Trends in New York City Housing Price Appreciation

As New Yorkers come to accept that the housing boom of the last ten years is over, many are wondering how the downturn will affect their neighborhoods: How much, if at all, will sale prices fall? Will the prices in my neighborhood drop more than in other neighborhoods? Should I be concerned about other negative trends, such as an increase in poverty or crime?

While there is no crystal ball to predict how bad this downturn will be or which neighborhoods will be hit hardest, history can provide some helpful context. In the past 34 years, New York City housing prices experienced two periods of rapid increase—1980–1989 and 1996–2006—and two periods of decline—1974–1980 and 1989–1996.[1] Fortunately, both booms were substantial, and both busts, although difficult, were relatively small. Overall, prices increased by 250% from 1974 to 2006.

This chapter explores these four periods of price appreciation and decline, using the Furman Center's Index of Housing Price Appreciation and other data, to identify persistent trends and useful lessons.[2] The chapter is divided into three parts. The first describes each boom and bust, its impact on the City and boroughs, and the socioeconomic and demographic characteristics of the neighborhoods with the biggest price changes. The second looks at a variety of neighborhood characteristics and attempts to identify which, if any, are useful predictors of how a neighborhood will fare in an upturn or downturn. Finally, to address questions about individual neighborhoods, we provide a detailed case study of one representative community from each borough. These case studies follow the neighborhoods from 1970 to 2006 and describe not only housing sale price trends but also changes in other economic, social and environmental characteristics.

---

[1] According to the Furman Center's Index of Housing Price Appreciation, derived from sales data collected by the New York City Department of Finance, 1974–2006.

[2] For more information on the Index of Housing Price Appreciation, see the Indicator Definitions and Rankings section. The index shows a decrease in housing sale prices from 2006 to 2007 for single family and 2–4 family buildings in New York City.

Figure 1: Index of Housing Price Appreciation in New York City (1974–2006)
Index=100 in 1989
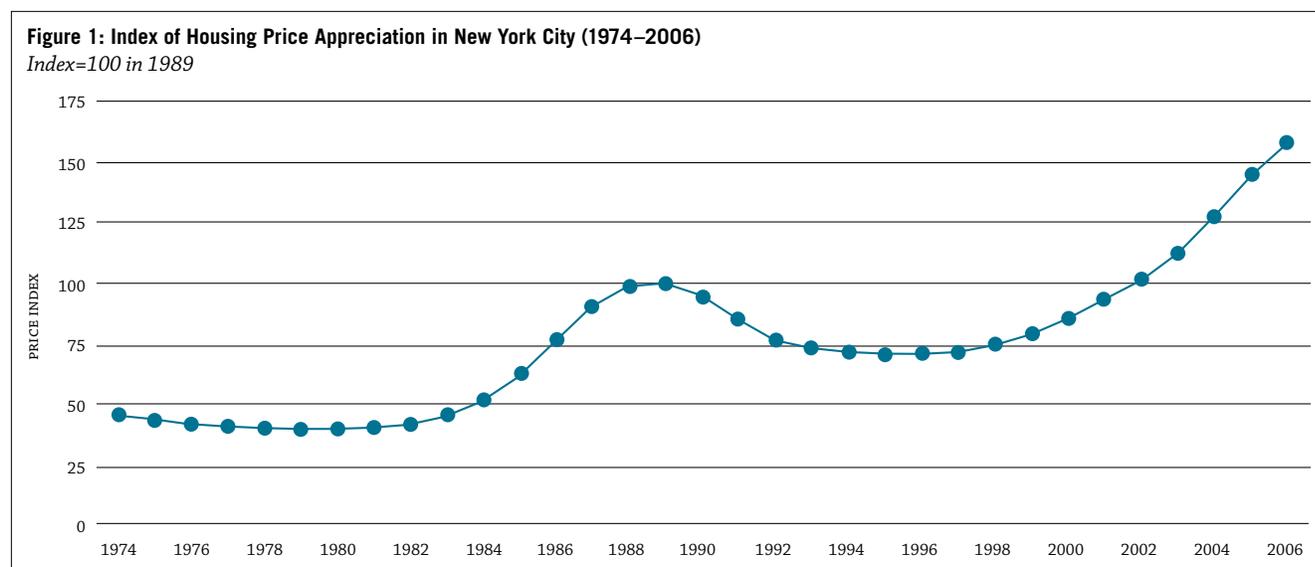
Source: New York City Department of Finance, Furman Center

BOOMS AND BUSTS—
NEW YORK CITY FROM 1974 TO 2006

In the 1970s, New York City was devastated by national and municipal economic crises. Rising crime, unemployment and poverty rates, coupled with a lack of social services, made many neighborhoods inhospitable.[3] The City's population declined by more than 800,000 people, and many disadvantaged neighborhoods were littered with abandoned buildings. Between 1974, the first year for which we have sales price data, and 1980, housing sale prices declined by 12.4% citywide. After at least six years of decline, housing sale prices across the City soared from 1980 to 1989, increasing by 152%.[4] Prices in 18 neighborhoods increased by more than 200%, and only one neighborhood saw prices grow by less than 100%. This boom ended as the nation entered a recession in 1989.[5]

From 1989 to 1996, prices dropped by 29.3%. In contrast, during this period housing prices remained quite flat in the ten largest metro areas, declining only 4%.[6] In 1996, the City entered the decade-long boom that only just ended. Sale prices increased in every neighborhood, and the average price increase for the City was 124.2%. Construction exploded (new building permits quadrupled between 1996 and 2006, see **FIGURE 2**) and the City's population grew significantly.[7]

While the City's latest upturn was large, the boom was even more pronounced nationwide; prices increased 189% in the ten metro areas (including New York City)

Figure 2: Units Authorized by New Residential Building Permits
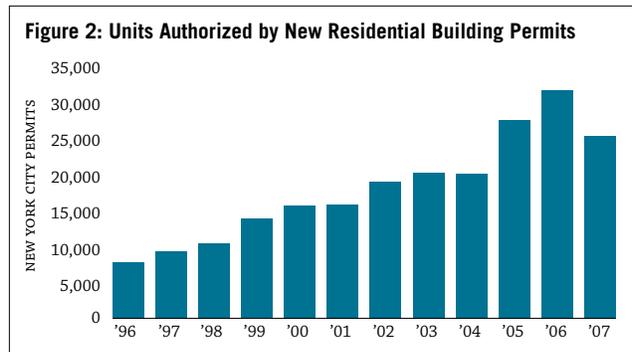
covered by the Case-Shiller Composite of 10 Price Index. **FIGURE 3** compares the housing price trends of these ten metro areas to New York City.

The City government reacted to the changing economic landscape with City investment programs. In the 1970s, as vacant buildings and tax foreclosures increased, the New York City Department of Housing Preservation and Development became the second largest landlord in the City. By 1979, the City had taken over ownership of 100,000 residential units. Ultimately, the City undertook a massive program of affordable housing renovation, rehabilitation and new construction. The program began in 1985 with the launch of the Five-Year Plan, which was quickly extended and renamed the Ten-Year Plan. Funds were concentrated in the South Bronx and Upper Manhattan—some of the most distressed areas in the City. By the end of the 1990s downturn, most City-owned buildings had been rehabilitated and most vacant land was

Figure 3: Index of Housing Price Appreciation (1974–2006)
Index=100 in 1989 — New York City Index   — U.S. Composite of 10 Metro Areas Index
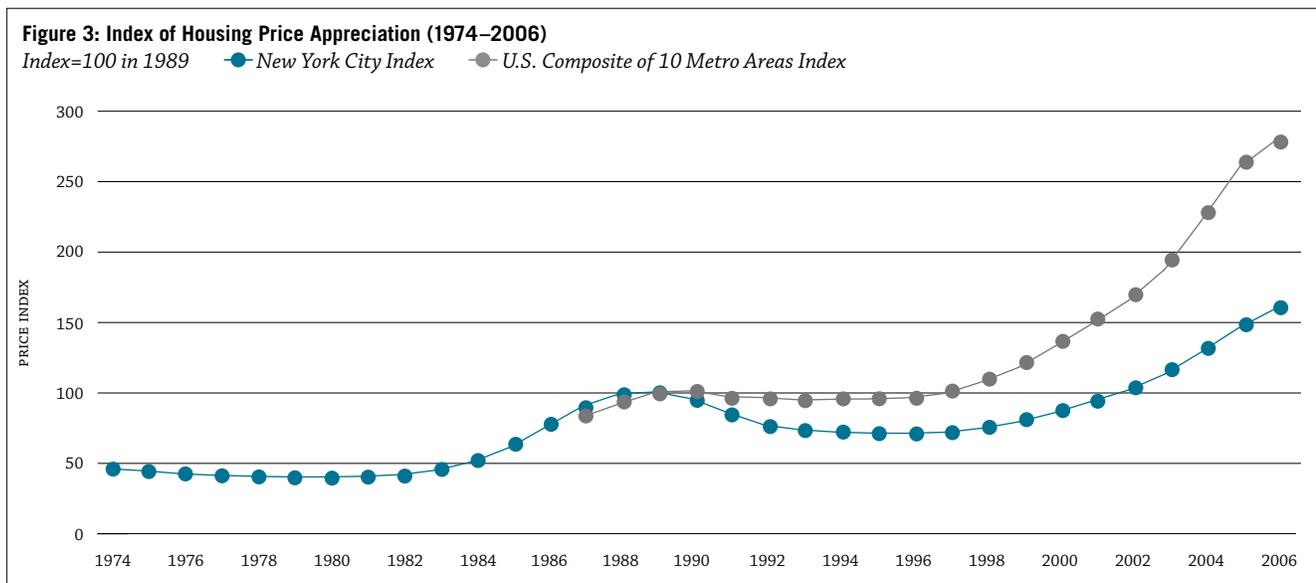
Source: New York City Department of Finance, Case-Shiller Composite of 10 Price Index, Furman Center

in development. As the Ten-Year Plan wound down, the City's housing stock was in much better shape: 34,000 new affordable units had been built, 49,000 affordable units were rehabilitated, and 125,000 units had received renovation subsidies. In 2003, in response to continuing affordability pressures, the City launched a new affordable housing initiative, the *New Housing Marketplace Plan*.[8]

