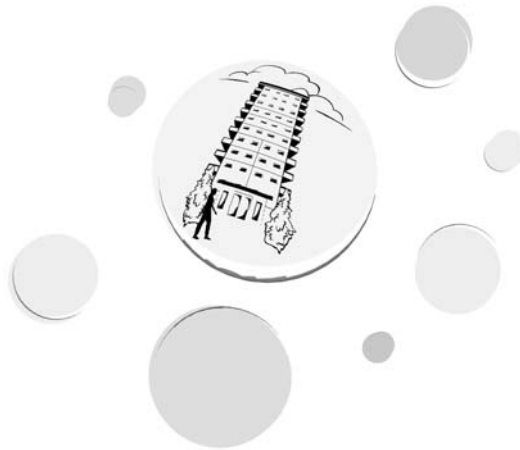


A Real Estate Bubble in the Bronx?

A Study of Trends in Bronx Multifamily Housing Pricing, 1985 to 2001

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Abstract: This preliminary study examines pricing trends in the Bronx multifamily housing market over the past 16 years. University Neighborhood Housing Program (UNHP), a nonprofit community housing organization, initiated this research project in order to assess whether rising prices for multifamily properties correlate to a fundamental rise in property values or indicate a more speculative form of market activity. The primary source of building sales data was obtained from First American Real Estate Solutions (formerly Experian). A regression analysis, controlling for a number of property and market factors including location, indicated a substantial increase in real per unit sales price since 1996, a finding that is confirmed by other recent research.

I. Speculative Bubbles: Is Housing Next?

Recent events in U.S. financial markets, particularly involving the information technology sector of the economy, have made the term “speculative bubble” a part of everyday parlance. Economists use this term to refer to the delinking of an asset’s earnings or profitability from its price. Matthew Higgins, Carol Osler and Anjali Sridhar note that in a speculative bubble “asset prices rise beyond levels consistent with economic fundamentals because of widespread expectations of further price rises.”² But this is no longer the technical language of professional economists alone. Consider what the general public has been grappling to understand, as they read reports about Wall Street and watch their shrinking retirement accounts, and it is clear that this is a concept whose time has come.

Public discussion of speculative bubbles is now spreading to the housing market. In August 2002 a New York City public radio station aired a program on speculative bubbles in the residential real estate market and addressed whether prices have

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² Matthew Higgins, Carol Osler and Anjali Sridhar, “Second District House Prices: Why So Weak in the 1990’s?” *Current Issues in Economics and Finance*, Vol.5, No.2, p.3.

outstripped value in the New York residential housing market.³ Citizens, public officials and housing policy analysts have good reason to heed with caution the financial turmoil in other sectors of the economy. Is housing next?

In a recent *New York Times* editorial, Stephen Roach, chief economist and director of global economics at Morgan Stanley, has argued that the “equity bubble helped create other bubbles—most notably in the housing market and in consumer spending” and that there is “good reason to believe that both property and consumer bubbles will burst in the not-so-distant future.”⁴

The question of whether rapidly escalating prices in housing markets such as New York City’s have been matched by corollary increases in value raises important questions about how to determine the value of housing. This research focuses on the multifamily housing market in the Bronx and examines both whether real per unit sales prices have increased and, if so, whether those price increases are supported by changes in fundamental value.

We find that, controlling for a number of property and market factors including location, real per unit sales prices for Bronx multifamily housing have risen substantially from 1996 to 2000. While prices decreased in 2001, they rebounded and surpassed the 2000 level in 2002 (based on data available as of December 2002). Available data on net income for Bronx multifamily properties does not match this rate of increase, raising questions about a possible mismatch between price and value in the Bronx market. Further, our research raises questions about how to analyze the relationship between price and value, and about how possible policy responses might appropriately mitigate some of the negative consequences of speculative investment practices in real estate markets.

Before further discussing the question of price, speculation and value, it is necessary to understand a bit about the importance of multifamily housing in the Bronx communities from which this research emerges.

II. A Speculative Bubble in the Bronx?

Since the fires of the early 1970s, the Bronx has served as a metaphor for the crisis of urban disinvestment but also—in the wake of the remarkable achievements of the 1980’s and 1990’s—a symbol for the promise of reinvestment and sustained community development. Paul Grogan and Tony Proscio have heralded the phenomena of “comeback cities,” of which the Bronx is one of their prime examples, as a model for sustainable community and economic development that harnesses the productive capacity of markets and private initiative for improving housing, education, community safety and employment opportunities in urban centers.⁵

One can consider these two visions of the Bronx and simply see the ebb and flow of the business cycle. But given the impact of policy decisions, both by private and public actors, on the decline as well as the recovery of a core group of Bronx

³ “Trapped in a Bubble,” The Brian Lehrer Show, WNYC, 8/7/02. The program included guests Edward Leamer, Director of UCLA Anderson Forecast, and David Berson, chief economist at Fannie Mae.

⁴ Stephen Roach, “The Cost of Bursting Bubbles,” *New York Times*, Section 4, p.13, September 22, 2002.

⁵ Paul Grogan and Tony Proscio, *Comeback Cities: A Blueprint for Urban Neighborhood Revival* (Westview Press, 2000).

neighborhoods, a more detailed analysis is required. The resurgence of a strong multifamily housing market in the Bronx over the past two decades affords an opportunity for further analysis into the financial processes that undergird, but can also undermine, stable and sustainable community development in an economically and socially diverse urban context.

The impetus for investigating recent developments in the Bronx housing market grows from a particular organizational vantage point. A dense network of nonprofit community-based organizations have been built in the Bronx over the past twenty-five years through the leadership and involvement of community residents in conjunction with community organizers, community development staff, and institutional partners, most notably: religious institutions, a local university (Fordham University), foundations, public agencies and financial institutions. One of these nonprofit organizations, University Neighborhood Housing Program (UNHP), functions to both create and preserve affordable housing in the northwest section of the Bronx. In advancing that mission, UNHP straddles both the world of day-to-day housing development and management, and the world of housing and urban policy. This research was sparked by a concern about how broader trends in the Bronx housing market might threaten the stability and affordability of local housing, and thus also the stability of our local communities.

Multifamily housing is part of the bedrock of community life in many neighborhoods in the Bronx. Thus, anecdotal accounts of sales prices for multifamily properties exceeding five times rent-roll triggered alarm. A startling question began to form: could the Bronx multifamily housing market be experiencing a wave of speculative investment?

The recent rapid escalation of real estate prices brings back memories of the inflated multifamily market of the late-1980s, when the Federal Home Loan Mortgage Corporation (Freddie Mac) was active in the Bronx market. Freddie Mac bought mortgages underwritten with inflated values. The dramatic increase in values at the time was driven by Freddie Mac's interest in fostering the secondary mortgage market in the Bronx, the demand for mortgage dollars, and insufficient knowledge of the local market. As a result, when the real estate market contracted in the early 1990s, the Bronx witnessed a large number of foreclosures on the Freddie Mac-financed properties. The property owners could not afford to both service their inflated debt and properly maintain the buildings. After a period of declining building services, owners often became delinquent in paying their mortgages.

The episode involving Freddie Mac foreclosures played out against the infamous backdrop of the earlier, and even more devastating, period of market instability in the 1970s. When the Bronx real estate market dropped in value throughout the 1970s, foreclosures, arson and abandonment were frequent responses to the growing mismatch between debt and value in Bronx multifamily properties.

These periods of instability in pricing and investment are in part evidence of the self-correcting capacity of markets and are typical of real estate cycles. But they can also be viewed through the prism of recent events in the financial markets and the resulting sensitivity to practices that contribute to the speculative pricing of assets. In this context, these recent trends in the Bronx housing market invite a certain degree of caution and reflection. Two concerns are foremost: the problem of speculation, whereby price

becomes disconnected from financial fundamentals, and the more internal problem of overfinancing or overleveraging in commercial housing.

Upon investigation, even if the escalating prices of Bronx multifamily housing over the past seven years turn out to be part of a normal, not deeply speculative, business cycle (i.e., changing prices as a measure of relative changes in supply and demand), housing, like many commodities or assets, has its own distinctive features which warrant consideration on a public policy level. Because multifamily housing functions not only as an investment vehicle but also as the physical foundation of community life, the vicissitudes of market value and profitability can profoundly destabilize already vulnerable neighborhoods: those with fragile real estate, rental housing and labor markets. As well, rising prices for commercial rental properties, even if they were solidly supported by rising values (which would include the expectation of increased rental income), create pressures that can further reduce the supply of affordable rental housing. Of the five New York City boroughs, the Bronx has the lowest per capita income.⁶ The demand for rental housing affordable to very low-income families far exceeds the available supply and Bronx families pay, on average, the highest percentage of their income on rent in the city.⁷ Current trends threaten to reduce the supply of affordable housing even further.

