A real estate bubble?

An economic review of the Manhattan residential real estate market

September 24, 2004

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Summary

Business360 has completed an assessment of the real estate market in Manhattan – one of the nation's so called "hot spots". We did this using data from Miller Samuel, Manhattan's leading real estate assessor, which gives real estate prices on a square foot basis, for both co-ops and condos, from Q2 2004 back to 1979. We understand this analysis is the only attempt to make use of this time-series data to assess real estate values in Manhattan and gives a unique insight into valuations in this market.

Business360's analysis is a unique view into Manhattan residential real estate values

Combined with economic data on income and interest rates stretching back over 20 years, we assess that the Manhattan mass-market is not overvalued. However, restricting assessment to just seven years or so does give the impression of an overheated market and has led some to conclude that there is a housing bubble. Over this reduced period, real estate prices have risen rapidly and outstripped personal income gains, but over a period of two decades the opposite is the case. Further, the decline in interest rates over this period now makes real estate much more affordable. In broad terms, while real estate was relatively cheaper in the 1990s, it was much more costly throughout the 1980s.

Looking at just the last seven years, Manhattan real estate prices look high, but over a longer horizon of two decades, they look relatively undervalued

One comparison brings these findings to life: in 1981 - when Manhattan crime rates were close to their peak, the city was near bankruptcy, the economy was in recession, the population level was at a low not seen since the 1880s, and the mortgage rate reached 16% - the average selling price of a condo was $339 per square foot.

Manhattan's population has since grown 8.5%, prices generally have risen 126%, personal income is up 377% and mortgage rates are close to multi-decade lows, yet average square foot condo prices are up only 163% to $890 (co-ops are up 189%). Had real estate prices merely kept pace with personal income over this period they would be over double current levels. Prices still look to be recovering from declines in the 1990s.

Underlying these findings is a prolonged decline in property prices during the 1990s, from which they are still recovering

Using moderate projections of personal income growth over the next five years, and assuming a rise in interest rates of 2-3 percentage points, we expect real estate prices to rise around 10% per year for the three years to 2007 and between 5%-8% to 2010. This would put square foot condo prices at $1,185 in 2007 and as high as $1,490 in 2010.

We foresee continued price rises in Manhattan residential real estate

Context and concerns

In recent years there has been considerable debate about the existence of real estate bubbles, their likelihood of bursting and probable consequences. In the US, real estate is a major asset class, worth 130% of GDP and accounting for 28% of household assets. Recent valuation gains have been a primary source of wealth creation for owners during a difficult time for the economy.

Sustained growth in US real estate prices has sparked debate about whether this constitutes a price bubble

Rapid and sustained increases in real estate prices nationally, and especially in certain metropolitan areas, have generated interest in real estate values as well as the prospect of a price bust. An IMF finding that housing booms often collapse heightened concerns, with a warning that housing price booms occurred once every 20 years, with 40% ending in busts in which housing prices fell an average of 30%.[1]

Studies and predictions

Many economists have recently studied the US housing market, often reaching very different conclusions. Some see a bubble that will burst; some foresee a leveling of price growth but no collapse and a few see continued strong growth. Table 1 has summary findings and comments from selected studies.

Economists have very different forecasts for real estate values, from price collapse, slowing price growth to continued price gains

Table 1. Recent notable comments and forecasts about the US housing market

Commentator	Date	View	Quotes	Citation
Ian Morris	June 25, 2004	☹	*"…US houses are bubbly. Prices are 10-20% too high and can overshoot on the way down."*	*The US Housing Bubble*, HSBC
Jonathan McCarthy and Richard Peach	June 22, 2004	☺	*"A close analysis of the U.S. housing market in recent years, however, finds little basis for such concerns. The marked upturn in home prices is largely attributable to strong market fundamentals: Home prices have essentially moved in line with increases in family income and declines in nominal mortgage interest rates."*	*Are Home Prices The Next "Bubble"?*, FRBNY Economic Policy Review
Federal Reserve Bank Of Dallas	March/ April 2004	😐 ☺	*"...although there is little risk of a national bubble, prices in some areas are vulnerable if local economic conditions deteriorate..." "Overall, there is little risk of a national housing-price bubble. But in some cities in the Northeast and Pacific states, prices are vulnerable if the local economies weaken appreciably."*	*How Vulnerable Are Housing Prices?*
Paul Slon	Jan/Feb 2004	☹	Slon quotes Mark Zandi: *"Housing is at the mountaintop. From here, all roads lead down."*	*A Squeeze on Home Price*, Business2.0

1 IMF, "World Economic Outlook", IMF, April 2003, "Chapter 2: When Bubbles Burst" http://www.imf.org/External/Pubs/FT/weo/2003/01/pdf/chapter2.pdf

Note: The IMF comments that its figure of 40% may overestimate current risk since house price busts included in the sample tended to be related to tight monetary policy, which we do not have today. Separately, the IMF comment that "only one-third of all equity price busts overlapped with housing price busts", demonstrating that the stock market declines since 2000 need not necessarily bring a real estate price collapse.

Table 1. Recent notable comments and forecasts about the US housing market

Commentator	Date	View	Quotes	Citation
The Economist	May 31st, 2003	☹	*"The ratio of average house prices to average incomes, which tracks the long-term affordability of homes, is currently flashing red in America... Britain, Australia, Ireland, the Netherlands and Spain" "The end result of these calcula - tions is that average house prices in America could fall by 10% in money terms over the next four years..." "In America prices in New York, San Francisco and Boston might drop 20% or more."*	*Castles in hot air*, The Economist
The Economist	Nov. 29th, 2003	☹	*"In all six countries [Spain, Britain, Netherlands, Ireland, Australia and the United States] the ratio of house prices to average earnings is at record levels, much higher than its average level during 1975-2002."*	*Shaky Foundations*, The Economist
Barron's	April 12, 2004	☹	Barron's acknowledged that it was premature in *"forecasting an imminent fall in US home prices in 2002* (*Home Groan*, April 15, 2002)". . . *"But the housing bubble has continued to inflate"* *"Still, a pricey market merits caution. And this one's downright frothy. According to data collected by Bridgewater Associates, existing home prices relative to average US household income has risen to record levels, some 60% above the ratio that obtained in 1975. The previous record was set in the late 1980s, about 40 percentage points lower."*	*Follow Up*, Barron's
Gene Epstein	April 7, 2003	☺	*"We've also seen bull markets in housing, and price bubbles in different locali - ties. But nationwide, only once in this 35-year period did the median price of existing homes decline from the year before. That was in 1990, when the price fell 0.9%, followed by an 8.1% leap in '91"... "And as for the next several years, the key factor buoying house prices will be demographics. Household formation by 25-29 year olds, prime first-time buyers, has fallen 1.5% per year since the mid- 1990's, as the Baby Bust took its toll. But with all credit to the Echo Boom that followed, Census Bureau projections show this trend is already beginning to reverse itself. Household formation in the 25-29 age-group should grow by 1.8% between now and 2010."*	*Economic Beat*, Barron's
International Monetary Fund	March 2004	☺	*"House prices do not appear particularly out of line with disposable income…declining mortgage interest rates have allowed homeowners to reduce mortgage payments through refinancing…" "With home ownership rates increasing sharply for individuals in their 30s, the coming of age of the last cohorts of the baby-boom generation may have had a large impact on the housing market. In addition, a decline in average house-hold size and a pickup in immigration may also have helped boost demand…" "The growing use of mortgage-backed securities has made the U.S. mortgage market significantly more efficient, reducing costs for mortgage applicants and improving access to mortgage loans for lower-income households "*	*Are U.S. Households Living Beyond Their Means?*, IMF
Paul Macrae Montgomery	March 8, 2004	☺	From an interview with Sandra Ward in Barron's: *"I've regressed median single-family housing prices against stock prices back to the mid-1800s. They tend to go through cycles in which stocks do better sometimes and sometimes real estate does better. These cycles have tended to last roughly 17-18 years, and as of March 2000, stocks had outperformed real estate for about 18 years. It was time for that cycle to turn, and it has turned. Real estate has done better for the last five years. I don't think it is a bubble. We are on a cycle where the relative strength in real estate, and commodities in general, ought to be better than stocks."*	*View From the Top?*, Barron's

The bullish...

Many economists dismiss the idea of a US housing bubble...

Those who have looked at this issue and concluded that there is no bubble include Alan Greenspan who on May 6, 2004 commented:

> *"But a destabilizing contraction in nationwide house prices does not seem the most probable outcome. Indeed, nominal house prices in the aggregate have rarely fallen and certainly not by very much".*[2]

About a year earlier he stated:

> *"To be sure, the mortgage debt of homeowners relative to their income is high by historical norms. But as a consequence of low interest rates, the servicing requirement for the mortgage debt of homeowners relative to the corresponding disposable income of that group is well below the high levels of the early 1990s. ...the total servicing costs faced by households relative to their incomes are below previous peaks and do not appear to be a significant cause for concern at this time".*[3]

Robert Shiller (a professor at Yale and author of the timely "Irrational Exuberance" in 2000 that foretold the stock market collapse) stated:

> *"...it is most unlikely that there would be a nationwide drop in home prices. With available data of the last few decades, there has never been a nationwide price drop".*[4]

Last, Jonathan McCarthy and Richard Peach, both of the Federal Reserve Bank of New York, released a study in June 2004 that found:

> *"...little evidence to support the existence of a national home price bubble".*[5]

Indeed, they went further. Pointing out that since 1990 the decline in mortgage carrying costs and the rise in median family income means that the maximum mortgage allowed under prevailing lending conditions has risen by nearly 130%, compared with a rise in the Office of Federal Housing Enterprise Oversight (OFHEO) price index of just 72%, they ask:

> *"Perhaps we should be asking why home prices did not rise even further under the circumstances."*[6]

2 Remarks by Chairman Alan Greenspan on 'Globalization and innovation' at the Conference on Bank Structure and Competition. May 6, 2004, http://www.federalreserve.gov/boarddocs/speeches/2004/200405062/default.htm

3 Testimony of Chairman Alan Greenspan, Federal Reserve Board's semiannual monetary policy report to the Congress. Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, February 11, 2003. http://www.federalreserve.gov/boarddocs/hh/2003/february/testimony.htm

4 Robert J. Shiller, "Safe as Houses?", The Wall Street Journal, December 17, 2002

5 Jonathan McCarthy and Richard Peach, "Are Home Prices The Next "Bubble"?", FRBNY Economic Policy Review, 22 June 2004

6 Jonathan McCarthy and Richard Peach, "Are Home Prices The Next "Bubble"?", FRBNY Economic Policy Review, 22 June 2004

...and the bearish

... while other economists believe real estate prices nationally are excessive

But other commentators have for a good while been bearish on real estate.