HOW DID THE DIFFERENT BOROUGHS AND NEIGHBORHOODS FARE IN BOOMS AND BUSTS?

New York is a city of diverse neighborhoods; looking solely at citywide trends masks significant variation. What follows is a more detailed examination of how different parts of the City fared in each boom and bust, including analysis of the ten neighborhoods with the greatest sale price increases and decreases in each upturn and downturn; the tables list five from each group.

[3] Van Ryzin and Genn (1999).

[4] Because our data begins in 1974, we do not know the exact length of the first bust but estimate that it lasted from 1974 to 1980.

[5] Glaeser et al. (2008). National Bureau of Economic Research (NBER) shows that the U.S. was in recession by 1990. For more see: http://www.nber.org/cycles.html.

[6] National data on housing begins in 1987. S&P/Case-Shiller (2008). This data is not directly comparable to our index because of differences in methodology.

[7] For more information about units authorized by new residential building permits see the Indicator Definitions and Rankings section.

[8] The Ten-Year Plan resulted in investments topping $5 billion in housing. Ellen et al. (2003). Van Ryzin and Genn (1999). See NYC Department of Housing Preservation and Development (2006).

[9] CD and neighborhood are used interchangeably throughout this chapter. Individual neighborhoods experienced different peak years. The Furman Center treats with caution CDs with fewer than 1,000 repeat sales since 1974.

[10] For instance, in Mott Haven/Melrose, Hunts Point/Longwood, Morrisania/Crotona and Highbridge/Concourse, owner-occupied units fell from an average of 30% of the stock to less than 5% from 1970 to 1980. The percentage remained in single digits until 2006.

[11] The Furman Center has previously used the housing sale price index to explore the effects of supportive housing, community gardens and a variety of other investments on neighborhoods. See. e.g., Been et al. (2008); Voicu and Been (2008); Ellen and Voicu (2006).

[12] The Neighborhood Change Database, created by the Urban Institute and Geolytics, reports census tract level data from the long form of each Decennial Census between 1970 and 2000 with tract boundaries normalized to 2000. For more information see http://www2.urban.org/nnip/ncua/ncdb.html.

[13] There are some restrictions in comparing across datasets (outlined in Methods). For example, racial comparisons are not advised between 1970 and later years because racial definitions have changed.

OUR DATA

Our analysis is based on the Index of Housing Price Appreciation, a "repeat sales index" the Furman Center constructs using data on property sales provided by the New York City Department of Finance. This inflation-adjusted index is based on average price changes in individual properties sold multiple times between 1974 and 2007. This method provides a more accurate picture of price changes than simply looking at changes in the median or average price of all sales each year because it controls for differences in the underlying characteristics of the properties that sell in any given year. The index includes almost a quarter of a million pairs of sales throughout the City. However, in the context of this chapter, it is important to remember that the number of repeat sales in some community districts (CDs) is relatively small.[9] Sales volumes are particularly low in Upper Manhattan and the South Bronx, where the vast majority of residents are renters.[10]

In this chapter, to increase the volume of sales under investigation, we pooled data for repeat sales of single family, two to four family buildings, five or more family buildings, and condominiums (co-ops are excluded). After 1974, we report data in a rolling two-year average to smooth out variations that may be due to small numbers of sales in some years. For example, the 1980 figure is the average of sales data from 1980 and 1979. In some CDs this may mask variations in house prices between the start and end of each period.

The repeat sales index is an excellent indicator of changes in neighborhood quality.[11] As a neighborhood improves, it becomes more attractive to renters, buyers and landlords, which causes housing sale prices to rise. However, understanding the other neighborhood changes that accompany price trends is also a key part of understanding the impact of these housing cycles. Therefore, in addition to our repeat sales index, we investigate changes in neighborhood characteristics and demographic patterns, using data from the Neighborhood Change Database[12] and the American Community Survey.[13]

The 1970s Downturn

During the 1970s downturn, prices fell by 12.4% city-wide. As shown in Figure 4, prices in all boroughs except Manhattan declined.

The Bronx

- In the South Bronx, homes lost between a quarter and a third of their value.
- Prices in the northern Bronx also fell, but saw a more modest decline of 3–13%.

Brooklyn

- Every neighborhood in Brooklyn, except Fort Greene/Brooklyn Heights and Park Slope/Carroll Gardens, saw price declines.

Manhattan

- Manhattan survived this downturn largely unscathed, with an average price increase of 28.6%.[14]
- The Lower East Side/Chinatown was a notable exception to Manhattan's price appreciation, and is detailed in case study 3.

Queens

- Houses in Rego Park/Forest Hills maintained value, but home prices in all other neighborhoods dropped, with most decreasing 10–20%.
- Ozone Park/Howard Beach (highlighted in case study 4) saw the biggest drop in value—19.4%.

Staten Island

- Prices in St. George/Stapelton fell by 14%, compared with modest 1–5% declines throughout the rest of the borough.

Tables 1 and 2 highlight the five neighborhoods that had the greatest declines in housing sale prices and the five neighborhoods that had the greatest increases in housing sale prices during this period.

There are several notable features of the neighborhoods whose sale prices fared best and worst during this time period. The neighborhoods with the largest decreases had high rates of poverty, low mean incomes and low educational attainment.[15] The neighborhoods that saw price increases were mostly in Manhattan. They had relatively high mean incomes, more educated residents and large white populations. In both groups, a neighborhood's performance during this downturn was a poor predictor of its performance in subsequent booms and busts. The worst performing neighborhoods,

Figure 4: Percent Change in Housing Prices (1974–1980)

NEW YORK CITY -12%
THE BRONX -16%
MANHATTAN +29%
QUEENS -14%
BROOKLYN -13%
STATEN ISLAND -8%
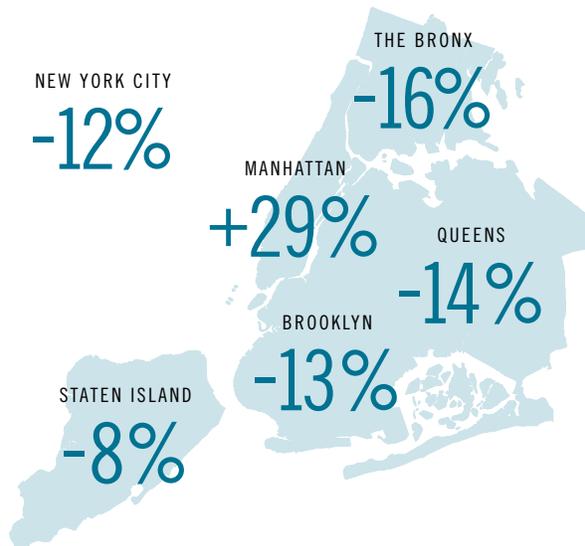
Table 1: Neighborhoods with the Largest Decreases in Sale Prices (1974–1980)

CD	Neighborhood	% Decline
104	Highbridge/Concourse (BX)	-29.6%
303	Lower East Side/Chinatown (MN)	-28.5%
105	Fordham/University Heights (BX)	-28.3%
208	Crown Heights/Prospect Heights (BK)	-27.1%
107	Kingsbridge Heights/Bedford (BX)	-26.6%

Table 2: Neighborhoods with the Largest Increases in Sale Prices (1974–1980)

CD	Neighborhood	% Increase
308	Upper East Side (MN)	59.8%
305	Midtown (MN)	41.8%
302	Greenwich Village/Soho (MN)	33.6%
307	Upper West Side (MN)	26.7%
306	Stuyvesant Town/Turtle Bay (MN)	26.5%

rather than continuing to fall behind, tended to follow the City average in later decades. With the exception of the two Brooklyn neighborhoods, the neighborhoods that did relatively well in this downturn did not see housing prices grow faster than the City average in subsequent decades.