It is against the backdrop of the earlier periods of market instability in the Bronx, and with an awareness of the potentially negative consequences of such episodes on family and community life, that UNHP began investigating current pricing trends. From early efforts to overcome redlining by banks and insurance companies through successful collaborations with these institutions to promote and achieve reinvestment, UNHP has recognized the financial and economic processes that undergird stable and vibrant neighborhoods. Thus, advancing our social mission has required an understanding of and a capacity to interact with the market processes at work in the neighborhoods of the northwest Bronx. This perspective highlights both the value of vibrant markets as well as the need to promote the stability and sustainability of the market for affordable housing, which serves as a key component of the infrastructural bedrock of community life in the Bronx.

This modest research effort seeks to determine if cause for concern exists and to explore that question in collaboration with our partners in the financial, research, philanthropic, and nonprofit and for-profit real estate communities. UNHP views this project as an opportunity to promote conversation about and inquiry into possible policy responses that might help to stabilize vulnerable housing markets in the Bronx. While this research is particular to the Bronx housing market, it may prove useful and relevant to communities facing similar processes and challenges.

III. Examining Price and Value in Multifamily Housing: The Research Questions

This research seeks to assess two main questions. First, is there an observable increase in multifamily sales prices in the Bronx during recent years and how great is it?

⁶ See Chart 5, based on Regional Accounts Data of the U.S. Department of Commerce, Bureau of Economic Analysis.

⁷ See Chart 6, based on data provided by Citizens Housing and Planning Council.

Second, do factors influencing profitability (income and expenses) appear to support trends in pricing?

A standard assumption in any market analysis holds that rising prices reflect improving market conditions, that is, an attractive return on investment relative to other options. According to this view, rising prices reflect a growing demand for real estate as a desirable investment that will generate a competitive rate of return either at present or in the foreseeable future.

But this viewpoint assumes an adequate amount of information about market conditions at present and in the near future on the part of investors. It also assumes that investors are primarily concerned with determining the rate of return that a given property is expected to generate.

It is possible, however, that these assumptions may not be completely accurate or consistently operative. Concerning the completeness of information, investors may not adequately anticipate changing expenses, such as property taxes and the cost of fuel and insurance, or the capacity of the local rental market to support projected rental increases. As well, the current condition of a property and its future maintenance or rehabilitation needs are important pieces of information that will affect the accurate calculation of return on investment. Inaccurate or incomplete information about these factors could lead an investor to miscalculate the rate of return that can be expected from a given property. Depending on the financing and level of debt on the property, this miscalculation can lead to a conflict between the property's maintenance requirements, its debt service and the investor's expected profit. In such situations, owners usually defer maintenance and building conditions decline. This process negatively affects building residents, as well as the surrounding community.

This raises the second issue. How relevant is a given property's anticipated rate of return to a potential buyer's investment decision? Is a given investor expecting to derive profits from the net operating income a property generates or from the sale of a property that has appreciated in value? If it is the latter, issues affecting the accurate calculation of the rate of return (such as complete information concerning the level of rent that will be competitive in the surrounding market) are less of a concern.

But such an approach to real estate investment creates other issues. An investment strategy focused on the expected appreciation of property value can negatively affect the financial soundness of the property over time. An investor who expects to generate a profit from the sale of a property can contribute to rising price levels that are neither related to the internal finances of a given property nor to the general market conditions in the surrounding neighborhood. In time, the gap between price and a property's internal financial soundness (a level of net operating income that produces a competitive rate of return after debt service) can grow large enough that even a shorter-term investor will view the property as too risky an investment. By this time, a property has perhaps already been over-financed (depending on the underwriting criteria of financial institutions or other investors), thus creating the tensions between debt, maintenance and profit discussed above.

The market pricing model generally holds that prices are rational. But prices can become irrational if investors have insufficient relevant information about any given transaction. Further, if prices become delinked from the internal profitability of properties (i.e., if prices reflect that value of properties as commodities, not as sustainable

income streams) the conditions for a more general, market-level irrationality could develop. Presumably a rational investor would only delink a careful evaluation of internal profitability from price when assumptions are operating about some general features of the surrounding real estate market (this could be called rational speculation).

This delinking of internal profitability from price is what economists define as a speculative bubble, a condition in which rising asset prices are predicated on expectations of further increases in price.⁸

But at some point, any speculative bubble will burst. If enough of the individual properties that constitute the broader market are priced at a level that makes them unprofitable or not competitively profitable, then in time the assumptions about the strength of the market at an aggregate level may be disproved or questioned. At such time, the market will be viewed as overvalued, resulting in declining property values, a possible mismatch between value and debt, increased foreclosures, compromised building maintenance, visible deterioration of a larger segment of the local housing stock, and concomitant forms of neighborhood instability.

While speculative bubbles are a concern for various investments, including single-family housing purchases, their impact on multifamily housing can be particularly serious. The reason for this is related to the distinctiveness of multifamily rental housing. While all real estate constitutes an investment, multifamily housing has three dimensions. It is simultaneously an investment, a business and a social good. As an investment, speculation may be a rational strategy depending on such factors as an investor's tolerance for risk, perceived levels of risk and reward, and competing investment opportunities. But as a business, the financial soundness of a property affects its long-term viability. As well, an investor's faulty decision about price not only affects her own rate of return. It also affects the residents of the building and the surrounding community. This is because housing is not only an investment and a business, but also a social good in that it provides homes for individuals and families and is a key component of a community's infrastructure. Thus there are social costs for transactions in the private real estate market.

Another social cost of rising prices that is not addressed by the traditional market model is the erosion of affordable housing available in the private rental market. Whether rising prices are speculative or not largely turns on whether rental increases are commensurate with rising prices. In either case the consequences can destabilize existing low-income and moderate-income neighborhoods: if the former, building conditions will likely worsen and foreclosure may occur, and if the latter, existing residents may be priced out. Both sets of social costs invite consideration of possible policy interventions that might serve to stabilize real estate markets, mitigate some of the negative consequences of speculation and promote incentives to strengthen the market in affordable housing. We will return to these policy issues at the end of the article.

⁸ See comments of David Berson, "Trapped in a Bubble," WNYC, 8/7/02, *ibid.* See also Higgins, Osler and Sridhar, *ibid.*

IV. Research Methods

To address our research questions we have used both quantitative data analysis and case studies. Quantitative methods were used to investigate broader pricing trends over time in the Bronx multifamily housing market. Because the object of analysis is inherently quantifiable (i.e., the dollar value of price) and the population is relatively large, both basic and more advanced statistical analysis is appropriate and yields valuable information about the questions under investigation. The findings reported here are based on this quantitative analysis of pricing data. In addition to studying these broader pricing patterns, we have been interested to learn about lending activity and the structure of debt and equity on individual buildings. This research requires a combination of sorting and coding data for quantitative analysis and case studies. This component of the research is ongoing.

The primary data source for our findings on pricing trends in the Bronx market was purchased from First American Real Estate Solutions (FARES, formerly Experian). Other data was obtained from the New York City Rent Guidelines Board, the Housing and Vacancy Survey (HVS), U.S. Department of Commerce, U.S. Bureau of the Census, and Citizens Housing and Planning Council. Using these data sources, UNHP has examined pricing trends since 1985 and has begun to explore expense factors that affect profitability in the Bronx housing market. A database of sales of Bronx multifamily properties (apartment buildings with 6 or more units excluding coops and condominiums) for the period 1985 through 2002 was assembled from the FARES data in order to analyze pricing trends using both descriptive and analytical statistics. The chart of adjusted real prices, which Dr. Braconi of CHPC produced using multivariate regression analysis and which covers the period through 2001, makes use of the database as does the more basic calculation of average price per unit per year. The calculation of simple average price per unit per year uses data available as of December 2002, although due to time lag with data recording, the data for 2002 sales lacks some sales from the final quarter of 2002.

The methods used in the research and issues with the data are discussed in detail in the methodological appendix (Appendix A).