The Economist has been especially vocal, first raising the specter of a housing bubble early in 1999.[7] Since this time it has frequently warned of an upcoming fall in house values globally.

May last year it warned that *"average house prices in America could fall by 10% in money terms over the next four years"* and that *"...prices in New York, San Francisco and Boston might drop 20% or more."*[8]

Since this time, prices have risen by approximately these amounts, not fallen. In a table entitled *Waiting for the crash*, the paper also provided projected four-year price declines of 20% or more for five other countries, and in all cases prices have since risen, mostly by double digit percent increases. Over a year later, in a table entitled *Ripe to burst?*, The Economist made the same projections,[9] quietly ignoring the price rises since its first forecast that, one might think, would now suggest much larger falls were likely.

In 2002, the financial paper Barron's forecast an imminent fall in US home prices.[10] It recently acknowledged it was "*premature*" in making this forecast, but added:

> *"... the housing bubble has continued to inflate... [and] ...a pricey market merits caution. And this one's downright frothy. According to data collected by Bridgewater Associates, existing home prices relative to average US household income has risen to record levels, some 60% above the ratio that obtained in 1975. The previous record was set in the late 1980s, about 40 percentage points lower."*[11]

Perhaps the best recent critique of the US housing market was presented by HSBC. Issued late June 2004, it points out that on a wide number of measures housing in the US is at or beyond historical measures, and that:

> *"Expectations of future house price appreciation are spectacularly, and unrealistically, high... House prices relative to income, rent, replacement-cost and home-equity have set new highs... Prices are 10-20% too high and can overshoot on the way down."*[12]

7 "House Party", The Economist, February 25, 1999. Incidentally, this occurred a month before The Economist suggested the per barrel price of oil "may be heading for $5" ("The next shock?", Mar 4th 1999); it is today over $40.

8 "Castles in hot air", The Economist, May 29th 2003

9 "Hair-raising", The Economist, June 3rd 2004

10 "Home Groan", Barron's, April 15, 2002

11 "Follow Up", Barron's, April 12, 2004

12 Ian Morris and Ryan Wang, "The US Housing Bubble", HSBC, June 2004

Across all these studies, whether bearish or not, one recurring theme is that real estate values in a few 'hot-spots' – including, San Francisco, San Diego, Boston and New York – are especially high and vulnerable to a fall, possibly up to 30% in nominal terms. As the Wall Street Journal reported over two years ago:

> *"Many economists argue that markets like San Francisco and New York might be extraordinarily overpriced".*[13]

Both optimists and pessimists express concern about valuations in some metropolitan 'hot spots'

Even studies that do not suggest the existence of a national housing bubble concede that in some markets valuations are high and pull backs are likely.

We investigated the 'hot spot' of Manhattan, one of the supposed more egregious real estate bubbles. We did this using average square foot price data from 1979 to the latest available (Q2, 2004), which provide a unique opportunity for historical comparison. These data were provided by Miller Samuel[14], New York's leading authority on its real estate values. We provide below some additional comments about price indices and the data we used.

Business360 looked at Manhattan – one of the supposedly more overvalued markets – and found that despite recent strong gains, real estate does not look overvalued from a perspective of two decades

Our findings underscore the sharp rise in real estate prices since the mid-1990s, and how they have outpaced personal income over this period. But by using a wider historical view, and taking into account other important factors, we find that Manhattan real estate is not overvalued.

13 "Here's How to Buy a New House In the Midst of a Market Bubble", The Wall Street Journal, June 4, 2002

14 Miller Samuel, New York's leading authority on its real estate values, has been providing residential real estate appraisal and consulting services in the Manhattan real estate market since1986. Last year the firm provided valuations of approximately $3,500,000,000. Miller Samuel maintains the largest database of historical sales information on the Manhattan residential market and prepares several extensive market reports with a annualized distribution of more than 125,000.

Observations on the data

Issues with using house price indices

Assessing real estate price movements is not as easy as it might appear. Unlike goods in most markets, each property is unique and typically turns over at a slow rate, often without transactions on particular properties for years. Economists use various indices to capture price trends, but each presents issues.

Aggregate house price movements are captured with various indices that often give very different views on price changes

There are broadly four types of index:

- a simple mean or median of new home prices
- a mean or median of existing home prices
- a repeat sales index
- a constant-quality index

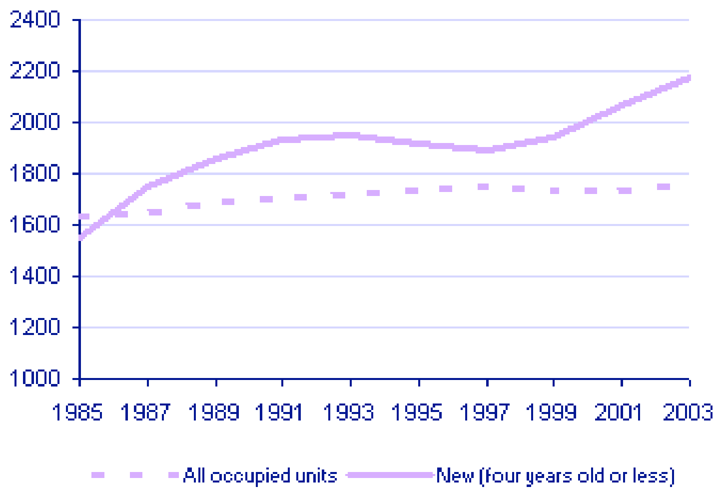
The Bureau of the Census of the US Department of Commerce publishes a median price of new homes sold. However, using just new homes gives a very selective view of the market, although it is useful to highlight emerging trends. Also, because of sales mix changes and seasonality, this measure can be volatile.

The National Association of Realtors (NAR) publishes a monthly index of existing single-family home sales as well as data for existing single-family apartment condos and co-op sales. This measure is also affected by sales mix changes and seasonality.

The OFHEO produces a repeat sales index that controls for mix changes. This index looks just at sales of properties that have been previously sold, and consequently provides a more 'like-for-like' view of price changes. However, this index only captures information based on mortgage securities purchased by Fannie Mae and Freddie Mac, which is limited to conventional mortgages: 'Jumbo' loans that exceed the conforming limit are excluded. The exclusion of Jumbo mortgages, which account for around 10% of the total mortgage market, means the market for higher priced homes is largely omitted from this measure.

A constant-quality index attempts to adjust for the trend to larger and better quality housing, which gives a natural upward drift to house prices: even if there were no overall house-price inflation, median prices would rise as larger and better properties replace smaller, less facilitated ones. Size changes are well documented. According to the National Association of House Builders, the average new house was 1,905 square foot in 1987, compared with 2,320 in 2002. In the 1950s it was around 1,000 square foot. Of course, since new build makes up typically less than 1% of the total housing stock, the size of the total stock does not increase as fast (Chart 1), lessening the argument that the effects of changes in size contribute a large portion of the price gain.

Chart 1: Size of all new-build and occupied units



Sources: American Housing Survey for the United States

Separately, housing has been getting better. Facilities that were once extras are now standard (e.g. air conditioning), and developers often include communal services – gyms, pools etc – that add value to property. This too gives a natural upward drift to prices.

Some believe the rise in quality to be large. A study by Mills and Simenauer (1996) concluded that quality variation over the 1986–1992 period accounted for over half of the NAR's reported increase in housing prices.[15]

One way to control for changes in size and quality is to use a constant quality price index. These are constructed using hedonic regression techniques that seek to identify the contribution of quality improvements to price changes, which can then be adjusted for to leave a 'constant-quality' measure. The US Bureau of the Census compiles a constant-quality index every quarter, but only for new homes; there is no established constant-quality index for existing homes.

15 Mills, E. and R. Simenauer, "New Hedonic Estimates of Regional Constant Quality House Prices", Journal of Urban Economics, 1996, 39, 209–15.

Some commentators have been dismissive of these measures. HSBC, for instance, using some broad brush assumptions, points out that investment in housing has been insufficient to offset depreciation, suggesting an overall degradation in quality.[16]

While all this is a little arcane, the choice of data set is critical to any analysis. Table 2 below shows the cumulative increase from Q1: 1977 to Q3: 2003 for the four main indices.

Home price appreciation over the last 25 years or so is significantly less when assessed on a constant-quality basis; other measures show roughly similar levels of growth

Table 2: Home price appreciation, 1977 (Q1) to 2003 (Q3)

	Median price of existing homes sold	Median price of new homes sold	OFHEO (repeat sales)	Constant quality new home index
Cumulative increase (%)	337	311	321	199

Sources: National Association of Realtors; US Department of Commerce, Bureau of the Census; Office of Federal Housing Enterprise Oversight, as provided by the Federal Reserve Bank of New York

Using a constant-quality index greatly lowers the estimate of home price increases; all others show further increases of 60% or more, a massive difference and more than enough to swing the results of an analysis on the existence of a housing bubble. Using a constant-quality index is conceptually the correct choice, provided consumers have a range of quality options and the index accurately reflects consumer perceptions of quality, but it is not clear that either condition applies.