[14] The Financial District and Central Harlem are omitted from analysis for this period due to a lack of complete data.

[15] In these neighborhoods, the poverty rate was 21% (City rate: 14.7%); the mean income ranged from $5,893 to $11,504 (City: $10,351); and 31.4% of the population had a high school education (compared to 36.3% of the City's population). Only South Ozone Park/Howard Beach had an average household income that was higher than the City average.

1980–1989 Boom Times

The 1980s were a time of rapid price appreciation; prices increased by 152% citywide from 1980 to 1989, and all boroughs saw big gains.

The Bronx

- Those neighborhoods closest to Manhattan fared no better than those in the North Bronx.
- Only one neighborhood (Belmont/East Tremont) saw prices rise more than the City average.

Brooklyn

- Prices climbed considerably: half of the community districts in Brooklyn saw prices increase by more than 200%.
- Park Slope/Carroll Gardens, Fort Greene/Brooklyn Heights and Greenpoint/Williamsburg—the three areas neighboring Manhattan—fared exceptionally well.
- The eastern half of Brooklyn had smaller but still sizable increases, between 150 and 175%.

Manhattan

- Neighborhoods with higher initial home values enjoyed a smaller percentage increase than neighborhoods which started the decade with lower initial home values.[16]
- Upper Manhattan neighborhoods experienced significant price increases.

Queens

- Prices increased at a greater rate than the City average in the neighborhoods closest to Manhattan, while neighborhoods bordering Long Island saw smaller increases.[17]

Staten Island

- Home values increased by only 103–130%, less than the City average.

The characteristics of neighborhoods with the largest and smallest sale price increases in the 1980s were notably different from the characteristics associated with the largest and smallest decreases in the 1970s. In the housing bust of the 1970s, the neighborhoods with the largest decreases tended to have high poverty rates, low mean incomes, and few white residents. In contrast, in the boom years of the 1980s, the neighborhoods with the smallest sale price increases had higher mean incomes and a greater than average percentage of white residents. In addition, these neighborhoods (with the

exception of those in the Bronx) tended to have much higher home ownership rates than the City average.

The neighborhoods that experienced the biggest increases in the 1980s had larger Hispanic populations, higher poverty rates, fewer home-owning residents, and lower mean household incomes than the City as a whole.

Figure 5: Percent Change in Housing Prices (1980–1989)

NEW YORK CITY **152%**

THE BRONX **149%**

MANHATTAN **155%**

QUEENS **154%**

BROOKLYN **180%**

STATEN ISLAND **114%**
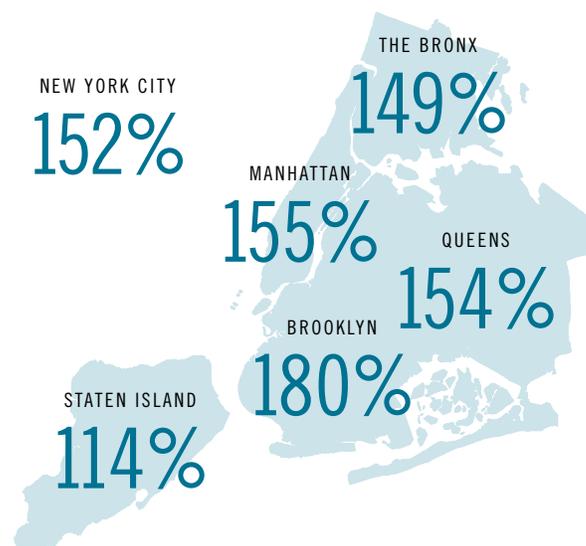
Table 3: Neighborhoods with the Largest Increases in Sale Prices (1980–1989)

CD	Neighborhood	% Increase
311	East Harlem (MN)	354.5%
206	Park Slope/Carroll Gardens (BK)	299.7%
207	Sunset Park (BK)	265.4%
303	Lower East Side/Chinatown (MN)	262.2%
202	Fort Greene/Brooklyn Heights (BK)	257.6%

Table 4: Neighborhoods with the Smallest Increases in Sale Prices (1980–1989)

CD	Neighborhood	% Increase
305	Midtown (MN)	43.3%
502	South Beach/Willowbrook (SI)	102.8%
503	Tottenville/Great Kills (SI)	106.5%
102	Hunts Point/Longwood (BX)	108.6%
103	Morrisania/Crotona (BX)	108.7%

[16] For example, Greenwich Village/Soho, Stuyvesant Town/Turtle Bay, Upper East Side, and Upper West Side saw more modest increases than neighborhoods like Morningside/Hamilton Heights, Central and East Harlem and Washington Heights/Inwood.

[17] The neighborhoods with larger increases were: Astoria, Woodside/Sunnyside, Jackson Heights, Elmhurst/Corona and Kew Gardens/Woodhaven.

1989–1996 Downturn

Along with the rest of the country, New York entered a downturn at the end of the 1980s. Citywide, prices fell by nearly 30%, more than twice the drop witnessed between 1974 and 1980, and even in Manhattan prices fell significantly. There was less variation in price declines across neighborhoods during this downturn than there was during the 1974 to 1980 downturn, and the differences that did exist are harder to explain.

The Bronx and Brooklyn

- Unlike in the 1970s, some of the poorest neighborhoods in the Bronx and Brooklyn fared relatively well. In fact, prices actually rose in three neighborhoods in the Bronx and two in Brooklyn.
- On the whole, Brooklyn saw average price declines (prices in eleven Brooklyn neighborhoods dropped 27–29%).

Manhattan

- Prices in Upper Manhattan experienced the sharpest declines in the borough.[18]

Queens

- While Queens was home to four of the ten worst performing neighborhoods, the borough's average price decline was in line with the City's.

Staten Island

- Prices in Staten Island suffered the biggest price decline of any borough during the period, with prices in all three of its community districts falling by over 30%.

The neighborhoods that bore the brunt of the 1990s downturn tended to have larger Hispanic populations than the City average. Poverty and educational attainment were in line with the City average, but mean income was lower than average. However, the neighborhoods that suffered the most during the 1990s downturn are remarkably diverse, and there is no clear common link to explain why this group had the largest sale price decreases.

Of the neighborhoods that avoided the worst of the downturn, some even saw price increases. They tended to have relatively large black and Hispanic populations, high poverty rates, low mean incomes, and smaller numbers of high school graduates.[19] Prices in these neighborhoods saw a big drop in the 1970s downturn and had below average increases in the 1980s and 2000s upturns. These trends may indicate emerging sale price stability in these neighborhoods. For greater detail see part two and the case study 1.

Figure 6: Percent Change in Housing Prices (1989–1996)

NEW YORK CITY **-29%**

THE BRONX **-31%**

MANHATTAN **-32%**

QUEENS **-29%**

BROOKLYN **-26%**

STATEN ISLAND **-33%**

Table 5: Neighborhoods with the Largest Decreases in Sale Prices (1989–1996)

CD	Neighborhood	% Decrease
109	Parkchester/Soundview (BX)	-45.4%
311	East Harlem (MN)	-43.1%
404	Elmhurst/Corona (QN)	-41.4%
312	Washington Heights /Inwood (MN)	-40.4%
304	Clinton/Chelsea (MN)	-40.0%

Table 6: Neighborhoods with the Largest Increases in Sale Prices (1989–1996)

CD	Neighborhood	% Change
103	Morrisania/Crotona (BX)	59.7%
102	Hunts Point/Longwood (BX)	18.3%
216	Brownsville (BK)	13.4%
101	Mott Haven/Melrose (BX)	5.1%
203	Bedford Stuyvesant (BK)	3.3%

[18] Only Greenwich Village/Soho, Upper West Side and Central Harlem fared better than citywide average.

[19] Mean household income in 1990 ranged from about $16,000 to 23,000 for these 10 neighborhoods. The City average was $41,741. Nine of the neighborhoods had more black residents than the City average while the seven neighborhoods that had more Hispanics than average were all majority Hispanic. Poverty was also typically twice the City average.

1996–2006 Boom Times

In the most recent boom, prices soared dramatically in the City, especially in Manhattan and in outer borough neighborhoods close to Manhattan. Citywide, prices rose by 124.2%.

The Bronx

- Prices in most of the Bronx increased relatively little, but once again, the "Manhattan effect" had some impact on prices in the South Bronx.[20]

Brooklyn

- Neighborhoods closest to Manhattan accounted for three of the ten neighborhoods with the largest increases, but most of Brooklyn experienced below average price appreciation.

Manhattan

- Upper Manhattan neighborhoods really stood out, with price increases from 270 to 500%.

Queens

- Areas close to Manhattan (Astoria, Woodside/Sunnyside) did better (135–150%).

Staten Island

- Of the five boroughs, prices increased the least in Staten Island; two of its three neighborhoods were among the ten lowest increase areas.