V. Research Findings: Regression Analysis Controls for Factors Affecting Price and Identifies Significant Rise in Real Price per Unit Since 1996

Controlling for inflation, location and other factors, sales prices for multifamily properties in the Bronx have been rising since 1996 and have exceeded the previous peak in the market that occurred in 1988 (chart 1). Regarding factors influencing profitability, our initial findings do not reflect an increase in net operating income that is comparable to the recent rise in prices. Using data from RPIE filings provided by the NYC Rent Guidelines Board, net operating income in Bronx multifamily properties has not been rising at the same rate as prices (chart 3). Instead, NOI (in 2002 dollars) has remained relatively constant from 1990 to 2000.

Chart 2 illustrates the significant rise in average price per unit per year (in 2002 dollars) that has occurred since 1996. From 1996 to 2002 the simple average price per

unit increased almost 400% (based on data available as of December 2002, which is incomplete for the fourth quarter of that year). Prices dip in 2001, but surpass 2000 levels in 2002. This data on average price per unit, however, is somewhat inconclusive because variations in the geographic distribution of sales by year could affect the result. Other factors that could also affect price are net operating income and condition of the property. Unfortunately, this information is not available on a per property basis, but information about property location is available. Thus, using multivariate regression analysis, we were able to control for the geographic distribution of property sales as well as for some other potentially significant factors.

The multivariate regression analysis of the data, represented in the chart of adjusted real prices (chart 1), controls for property location, lot size, number of units, year built, elevator, old law status, stores and location in the southern and eastern regions of the Bronx. The regression equation also uses census data to control for the percentage of African Americans, percentage of Latinos, median household income and percentage of female-headed households in the census tract. These independent variables were regressed against a dependent variable of constant price (2001 dollars). The regression analysis eliminated outliers with average per unit prices of \$0 or \$1 million and higher. Using these results, the adjusted real price per unit was calculated for each year. The chart of adjusted real prices covers the period from 1985 through 2001.

Controlling for location and these other variables, the chart of adjusted real prices confirms that a prior spike in prices reached its peak in 1988 and that another take-off in prices began in 1995. Prices from 1999 through 2001 have exceeded the previous peak in the late-1980s. In 1988 the average real price per unit was \$27,389. In 2000 it was \$36,834, an increase of 34% from 1988. In the past two years, prices dipped and rebounded. In 2001, the average real price (controlling for all factors mentioned above) dropped to \$34,558. However, prices rebounded in the fourth quarter of 2001 and through December 2002. The simple average price per unit (not controlling for all factors) is \$31,743 in 2001 and \$37,632 in 2002 (chart 2).⁹ Controlling for all factors, from 1985 to 2001 the real per unit sales price for multifamily properties in the Bronx increased 92.6% (chart 1).

As discussed above, while aggregate data for the Bronx indicates rising net operating income during these years, the increase is not nearly so dramatic as that found in sale prices. Other available data suggests that the prospect for significantly increasing income may be limited. Data from the U.S. Department of Commerce reveals that the Bronx has the lowest per capita income in New York City (chart 5). Additionally, CHPC has found that median rent to income ratios are inversely related to income in New York City, with the lowest income households paying the highest percentage of their income on rent. In particular, CHPC reports that the Bronx has the lowest average rents in New York City and also the highest median rent-to-income ratio of all boroughs (chart 6). The Bronx housing market also has the highest level of housing maintenance deficiencies in the city (chart 4). This information about the Bronx market indicates that the current residents of multifamily housing are already paying the highest proportions of their incomes for rent, and that much of the housing is in need of repair and renovation. These

⁹ The average price per unit in chart 2 is calculated in 2002 dollars. The average price per unit for the regression analysis is in 2001 dollars. As noted above, due to time lag with the recording of sales data, the data for sales in the fourth quarter of December 2002 is incomplete.

two factors do not indicate a strong potential for increasing the profitability of Bronx multifamily properties by increasing the income component of the NOI equation.

Current research corroborates UNHP's findings. Most recently, Glynis Daniels' and Michael Schill's report, *State of New York City's Neighborhoods 2001*, provides valuable data that highlights current conditions in the Bronx market and situates that market in comparison to the other boroughs. Regarding prices, they found an increase of 62.4% in multifamily prices from 1986 to 1999. From 1985 to 1999, we find an increase of 64.4%. Our data reflects a significant rise in prices in 1986, and thus the percentage increase in adjusted real price from 1986 to 1999 is only 37.1%. The similarity in these findings helps to substantiate our results on rising prices; however, the discrepancy between 1985 and 1986 could be investigated further.

Daniels' and Schill's price indices include different property types in each borough of New York City. Relative to other boroughs, these price indices confirm that as of 1999 multifamily properties in the Bronx have experienced the highest level of price appreciation in the city, using 1986 as a baseline. The report uses repeat sales indices to track average changes in housing prices. A repeat sales price index is a "relative measure of the market value of properties over time (i.e., housing value is expressed relative to a baseline point in time)."¹⁰ The advantage of this approach is that it applies "statistical modeling techniques to data on properties that have sold more than once during the observation period" and thereby "eliminates possible bias resulting from the sales of properties of different quality at different points over time."¹¹ For properties with five units or more, the Bronx price index in 1999 (relative to 1986) is 162.4, the highest of the four boroughs with relevant data. In comparison, Brooklyn's price index is 114.9, Manhattan's is 121.4 and Queens' is 86.1.¹² These findings highlight that prices in the Bronx market have risen significantly over the past fifteen years, both in objective and comparative terms.

Regarding the rental market, Daniels and Schill draw on data from the New York City Housing and Vacancy Survey to report that the Bronx is the borough with the highest percentage of renters with severe rent-to-income burdens (29.1% of households spend greater than 50% of their incomes on rent) and also the borough where renters spend the largest percentage of their income on rent (30.2%).¹³ Another critical factor highlighted by Daniels and Schill is the dramatic concentration of Section 8 units in a few Bronx neighborhoods. Daniels and Schill study the distribution of Section 8 vouchers amongst the city's sub-borough areas; their data does not include project-based Section 8. Four sub-borough areas comprising the central Bronx (out of a total of 10 areas in the borough and 55 in the city) contain 21.9% of all Section 8 units in the city. Also, while the citywide average percentage of Section 8 units at the sub-borough level is 2.4, in these four Bronx sub-borough areas the average percentage is 9.68.¹⁴

¹⁰ Glynis Daniels and Michael Schill, *State of New York City's Housing and Neighborhoods 2001*, Center for Real Estate and Urban Policy, New York University School of Law, 2001, p.55.

¹¹ Daniels and Schill, *ibid*.

¹² Daniels and Schill, *ibid*.

¹³ Daniels and Schill, *ibid*, pp.76-77.

¹⁴ The percentage for the borough of the Bronx and the four sub-boroughs of the central Bronx have been calculated by UNHP using the percentages reported in the Daniels and Schill report. Please note that the percentages resulting from our calculations may include a small degree of error as the reported percentages on which they are based are presumed to have been rounded. Daniels and Schill, *ibid*, p.91.

This data regarding the tenant-based voucher program reveals that the Bronx multifamily housing market is far more dependent on Section 8 subsidy than any other borough in the city. While this concentration of Section 8 vouchers could be seen as supporting higher real estate prices, as Section 8 provides guaranteed rental income at levels generally higher than the local market rents, such a conclusion would reflect an incomplete analysis. Tenant-based Section 8 is a vulnerable form of subsidy; an increase in income can disqualify the voucher-holder and the program is also susceptible to budget cuts. Given that the population served by the program is dispersed, unlike project-based Section 8 subsidies, the program remains particularly politically vulnerable. In addition to destabilizing the individuals and families who rely on these subsidies, reductions in the Section 8 voucher program would dramatically impact the Bronx buildings and neighborhoods where many Section 8 tenants now live.

To summarize the research findings in relation to our initial questions, we have found substantial evidence that per unit prices have risen significantly over the past six years in the Bronx market, and some preliminary evidence that fundamental value has not risen at a comparable rate. The results of our regression analysis, represented in our chart of adjusted real prices, are confirmed by the results of Daniels' and Schill's repeat sales price indices. We find a 64.4 % increase in real price per unit from 1985 through 1999, a 92.6% increase from 1985 through 2001, and a 123.6% increase from 1996 through 2001. Factors related to the fundamental value of real estate have been studied to the extent that data is available. Such factors include the income a property generates (net operating income), the quality and maintenance condition of the property, and the expected rent levels in the surrounding market. While data is not publicly available on a per property basis, aggregate level data about the Bronx market calls for caution when assessing the financial soundness of current pricing trends. Net operating income for Bronx properties (in 2002 dollars) has remained relatively constant in comparison to prices from 1996 to 2000, Bronx properties have the highest levels of maintenance deficiencies in the city, and Bronx residents have the lowest median income and highest rent burden in the city.

