A Repeat Sales Index for Office Buildings In New York City, 1900-2000

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Submitted to the Department of Urban Studies and Planning
and the Department of Architecture
in Partial Fulfillment of the Requirements for the
Degree of Master of Science in Real Estate Development
at the
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ABSTRACT

This paper comments on one of the real estate and financial world's most common adages: that real estate is a safe long-term investment that will perform equal to or exceed other common investments, particularly over long stretches of time.

With data drawn from a wide range of primary and secondary sources, a repeat sales index of large (250,000+ square foot) commercial building sales in the Midtown and Downtown sub-markets of New York City is created to illustrate how these properties have performed as an inflation-adjusted investment from 1900 through 2000. It differs from other papers that focused on hedonic modeling of building attributes and locational characteristics or that created appraisal-, lease- or property-share returns indices.

Although our findings were not statistically significant, appreciation is found to be rather flat over time, appreciating on average between a ¼ to 2/3 percent per year and mirrors the findings of Eichholtz 1997 and Eichholtz & Geltner 2002. This suggests that while commercial office properties may provide investment opportunities when purchased and sold at the right points in the cycle, it tends to under-perform other investment options when carried over time.

Thesis Supervisor: William C. Wheaton
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Mark would like to thank his family in Boston – Evelyn, Nathan, Mary and Lynne – and Connecticut – Eric and John – for their support and understanding over the last year and his classmates and professors of the CRE 2002 for creating a stimulating environment that made the year pass too quickly.

BIOGRAPHIES

Cesarina A. Templeton grew up in New Jersey with a picture perfect view of the New York skyline. She has lived in the Boston area since 1991. Prior to joining the MIT community, Cessy worked in many facets of the real estate industry including asset management, property management and leasing.

Mark S. Baranski is a resident of the South End in Boston, where he lives with his wife, Mary Helen Hull, and two children, Nathan and Evelyn. Prior to attending MIT, Mark focused on gut rehabilitations of Victorian-era brownstone properties for sale or for income. He has since expanded his focus into the new development of residential housing on constrained urban sites.

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INTRODUCTION

Statement of the Problem

Before there were STRIPS and real estate funds, in fact before there was currency, there was land. Land and real estate have long served as popular and desirable investment vehicles. In addition to a desire for control and security over one's home and surroundings, common reasons for investing in real estate include a stable or steady income; appreciation of the residual; embedded values from future development rights; and, more recently, a perceived inflation hedge and an apparent low correlation with equities and bond markets. Some of these reasons are easily confirmed although others remain in question. For example, the so-called "landed gentry" of England are conferred a degree of power and privilege solely because they own(ed) land. Monthly or annual distributions of cash flow are clearly desirable and, to a certain extent, the value of future development rights can be calculated and sold. An immediate question comes to mind, when considering the reason of appreciation – is the same parcel of land, or perhaps the building on it, handed down or transacted from generation to generation, worth less, as much or more today as it was decades or centuries ago?

Hypothesis

John Jacob Astor is reported to have once said, "Could I begin life again, knowing what I now know, and had money to invest, I would buy every foot of land on the island of Manhattan."[1] As one of the wealthiest and most successful businessman of his time, Astor's statement certainly belies this long-held adage that real estate is a safe, if not very profitable, long-term investment.

However, a recent article in the New York Times Sunday magazine[2] posed an interesting question: can a penthouse apartment could be worth more than the Empire