As in the previous upturn, the ten neighborhoods with the smallest increases in the 2000s were solidly middle class with relatively low crime and high levels of educational attainment.[21] In 2000, median house prices in these neighborhoods were 12% below the City median, and remained low through 2006. In 2006, foreclosure and subprime rates were both larger than the City average.[22]

The neighborhoods with the largest price increases, on the other hand, were a more diverse group, including largely immigrant neighborhoods such as Greenpoint/ Williamsburg and the Lower East Side/Chinatown, high-poverty neighborhoods in Upper Manhattan like Central and East Harlem, and some more affluent neighborhoods such as Greenwich Village. However, these neighborhoods did share one significant characteristic: eight of the ten were also among the neighborhoods with the largest price increases in the boom of the 1980s.

Figure 7: Percent Change in Housing Prices (1996–2006)

NEW YORK CITY
124%

THE BRONX
104%

MANHATTAN
185%

QUEENS
115%

BROOKLYN
130%

STATEN ISLAND
99%
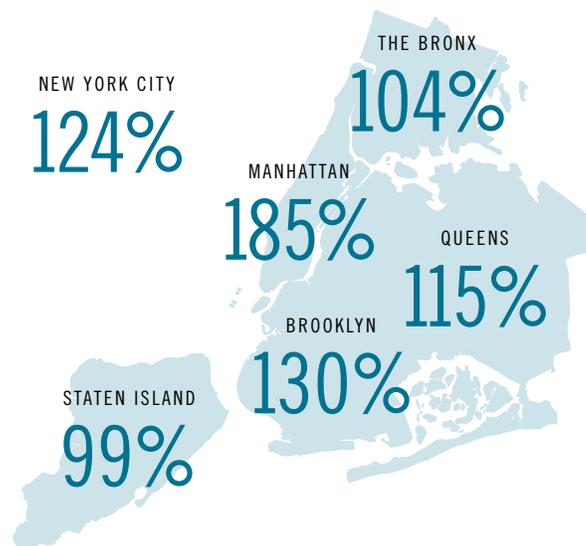
Table 7: Neighborhoods with the Largest Increases in Sale Prices (1996–2006)

CD	Neighborhood	% Increase
311	East Harlem (MN)	499.6%
309	Morningside/Hamilton Heights (MN)	398.7%
312	Washington Heights/Inwood (MN)	333.4%
310	Central Harlem (MN)	270.2%
202	Fort Greene/Brooklyn Heights (BK)	261.5%

Table 8: Neighborhoods with the Smallest Increases in Sale Prices (1996–2006)

CD	Neighborhood	% Increase
112	Williamsbridge/Baychester (BX)	83.1%
103	Morrisania/Crotona (BX)	90.5%
218	Flatlands/Canarsie (BK)	91.2%
503	Tottenville/Great Kills (SI)	94.9%
111	Morris Park/Bronxdale (BX)	97.4%

[20] Neighborhoods bordering Manhattan tended to perform better than the City average.

[21] Morrisania/Crotona, a high-poverty area, was an exception.

[22] The foreclosure rate (defined as number of properties per 1000 receiving a notice of foreclosure) for the ten neighborhoods with the smallest increases went from 75% of the average in 1990 to 110% in 2006; subprime mortgages as a percentage of the mortgage market rose from 93% of the City average in 1990 to 132% in 2006. In this chapter, "subprime" refers to loans originated by lenders who specialized in subprime lending as identified by HUD. In 2004, HMDA began identifying "high-cost" loans that had APRs higher than a benchmark treasury rate. While we use the high-cost definition throughout the rest of the book, we use the subprime definition for this chapter to make historical comparisons. Because of these differing methodologies, the subprime loan numbers in this section are not directly comparable to the high-cost loan numbers in the rest of the book. For more information, see the Indicator Definitions and Rankings and Methods sections of this book.

WHAT DO WE KNOW ABOUT THE RELATIONSHIP BETWEEN NEIGHBORHOOD CHARACTERISTICS AND NEIGHBORHOOD PRICE TRENDS?

In this section, we investigate a variety of neighborhood characteristics and explore which, if any, are good predictors of how a neighborhood will fare in different markets. We start by evaluating whether a neighborhood's housing sale price performance in previous upturns and downturns predicts how it will perform in future booms and busts. In other words, we ask: if a neighborhood fared well in past downturns, is it more likely to do well in future downturns? Next, we look at whether and how a neighborhood's socioeconomic characteristics affect the price trends in upturns and downturns. Here, we use income as a proxy for the socioeconomic characteristics of a neighborhood because income is closely related to educational attainment and poverty. We evaluate whether wealthy neighborhoods are more or less likely to be insulated from downturns, and whether poor neighborhoods are more or less likely to see big increases in upturns. Finally, and potentially most importantly for policymakers, we explore the association between the City's investments in affordable housing and neighborhood price appreciation.

Can we predict future sales price performance based on past performance?

The short answer is no, if one is trying to predict performance in a downturn. Neighborhood performance in the downturn of the 1970s and in the upturn of the 1980s were both poor predictors of how a neighborhood fared in the 1990s downturn. In other words, prior price trends had little bearing on how neighborhoods fared in the later downturn. Thus, as enticing as it might be, policymakers and those interested in forecasting how the current downturn will impact New York's neighborhoods should not simply turn to prior price trends.

FIGURE 8 shows, however, that there does appear to be a relationship between performance in prior upturns and performance in future upturns. Neighborhoods that saw strong price appreciation in the 1980s also were more likely to see strong price appreciation in the 2000s.[23] The opposite is also true; neighborhoods with

weak performance in the 1980s were more likely to experience weak performance in the 2000s. This implies that sales trends in the upturns were not independent of each other and that neighborhood characteristics may have exerted some influence on sale prices.

Figure 8: Relationship between Neighborhood Price Appreciation of the Booms of the 1980s and the 2000s
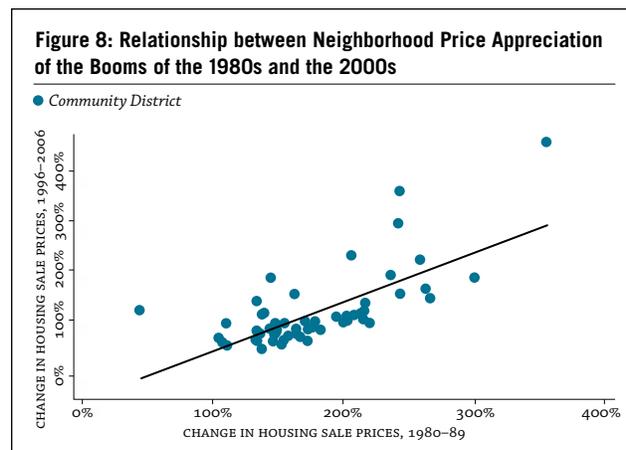
How do socioeconomic characteristics affect neighborhood price trends?

One might expect to find a relationship between the socioeconomic characteristics of a neighborhood and its sale price changes in boom and bust cycles.[24] To test this relationship, we examined the link between a neighborhood's mean income at the start of a boom or bust and the percent increase or decrease in housing sale prices for that neighborhood for each decade.[25] Mean income is highly correlated with other socioeconomic characteristics such as education, poverty rates, and unemployment rates.[26] We found that in the 1970s neighborhoods with higher average household income tended to experience smaller than average declines in house prices in the 1974–1980 downturn.[27] In the boom of the 1980s and the bust of the early 1990s, richer community districts were less likely than other districts to experience dramatic price increases in the 1980s and were more likely than other districts to see big price drops in the downturn of 1989–1996.[28] Prices in poorer community districts were more likely to have greater increases in the boom of the 1980s and smaller drops in the early 90s downturn. In the most recent upturn (1996–2006), we found no correlation between neighborhood income and price appreciation, suggesting that this latest boom was more widespread than previous price swings had been.[29]

Other researchers have explored the relationship between neighborhood income and housing price changes in other major U.S. cities. For example, as in New York, in the 1980s upturn, poorer neighborhoods in Boston and Chicago experienced greater price increases than richer neighborhoods. However, unlike in New York, poorer neighborhoods in Boston were more likely to see steep declines in the downturn of the 1990s.[30]

Given that the relationship between the income of a neighborhood's residents and the sales price performance is different for each upturn and downturn, and for other large cities, we must conclude that household income is a poor predictor of future neighborhood price trends.

Is City investment associated with neighborhood price trends?

We analyze the relationship between public investment in a neighborhood's housing stock and the neighborhood's price trends by comparing City investment with neighborhood price appreciation in the 1989–1996 downturn and the 1996–2006 upturn.