The upside potential for income growth in Bronx multifamily properties, as a general category, does not appear to match the rapid escalation of prices. Assuming rational action on the part of investors, a sound assumption would be that investors are paying higher prices with the expectation that they will derive profits from the resale of the property and not necessarily from its long-term profitability as a commercial business venture. This delinking of price from financial fundamentals constitutes speculation. It is reasonable, therefore, to view current pricing trends as indicating the presence of some level of speculative market activity in the Bronx.

VI. Policy Implications of the Research: Ameliorating Speculative Markets and Promoting Affordable Housing Markets

Current price levels in the Bronx market do not appear to be supported by the economic fundamentals of real estate management. Speculative investment patterns, while possibly profitable for individual investors, will contribute to a general overvaluing of the Bronx multifamily market and when that bubble bursts, building deterioration and foreclosures are likely to increase significantly. Even in the short run, an investor more

interested in speculation than long-term real estate management will likely defer or shortchange necessary building maintenance. Both dynamics negatively impact people's homes and communities. In the case that investors are expecting to profitably manage their properties, current pricing levels may reduce the likelihood that they will be able to do so successfully, unless they succeed in significantly increasing the existing rent roll. That outcome entails an erosion of affordable housing in the Bronx market. These scenarios depict the impact of different investment strategies (speculation vs. property management) on the preservation of well-maintained affordable housing units. The outcomes resulting from the dynamic interplay of these factors reflect the three-dimensional nature of multifamily housing as an investment, a business and a social good. The potential impact of the two investment models on housing as a social good (here defined as the preservation of quality affordable housing units) is summarized in the following chart. The distinction between successful and unsuccessful investment refers to whether or not the strategy is profitable; the four cells describe the potential consequences of each outcome for the quality and/or affordability of the housing.

Potential Impact of Rising Prices on Housing as a Social Good

Form of Investment	Profitable	Unprofitable
Speculation	Possibility of deferred maintenance. Risk of overvaluation	Overvalued asset. Possibility of excessive debt or financing. Deterioration of building. Foreclosure risk.
Property Management	Rent increases in order to support higher debt or return on equity. Erosion of affordable housing units.	Limited rent increases (not attempted or not marketable) result in limited cash flow and deterioration of building conditions. Foreclosure risk.

What are the practical implications of this information? There are two main avenues for consideration. The first involves ameliorating the potentially negative consequences of speculation in real estate markets. The second involves fostering conditions for a strong affordable housing market.

Addressing possible strategies for ameliorating the potentially negative consequences of speculative investment practices involves examining the relationship between price and value. If we view housing as a business that generates a sustainable income stream, then the net operating income of a property (the rental income remaining after expenses have been paid) is a fundamental consideration in determining how much a property is worth. Given that financing is in the form of either debt (with required debt service) or equity (with an expected rate of return), the net operating income must be sufficient to service the debt and/or generate the expected rate of return on equity. Often real estate professionals use a multiple of rent roll as a shorthand way to calculate the value of a property. Many experienced owners are very cautious of prices exceeding a rent roll multiple of 4.5 because over the long-run expenses vary (insurance, fuel, interest rates). (It now not uncommon to hear of Bronx properties selling for rent roll multiples as high as 6 and some buildings are now selling for multiples as high as 7.) Financially

sound pricing involves prudent calculations of income, expenses, and debt service in order to insure a sustainable and profitable income stream.

Financial institutions play an important role in this aspect of the real estate market. As mortgage lenders, banks impose underwriting criteria to insure that their loans are sound. The kinds of evaluation of cash flow described above are commonplace amongst established financial institutions. But under current conditions, do financial institutions have adequate information to determine the financial structure of the properties to which they lend? In particular, the terms and conditions, if any, of equity investment should be a factor in a lender's financial evaluation of a property. Requiring a borrower to disclose sources and terms of equity funds would enable a lender to develop a comprehensive financial analysis of a prospective property.

Another area for consideration in terms of the role of financial institutions concerns interest rates. One explanation for the rapid escalation of housing prices is declining mortgage interest rates. Coupled with shorter-term mortgages (5 year terms with 20 year amortizations, for example) buyers are able to borrow more and therefore pay more for properties. One potential financial problem with shorter term mortgages is that interest rates will most likely be higher when the term expires, perhaps considerably so, but the mortgage principal will not have been paid down to any significant degree. The property's finances will then have to absorb a higher debt service. It may be prudent to consider realistic refinancing scenarios when issuing shorter-term mortgages.

One other strategy for ameliorating the potentially negative consequences of speculative investment would be for financial institutions, city housing departments, and the nonprofit housing sector to work collaboratively to establish a protocol for addressing the needs of troubled or at-risk properties. Such a protocol could serve as a proactive process for developing a work-out plan for properties at risk of, or in the process of, foreclosure.

The second set of practical implications emerging from this research concerns possibilities for promoting a strong affordable housing market. The vicissitudes of the private real estate market demonstrate that regulatory and financial incentives can serve to rationalize investment patterns and help to maintain stable and transparent market transactions. Successful models include the Community Reinvestment Act, which promotes lending in underserved communities through regulatory requirements, and the Low-Income Housing Tax Credit, which has leveraged billions of dollars of private capital to create and preserve affordable housing through tax credit policy. Policies and programs such as these create conditions whereby the affordable housing market (both for-profit and nonprofit) can successfully compete with investment strategies which bet on the upside potential of rents.

The private market represents a significant source of affordable housing and both for-profit and nonprofit housing developers can play an important role in preserving this housing stock. Public policy should recognize that strengthening this market will help to preserve the "social good" of quality affordable housing that is privately owned and managed in a competitive market environment. Specific policy actions that could further promote the affordable housing market include, on a national level, continued expansion of the Low-Income Housing Tax Credit and Tax-Exempt Bond allocations to states, and, on a local level in New York City, effective enforcement of the City Housing Code and creation of a source for acquisition financing for affordable rental housing. An

acquisition financing source would enable both nonprofit and for-profit owners who are committed to preserving affordable housing to compete more effectively in the private market to acquire suitable properties.

Effective code enforcement operates as the last line of defense for tenants of financially distressed properties. Accurate, up-to-date records of property violations should also affect prices as well as underwriting and serve as a valuable source of information for buyers, lenders and residents.

Further analysis and discussion of these issues are required. A dialogue about the question of speculation in housing markets and its implications for both stable communities and the affordable housing market would be opportune and useful, and would most productively include a wide range of interested parties: community organizations, financial institutions, foundations, regulatory agencies, city housing officials, researchers, and both for-profit and nonprofit real estate investors. Careful consideration of possible policy action, undertaken in a proactive manner, could seek to minimize the kinds of market disruptions that have occurred in other sectors of the economy. By taking practical steps such as these and others, the diverse community of organizations and interests involved with real estate might work to improve the soundness of the housing market and to reduce the possibility that housing will be the next speculative bubble to burst.

Appendix A: Methodological Appendix

The methodological appendix is organized into two sections. The first section describes the data and methods used in analyzing pricing trends in Bronx multifamily housing. This section describes issues with the data source used for the database, the method used in assembling the database, the method used in calculating the simple average price per unit per year, and the method used in producing the adjusted real prices (for which multivariate regression analysis of the data was performed). The second section describes the sources for the data on net operating income, per capita personal income, rent to income ratios, and housing conditions.

I. Data Base and Analysis of Price

A. Issues with the Data Source

The primary data source for the analysis of price is FARES Win2 Property Files (First American Real Estate Solutions, formerly Experian). FARES obtains records from county recorder offices, county assessor offices and appraiser evaluations. The FARES data is used throughout the real estate industry by both public and private entities. The June 2002 disk was used to assemble the database that has been used for both the descriptive and analytical statistics (the calculations of average price per unit per year and adjusted real price). The main shortcomings and limitations of the data that have been identified are as follows.

1. Sample Bias. There are varying numbers of properties in each time period for which sales price information is not available. These properties, therefore, are not included in calculations of price in either the descriptive or analytical statistics. If there were an uneven distribution of prices between the properties with and without sales price information, then the findings could be distorted. In order to assess the possible degree of this effect in our data, a comparison of the number of properties with and without sales price information has been compiled for each year. The properties are divided by zip code, which serves as a proxy for price level. The percentage of properties without sales price information remains relatively low and evenly distributed amongst zip codes, and also between years. This information is included as Appendix B.