To assess price movements, we used the simple measure of $ per square foot

In our look at the Manhattan residential real estate market we have largely side-stepped these issues. We use prices on a square foot basis, derived from a large number of transactions. Data are not restricted by mortgage type, age of dwelling etc, and there is no control for quality changes. The data set comprises a mean price given on a constant basis (square foot) from many thousands of transactions each year in a geographically defined area. These data extend back to 1979 and offer a unique opportunity to assess housing economic values over time in Manhattan, one of the most cited 'hot spots' in the US real estate market. As far as we know,

16 Ian Morris and Ryan Wang, "The US Housing Bubble", HSBC, June 2004

Business360's work is the first use of these data to analyze real estate valuations in this market.

There are a couple of ways the data we are using may be skewed:

First, there is a premium in Manhattan on contiguous space, such that larger apartments are more expensive than the increase in size alone would suggest. Growth in average apartment size, as larger new apartments are built and old ones are knocked through, combined with the greater value on contiguous space, could bias price increases upwards.

Second, working in the opposite direction, over the ten years to 2003, there has been an increase in the proportion of studio and one-bedroom apartments sold, and this would lower average square foot prices calculated on an arithmetic average basis. However, we use a weighted average square foot price that accounts for the change in mix and believe residual effects to be insignificant.

It is also worth pointing out that the New York and Manhattan markets are unusual in a number of important ways. First, roughly 75% of New Yorkers rent – almost a reverse of the national picture where approaching 70% now own. This reflects the transient nature of some of the population and the inability of many lower paid workers to buy.

A further complication is that New York has a large number of co-operatives (co-ops), over 80% of the national total, where owners hold shares in a corporation that owns the entire apartment building. Around 80% of the New York market is made up of co-ops with the rest being condominiums. Co-ops typically limit to two years the amount of time that owners can rent their apartment, which effectively means that aside from special cases (rent controlled co-ops, sponsored apartments etc) the active rental market is served by condos.

While condos may be purchased to rent, and rent to price is an important valuation metric, renting is not a viable option for most co-op owners. In Manhattan, the primary economic driver is the relative costs of renting and owning which, for a family with income to sustain a mortgage, usually favors ownership because the tax deductibility of mortgage interest lowers effective ownership costs.

Analytical findings: summary

A case can be made that the Manhattan real estate market is a bubble only if you look at only the last seven years or so. With a broader time horizon - say 20 years - the market today looks relatively undervalued.

In our review of the Manhattan market we take two views – one that covers the last seven years (1997-2004) and the other that uses a longer time frame, usually 1984 to 2004.[17] In both cases we look at a range of indicators (including price increases, comparison with income, and comparison with other assets).

We find that real estate price increases in last few years have been very strong and outstripped the gains in personal income and other assets. Within this time period, gains have often been outside historical norms, with year-on-year increases reaching 39% for condos in the peak year of 2000. Further, since the mid-1990s, price gains have been sustained for longer than any other period in our data series. With interest rates widely forecast to rise from here it is easy to see why many foresee a fall in Manhattan real estate prices.

Restricting analysis to the last seven years or so can suggest Manhattan real estate prices are currently high…

Our second view considers a longer time-frame, looking back past the previous real estate peak (1987) to the early 1980s. This review underlines that Manhattan real estate is well within historical ranges and, certainly compared with the previous high, looks relatively undervalued. A few striking figures show this:

…but over a longer horizon of 20 years, Manhattan real estate looks relatively undervalued

Table 3: Nominal increase in Manhattan real estate prices to 2004
(Index of $/square foot)

	1997=100	1987=100
condos	234	187
co-ops	258	183

Sources: Miller Samuel, Business360 analysis

Since 1997 there have been strong increases in co-op and condo real estate prices, both more than doubling over the period with annual gains around 13%. However, since 1987 the increase has been more modest – about 85% - with annual gains of around 4%.

17 Please note, that in our analysis we have used Q2 2004 real estate prices when possible, but where only 2003 is available or we were unable to use reliable forecasts for 2004, we have used 2003 data. In all cases we have tried to make it clear.

Looking at real prices (Table 4), the gains from 1997 are smaller than nominal gains, but still large at 10% a year for co-ops. But real prices today are about the same as those in 1987, whereas most assets have risen in value strongly in real terms since that date (the S&P 500 has doubled in real terms, and the OFHEO House Price Index is up over 22% in real terms).

Table 4: Real increase in Manhattan real estate prices to 2004
(Index of $/square foot)

	1997=100	1987=100
condos	191	105
co-ops	210	103

Sources: Miller Samuel, Business360 analysis

Last, a comparison of real estate prices with personal income shows that since 1997 real estate prices have risen up to 80% more than personal income, making it relatively more costly to buy. However, since the last Manhattan real estate peak in 1987, personal income has grown considerably faster than real estate prices, such that the ratio today is only at 65% of its 1987 level.

Table 5: Ratio of Manhattan real estate prices to personal income

	1997=100	1987=100
condos	160	65
co-ops	180	64

Sources: Miller Samuel, Bureau of Economic Analysis , Business360

Our report provides additional analysis to support these general findings together with a view on future price trends.

Predicting real estate values from this point is not easy. In our data series, such strong price gains have always been followed by a pull back. Certainly, some commentators and buyers express disbelief at current prices and a small pull back, reflecting the ebb and flow of a normal market, would not be surprising. But our analysis shows that fundamentals support current valuations and could justify considerably higher prices.

Irrespective of any short-term weakness, and in the absence of a major economic shock such as that caused by another terrorist attack, the market looks sufficiently robust to justify price increases of around 10% per year for the three years to 2007 and between 5%-8% to 2010. This would put square foot condo prices at $1,185 in 2007 and as high as $1,490 in 2010.

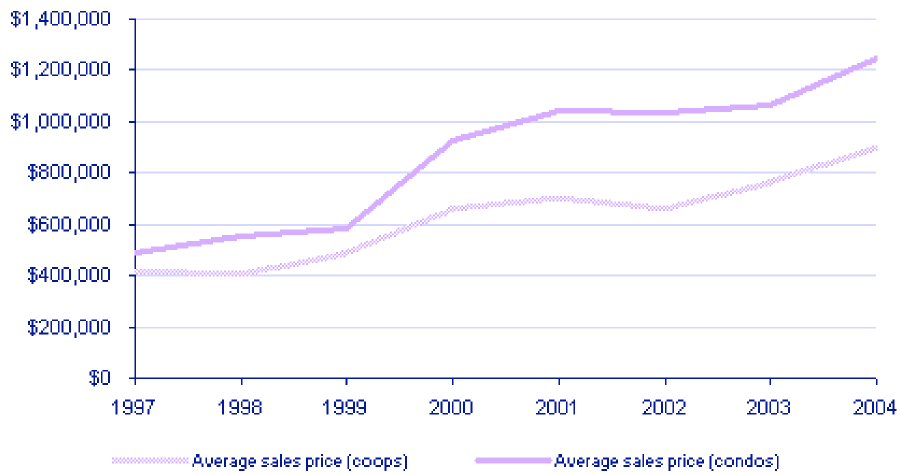
In the absence of a major external shock, we foresee continued growth in Manhattan real estate prices of around 10% a year to 2007, with reduced growth to 2010

Evidence of a bubble?

Real estate prices in Manhattan have increased strongly in recent years

Average sales prices and square foot prices of co-ops and condos in Manhattan have risen strongly and consistently since 1997, more than doubling over this seven-year period. Chart 2 graphs both these measures over this time. While the rate of increase fell even before 9/11 and the economic recession, the overall picture is of strength.

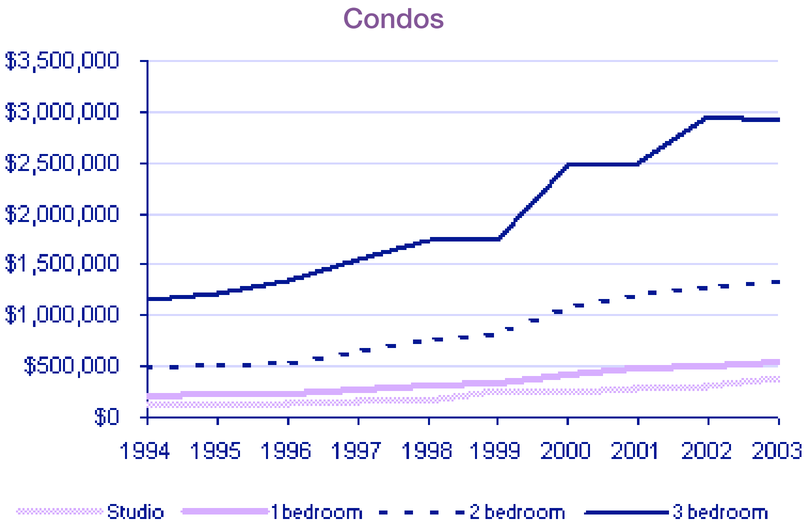
Chart 2: Average sales price and average price per square foot in Manhattan

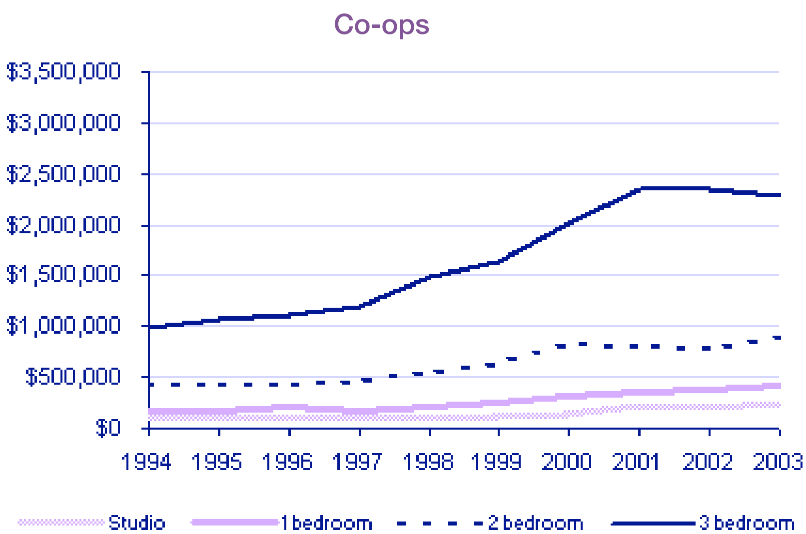


Sources: Miller Samuel

A similar picture emerges in each residential category. Chart 3 gives average sales prices according the number of bedrooms in the apartment; Chart 4 gives sales data on a square foot basis (note that these data are only available to 2003).