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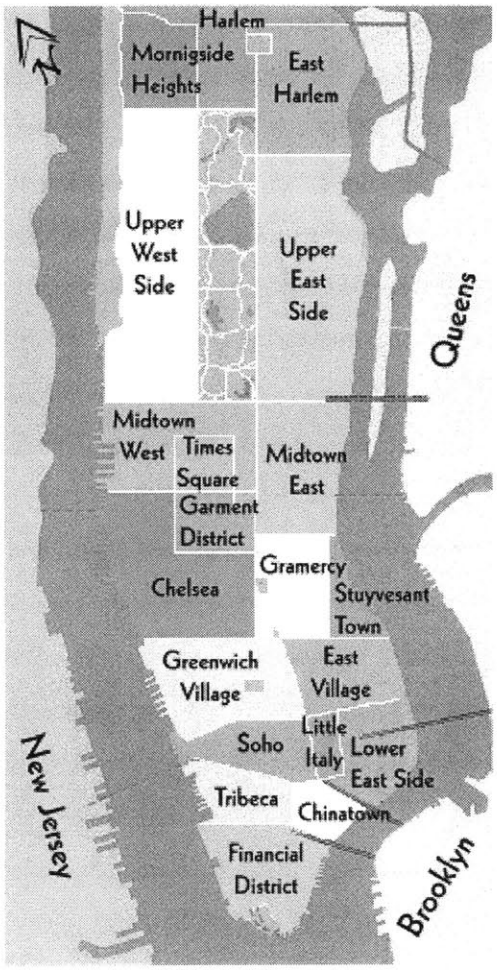
[1] *A Place Called Home: A History of Low-Cost Housing in Manhattan*, Anthony Jackson, 1976
[2] Bagil, Charles V. "Unreal Estate", *New York Times Sunday Magazine*, April 14, 2002, pg 28.

State Building. Donald Trump had recently listed a 20,000 square foot penthouse apartment for $58 Million – just a bit more than the $57.5 Million sales price of the Empire State Building only a month or so earlier. Of course, when you take a closer look at the intricacies of the capital structure, you realize that the Empire State Building has been subject to a series of leasehold and fee transactions that have partitioned the overall value of the parcel into a number of different entities. Nonetheless, the mere thought that such a magnificent and well-known building could sell for so relatively little sets the mind thinking. What if the Eichholtz paper on residential transaction values in Amsterdam over three hundred years, which found marginal returns over inflation, applied to commercial real estate as well?

This paper expands on the question posed above through an in-depth study of sales transactions that took place in a select group of New York City office buildings from 1900 through 2000. We intend for it to assist in the development of a comprehensive metric that can communicate the performance of commercial real estate holdings over an extended period of time.

We chose a well-established and actively functioning property market as the basis for our study – New York City. It has a long history of development, a large inventory of buildings and a good sampling of buildings built throughout the last one hundred years. As the center of the financial world, cash has flowed as readily to the real estate market as it has to the stock exchanges and financial markets.

A Brief History of New York City



New York City has long been an important commercial, cultural and financial center of the United States of America. Settled by the Dutch in 1624, it had been previously explored by Giovanni da Verrazano and visited by Henry Hudson. By 1790, New York City was America's largest city and served as the state capital of New York until 1797 and briefly as the United States Capital from 1789 to 1790. By 1900, New York City was firmly entrenched as the financial center of the country, if not the world.

Since that time, New York has stood as an icon of the strength and power of the United States. It is no coincidence that "since 1784, stock prices have been in a secular bull market that has lasted over 215 years coinciding with the existence of the United States as a nation" and New York as the center of this financial world. [3]

New York's allure extends to every walk of life; impoverished immigrants seeking the fulfillment of the American dream; actors, artists, musicians and writers hoping to find recognition and stardom; and financiers and innovators beating a path to the world's markets. With money and power so heavily concentrated in one place, there is no mistaking New York for any other city. Not coincidentally, New York is also a fertile

[3] "*The Collapse of Wall Street and the Lessons of History Learned*", Friedberg Mercantile Group, 3/16/1997.

breeding ground for architecturally distinct landmark buildings to accommodate the space demands on many national and international companies.

A past New York mayor, Philip Hone, wrote, "The spirit of pulling down and building up is abroad. The whole of New York is rebuilt about once every ten years".[4] By one count in 1902, the city that never sleeps was growing at a rate of 5,000 new buildings a year about 5% of those skyscrapers[5]. The introduction of steel beam construction and improved elevators came about during the onset of the new century and contributed to this boom. The revolutionary and pioneering 1916 New York City Zoning Resolution – which encouraged taller buildings set back from the streetscape – also helped skyscrapers spring from the ground and take over whole city blocks.