2. Combined Sales. Upon reviewing the sales price data, it appears that the price for a group of properties was at times being recorded in the data as the price for each individual property. The effect of this error was an inflation of the price/unit value for those properties. We were concerned that this error in the data could distort the calculation of the aggregate pricing trend. We have used the method described below to correct for this apparent error in the data. To the extent that the correction itself introduces error, the effect would be to reduce the price per unit values, thereby weakening somewhat our finding of significant price increases.

Two main steps were used to correct the price/unit value for combined sales: identifying combined sales and recalculating the price/unit for such sales. To identify combined sales, we sorted the data by sale date (year and quarter) and by sale price. All properties from the same year with the same sale price were selected as possible combined sales. To further determine whether a possible combined sale were likely to be an actual combined sale, the following criteria were used: same sale date (year, month and day), similar addresses (same street, close proximity), an identical and unusual sale

price (such as \$1,453,000 as opposed to \$500,000), or any combination of the three. Of our data, the properties determined to be combined sales were distributed amongst these criteria as follows: 73% same address and same date of sale, 13% same date and different address, 10% same address and different date, and 4% different address and different date.

Once the properties that were likely to be combined sales were identified, the following method was used to correct the price/unit for these properties. The shared sales price was divided by the total number of units in the group of properties. For example, if three properties were all listed with a sales price of \$1,453,000 and each had 12 units, the uncorrected price per unit for each building would be \$121,083, while the corrected price per unit for each building would be \$40,361. Once a corrected price per unit was calculated, that corrected value was substituted into the database for all the properties in that combined sale group.

3. Residential Units: The data source combines residential and commercial units in the category of residential units. This means that for properties with commercial units, we may be including some properties with fewer than 6 residential units in our calculations of multifamily per unit prices (we have used the threshold of 6 units to define multifamily properties).

4. Sales Date: The data includes prior sales date and most recent sales date information. The data is cumulative, and therefore earlier sales are overwritten by new sales. This feature of the data potentially would have the greatest impact on earlier sales. Our search on sales date pulls up the most recent sales date. Thus, the data will only include the sales for each year for properties that have not sold since that time. In this sense, we may be sampling properties that are more stable, whose owners were less interested in selling the properties for profit in the shorter run to begin with. That may have affected the sales price.

5. Building Classification: An analyst at FARES states that the county land use code and the building class code are the same in their data. We use this information to eliminate coops and condominiums from the data.

6. Completeness of Data: The database for the regression analysis was assembled from the June 2002 data disk from FARES. FARES reports that there is up to a four month lag in the time for sales to be reflected in the data. Therefore the June 2002 data should be relatively complete for the period ending January 2001. We used the December 2002 data disk for calculating the simple average price per unit per year. Due to time lag with the recording of sales, the data for the year 2002 lacks some sales from the fourth quarter of 2002.

B. Assembling the Data Base

First we searched property files for sales from 1985 through 2001 in the borough of the Bronx for apartment properties (this category is identical, according to FARES, to the county land use code and with C and D Class properties used in the Bronx Apartments Directory). Once this set of properties was selected for the period from 1985 through 2001, the data files were downloaded into a single database. The downloaded files include address, sale data, sale price, prior sale data and price, zip code, block and lot numbers, land use code, lot size, building area, number of stories, number of

residential units, year built, assessment year, total value, total improved value, land value, property taxes, and census tract.

Some basic calculations and conversions were also performed in the database to make it more useable. The sales date was converted into year and quarter. The price per unit was calculated for each property and then converted into 2001 dollars. The same calculations were done for prior sales date and price. Land use codes were numerically converted (C to 1 and D to 2).

Data from the 1990 and 2000 census was also included and matched to properties by census tract. The following data was included: total population in census tract, percent white (non Hispanic), percent Black (non Hispanic), percent Hispanic, percent Asian (non Hispanic), total number of households, percent female headed households, and median household income in 1989. Only the final piece of data is from the 1990 census; all other data is drawn from the 2000 census. For the entire database, only 8 properties could not be matched to recorded census tracts.

C. Calculating the Average Price per Unit per Year (Chart 2)

The database was sorted using the following selection criteria: include properties with 6 residential units and more, include properties with sales price information, and exclude coop properties (building classes D4, D0, C8 and C6). The first criteria establishes our sample of multifamily properties, the second is necessary for calculating price per unit, and the third eliminates the extremes represented in the coop market. (Note that the original search criteria for the downloaded data did not include condominium properties.)

After establishing the set of properties to be analyzed, we sorted the properties by year, added the sales prices for that year and divided that amount by the total number of units that had been sold in order to calculate an average price per unit per year. That average price per unit per year was then converted into 2002 dollars. Data drawn from the December 2002 FARES data disk was combined with the database (data drawn from June 2002 data disk) in order to include the data for 2002. As noted above, due to time lag with the recording of sales, the data for the year 2002 lacks some sales from the fourth quarter of that year.

One note: there appears to be a number of properties with extremely low sale prices, which may have been purchased through the NYC Tenant Interim Lease (TIL) program or some other below-market housing program. These below-market sale prices would have the effect of deflating the average price per unit. As there is no readily available means of investigating these issues, we have left these observations in place.

D. Producing the Chart of Adjusted Real Price (Chart 1)

As discussed in the article, the analysis of the FARES data provided by basic descriptive statistics of the average price per unit per year is somewhat inconclusive. The primary issue concerns the geographic distribution of property sales. Given that the Bronx market does vary significantly by region, the uneven geographic distribution of sales could affect the average price per unit. Other issues that could also affect price are the net operating income for the property and the condition of the property. Unfortunately this information is not available on a per property basis. However, as our data could be coded geographically (through zip codes and broader geographic groupings

as well), we were able to control for the geographic distribution of property sales as well as for a number of other variables described below.

Dr. Frank Braconi of Citizens Housing and Planning Council performed a multivariate regression analysis of the data controlling for location, lot size, number of units, year built, elevator, old law status, stores and location in the southern and eastern regions of the Bronx. The regression also controls for the percentage of African Americans, percentage of Latinos, median household income and percentage of female-headed households in the census tract. These independent variables were regressed against a dependent variable of constant price per unit (2001 dollars). The regression eliminated properties with five or fewer units, coops, and outliers with average per unit prices of \$0 or \$1 million or higher.

Because we sought to evaluate the change in price over times, in an effort to determine if some independent market effect were influencing price, Dr. Braconi included a dummy variable for each year from 1986 through 2001. The adjusted real price per unit for each year was created by adding the product of the coefficient and mean for each independent variable, and by then adding the coefficient for the relevant year.

The number of observations in the regression is 3,244 and the R-squared is 0.1509. The low R-squared can be interpreted in various ways. From one perspective, it indicates that the regression is missing a large piece of the explanatory puzzle, thereby reducing its usefulness. From another perspective, it confirms that the factors included in the regression, which should be correlated to price, are not as strong predictors of price as should be expected. In this sense, the results of the regression analysis confirm the *possibility* that other market factors (such as speculative investment) may be influencing price.

The most significant lacuna in the available data at this point is the absence of data on net operating income. With a reliable independent variable for NOI, the regression equation could provide a more complete analysis of factors affecting price in the period being studied. Rising NOI would be the presumed rational explanation for rising prices. However, the yearly dummy variables should capture that factor by proxy if it were explaining a significant amount of the variance in annual price per unit.

II. Other Data on Income, Rents and Housing

A. Net Operating Income from RGB Data (Chart 3)

The source for this information is the RPIE filings to the Department of Finance of the City of New York, as reported in the New York City Rent Guidelines Board annual income and expense studies. This data has been made available to us by the Rent Guidelines Board for rent stabilized properties in the borough of the Bronx through 2000. The main limitation with this data is that it is based on RPIE filings which are self-certified by owners. Also, only properties with 11 or more units and an assessed value of more than \$40,000 (to 1998) or \$80,000 (1999-2000) are required to file RPIE forms with the City.

B. CHPC Substandard Housing Data (Chart 4)

The information in this chart is drawn from data provided by Citizens Housing and Planning Council and based on the 1999 Housing and Vacancy Survey. CHPC defines substandard housing as housing with three or more maintenance deficiencies (of a

possible 7). (The Department of Housing and Preservation of the City of New York, in contrast, defines substandard housing as properties with five or more deficiencies.) We graphed the percentage of substandard housing for each borough and all boroughs.

C. Per Capita Personal Income in New York City by Borough (Chart 5)

The information on per capita personal income in New York City by borough is drawn from the Regional Accounts Data of the Bureau of Economic Analysis of the U.S. Department of Commerce.