We find that City investment was strongly correlated with smaller price declines in the 1990s downturn, and less strongly, but still positively, correlated with larger increases in the 2000s upturn. In fact, City investment was more closely related to smaller housing price declines than any other neighborhood characteristic we studied.[31]

Our analysis does not allow us to make a causal connection between City investment and protection from downturns (i.e. we cannot prove that it was the public investment in housing stock that insulated these communities from larger price declines), but it is still worth noting—and should be of interest to policymakers as we begin another downturn—that areas which received greater City investment were less likely to experience price declines in the last downturn. From 1989 to 1996, homes in five otherwise depressed neighborhoods gained value as housing prices plummeted around them. All ten neighborhoods that avoided the worst of the downturn of the early 1990s received well above aver-

Figure 9: Correlation between City Investment Rates and Price Appreciation 1989–1996[32]

● *Community District*

CHANGE IN HOUSING SALE PRICES, 1989–96
ANNUAL CITY CAPITAL INVESTMENT 1987–96 (% OF EXISTING UNITS)
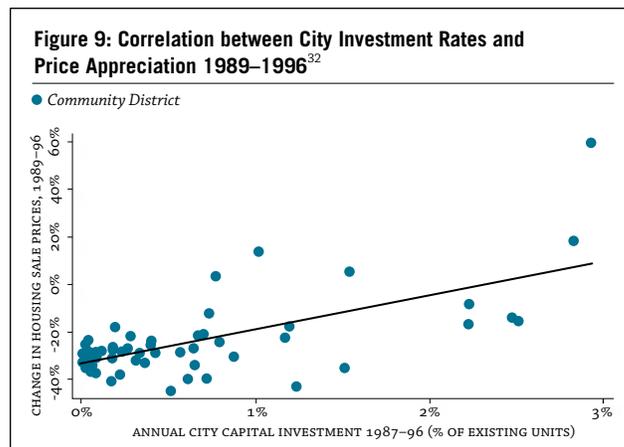
[23] The correlation (R) between these two variables is .70. Correlations range from -1.0 to 1.0. A correlation of 1.0 indicates a perfect and positive relationship between variables. This means that low values of one are perfectly related to low values of the other. A correlation of -1.0 indicates a perfect but negative relationship. This means that low values of one are related to high values of the other. A correlation of 0 indicates no relationship between variables.

[24] However, there does not appear to be a consistent trend in other major U.S. cities. Case and Marynchenko, (2002).

[25] Alternatively, we could test the link between median sale price and appreciation. However, due to the wide variety of housing types within and across CDs, it is difficult to find a meaningful measure.

[26] Correlations between housing sale price changes from 1974 to 1980 and: mean household income 1970/80: R=.48/ R=.53 (significant at 5% level); no high school 1970/1980: R=-.47/ R=-.51; bachelor's degree 1980: R= .74 (correlation in 1970 was not significant). Neighborhoods with more Hispanic residents were more likely to outperform the City. Correlation between housing sales changes 1980s/1990s/2000s and: percentage non-Hispanic white in 1980: R= -.26/R= -.49/R= -.31; percentage Hispanic in 1980: R= .29/ R= .30/R= .33.

[27] The correlation between housing price performance and income was R=.48 suggesting a positive and relatively strong relationship between the two variables.

[28] The correlation between mean income (1980) and price changes (1980–89) was R=-.39. The relationship between mean income (1990) and price changes (1989–1996) was R= -.41.

[29] We also conducted an alternative analysis, using the mean income in 1970 throughout. This analysis is, unsurprisingly, similar to the above analysis using mean income in each decade because the relative mean incomes of the neighborhoods did not change significantly from 1970 to 2006. The only notable difference is for the most recent upturn. Mean income in 1970 was negatively correlated with housing sales changes from 1996 to 2006. Therefore, neighborhoods that were richer in 1970 were less likely to have large upturns from 1996 to 2006, and neighborhoods that were poorer in 1970 were more likely to have large upturns.

[30] Case and Marynchenko (2002). In Los Angeles, there was no discernable difference between price increases in poor and rich neighborhoods in the 1980s upturn (measured by median income per zip code). In the 1990s downturn, poor neighborhoods in L.A. performed best (like New York). Chicago housing prices remained stable in this period (data only extends to 1998).

[31] These included a variety of neighborhood characteristics: demographics (age and racial makeup), economics (such as unemployment and poverty rates), and others (household ownership and proximity to subways and parks).

[32] The correlation is: R=66, which indicates a strong and positive relationship between City capital investment and sale prices in this period.

age City investment.[35] In contrast, the ten neighborhoods that saw the biggest declines during this period received little or no City investment.[36] This relationship does not hold up for every neighborhood. For example, Morningside Heights/Hamilton Heights received as much City investment as those neighborhoods that were relatively sheltered from the downturn, but it still saw a huge drop in prices in the 1990s downturn. However, unlike the other neighborhoods in this high City investment group, price increases in Morningside/Hamilton Heights in the prior upturn in this community district were among the highest recorded in the City.[37]

Of course, it is possible that what we are measuring here is not the effect of City investment, but rather some other characteristic that neighborhoods which receive City investment all have in common, such as low initial housing prices. We know from previous research however, that public investment in neighborhoods can have strong positive impacts on surrounding properties, and those spillovers may have been part of what stabilized these neighborhoods.[38] Further, prices were not at rock bottom at the beginning of the 1990s downturn in these City investment neighborhoods—in the 1980s, prices in these neighborhoods had increased by over 100%.[39]

Despite their relative insulation from steep price declines, the neighborhoods which received City investment did not see significant improvements in other economic indicators (such as poverty, educational attainment and unemployment) compared to the rest of the City by 2000, and they tended to be the same neighborhoods that were hit hardest by the subprime mortgage and foreclosure crisis.[40] Thus, while investments in the housing stock may have played a role in stabilizing the value of the neighborhood's housing in the short term, it appears to have done little to improve the socioeconomic indicators of the neighborhood.[41]

As housing prices improved citywide in the boom years of 1996–2006, the City continued to invest in largely the same depressed neighborhoods as it had in the 1990s. The amount of City funding—and the number of units being built—was significantly lower in this period than in the 1990s.[42] The relationship between City investment and housing prices was also not as strong. In contrast to the downturn, prices in only two of the neighborhoods receiving the most assistance increased in value notably more than the City average.[43]

For policymakers, the fact that neighborhoods which received significant investment were relatively protected from the past downturn provides an interesting lesson. We do not know whether this relationship will hold up in this next downturn, but direct City investment may offer a powerful counterforce to the current downturn.

CONCLUSION

Reassuringly, despite past price volatility, the overall health of the City's real estate market remained strong over the past three decades, with the losses from the downturns representing only a fraction of gains from the upturns. While there is no crystal ball to predict how neighborhoods will respond to market forces, our analysis does identify a number of interesting patterns and trends. We found that past downturn price changes are not a reliable predictor of future changes, but great upturns generally signal that a neighborhood will do well again in the next boom.

We found a more complicated story when we evaluated how, if at all, neighborhood characteristics can help us understand how neighborhoods will fare in the future. We found that residing in a higher-income neighborhood provided no shelter from price falls and no guarantee of future gains. Instead, prices in higher-income neighborhoods tended to grow less than the City average in the 1980s upturn and fall further in the 1990s downturn; and in the most recent upturn, there was virtually no correlation between income and sales price performance. On the other hand, poorer neighborhoods that received large City investment in their housing prices fared much better in the 1990s downturn, with a number actually experiencing increases to the value of their housing stock during that time. These neighborhoods were generally protected from repeating the devastation of the 1970s downturn.

It also is heartening to note that even as housing sale prices declined, neighborhoods often still improved in other ways. For example, crime rates fell, while educational attainment shot up in many neighborhoods, and by 2006 these rates along with poverty and unemployment had improved in every borough.

Our retrospective of New York City housing trends ends in 2006 at the peak of the latest housing boom. A recession officially began across the country in December 2007, and the City and state are now facing daunting budget shortfalls. Although the housing crisis hit New York City after the rest of the country, the City has now likely entered its next downturn. Between 2006 and 2007, the number of foreclosure filings increased by 50%

across the City, with significant concentrations in some community districts.[44] Access to credit was also drastically cut, with financial institutions granting 14% fewer home purchase loans.[45] But while these times are hard, there is a note of optimism in our findings: past downturns in house prices have been modest in comparison to the upturns. Evidence suggests that hard won social and economic gains will not be easily given up.

[33] Schill et al. (2002). Van Ryzin and Genn (1999).

[34] Schill et al. (2002) similarly confine their analysis to housing units that received City funding.

[35] The seven neighborhoods with the most rehabilitation are: Mott Haven/Melrose, Hunts Point/Longwood, Morrisania/Crotona, Highbridge/Concourse, Fordham/University Heights, Belmont/East Tremont and Central Harlem. In each, 15–29% of units were rehabilitated (based on the total number of units in each district in 2000). The City average was 4.97% of units.

[36] See Figure 6.

[37] Morningside Heights/Hamilton Heights received City capital investment for 15% of units and had the seventh best rise in the 1980s of 242%. Three of the other highest rehabilitation neighborhoods (Hunts Point/Longwood, Morrisania/Crotona, Highbridge/Concourse) were among the smallest gainers in the 1980s.

[38] Other researchers have found potential neighborhood spillover effects of direct rehabilitation that contributed to neighborhood regeneration. Specifically, Schill et al. (2002) found that prices of homes within 500 feet of revitalized units increased in value relative to those beyond 500 feet but still in the same neighborhood. In addition, we ran simple regressions to examine the relationship between City capital investment rates and housing price trends from 1989–1996 while controlling for other factors. These regressions indicated that City capital investment had a significant and positive relationship with sales price trends.