Chart 3: Average sales price
(Excluding 4+ bedroom apartments)

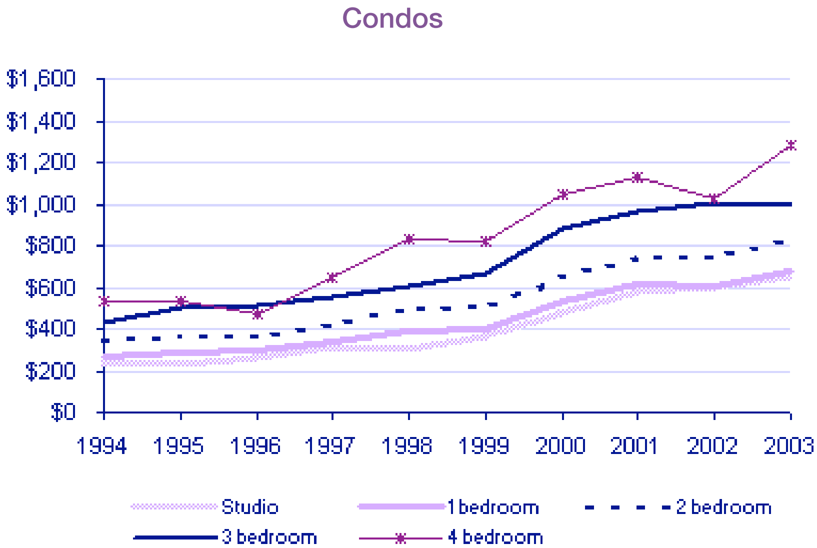


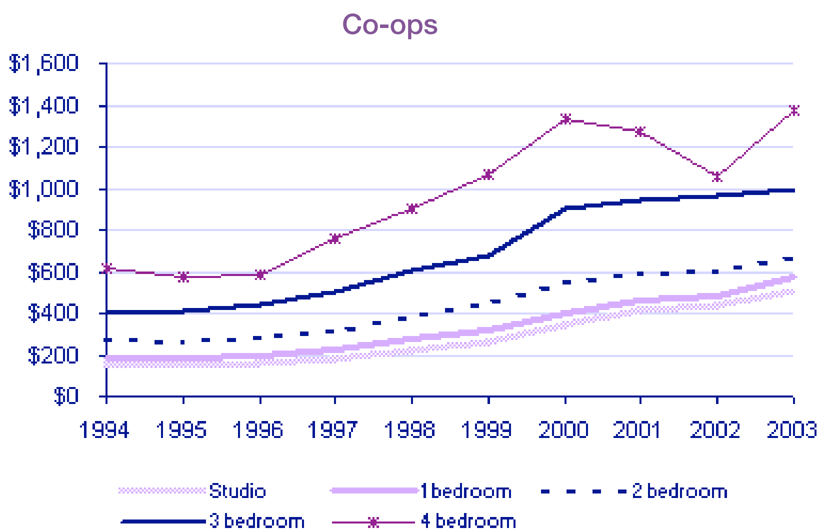


Sources: Miller Samuel, Business360 Analysis

Chart 4: Square foot apartment prices in Manhattan

($/square foot)





Sources: Miller Samuel, Business360 Analysis

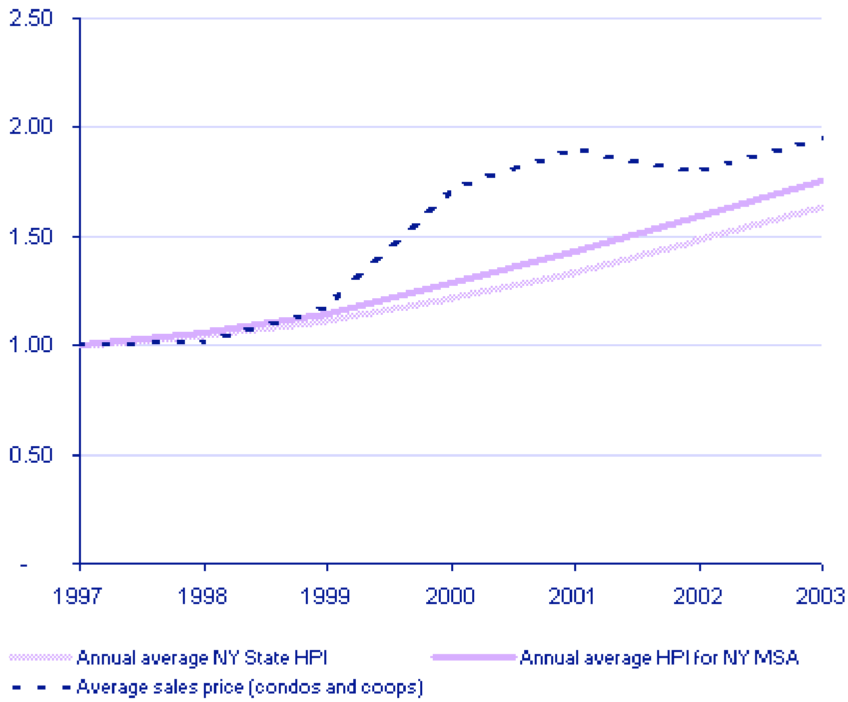
Square foot condo price increases in 2000 (up 39%) are the highest in our data series, which goes back 25 years. For co-op prices (up 26% in the same year) they are the third highest: in 1989 and 1981 co-op prices rose 28% and 40% respectively. Significantly, price rises since 1997 are the most sustained, with double digit increases in most years to 2003; this is without precedent in the period back to 1979. Moreover, never before have such sustained price rises occurred without a subsequent fall.

Last, average condo and co-op prices per square foot have risen every year since 1995, which is again unprecedented.

Manhattan prices have recently risen faster than those in neighboring areas

Since about 1997, real estate prices in Manhattan have risen faster than those in the surrounding metropolitan area, or New York State (Chart 5). Since we use square foot price data, which does not exist for the surrounding area, it is difficult to get a like-for-like comparison. Instead, we use the House Price Index for NY State and the NY Metropolitan Statistical Area (MSA) as compiled by the OFHEO.

Chart 5: Indices of Manhattan, NY MSA and NY State house price increases
(1997=1.00)



Sources: Miller Samuel, Office of Federal Housing Enterprise Oversight (OFHEO), Business360 analysis

The OFHEO HPI is a weighted repeat sales index, and measures average price changes in repeat sales or re-financings on the same properties. In this sense, it is seen as a constant quality index and makes for a conservative comparison (a median or average price index would show a faster increase). Table 6 shows a different view and underlines that over the last six years prices in Manhattan have risen faster than neighboring areas, the state or the nation as a whole.

Table 6: Price appreciation index, 1977 to 2003

	Average Manhattan condo sales price	Square foot price of Manhattan condo	NY MSA HPI	NY State HPI	National HPI
Cumulative increase (1997=1.00)	2.18	2.03	1.76	1.64	1.46

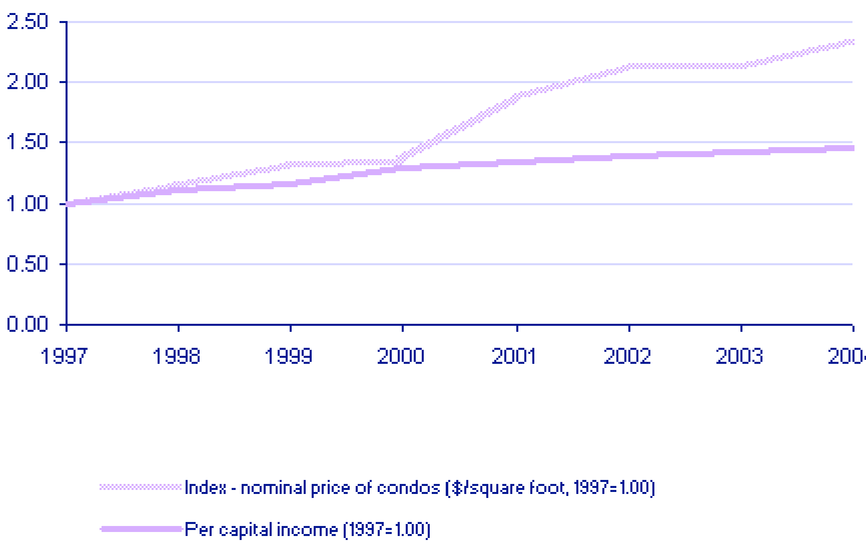
Sources: OFHEO, Miller Samuel, Business360 analysis

A similar view emerges over the ten years to 2003: square foot prices in Manhattan rose 154%; those in the metropolitan area rose 84%; and those in the State rose 68%. Price increases seemingly propagate from Manhattan out to the surrounding area, but with the effect slowly dissipating with distance.