Measures of Real Estate Valuation

How then is real estate value measured and what are the factors that contribute to value? Commercial real estate values are currently measured through a series of national indices, property or portfolio-level yields and returns and other private or proprietary means of performance measurement. The National Real Estate Index (NREI) and the National Council of Real Estate Investment Fiduciaries with the Frank Russell Company (Russell-NCREIF) measure different properties in different sectors across the country. The NREI is a time-series index that organizes and analyzes rent and price data from 50 markets and six property sectors. Russell-NCREIF tracks the value of properties held by pension funds on an un-leveraged basis. However, real estate, like politics, is local. Because of the unique trading structure and the size and intricacies of the distinct real estate markets, it is difficult to create an accurate measurement of overall industry performance.

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[4] *New York Times*, "100 Years of NYC", Special Edition
[5] Ibid

Attempts have been made to use a repeat sales method to make up for the shortfalls of these two national indices. Abraham 1996[6] used a repeat sales method with property-specific net operating income data. Unlike these indices that measure the strength of a given market at a point in time, this paper attempts to measure the long-term capital gains of a given market.

As mentioned previously, the Eichholtz Herengracht study is the most thorough piece of literature presently written and it provides conclusive findings with regard to residential housing performance over the long term. Could Amsterdam be unique or are these findings fairly representative of major metropolitan areas throughout the world? Is commercial real estate, in even the most desirable market in the world, constrained by the same vagaries as the Amsterdam residential market - flat appreciation over time, with internal and exogenous factors contributing to shorter-term volatility? Does the monocentric city model of urban economics correctly assess the fate of major Central Business Districts (CBDs)? Perhaps the world's pre-eminent city will paint a different picture. More likely, the world's preeminent city may paint more than one picture about long-term gains.

Expectations

We expect that our conclusion of relatively flat appreciation will suggest that the only ways to profit from commercial real estate are in those stages where true value is created – development and re-leasing. Buying a building as a means of safely "tucking away" money, with no vision or plan for internal growth, will result in uninspired and disappointing returns.

Interestingly, our conclusions may have some impact in how REIT share values are assessed. Firms with development experience and capacity are at times considered overly risky vis a vis buy-and-hold firms. However, if we agree that substantial profit

[6] *Journal of Real Estate Research*, Jesse Abraham, 1996

over inflation can only be derived by adding value, we can surmise that development-oriented REITs and buy-and-hold REITs with extremely strong internal management and re-leasing capacity are the only REITs that over time should show appreciation.

Framework of the Paper

This paper is organized as follows: in addition to our statement of the problem and a general discussion on the history of New York and real estate markets and valuation metrics, we will review the relevant literature and similar studies, noting similarities and differences between our approach and findings and the body of academic work presently available. We will then provide a detailed illustration of our data, collection process and methodology. Finally we will share the results and conclusions derived from our statistical analysis as well as offer suggestions in how our thesis and data can be utilized and/or enhanced for future study.

LITERATURE REVIEW and SYNTHESIS

This paper is written as an expansion on many theories and papers on the topic of real estate transaction values indices. Perhaps the most compelling and influential was Eichholtz 1997, which created an index of real estate transaction values for a 300-year period on the Herengracht canal in central Amsterdam. The rather surprising outcome of this paper was that long-term value for these buildings was relatively flat, with the real value of the index doubling between 1628 and 1973. The first Herengracht data focused solely on residential properties, utilized data that was much deeper (older) and broader (more buildings) than we had available and was able to more effectively resolve issues of stable quality levels, obsolescence and renovations. The prominent similarity between the first Herengracht paper and ours was the use of a repeat sales method, addressed later in this section, as opposed to the hedonic method, used by Halvorsen & Pollakowski 1981, Linneman 1980[7] and others.

There is a body of literature that has focused on the creation of indices based on appraisals, as in Eichholtz & Tates 1993, Webb, Miles & Guilkey 1992, or the commonly known Russell-NCREIF index, or by rent values, as in Mills 1992 or Brennan Cannaday & Colwell 1984. As discussed in the first Herengracht paper, an appraisal approach can be flawed because the data can be subject to poor record keeping (if at all available over longer stretches of time) as well as varying appraisal methods and rates. Rent value indices are similarly challenged by the varying methods in which effective rent is derived as well as subject to flaws due to record-keeping over time and the general disincentive for real estate firms and brokerages to release this data, as it represents significant competitive information. Appraisal based-indices like the NCREIF have also been criticized for using smoothing techniques. These techniques have the ultimate effect of skewing the statistical results and, like hedonic methods,

[7] "A Long-Run House Price Index: The Herengracht Index, 1628-1973", *Real Estate Economics*, Eichholtz, 1997

impart some level of bias. The benefits and detriments of each method are broadly addressed in Fisher, Geltner & Webb 1994.