[39] Prices in these neighborhoods grew between 108% and 215% in the 1980s upturn.

[40] Foreclosure rates in the neighborhoods with high City investments increased to twice the City average in 2000 and three times average by 2006. Subprime mortgage rates in these neighborhoods increased in 2000 as the City average fell, and were typically twice the City average by 2006.

[41] Of course, it is possible that without the investments, the socioeconomic indicators of the neighborhood would have worsened. More research would be needed to show any causal link. For more information about fears of decreased affordability, see Van Ryzin and Genn (1999).

[42] From 1996 to 2006, the City average of rehabilitated or constructed units was only 2.33% compared to 4.97% in the 1990s. R= .33.

[43] The best performers were Central Harlem and East Harlem. Central Harlem topped the charts with 18% of its housing stock rehabilitated or constructed and a 270% jump in housing prices. The worst performer was Morrisania/Crotona.

[44] For more detailed information see the community districts pages.

[45] http://furmancenter.org/files/KeyFindingsfromHMDA2007FurmanCenterReport.pdf

CASE STUDY 1:
CD 103: Morrisania/Crotona, The Bronx

Price Appreciation 1974–2006	1974–1980	1980–1989	1989–1996	1996–2006	1974–2006
CD 103	+21.3%	+108.7%	+59.7%	+90.5%	+670.2%
City	-12.4%	+152.2%	-29.3%	+124.2%	+250.3%

Morrisania/Crotona is a low-income neighborhood that bucked the boom and bust cycle to have four periods of consistent price growth. The neighborhood did not experience either bust—in the 1970s, prices increased 21% compared to a 12% citywide decrease, and in the 1990s, prices shot up 60% while they were falling almost everywhere else. Prices increased much less than the City average, however, during the booms; Morrisania had one of the smallest increases in the 1980s.

In 1970, Morrisania/Crotona was a racially diverse, almost exclusively American-born, high-poverty, low-education neighborhood with many children. Black and Hispanic residents shared the area with a small and decreasing white minority. Children accounted for a whopping 44% of the population.[46] Starting in the 80s, Morrisania gradually became more attractive to immigrants, while the black and white population and the proportion of children declined. By 2006, foreign-born residents made up close to a third of the population, and a majority of residents were Hispanic.[47]

After four periods of price upturns, Morrisania's affluence did not increase. Mean income was among the lowest in the City in 1970 and remained so in 2006, and fewer residents had a bachelor's degree here than in almost any other neighborhood in the City from 1970 to 2000. Between 2000 and 2006, the neighborhood enjoyed some relief. Poverty and unemployment, while still high, decreased.[48] High school and college completion rates also improved: in 1970 only 24% of residents had completed high school, but by 2006 almost half of residents had done so.[49]

However, even these modest improvements may be undermined by trends in other areas. Foreclosure rates and subprime mortgage lending escalated from 1990 to 2006, and by 2006 subprime rates were double the City average.[50] At the end of the period, Morrisania/Crotona was a neighborhood defined by a still poor and young population, but it had become majority Hispanic with a growing proportion of immigrants.

Index of Housing Price Appreciation and Mean Income*
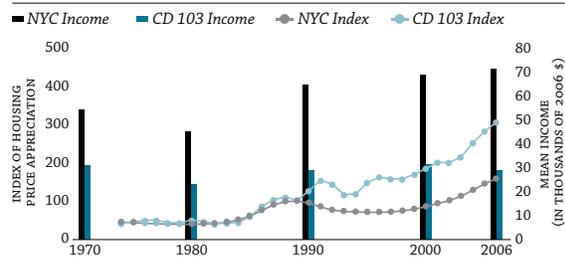
■ NYC Income ■ CD 103 Income ●— NYC Index ●— CD 103 Index

Index of Housing Price Appreciation and Educational Attainment

■ NYC Education ■ CD 103 Education ●— NYC Index ●— CD 103 Index

Index of Housing Price Appreciation and Poverty Rate

■ NYC Poverty ■ CD 103 Poverty ●— NYC Index ●— CD 103 Index
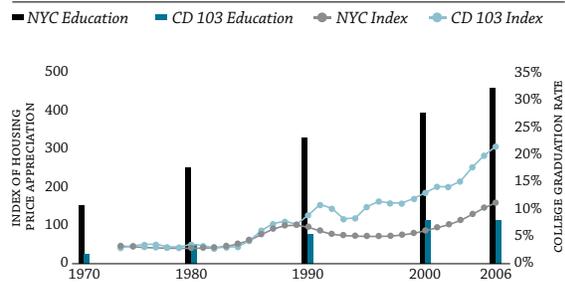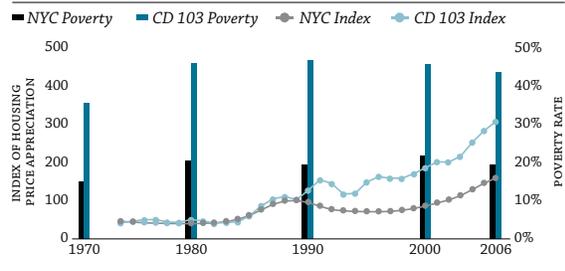
[46] Percentage of population that were children: 1970: 44%; 2000: 35%.

[47] Non-Hispanic white population fell from 12% in 1980 to 5.5% in 2000. Immigrant population, however, remained below the City average: 1970: 8.9% compared to 18%, 2000: 21.5% compared to 35.8%. Black: 1980: 45%, 2006: 32.6%; Hispanic: 1980: 41.7%, 2006: 62.6%.

[48] Poverty 1970/1990/2006: 35%/46.6%/43.5%. Unemployment: 6.6%/19%/13%.

[49] High school diploma 2006: 49% compared to 46.7% City average.

[50] Foreclosure rates: 1990: 3.2/1000, 2000: 16.6/1000, 2006: 26.5/1000 properties. Subprime: 1990: 3.5%, 2000: 11%, 2006: 37% (compared to 9%, 3.9%, 17.6% respectively for the City).

* 2006 income data is not directly comparable to previous years.
For more information, please see the Methods chapter of this book.

CASE STUDY 2:
CD 201: Greenpoint/Williamsburg, Brooklyn

Price Appreciation 1974–2006	1974–1980	1980–1989	1989–1996	1996–2006	1974–2006
CD 201	-9.8%	+243.1%	-23.0%	+193.2%	+599.0%
City	-12.4%	+152.2%	-29.3%	+124.2%	+250.3%

Greenpoint/Williamsburg is an example of an increasingly well-off neighborhood that had large housing sale price increases. Prices spiked brilliantly in both upturns and did not drop as severely as in most neighborhoods during the 1970s or 1990s downturns.

Demographically, the neighborhood changed dramatically between 1970 and 2006. While Greenpoint/Williamsburg now has a reputation as a young hipster haven, in the 1970s the population was even younger, largely because children accounted for over a third of the population, while few residents were over 65.[51] By 2006, the share of children fell to 27% and that of seniors increased to 12.5%. Over time, these children and other residents were remarkably more likely to complete high school and college. In 1970, three quarters of the neighborhood adult residents had no high school diploma; by 2006, only a third did not. College graduates in the neighborhood jumped from a meager 2% in 1970, to 29.5% in 2006. In the 1990s, the number of felonies decreased, while foreclosures and subprime loan rates were low.[52]

Through 1990, poverty rates were similar to the City average but mean income was considerably lower.[53] However, as talk of gentrification increased in this neighborhood, the economics and demographics of the community shifted. Between 2000 and 2006, mean income improved and unemployment dropped.[54] Up through 2000, white residents were consistently about half the population and Hispanic residents a third. However, from 2000 to 2006 the white population jumped. Suddenly, two thirds of residents were white, while only slightly more than a quarter were Hispanic.[55] Immigrants followed a similar trend. From 1980 to 2000, foreign-born residents were more and more attracted to Greenpoint/Williamsburg, but by 2006 this popularity dropped off.[56]

Index of Housing Price Appreciation and Mean Income*
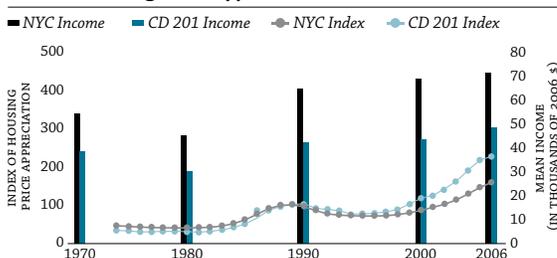
Index of Housing Price Appreciation and Educational Attainment
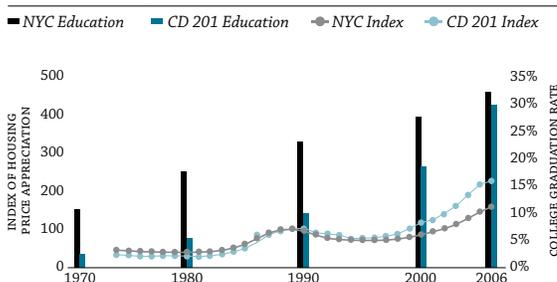
Index of Housing Price Appreciation and Poverty Rate
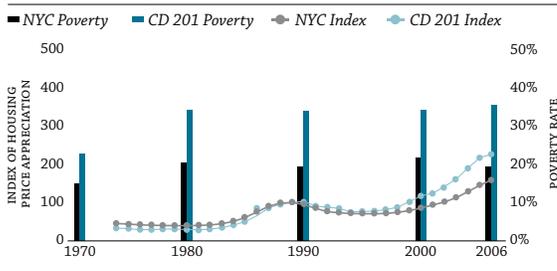
[51] Children as percent of population 1970: 35.3% compared to City average of 28.4%. In 2006, city average: 23.4%; borough average: 26%. Proportion over 65 1970: 8.6%.