Real estate prices have recently significantly outstripped personal income gains

Over the period 1997 to 2004, square foot condo prices in Manhattan have more than doubled (rising 136%) while per capita income has increased only 46% (Chart 6).

Chart 6: Comparison of real estate price gains and personal income gains
(1997 = 1.00)



Sources: Miller Samuel, Buereau of Economic Analysis, Business360 analysis

This pattern, which is present in many other American cities, is the foundation for the bubble theory – real estate is rising faster than income, and that cannot be sustained. Over the long run, this is of course true. However, our findings do not end with this observation.

Bursting the bubble theory?

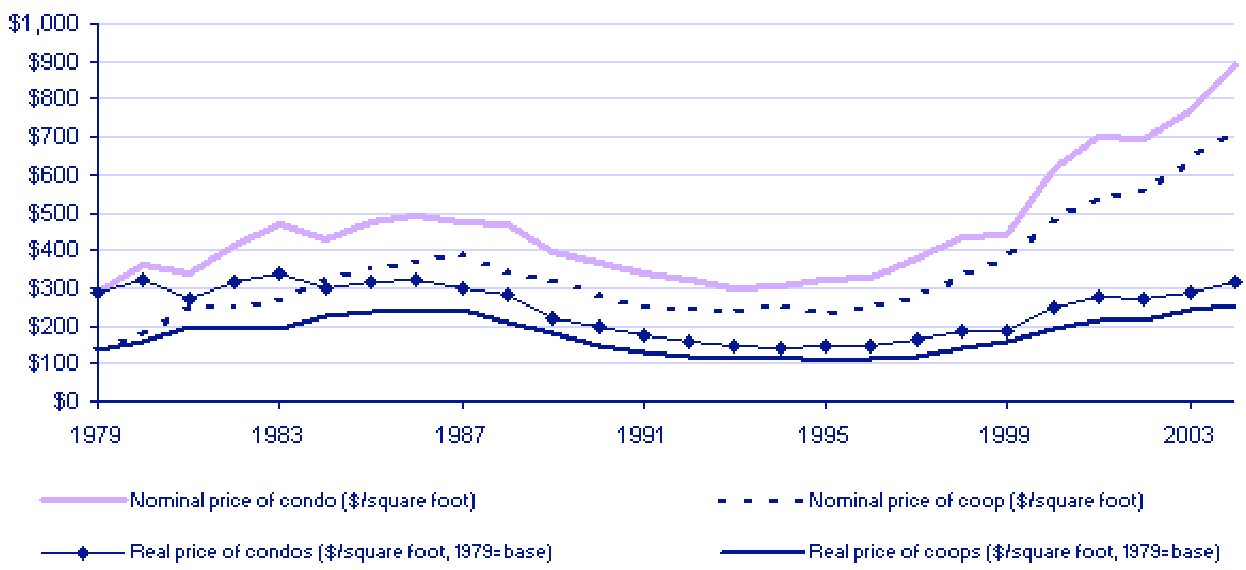
We agree that the picture over the last seven years or so points determinedly at the existence of a real estate bubble in New York, but why should the last seven years be the time horizon to assess the issue?

What follows is a review of Manhattan real estate prices over a longer time horizon – twenty years. There is nothing magical about 20 years. But it does give a longer time-view and underlines that caution is required when taking any partial view.

Manhattan real estate prices are emerging from a trough, and over two decades have lagged those elsewhere

While it is true that real estate prices in Manhattan have risen strongly since around 1997, this follows some six straight years of decline after 1987 (Chart 7). Nominal prices, which include inflation effects, did not regain their 1987 level until after 1999, and real prices, which exclude inflation effects, are today essentially unchanged from 1987.

Chart 7: Manhattan co-op and condo prices
($/square foot)

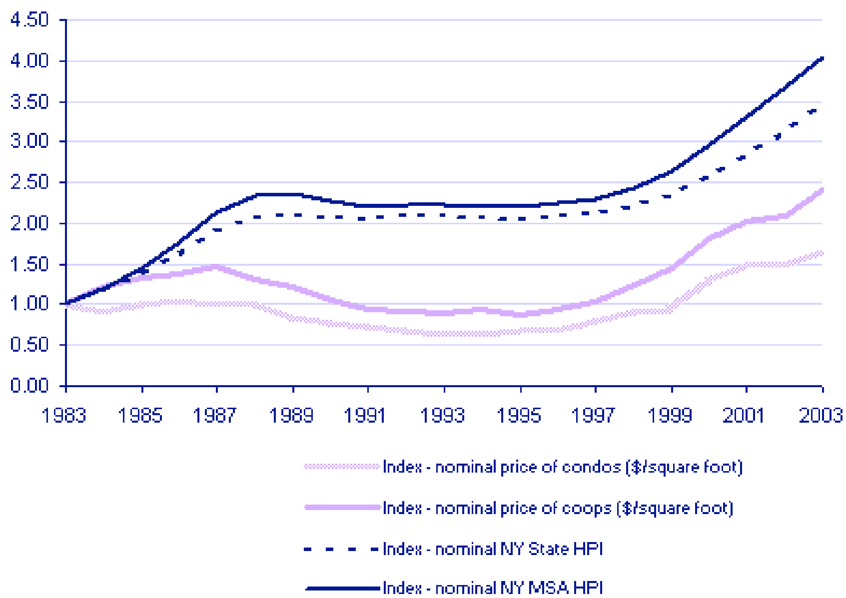


Sources: Miller Samuel, Bureau of Economic Analysis, Business360 analysis

This is remarkable and perhaps the single most surprising feature of Manhattan real estate prices. The real mystery is arguably, not that real estate prices are now so elevated, but that they fell so much in the early to mid-nineties. From an historical perspective there is still a way to go to catch up.

During the 1990s, prices in Manhattan fell further than those in the surrounding area. Chart 8 gives a comparison of Manhattan prices with those in NY State as well as the NY Metropolitan Statistical Area. While prices in the broader region roughly held their value in nominal terms, those in Manhattan fell over a period of six years.

Chart 8: Manhattan coop and condo price indices
($/square foot, 1983=1.00)



Sources: Miller Samuel, OFHEO, Business360 analysis

While we again run into difficulties of comparing price index data with the square foot prices we are using, precluding an accurate evaluation, the broad assessment should be robust. Table 7 gives cumulative price appreciation for the different areas, and shows that since 1983 prices in Manhattan have not increased as fast as those nearby, or indeed those nationally.

Table 7: Price appreciation indices, 1983 to 2003

	Square foot price of Manhattan condo	NY MSA HPI	NY State HPI	National HPI
Cumulative increase (1983=1.00)	1.65	4.05	3.46	2.88

Sources: HPI data from OFHEO, Manhattan real estate data from Miller Samuel

New York is not alone in experiencing nominal declines, but no other major metropolitan area saw such deep declines and, aside from Los Angeles, none were as prolonged (Table 8).

Table 8: Peak to trough declines in major metropolitan areas

	Manhattan Condo Prices	Manhattan Co-op Prices	NY MSA	Boston MSA	Los Angeles MSA	San Francisco MSA
Decline from peak	37%	38%	9%	11%	22%	11%
Peak and trough	1987 1993	1987 1993	Q2 1989 Q1 1995	Q4 1989 Q2 1992	Q3 1990 Q3 1992	Q1 1990 Q3 1994

Sources: Manhattan figures are taken from square foot price declines (source: Miller Samuel); all MSA (Metropolitan Statistical Area) figures are drawn from the OFHEO Housing Price Index

Either Manhattan prices in 1987 were unreasonably high, or the subsequent bust was unreasonably harsh, or (most likely) both are true.

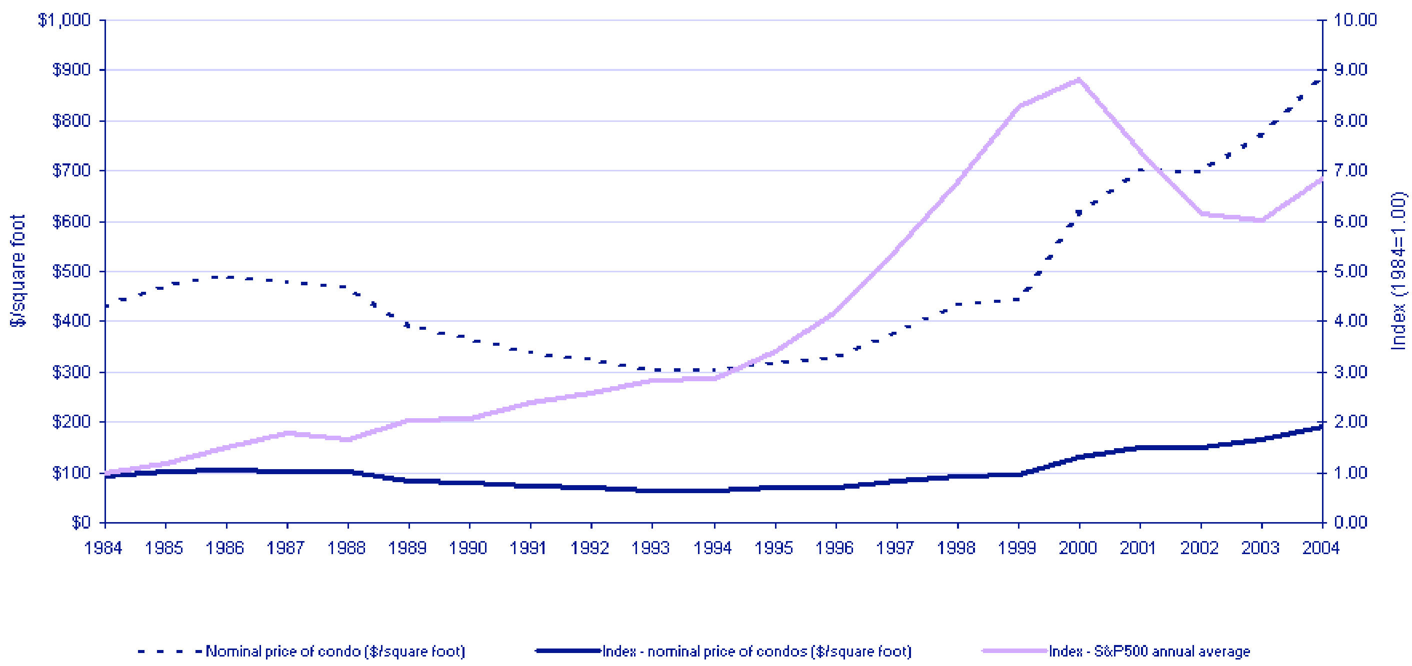
Other asset prices have risen much faster than Manhattan real estate