Hedonic versus Repeat Sales Models

Colwell Munneke & Trefzger 1998 applied a hedonic analysis to Chicago commercial office properties between 1986 and 1993. It noted a general upward trend over the study period. Most, if not all, of their data was drawn from one source – Real Estate Data, Inc. The researchers faced some of the same challenges we did – namely, deriving from many transfer declarations (deed transfers) if a valid sale occurred and if so, what was the value? In general, the hedonic approach is a valuation based on various individual attributes. The hedonic price equation considers the market price paid for a building to be a function of the levels of all observable characteristics of that building. The dependent variables are developed using actual or estimated transactions, while the independent variables include continuous variables, integer variables and discrete variables. This approach requires price information and a reasonably complete set of measures for the characteristics or attributes of the building and the neighborhood. This information can ultimately predict price.[8]

Shilton & Zaccaria 1994 provided compelling evidence in the course of their hedonic analysis of sales prices for 103 commercial office properties in New York City from 1980 to 1990 that building transaction values were affected by proximity to landmarks and major avenues as well as by the footprint of the building.

Our index is based on the repeat sales method, first suggested in Bailey, Muth & Nourse 1963 and discussed in greater detail in the ***Methodology*** section. The Bailey paper suggested a methodology that is the basis for many later papers. The common shortfall to a repeat sales index tends to be the lack of data. We tried to avoid some of the weaknesses expected and iterated in this type of index by Miles, Hartzell, Guilkey &

[8] DiPasquale and Wheaton, Urban Economics and Real Estate Markets, Prentice Hall, 1996 pgs 67-70.

Shears 1991, mainly significance problems due to the small amount of data available, but to some extent this paper is victim to the same shortfall. We do not necessarily agree with their conclusion that these indices are not constructible – rather, based on our time spent at various data sources, we feel that it can be built with the appropriate allotment of time.

The second Herengracht paper, by Geltner & Eichholtz 2002, had a similar methodology as the first paper but did not control for property use over the time period. In doing so, the authors allowed for changes to uses (particularly office) of potentially higher and greater use and hence greater value, which could contribute to an upward trend in sales values. The previous paper had eliminated transactions when a change of use occurred. Despite the possible upward trend derived from change of use, appreciation tended to be flat, as in the first paper.

DESCRIPTION of DATA

"New York itself outgrew its natural shoreline, swelling with landfill by some 13 square miles after 1898. And still it grows, all the time grappling with two conflicting visions: a monumental city built on a grand design, and a commercial mecca built spontaneously by capitalism and democracy."[9]

Although technological and policy advances from the early 20th century were the propagators of today's New York, New York City has always buzzed with activity, from art and music to agriculture to commerce and trade.

Legal Organization

New York City consists of five boroughs, the Bronx, Brooklyn, Manhattan, Queens and Staten Island. Each borough is also a county – therefore the Bronx is in Bronx County , Manhattan is in New York County while Brooklyn is in Kings County and Staten Island is in Richmond County. When this paper refers to New York City, we are referring to Manhattan. Citywide statistics refer to all five boroughs and county statistics unless noted otherwise.

Although New York City's population has more than doubled since 1900, there has been little growth since the 1930's and periods of contraction until the 1990's. Manhattan has lost more than a half a million people since the first decade of the 1900s. The city, however, continues to add new buildings and additional square feet to the existing stock.