[52] 1990–2006: Felonies per 1,000 residents: 68.5 to 29.7. Foreclosure rates: 6.1-4.7/1,000, subprime rate: 13% to 2.8%.

[53] After jumping in 1980, poverty remained around 33%.

[54] Unemployment 1970: 5.5%, 1980: 9.5%, 1990: 9.9%, 2000: 9.8%, 2006: 6.1%.

[55] White: 1980: 55%, 1990: 52%, 2000: 54%, 2006: 65%. Hispanic: 1980: 37.9%, 1990: 39%, 2000: 34.5%, 2006: 27%.

[56] Foreign-born share grew from 18% in 1970 to 34% in 2000. By 2006 it had fallen back to 29%.

* 2006 income data is not directly comparable to previous years.
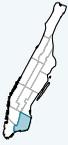
CASE STUDY 3:
CD 303: Lower East Side/Chinatown, Manhattan

Price Appreciation 1974–2006	1974–1980	1980–1989	1989–1996	1996–2006	1974–2006
CD 303	-28.5%	+262.2%	-31.0%	+203.4%	+442.2%
City	-12.4%	+152.2%	-29.3%	+124.2%	+250.3%

Today, Chinatown markets and hipster bars coexist in the diverse Lower East Side/Chinatown, but the neighborhood was not always so trendy. It was a poor area and experienced large swings in housing sale prices. Huge upturns were followed by major downturns.

In 1970, poverty and unemployment were high, and mean income and educational attainment were low.[57] But from 1970 to 2006, educational attainment rose consistently. Income rose from 1980 to 2006, and by 2006 it had increased substantially relative to the City.[58] For the first time since 1970, unemployment decreased between 2000 and 2006.

These improvements brought worries of gentrification.[59] In 1980, Asian, Hispanic, and white residents each accounted for approximately a third of the inhabitants, and the foreign-born population was larger than the City average. Since then, the Hispanic population decreased, bucking the citywide trend, and between 2000 and 2006 neither the population of foreign-born nor Asians increased.[60] Countering these decreases, the white population rose between 2000 and 2006, after two decades of decline.

Despite these demographic changes and economic improvements, in 2006 the Lower East Side/Chinatown retained its diverse character. The Asian population still made up a larger share of residents than the white population and the Hispanic population remained a significant minority.[61] Economically, the neighborhood was still less well off than the City average, residents without a high school diploma were numerous, and poverty, while falling, was still high.[62]

Index of Housing Price Appreciation and Mean Income*

NYC Income ■ CD 303 Income ■ NYC Index CD 303 Index

Index of Housing Price Appreciation and Educational Attainment

NYC Education ■ CD 303 Education ■ NYC Index CD 303 Index

Index of Housing Price Appreciation and Poverty Rate

NYC Poverty ■ CD 303 Poverty ■ NYC Index CD 303 Index

[57] The share of residents without a high school diploma was 25 percentage points higher than the City average, unemployment 33% higher, and income was only 65% of the average.

[58] Mean income jumped to 76% of the City average in 2000 and reached 81% in 2006.

[59] See, e.g., Martinez (2007).
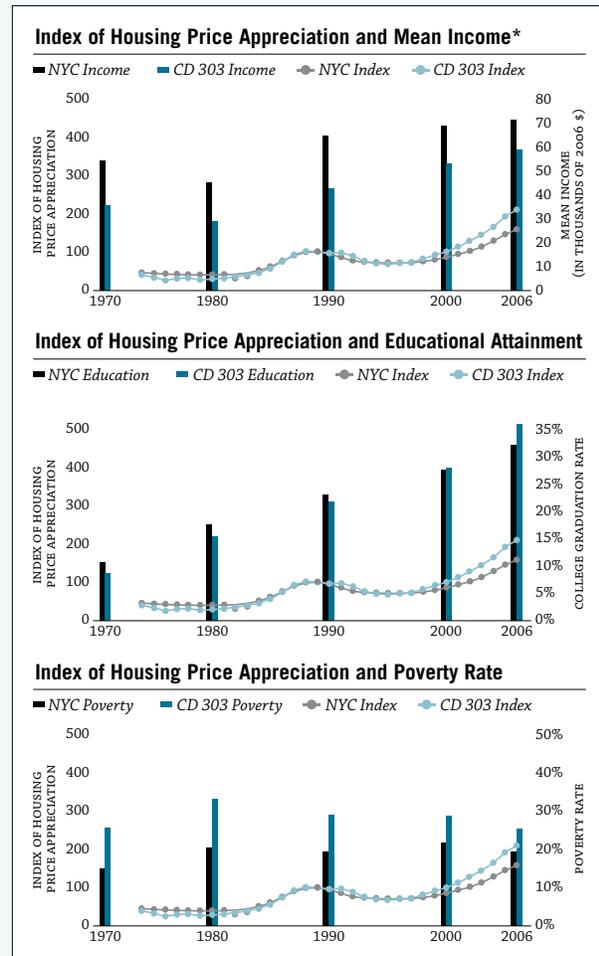
[60] 1980/2006 Hispanic population: 36.5%/22%. Immigrants: 1970/00/06: 24%/40%/39.3%. The gap in immigrant population between LES/Chinatown and the City has decreased from about 35% more than average in 1980 to only 6% in 2006.

[61] In 2006, population was 35.4% Asian, 33% non-Hispanic white, 22% Hispanic, and 10% black.

[62] Poverty rates were generally stable, but spiked in 1980 before gradually declining to 1970 levels again. 1970–2006: 25%/33%/29%/28%/25%.

* 2006 income data is not directly comparable to previous years.

CASE STUDY 4:
CD 410: South Ozone Park/Howard Beach, Queens

Price Appreciation 1974–2006	1974–1980	1980–1989	1989–1996	1996–2006	1974–2006
CD 410	-19.4%	+162.8%	-25.3%	+111.6%	+234.6%
City	-12.4%	+152.2%	-29.3%	+124.2%	+250.3%

South Ozone Park/Howard Beach is representative of the Queens experience demographically and economically. The 1970s downturn in housing sale prices was greater than the City average, but the 1980s upturn was above the City average. The second boom-bust cycle was harsher than the first. In the 1990s, the neighborhood experienced losses of 25%, a bit under the City average of 29%, and in the 2000s it gained only 111% compared to the City average of 124%.

Demographically, residents were generally white and middle income in 1970. But Ozone Park/Howard Beach dramatically illustrates New York City's increasing diversity: foreign-born, Hispanic, and Asian residents flocked to south Queens after 1970. This influx was so great that from 1970 to 2000, the share of foreign-born residents more than tripled, while the share of white residents fell by well over half.[63]

In 1970, residents here were likely to have completed high school (although not college) and enjoyed low rates of unemployment and poverty. The decade, however, was hard on the neighborhood: by 1980, poverty and unemployment, while still lower than the City average, were up and poverty rates continued to rise during the busts and fall during the booms. Despite this, many other characteristics of the neighborhood remained stable throughout. The majority of residents owned homes and cars, and the proportion of children was reliably representative of the City.[64]

There were some ominous signs for the neighborhood. By 2000, while this neighborhood was still middle class, mean household income fell behind the City average. Subprime mortgage lending saw a meteoric rise in the 2000s, and by 2006 the rate was almost twice the City average. The rate of foreclosure filings grew by 40% between 2000 and 2006.[65]

Index of Housing Price Appreciation and Mean Income*
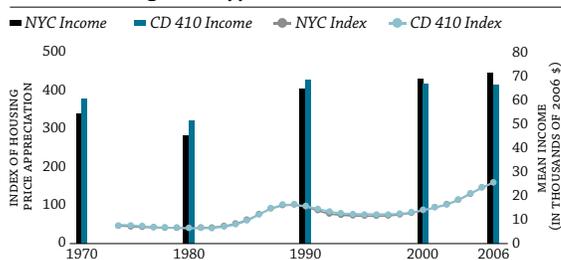
Legend: ■ NYC Income ■ CD 410 Income ● NYC Index ● CD 410 Index