Peak-to-peak - 1987 to 2000 - the S&P500, which is a good proxy for the value of a range of income-generating assets, rose 360% (from 329 to 1518). As of today it is still up 226% on 1987. Over the same 13-year period, square foot condo prices rose from $477 to $616 (29%), and as of today they are up about 87%. The situation is much the same for co-ops. Generally, compared with a basket of other assets, Manhattan real estate has become relatively cheaper.

1987 marks a stock market peak as well as the peak in housing values in Manhattan (for most markets real estate values peaked about 18 months later), and is an outlying reference point. But comparisons are much the same for other dates. For instance, compared to 1990, the S&P500 is today up 222% (from 332), compared with 143% for square foot condo prices.

Chart 9 shows the strong increase of the S&P500 compared to Manhattan real estate prices.

Chart 9: Comparison of asset price increases, 1984 to 2004



Sources: Miller Samuel, Thomson, Business360 analysis

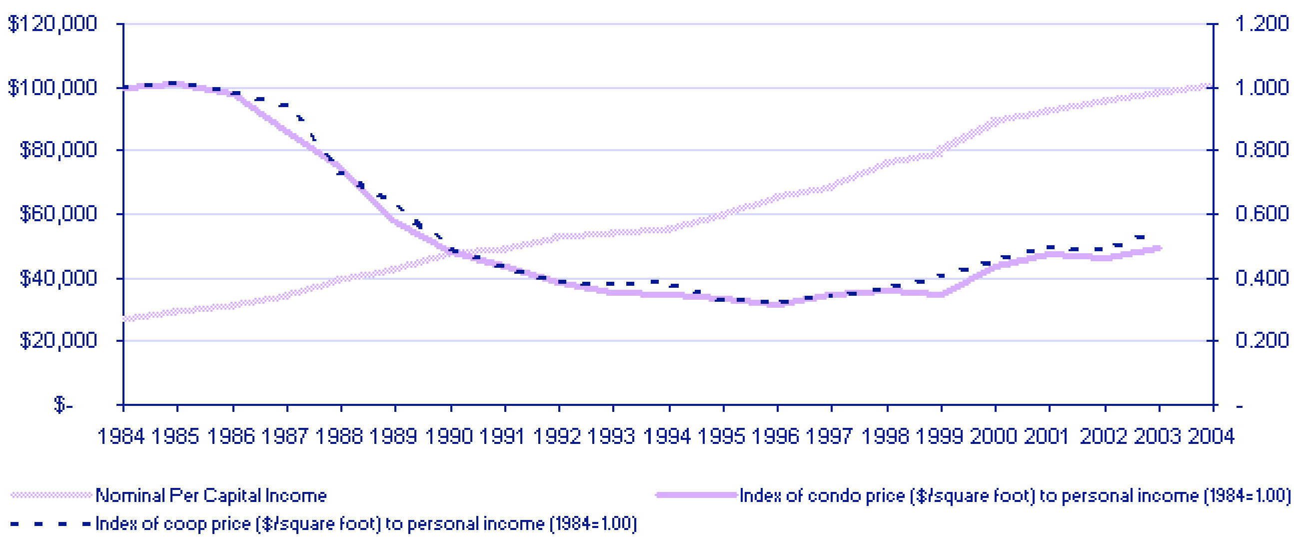
It is worth raising two points that affect the relative value of real estate to other assets. First, mortgage interest is tax deductible, lowering the carrying cost of real estate and making it relatively more attractive to hold. Second, capital gains tax on a primary residence have been greatly reduced following the increase in the capital gains allowance to $500k for a married couple ($250k for singles); for other assets, tax usually applies on the entire gain. Combined, these make real estate preferred in ownership and sale. All things being equal, its value ought to have risen compared to other asset classes. However, this has not yet happened, in spite of recent price gains.

Personal income has risen more than enough to offset price rises

As we pointed out above, real estate prices in Manhattan have recently risen much faster than personal income; with a longer time view, the opposite applies.

Chart 10 shows how personal income in Manhattan has risen strongly and consistently over the last two decades and, moreover, how it has risen faster than Manhattan real estate prices.

Chart 10: Comparison of personal income and Manhattan real estate prices, 1984 to 2004

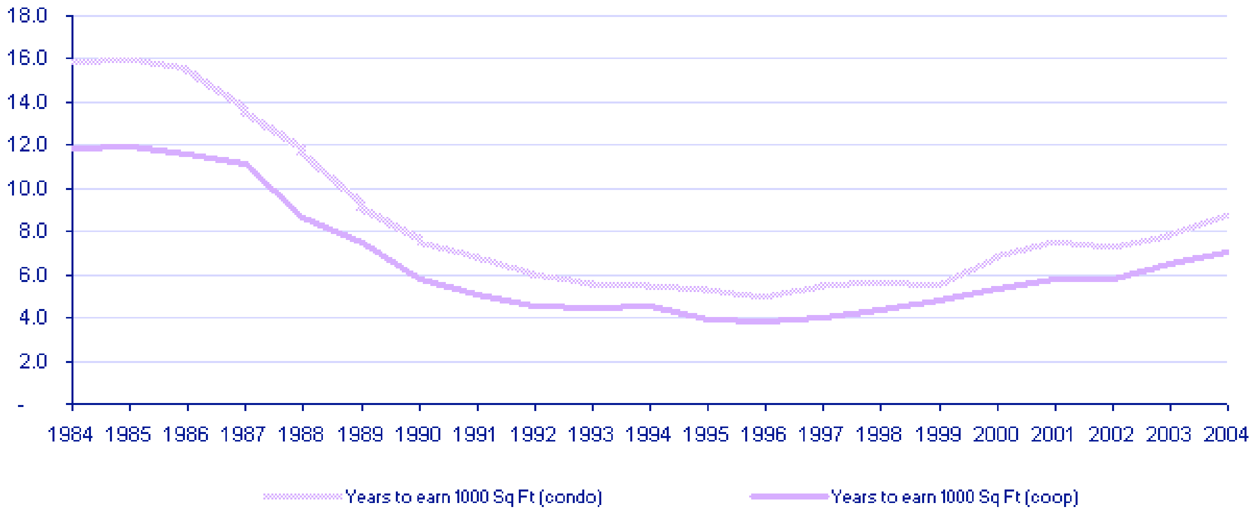


Sources: Miller Samuel, Bureau of Economic Analysis, Business360 analysis

Another way to compare income and real estate price changes is to track the time it takes the average person (or household) in Manhattan to earn the purchase price of a constant-sized apartment. We assumed a 1,000 square foot apartment, which is fairly typical for Manhattan. Chart 11 shows that since 1984 the number of years it takes the average person in Manhattan to earn the purchase price of a 1,000 square foot apartment has roughly halved, from 16.1 years in 1984 to 8.8 years today.

This is up from the 1996 low of 5.0, but still at the low end of the range. For the 1980s, the average was 15.4, and for only one year in the decade was it below 10.

Chart 11: Number of years to earn the cash value of a 1,000 square foot apartment, 1984 to 2004



Sources: Miller Samuel, Bureau of Economic Analysis, Business360 analysis

Note: based on personal income

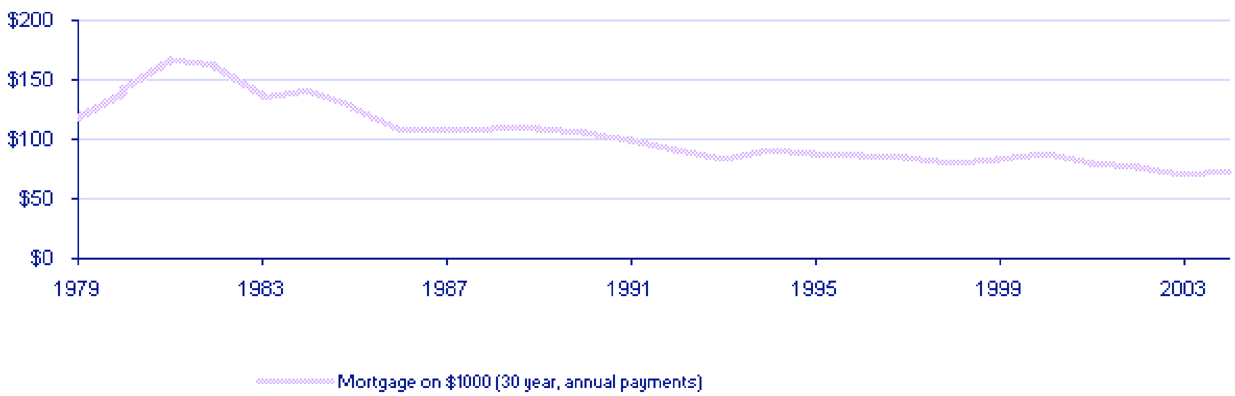
Since the mid-1990s, the amount of time required to earn the cash value of 1,000 square feet has risen, but today the figure is still well below the long term average. A similar picture emerges with household income.

