sunset Park East	Brooklyn
80	Park Slope - Gowanus	Brooklyn
81	Stuyvesant Heights	Brooklyn
82	Kensington - Ocean Parkway	Brooklyn
83	Brooklyn Heights	Brooklyn
84	Ocean Parkway South	Brooklyn
85	Rusby - Remsen Village	Brooklyn
86	Bushwick North	Brooklyn
87	Cypress Hills - City Line	Brooklyn
88	Williamsburg	Brooklyn
89	Fort Greene	Brooklyn
90	Bath Beach	Brooklyn
91	Brownsville	Brooklyn
92	DUJECO - Vinegar Hill - Downtown Brooklyn - Eoburn Hill	Brooklyn
93	Canarsie - Etc. (BX)	Brooklyn
94	Crown Heights South	Brooklyn
95	Bedford	Brooklyn
96	East New York (Part A)	Brooklyn
97	Gravesend	Brooklyn
98	Bensonhurst West	Brooklyn
99	East Flatbush - Farquhar	Brooklyn
100	Midwood	Brooklyn
101	Greenpoint	Brooklyn
102	Sheepshead Bay - Gerritsen Beach - Manhattan Beach	Brooklyn
103	North Side - South Side	Brooklyn
104	East Williamsburg	Brooklyn
105	East Williamsburg	Brooklyn
106	Flatbush	Brooklyn
107	Flatbush	Brooklyn
108	Starrt City	Brooklyn
109	Seaside - Coney Island	Brooklyn
110	Borough Park	Brooklyn
111	Carroll Gardens - Columbia - Red Hook	Brooklyn
112	Georgetown - Marine Park - Bergen Beach - Mill Basin	Brooklyn
113	Arden Terrace	Brooklyn
114	Arden Terrace	Brooklyn
115	Brooklyn Beach	Brooklyn
116	Ocean Hill	Brooklyn
117	Madison	Brooklyn
118	Ridgewood	Queens
119	Jamaica Estates - Holliswood	Queens
120	Fresh Meadows - Utopia	Queens
121	Glen Oaks - Floral Park - New Hyde Park	Queens
122	East Elmhurst	Queens
123	Lefferts	Queens
124	Lefferts	Queens
125	Elmhurst	Queens
126	Far Rockaway - Baywater	Queens
127	Rockaway Hill	Queens
128	Middle Village	Queens
129	Kew Gardens	Queens

Label	Neighborhood Name	Borough
130	Jackson Heights	Queens
131	John F. Kennedy Airport	Queens
132	College Point	Queens
133	Queensboro Hill	Queens
134	Rosedale	Queens
135	South Ozone Park	Queens
136	Ozone Park	Queens
137	Springfield Gardens South - Brockville	Queens
138	Springfield Gardens North - Edgemere	Queens
139	Hamms Avenue - Edgemere	Queens
140	Springfield Gardens North	Queens
141	Elmhurst	Queens
142	Queensbridge - Ravenswood - Long Island City North	Queens
143	Woodside	Queens
144	Douglas Manor - Douglaston - Little Neck	Queens
145	Maspeth	Queens
146	Whitestone	Queens
147	South Jamaica	Queens
148	South Jamaica Hills	Queens
149	Bayside Park	Queens
150	Suburbia	Queens
151	Corona	Queens
152	Bayside - Bayside Hills	Queens
153	Breezy Point - Belle Harbor - Rockaway Park - Broad Cj	Queens
154	Hunters Point - Sunnyside - Washington Maspeth	Queens
155	Astoria	Queens
156	Linwood - Howard Beach	Queens
157	Pomonoik - Flushing Heights - Hilcrest	Queens
158	Hale	Queens
159	Hale	Queens
160	East Flushing	Queens
161	Cambria Heights	Queens
162	Stamway	Queens
163	Elmhurst - Maspeth	Queens
164	Old Astoria	Queens
165	Park - Cemetery - Etc. (QN)	Queens
166	Rego Park	Queens
167	St. Albans	Queens
168	Queens Village	Queens
169	North Corona	Queens
170	North Corona	Queens
171	Fort Lottan - Bay Terrace - Clearview	Queens
172	Glendale	Queens
173	Oakland Gardens	Queens
174	Woodhaven	Queens
175	Briarwood - Jamaica Hill	Queens
176	Stapleton - Rosebank	Queens
177	Port Richmond	Queens
178	Queens Village	Queens
179	Queens Village	Queens
180	Queens Village	Queens
181	Old Town - Dorcan Hills - South Beach	Queens
182	Park - Cemetery - Etc. (S)	Queens
183	Westleigh	Queens
184	Oakwood - Oakwood Beach	Queens
185	Gramere - Anchoar - Fort Wadsworth	Queens
186	New Springville - Bloomfield - Travis	Queens
187	Toot Hill - Emerson Hill - Heartland Village - Lighthouse	Queens
188	New Corp - Midland Beach	Queens
189	Queens Village	Queens
190	Queens Village	Queens
191	Great Kills	Queens
192	Mannors Harbor - Aflinton - Port Ivory - Graniteville	Queens
193	Annadale - Huguenot - Princes Bay - Ellinville	Queens
194	West New Brighton - New Brighton - St George	Queens