APPENDIX B: Comparison of Number of Properties With and Without Sales Price Information (By Year and Zip Code)

	1985		1986		1987		1988		1989		1990		1991		1992	
Zip Code	With	Without	With	Without	With	Without	With	Without	With	Without	With	Without	With	Without	With	Without
10451	4	0	10	0	9	2	7	4	6	1	7	1	2	7	9	4
10452	10	1	21	0	17	7	22	7	15	5	20	19	11	4	10	2
10453	16	7	26	3	19	7	22	6	13	7	21	9	12	15	31	5
10454	8	3	4	1	13	4	8	4	4	1	7	3	7	2	1	2
10455	18	2	17	4	10	8	8	8	8	3	18	6	8	3	12	9
10456	24	9	29	5	22	8	19	8	9	21	24	8	24	30	34	15
10457	26	2	20	3	15	8	20	11	10	1	21	9	22	18	27	12
10458	29	4	31	10	31	16	38	7	29	8	27	6	25	9	29	5
10459	12	3	15	5	21	8	12	13	13	8	14	10	14	11	23	8
10460	13	3	15	4	23	6	15	8	15	5	23	6	15	11	22	7
10461	20	10	24	8	25	10	19	9	25	15	19	9	21	6	27	14
10462	17	2	31	10	12	9	19	6	20	13	27	3	18	9	19	11
10463	10	2	9	2	12	3	19	3	13	4	5	1	9	3	9	5
10464	2	1	1	0	1	1	1	0	3	2	2	2	2	1	0	1
10465	7	3	11	3	10	8	12	2	20	7	10	6	10	9	8	3
10466	34	17	12	10	31	17	37	14	48	11	37	6	24	15	26	16
10467	38	8	29	7	37	18	30	8	30	11	22	4	21	15	23	5
10468	27	5	23	1	11	1	31	4	12	4	10	4	12	7	11	0
10469	19	6	16	11	16	10	15	12	20	15	30	5	37	12	13	10
10470	10	3	7	1	4	8	8	3	9	1	11	0	9	3	6	2
10471	9	0	8	1	2	2	8	1	2	0	0	0	0	2	1	2
10472	34	13	37	18	40	15	39	16	54	28	35	9	28	14	33	22
10473	8	4	15	7	10	10	14	6	22	10	22	3	8	5	4	5
10474	0	0	4	1	6	5	5	3	3	1	4	7	7	18	4	2
10475	1	0	1	0	1	0	0	0	0	0	3	0	6	0	0	1
TOTAL	396	108	416	115	398	191	428	163	403	182	419	136	352	229	382	168
% Without Prices:		21%		22%		32%		28%		31%		25%		39%		31%

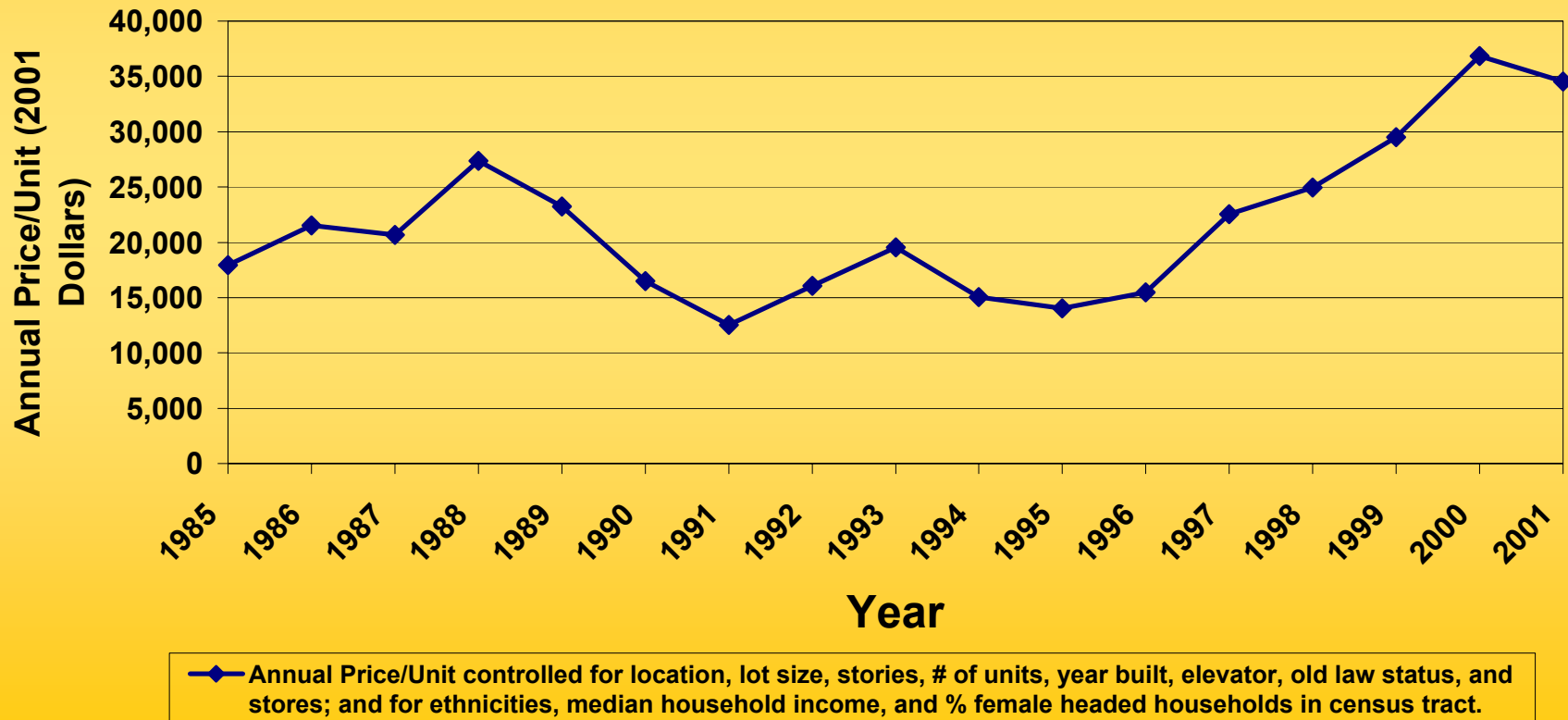
NOTE: Some properties do not have zip codes, so the total number of properties in this chart will not be identical to the total n for the 2002 data base. The number of such properties is small (less than 2-5 per year).

APPENDIX B, Continued

1993		1994		1995		1996		1997		1998		1999		2000		2001	
With	Without	With	Without	With	Without	With	Without	With	Without	With	Without	With	Without	With	Without	With	Without
3	4	4	2	14	9	6	7	14	1	6	0	9	0	10	0	11	0
13	12	26	3	20	14	30	20	19	10	13	1	14	0	12	0	18	0
15	5	12	2	19	16	33	22	23	11	36	1	22	0	22	0	25	0
5	1	9	1	17	10	25	8	23	7	11	0	11	0	20	0	13	0
11	8	13	6	25	7	15	17	23	2	16	0	14	0	17	0	21	0
31	19	26	8	29	19	21	29	57	8	32	3	36	0	37	0	21	0
16	7	31	8	36	25	29	31	33	8	42	5	27	0	22	0	41	0
36	11	24	9	47	30	50	42	33	5	43	2	33	0	51	0	44	0
8	15	8	7	16	17	41	9	27	12	18	2	25	0	31	0	63	0
13	6	14	16	38	15	46	31	35	18	36	1	35	0	44	0	32	0
22	17	25	24	40	29	39	29	44	11	47	3	36	0	43	0	37	0
23	13	20	10	37	22	28	19	41	10	36	1	46	0	49	0	45	0
9	3	10	4	10	16	23	17	15	0	17	3	11	0	5	0	10	0
1	1	0	1	0	3	1	1	6	1	3	0	4	0	2	0	1	0
13	2	14	8	14	2	15	8	21	9	15	0	29	0	29	0	21	0
35	13	60	31	54	24	70	15	67	13	59	3	41	0	61	0	56	0
31	13	42	7	43	24	70	37	59	15	50	1	59	0	45	0	58	0
18	0	22	4	35	15	51	27	23	2	23	2	31	0	20	0	24	0
18	8	23	16	27	10	20	19	46	11	43	1	52	0	29	0	36	0
4	5	13	3	14	3	14	3	23	4	14	2	17	0	14	0	13	0
1	1	5	3	6	0	5	3	6	4	7	2	5	0	6	0	2	0
34	12	64	20	65	43	75	35	67	17	74	7	93	0	78	0	89	0
16	9	21	10	20	12	23	17	22	13	34	2	34	0	23	0	24	0
1	0	4	0	2	2	6	1	12	0	9	1	14	0	14	0	8	0
1	0	2	1	4	1	2	4	3	2	2	1	3	0	1	0	1	0
378	185	492	204	632	368	738	451	742	194	686	44	701	0	685	0	714	0
	33%		29%		37%		38%		21%		6%		0%		0%		0%