Contrary to popular opinion, ratios of real estate price to income in Manhattan are well within historical norms.

Low mortgage rates help make today's real estate more affordable

Over the last two decades, the annual cost of a $1,000 mortgage over 30 years has fallen from $135 to $71, almost half (Chart 12). This decline is due to the secular fall in interest rates globally that has tracked the decline in inflation. Inflation remains low but there are indications that it is building momentum, and this will trigger nominal rate increases. However, it is difficult to see how rates could rise anywhere near the levels seen in the early 1980s, when they exceeded 15%.

Chart 12: Mortgage payments on $1,000, 1979 to 2004



Sources: Federal Home Loan Mortgage Corporation, Business360 analysis

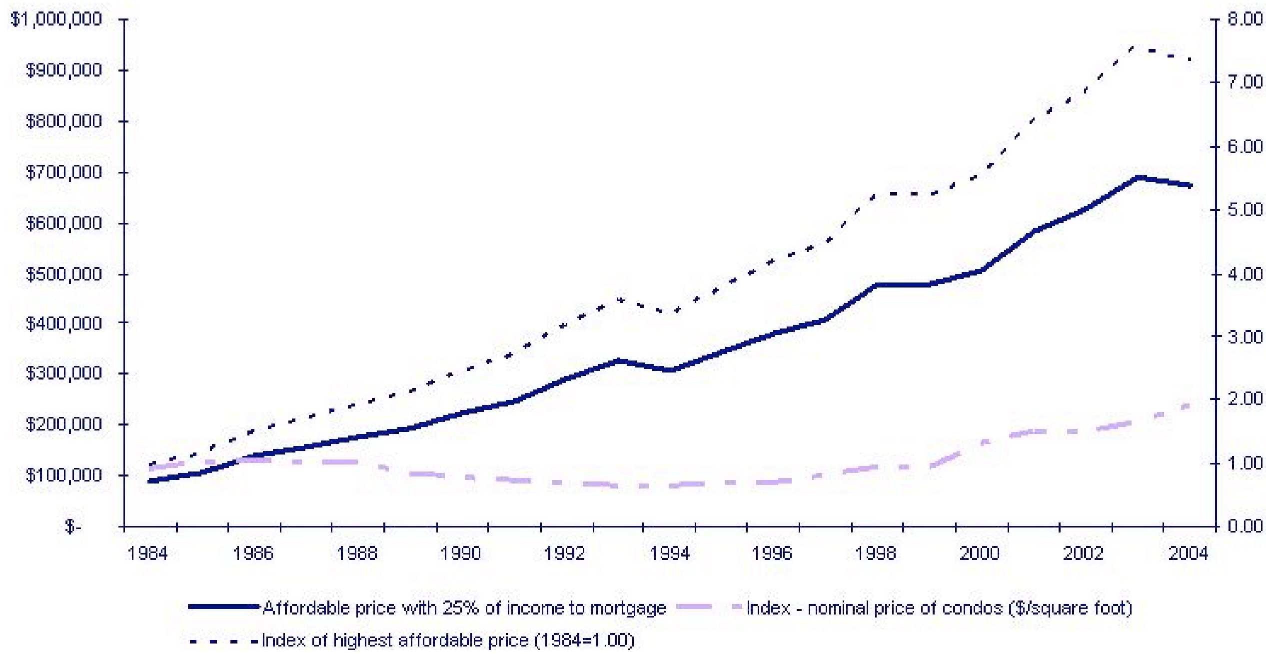
Note: assumes annual payments on 30-year mortgage, fixed at the then prevailing rate

There is a potential trap here for consumers. During earlier periods, inflation eroded much of the real cost of debt, but in this current low-inflation environment the real cost will persist. A number of commentators have pointed out that this may lure consumers into taking on too much debt or deter some buyers, especially as it becomes clear that inflation is set to remain low.

However, our belief is that, as with other products, as debt becomes cheaper consumers use more of it. This leverages demand: assuming a constant spend of 25% of per capita income on mortgage payments and 30-year rates fixed at the then prevailing level, the amount the average person could afford has risen almost year after year from $44,600 in 1983 to $337,000 today.

Chart 13 shows the case for the average household, assuming 25% of average income is allocated to paying a mortgage (fixed at the then prevailing 30-year rate). Aside from a few years (1994, 1999 and 2004), the price of property that the average household could afford to buy has risen every year, from $91,000 in 1984 to $670,000 today (up 630%). The same chart shows the index of co-op and condo prices over the period, which is up roughly 100%.

Chart 13: Manhattan condo average prices and comparison with highest affordable price



Sources: Miller Samuel, Bureau of Economic Analysis, Business360 analysis

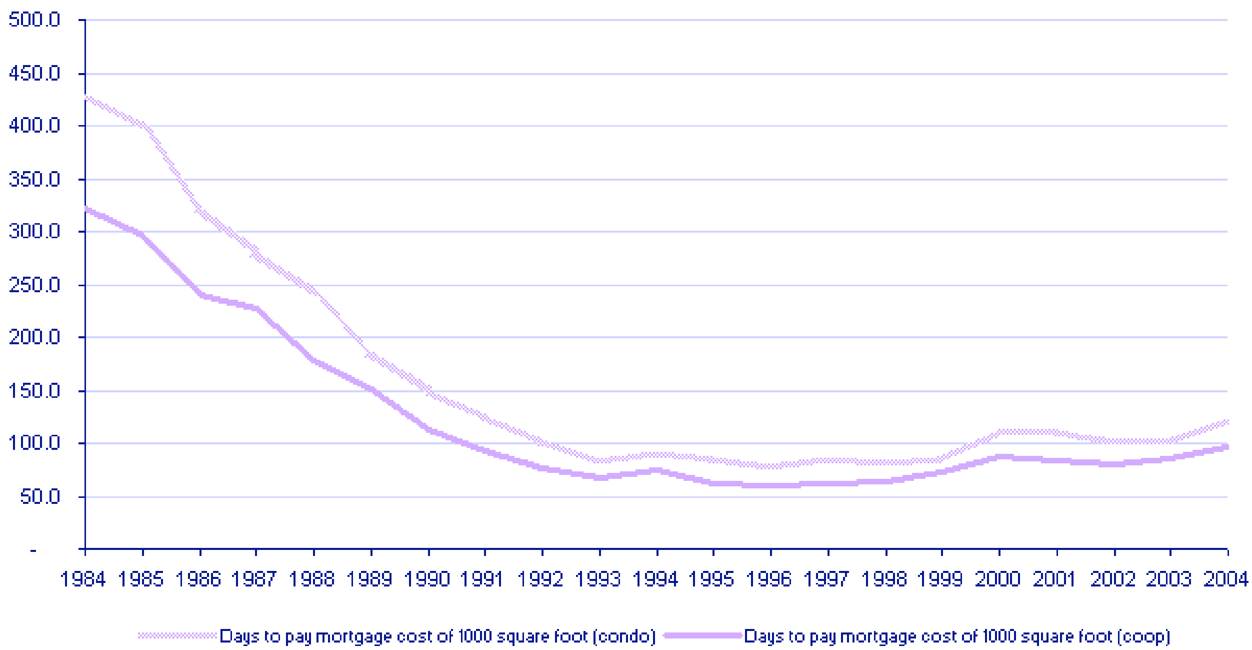
Note: 'Affordable price with 25% of income to mortgage' assumes 25% of average household income is allocated to mortgage costs, with rates fixed for 30-years at the then prevailing rate

While real estate has risen strongly in price, over the longer term people's income has risen more than enough to compensate and this, combined with the fall in interest rates, means the amount they can afford to spend on a mortgage has pushed the purchase price they can afford to pay substantially beyond actual price rises.

One consequence of this has been to make ownership viable to more households. But ownership levels in Manhattan (and New York) are low, at around 25%, compared with the national picture in which some 68% own, an all time high. Ownership is rising in Manhattan but there remains much untapped demand.

Chart 14 brings together the three factors we have looked at – the increase in real estate prices, rising household income and declining mortgage rates – to track the number of days required to pay mortgage costs on a 1,000 square foot condo for the average household. We find that it has declined fairly steadily over the last 20 years, with a small rise since 1999. We have estimated this measure by assuming that 25% of income is used to pay the mortgage, calculated at the then prevailing 30-year fixed rate.

Chart 14: Days of earnings to cover mortgage, 1984 to 2004



Sources: Miller Samuel, Bureau of Economic Analysis, Business360 analysis

On this measure, the minimum time required to work to pay mortgage costs was 78 days in 1996; the maximum was 432 days in 1984. Today it is 121, less than the arithmetic average since 1984 of 160 days.

Where now?

Conclusions about the existence of a Manhattan real estate bubble hinge on the time horizon used; where prices go from here is less clear

There is widespread belief that because house prices are at historical highs, further increases are unwarranted and declines are probable. In certain markets in the US this seems likely, and separate work we have done confirms this. However, our analysis of the Manhattan market, which is often cited as one of the more egregiously overvalued 'hot spots', shows valuations to be well within historical norms and that buyers have sufficient purchasing power to justify significantly higher prices. This gives context but does not say where prices will head from here, which is clearly a harder exercise.