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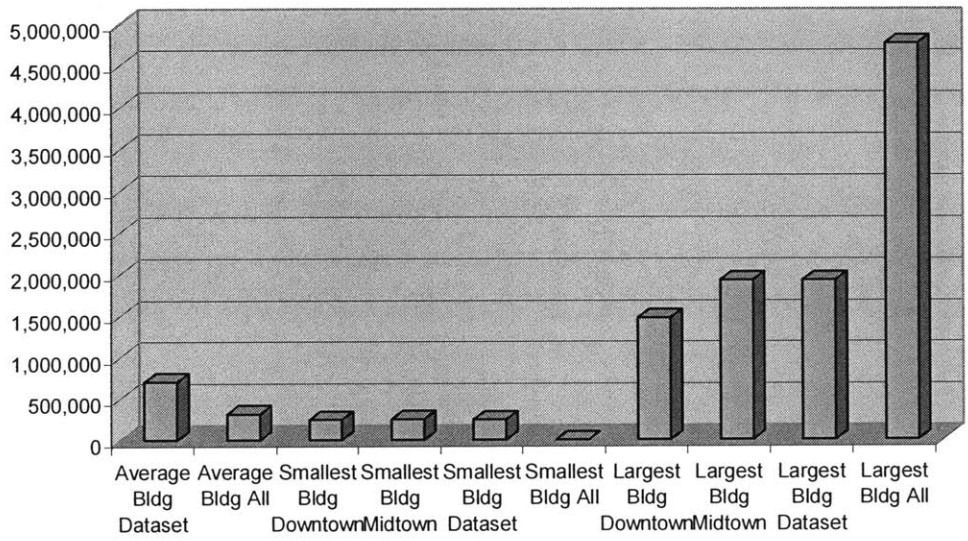
[9] Sam Roberts , *New York Times,* 1998 100 years of New York special

New York City Commercial Office Market

With close to 500 major companies headquartered in New York City and myriad other small- to medium-sized businesses and presences, the City requires a great deal of office space. New York City (Manhattan) consists of nearly 1400 office buildings that account for over 423 million square feet of space. These buildings range in size from 4,500 square feet to 4,761,416 square feet. The average building size is 317,248 square feet.

Building Sizes in Manhattan



The chart illustrates the range of property sizes in both New York City and within our data set.

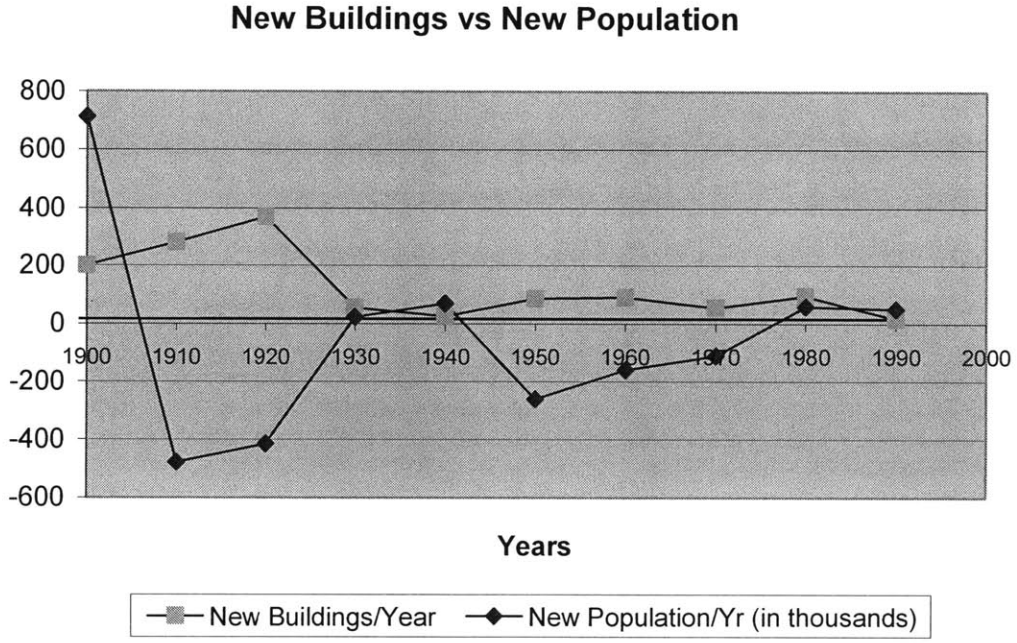
In terms of growth, New York championed the skyscraper. The thirty years from 1900 through 1930 represent the greatest building boom in the city's history. Eight hundred and fifty buildings were built during that time period. With only 424 new buildings

coming on line thereafter, the following seventy years of the century pale in comparison to those initial decades.

Interestingly, the decline in the building rate coincided with the population decline. It is very likely that improvements in transportation and/or employment decentralization factor into the precipitous declines. Additionally, the changes to the zoning code in 1961 may well be a factor in the reduction of new buildings.