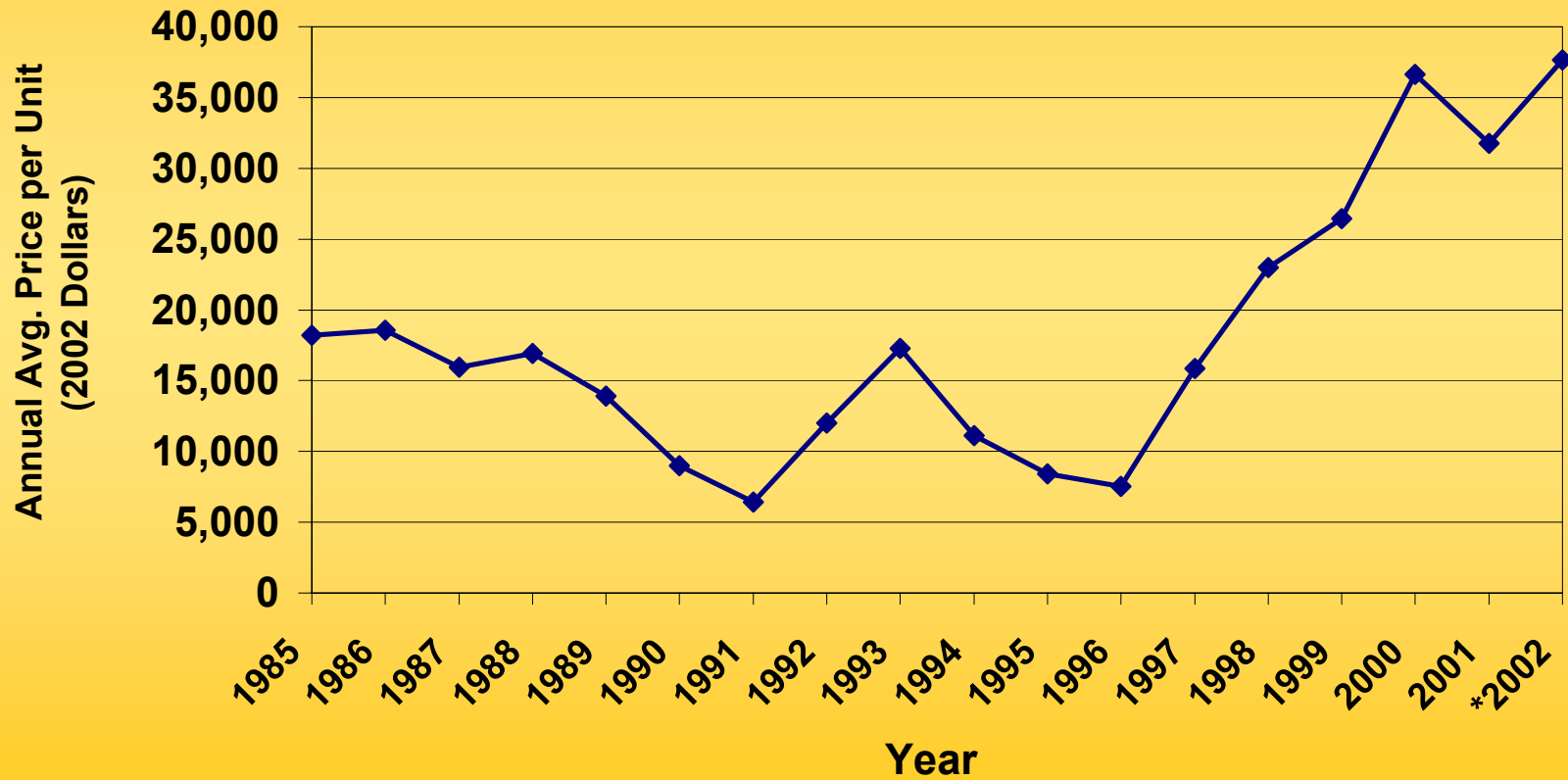
Adjusted Real Prices for Bronx Multifamily Rental Housing, 1985-2001

Source: FARES, June 2002



Average Price per Unit for Bronx Multifamily Housing 1985-2002

Source: FARES June 2002 and December 2002

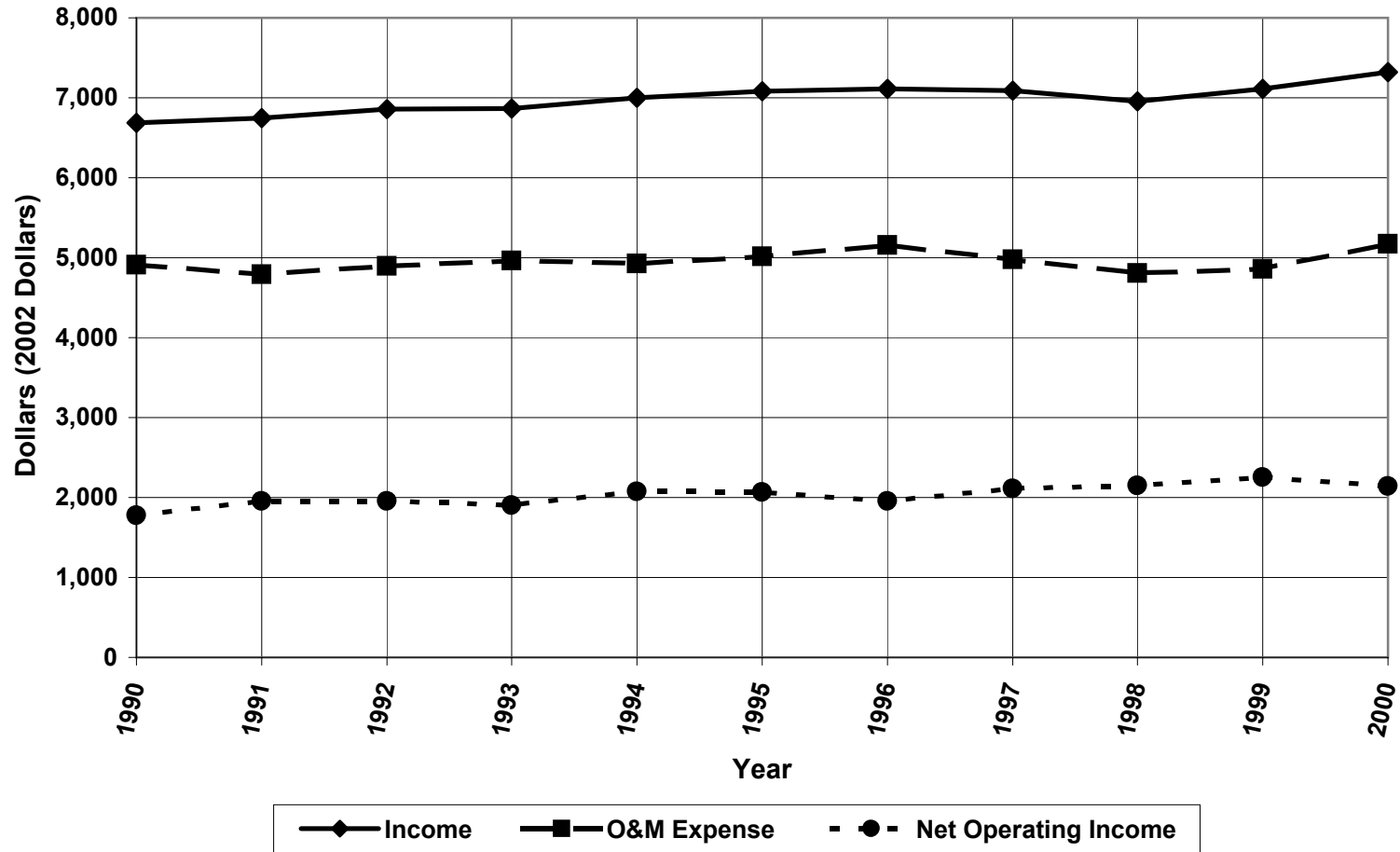


◆ Average Price per Unit in 2002 Dollars (*Note: Data for 2002 is based on sales data available as of December 2002 and therefore is incomplete for the fourth quarter of 2002.)