We paint some boundaries by asking how prices today would change if they moved to the extremes of the metrics we looked at, specifically:

- the ratio of personal (or household) income to real estate prices
- the number of days it takes the average person (or house hold) in Manhattan to earn the mortgage costs for a typical-sized apartment

Personal income

Over the long-term, house prices should track personal income trends, after adjustment for sustained changes in interest rates and changes in consumer preferences. Earlier we estimated the time it takes the average person to earn the price of a 1,000 square foot condo apartment and found the extremes to be 5.0 years (in 1996) and 16.1 years (in 1984); today the measure stands at 8.8 years. Square foot condo prices would need to move from the current $890 by dropping to $506 or rising to $1,628 to reach such extremes.

Mortgage payments

Sustained changes in mortgage rates will affect demand for property since rates determine what proportion of income must go to support mortgage payments. The number of days required for the average household to cover mortgage costs captures this, and for a 1,000 square foot condo the measure ranges from 78 days (1996) to 432 (1984). Today, the measure is at 121 days and square foot condo prices would need to fall to $574 and rise to $4,929 to again attain these extremes.

Table 9 summarizes all these findings.

Table 9: Historic valuation extremes and movements required from today's values

	Current measure	20-year min	20-year max	Implied square foot price if applied today		% change from today's prices	
				Min	Max	Min	Max
Ratio of personal income to real estate[1]	8.8 years	5.0 years (1996)	16.1 years (1984)	$506	$1,628	-43%	+82%
Days to pay mortgage[2]	121 days	78 days (1996)	432 days (1984)	$574	$4,929	-36%	+454%

Notes: 1 defined as years required to earn the price of a 1,000 square foot condo with per capita income

2 defined as the number of days of average household income need to cover mortgage costs at the then prevailing 30-fixed rate

Against these historical comparisons, today's prices do not look excessive. 1984 valuations do look extreme by today's standards, but do indicate what can happen in a true bubble.

In our view, there remains sizable upside to residential real estate prices in Manhattan. First, personal income gains look to be solid: Woods & Poole expect personal income in Manhattan to rise at nearly 3% per annum for the next ten years,[18] which suggests a reasonable upward trend. One factor that we have not thoroughly explored, but which we consider important, is the growing disparity between average income and the income of wealthy individuals, notably those in the financial sector. For many in and around Manhattan, buying real estate is not a viable option but their incomes feed into the averages we use. Property ownership is viable for a fairly small proportion of Manhattanites but these have been getting disproportionately richer and probably find real estate relatively affordable.

Second, interest rates look likely to remain fairly benign and unlikely to rise much beyond 8% or 9%. Certainly, rapid hikes that precipitated previous house price collapses look unlikely. As rates rise, mortgage carrying costs will increase and reduce the amount buyers can afford, although the amount they can afford will likely remain at the upper end of historical ranges.

Last, there remains some catching up to do. A host of factors – population increase, improving urban living, strong housing formation etc – will continue to drive Manhattan real estate prices (Annex 1 gives a summary overview).

18 Woods & Poole Economic Forecasts, 2004 Data Pamphlet

In August 2002 we forecast five year growth between 8% and 15% annually; in 2003 prices rose 11%, and to date in 2004 they are up 15%.

Our current best estimate is that they will rise around 10% per year for the next three years and between 5%-8% to 2010, although this will likely occur unevenly. This would put square foot condo prices at $1,185 in 2007 and as high as $1,490 in 2010.

We believe that there is still substantial scope for further price rises; as much as 10% per annum to 2007 and 5-8% per annum to 2010

Annex 1 - Other considerations

Our analysis needs to be set against wider issues, some of which support a case for higher real estate prices and some that caution against them.

On the cautionary side:

- Another major terrorist attack would, of course, lessen confidence, weaken the local economy and adversely impact real estate prices. Conceivably, a radiological bomb or some other extreme incident could leave the market near paralysis for years

- A rapid rise in interest rates would remove the benefit of low financing costs. Bond markets are showing increasing volatility and there is a case that rates will this time rise unusually quickly and unexpectedly

- Debt levels are high, especially consumer ones. They are more manageable within the real estate purchasing segments but a prolonged decline in income through economic stagnation or job loss, or an increase in debt burden through rate rises, could have a serious impact on the ability of consumers to pay their mortgages

- A prolonged and severe economic downturn in New York would quickly affect the real estate market. In recent years, sectors important to the New York economy – finance, media, advertising – have suffered and probably will not recover to boom levels in the foreseeable future

- New York's increased property taxes will gradually push commerce away – The Economist cites E.J. McMahon's work at the Manhattan Institute that estimates the property tax will cost the city 62,000 jobs, 2% of the total.[19] This could have an enduring effect – declines in workforce levels appear to be behind the real estate price falls of the 1990s

- People may start spending less on accommodation than they once did, preferring instead to spend a greater share of their income on new items (ipods, PDAs etc) or items that were once considered luxuries (spas, vacations etc). This already seems to be happening, and if it continues it will lessen demand for property and dampen any upside

19 "Gotham in peril—again", The Economist, Nov 28th 2002

On the upside:

- New York has already experienced the world's worst terrorist attack and is bouncing back. Following 9/11, rental prices downtown fell around 30% across the board but roughly six months later had mostly recovered, partly on the absence of subsequent attacks and partly as bargain hunters from Manhattan and beyond seized their chance to live in more desirable areas. This underscores the pent-up demand for Manhattan real estate; people want to live near it even if they can't afford to live in it. Any price softness would be limited through buyers re-entering the market or entering for the first time

- Manhattan is a safer, cleaner and a much more desirable place to live, bringing demand from surrounding boroughs and regions

- Supply remains constrained. Industry experts estimate that demand in the less than $1 million market exceeds supply by around 2.5:1. Developers today cater more for larger (3-4 bedroom) apartments than the 1-2 bedroom mid-market, limiting supply. Planning restrictions in most urban areas are tightening, increasing new-build costs and restraining supply. This is especially acute in Manhattan, already a crowded island. As Mark Twain said, *"Buy Land. They ain't making it any more."*

- New York is a gateway city, attractive to people the world over. Manhattan's population is rising - from a 1982 low of 1.42 million inhabitants; it is approaching 1987 levels of 1.54 million. (Interestingly, the flight from Manhattan in the 1970s and 1980s led to a population level not seen since the 1880s when the population first passed this mark.) Census 2000 results show unexpectedly high levels of immigration into New York - which in the 1990s grew by a high 9.4% - that will be an enduring driver for real estate demand

- New York City's population grew considerably faster during the 1990s than in the 1980s – 3.5% (1980-1990) compared with 9.4% (1990-2000). During the 1990s, New York's foreign-born population increased by nearly 800,000.[20]

- In the latest Harris poll of desirable cities New York was again top, a position it has occupied for six of the last seven years, in spite of the events of 9/11; in the year New York lost first place, 1998, it was rated second to San Francisco

20 "New York in Focus: A Profile from Census 2000", The Brookings Institution Center on Urban and Metropolitan Policy, 2003

- As a proportion of disposable income, we are now spending less on other essentials. According to data from the USDA Economic Research Service, spending on food as a percentage of disposable income in the US has fallen from over 20% in 1950 (about 13% in 1980) to about 10% today.[21] This leaves a larger portion or a much larger disposable income available for other needs. Consumers may choose to spend this on more costly accommodation or other non-essentials

- Analysis by UCLA Professor Leamer of home P/E ratios shows that real estate values in New York are low com pared with rental income. Of ten cities compared in a Wall Street Journal article, New York had the lowest value - around 10.[22] Also, this figure had fallen from a 1989 high of 15. More surprising yet, the New York figure of 10 compares with a Seattle measure of about 24 and a rough mean for the ten cities of 19: New York real estate prices would need to double (or rents halve) to reach this mean. Professor Leamer has since updated the figures for markets in California and is now warning that in these markets P/E ratios are at historical extremes and prices are likely to decline

- Vacancy rates in New York and Manhattan remain moderate, although there has been an upward trend in Manhattan since around 1999

- Moreover, housing formation has been strong and is like ly to remain so. *"During the recession of 1990-91, the city actually lost more housing units that it gained. During the subsequent boom, its best year was in 1998, when developers completed 11,432 units and rehabilitated 6,967. However, household formation exceeded housing increases in every year of the decade, the peak reaching 44,700 in 2000."*[23]

- Real estate is an unusual asset. It meets a basic human need, ensuring some level of demand for it, and you consume it (by living in it) without eroding its marketable value. Consume other goods - cars, white goods, etc – and their value falls, while other investments generally do not meet a basic need and are discretionary

21 United States Department of Agriculture, Economic Research Service, June 2004

22 Sheila Muto, "Economist Adds Clarity To Home-Value Debate", The Wall Street Journal, July 15, 2002

23 Robert Bartley, "Rent Control: New York's Self-Destruction", The Wall Street Journal, May 19, 2003

- Demographic and other factors point to continued pressure on available supply: households are getting smaller as kids leave home earlier, divorce continues to create demand and there is growing demand for property from *pied a terre* commuters and other multiple home households

- Interest rates have declined steadily since around 1984 and the prevailing noninflationary environment means sharp rises are unlikely, certainly unexpected. The excess capacity in the economy, higher productivity levels and deflationary pressures - such as China's entry into the WTO – make it more likely that we are in for a period of subdued interest rates and, consequently, sustained upward pressure on real estate values

- Prestige and, of late, dollar weakness, make Manhattan a get-away destination for foreigners. Late last year the Financial Times reported that demand from foreign buyers in Manhattan was up 20%.[24]

24 Lauren Foster, "Where to look in Manhattan", Financial Times, December 20/21, 2003

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