- TABLES -

Table 1: Count and Growth Levels of Negative Rental Gap

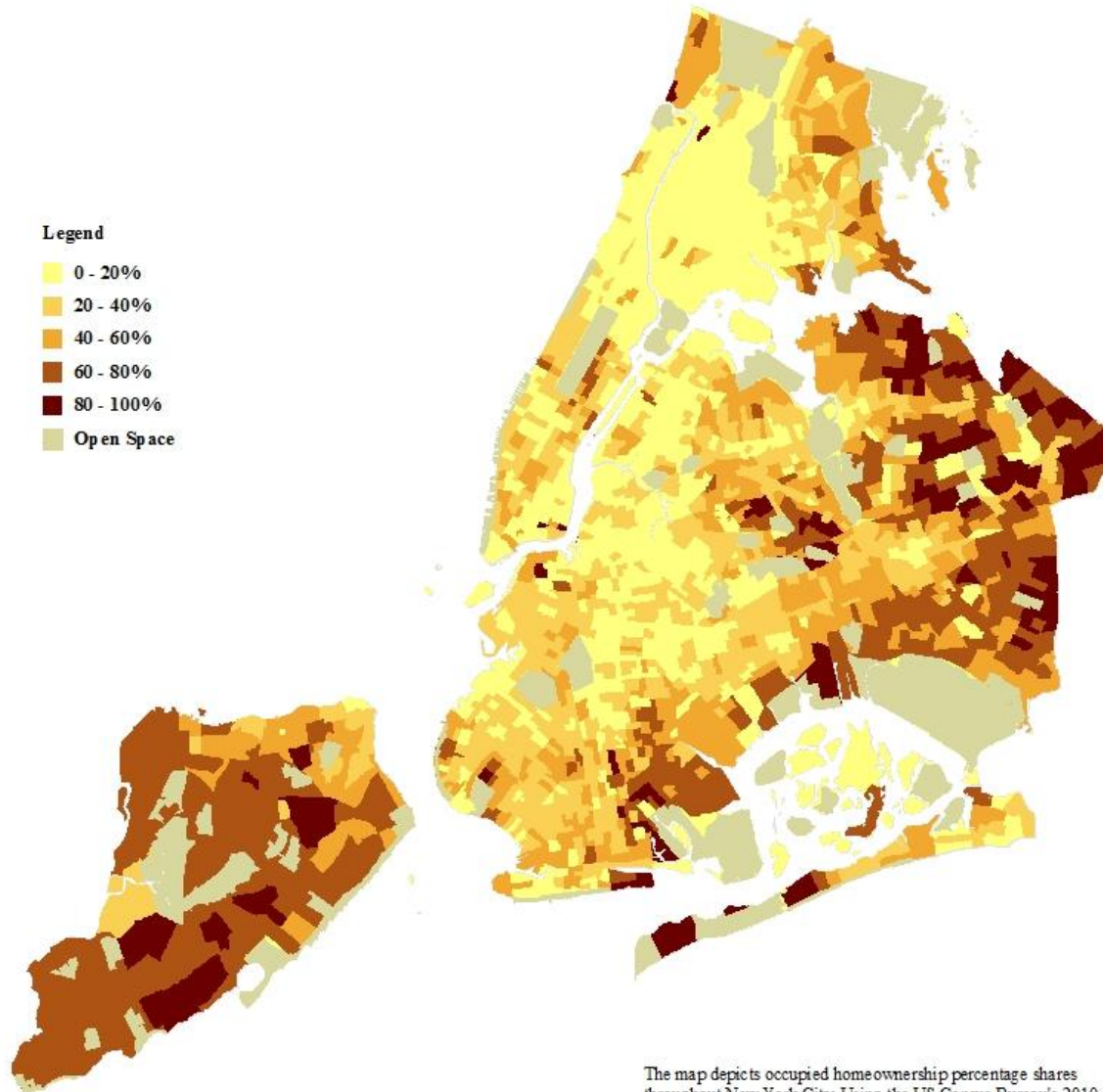
Unit Size:	New York City		Bronx		Brooklyn		Manhattan		Queens		Staten Island	
	Number	Growth	Number	Growth	Number	Growth	Number	Growth	Number	Growth	Number	Growth
<i>Studio</i>	900		207		292		37		293		71	
<i>1-bedroom</i>	407	-54.81%	111	-46.38%	131	-55.14%	11	-70.27%	121	-58.70%	35	-50.70%
<i>2-bedroom</i>	294	-27.61%	76	-31.53%	108	-17.56%	13	18.18%	85	-29.75%	13	-62.86%
<i>3-bedroom</i>	387	31.34%	99	30.26%	156	44.44%	24	84.62%	91	7.06%	15	15.38%

Table 2: Recalculated LIHTC Maximum Rent Ceilings, 2010

Unit Size:	Current	Bronx	Brooklyn	Manhattan	Queens	Staten Island
<i>Studio</i>	\$841	\$336	\$432	\$709	\$446	\$492
<i>1-bedroom</i>	\$901	\$459	\$631	\$1,070	\$602	\$740
<i>2-bedroom</i>	\$1,081	\$692	\$986	\$1,635	\$904	\$1,258
<i>3-bedroom</i>	\$1,249	\$752	\$1,005	\$1,537	\$953	\$1,350

- MAPS -

Map 1: Percentage of Homeownership

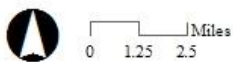


- Legend
- 0 - 20%
 - 20 - 40%
 - 40 - 60%
 - 60 - 80%
 - 80 - 100%
 - Open Space

The map depicts occupied home ownership percentage shares throughout New York City. Using the US Census Bureau's 2010 Summary File containing descriptive housing information both homeownership and rental information was extracted.

Mean Share = 33.87%

Source: US Census Bureau (2010)



Map 2: Average Unit Bedroom Size