Average Annual Income and Expense per Unit, Bronx 1990-2000

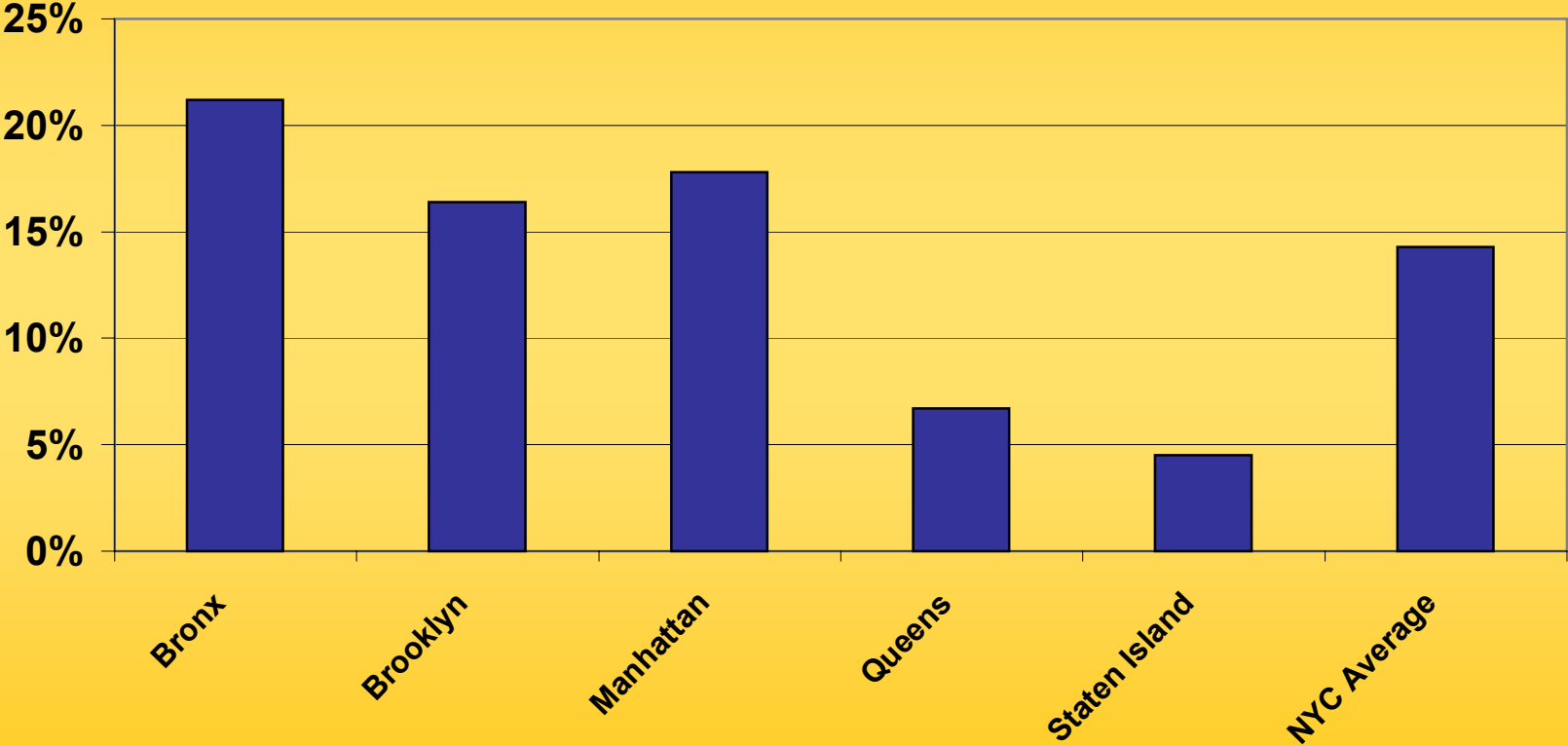
Rent Stabilized Properties

Source: NYC Dept. of Finance, RPIE Filings, 1990-2000,
and RGB Annual Income and Expense Studies, 1992-2002



Percentage of Substandard Housing By Borough, 1998

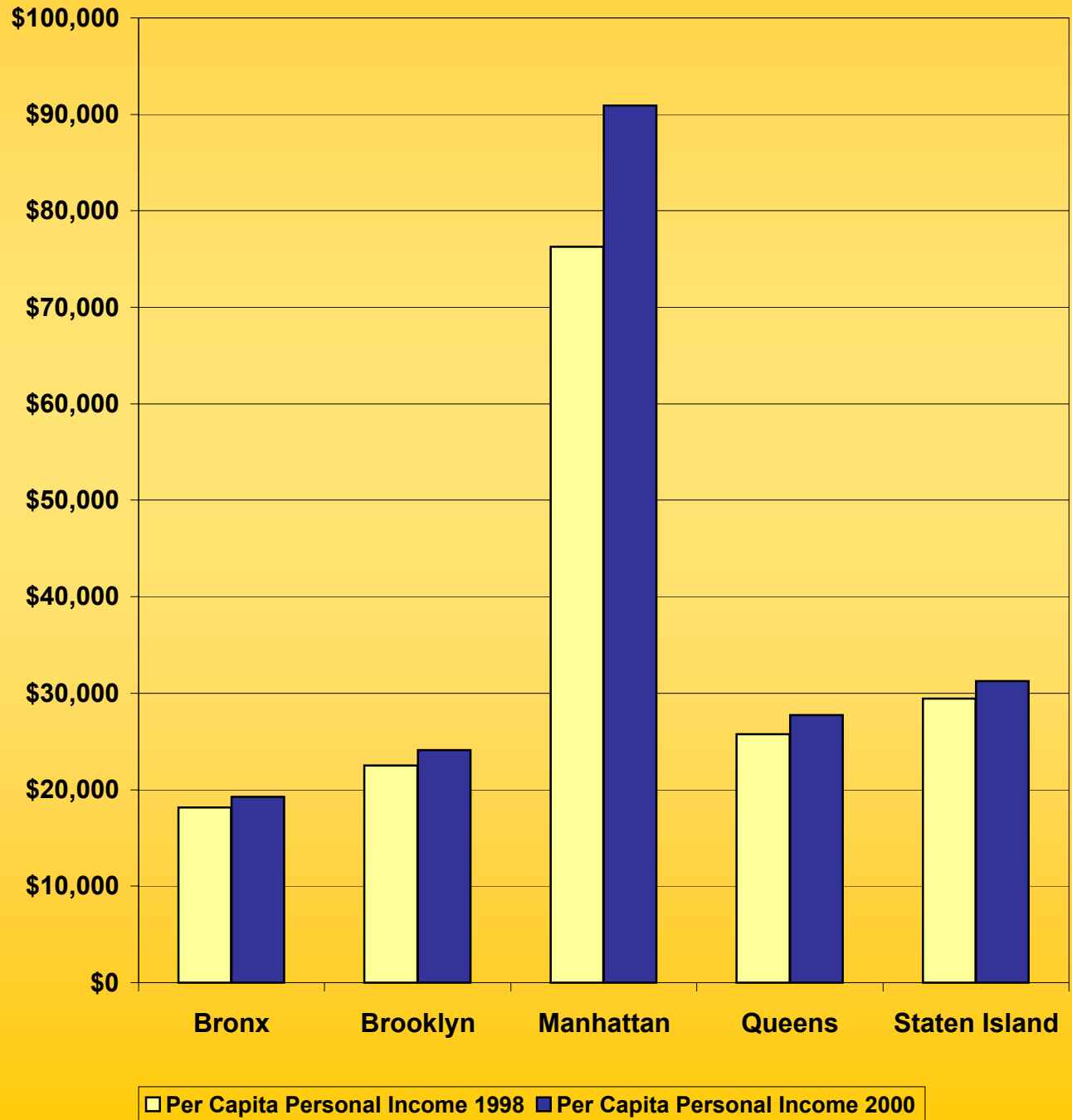
Source: 1999 Housing and Vacancy Survey



■ Note: Substandard housing is defined as properties with 3 of 7 maintenance deficiencies.

Per Capita Personal Income in New York City by Borough, 1998 and 2000

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, Regional Accounts Data, Table CA1-3 May '02



NYC Median Rent to Income Ratios, 1999

As Reported in *The Urban Prospect*, CHPC, V.6, N.3

Source: 1999 HVS, Tabulations by CHPC