Index of Housing Price Appreciation and Educational Attainment

Legend: ■ NYC Education ■ CD 410 Education ● NYC Index ● CD 410 Index

Index of Housing Price Appreciation and Poverty Rate

Legend: ■ NYC Poverty ■ CD 410 Poverty ● NYC Index ● CD 410 Index
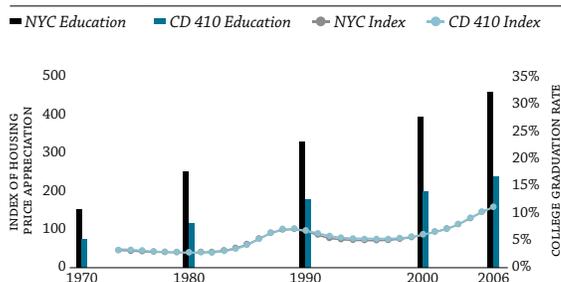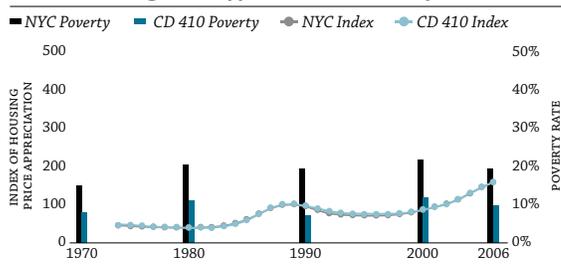
[63] The number of immigrants was below the City average in 1970 but above average by 2000. In contrast, non-Hispanic white residents decreased from nearly three quarters of the population in 1980 to 35% 2000.

[64] Homeownership fell from 69% in 1970 to 63% in 2000; percentage of households with no car: 1980/90/00: 25%/21%/24.4%.

[65] Foreclosure rate 00/06: 10.4/14.0 per 1,000 properties. Subprime rates 90/00/06: 10.7%/2.9%/34%.

* 2006 income data is not directly comparable to previous years.

Price Appreciation 1974–2006	1974–1980	1980–1989	1989–1996	1996–2006	1974–2006
CD 501	-14.2%	+133.4%	-32.7%	+98.5%	+167.8%
City	-12.4%	+152.2%	-29.3%	+124.2%	+250.3%

St. George/Stapleton is an example of a middle-class Staten Island neighborhood that experienced below-average housing price changes. Prices here decreased more than the City average in both downturns and failed to strongly recover in the 1980s upturn. From 1996 to 2006, housing sale prices increased only 99%, well below the City's average increase of 124%. By 2000, the median housing price for single-family homes lagged behind the City average for the first time.

The neighborhood also changed demographically. In 1970, St. George/Stapleton was a relatively well-off, family-friendly, home- and car-owning, majority-white neighborhood. However, poverty and unemployment rates increased from 1970 to 2000, and St. George/Stapleton was poorer compared to the rest of Staten Island from 1974–2006.[66] The number of families with children declined during the 1970s and 1980s, but increased during the 1990s, perhaps bolstered by citywide reductions in crime.[67]

By 2006, St. George/Stapleton, like the City as a whole, had become more demographically diverse. The share of immigrants, blacks and Hispanics increased, as the share of whites continued to decline.[68] In 2006, for the first time, the non-Hispanic white population was not a majority.

St. George/Stapleton was also hit by the subprime lending explosion. Rates of subprime loans soared above the rest of Staten Island and the City. Preliminary evidence shows that St. George/Stapleton also is bearing the brunt of the foreclosure crisis on Staten Island.[69]

Index of Housing Price Appreciation and Mean Income*
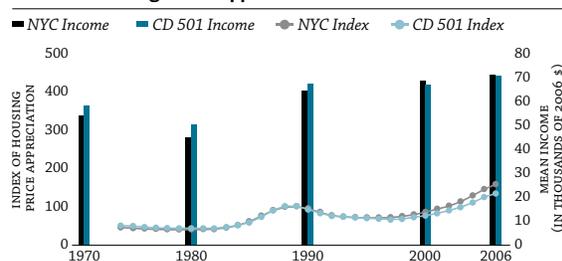
Legend: ■ NYC Income ■ CD 501 Income ●– NYC Index ●– CD 501 Index

Index of Housing Price Appreciation and Educational Attainment

Legend: ■ NYC Education ■ CD 501 Education ●– NYC Index ●– CD 501 Index

Index of Housing Price Appreciation and Poverty Rate

Legend: ■ NYC Poverty ■ CD 501 Poverty ●– NYC Index ●– CD 501 Index
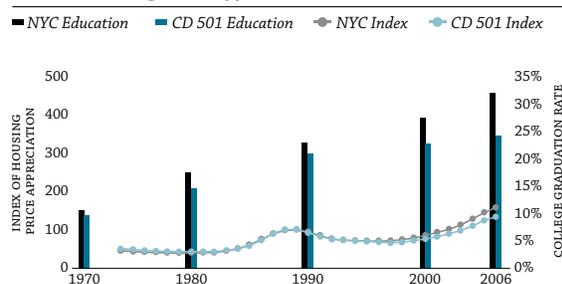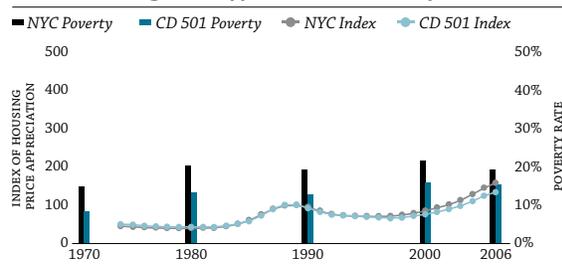
[66] Poverty rates increased from 7.9% in 1970 to 15.8% in 2000. Unemployment rates increased from 2.3% to 8.2% over that same period.

[67] The proportion of population that is under 18: 1970/80/90/00: 31%/28%/25%/27%. By 2006, the rate dropped to 25%. Felonies decreased from 60 per 1000 residents in 1990 to 24/1000 in 2000.

[68] 1980/2006 non-Hispanic white: 74%/42%; foreign-born: 11%/24%; black: 15%/23%; Hispanic: 8.3%/ 27.3%.

[69] The foreclosure rate was 13.0/1000 here compared to 8.4/1000 for the rest of the Island (City: 12.9/1000) in 2006.

REFERENCES

Been, V., Ellen, I.G., Gedal, M. and I. Voicu (2008) The Impact of Supportive Housing on Surrounding Neighborhoods: Evidence from New York City, Furman Center for Real Estate and Urban Policy Working Paper Series. Available at: http://furmancenter.org/files/FurmanCenterPolicyBriefonSupportiveHousing_LowRes.pdf.

Case, K.E. and M. Marynchenko (2002) Home Price Appreciation in Low- and Moderate-Income Markets *in* Retsinas, N.P. and E.S. Belsky (eds.) *Low Income Home Ownership: Examining the Unexamined Goal*, Joint Center for Housing Studies and Brookings Institute Press, Washington, D.C.

Ellen, I. G. and I. Voicu (2006) Nonprofit Housing and Neighborhood Spillovers. *Journal of Policy Analysis and Management*, Vol. 25, No. 1, 31–52.

Ellen, I.G., Schill, M.H., Schwartz, A. and I. Voicu (2003) Housing Production Subsidies and Neighborhood Revitalization: New York City's Ten-Year Capital Plan for Housing, *Federal Reserve Bank of New York Policy Review*, 1–84.

Galster, G. and P. Tatian (2006) *A Predictive Model of Neighborhood Gentrification for Washington, DC*, report to the Federal Reserve Bank of Richmond.

Glaeser, E.L., Gyourko, J. and A. Saiz (2008) Housing Supply and Housing Bubbles, *Journal of Urban Economics,* Vol. 64, No. 2: 198-217.

Martinez, M. (2007) *Gentrification, Cultural Capital, and Bounded Citizenship on New York's Lower East Side*, American Sociological Association.

NYC Department of Housing Preservation and Development (2006) *The New Housing Marketplace– Creating Housing for the Next Generation*.

S&P/Case-Shiller (2008) S&P/Case-Shiller Composite of 10 Home Price Index, Fiserv.Inc, available at http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices_csmahp/2,3,4,0,0,0,0,0,0,0,0,0,0,0,0,0,0.html.

Schill, M.H., Ellen, I.G., Schwartz, A. and I. Voicu (2002) Revitalizing Inner-City Neighborhoods: New York City's Ten-Year Plan, *Housing Policy and Debate*, Vol. 13, No. 3: 529-566.

Schwartz, A. (1999) New York City and Subsidized Housing: Impacts and Lessons of the City's $5 Billion Capital Budget Housing Plan, *Housing Policy Debate*, Vol. 10, No. 5: 839-876.

Van Ryzin, G.G. and A. Genn (1999) Neighborhood Change and the City of New York's Ten-Year Housing Plan, *Housing Policy Debate*, Vol. 10, No. 4: 799-838.

Voicu, I. and V. Been (2008) The Effect of Community Gardens on Neighboring Property Values. *Real Estate Economics*, Vol. 36, No. 2: 241-283. A working paper version is available at: http://furmancenter.org/files/The_Effect_of_Community_Gardens_combined.pdf.