There may be other reasons population and building relate. Transportation and decentralization issues aside but along the lines of the zoning code, economic factors that effect new construction are likely to correlate to population levels. The thirty-five page zoning code of 1916 was far less complicated than the nine hundred plus page code in use today. Is it possible that because it costs 35% more to build in New York City than elsewhere in the country, it is only possible to build to meet the demands of the high-end market (Class A office buildings and luxury residential buildings)? If this is in fact the case, then the demands of only one segment of the market can be met and the other market segments must go elsewhere to the outer boroughs or suburbs of the city.

If governance issues are effecting the ability to bring new buildings on line and the market is then not able to meet demand and if this has been going on for the last forty years, can we not expect real estate values to be higher? We shall see later.



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The Midtown Market

Midtown Manhattan is roughly forty blocks north and south and spans from the East River to the Hudson. Commuters coming from north (Westchester County), east (Queens) and west (Northern New Jersey) of the city access midtown more easily than downtown. The Empire State Building, Chrysler Building and Rockefeller Center are all located in midtown.

Midtown provided the largest number of buildings (253) that fulfilled our stated guidelines. We used 28 buildings which are located within the following sub-markets: Columbus Circle, East Midtown South, Garment District, Grand Central/UN, Madison Avenue, Park/Lexington, Penn Station, Plaza

[10] United States Census

District, Rockefeller Center, Third Avenue, Time Square/Theatre District and West Midtown South.

The Downtown Market

Downtown Manhattan encompasses the southernmost tip of Manhattan Island. Downtown covers a much smaller geographic area than Midtown and its historic streets are much more densely packed than the gridded streets and avenues of midtown. Wall Street, or "The Street" as it is known in financial circles, is located in the Downtown market. The Park Row building, pictured on the following page, was the world's tallest building in 1902 at 26 stories – it still stands today. Gotham City Hall is also located downtown and until recently the World Trade Center buildings stood in downtown. Commuters coming in from Brooklyn, Staten Island, Jersey City and Hoboken, NJ most easily access downtown.

The initial Downtown dataset consisted of 82 buildings in the following sub-markets: Battery Park, City Hall District, Greenwich Village, Insurance District, South Ferry Financial District and the World Trade Center.

Raw Data

Raw data for purposes of this paper was drawn from the commercial office building database of CoStar. We started with the nearly 1400 buildings across the entire New York City commercial market. Because we felt that smaller buildings could conceivably be affected by different transaction dynamics than larger buildings, we eliminated all

buildings below 250,000 square feet from the data set. Future indices should explore that building data set and ultimately be combined with our index. We then eliminated all buildings outside of the Midtown and Downtown markets, again as identified by CoStar. These two markets were chosen because they represent the tightest concentrations of larger commercial office buildings in any given New York City sub-market. This left a data set with 335 total buildings – 253 in the Midtown market and 82 buildings in the Downtown market. At this point, buildings were individually researched – properties were eliminated from the data set based on our data collection efforts.

For example, there are prominent buildings in New York City that have a surprisingly thin paper trail or that have a trail of nominal transfers and distinct fee and leasehold transactions that make their transaction history virtually incomprehensible or subject to a much lengthier and detailed study. Such are the consequences of drawing off primary and secondary sources in one of the most sophisticated commercial real estate markets in the country, if not the world.[11]

Based on the quality of the data, we noted that transaction histories seemed particularly thorough between 1940 and 1980. As a consequence, some buildings were identified and researched because they represented a size, apparent number of transactions and/or development date that we felt was particularly needed to fill out the data set. We are aware that in targeting buildings for some specific and statistically desirable attributes, it may in fact result in some bias and skewing of the data set. Nonetheless our desire was to reflect a diverse population of buildings within the general parameters of size and location.

[11] W. Tod McGrath, Graybar Case Study, class discussion

METHODOLOGY

In creating a repeat sales index, we were faced with a number of challenges:

find the data (perhaps most daunting);
rationalize the data; and
analyze the data.

Description of the Repeat Sales Index

There are a number of issues that arise when attempting to create a repeat sales index for real estate assets. With the exception of REIT share prices, real estate markets are "informationally inefficient"[12]. That is, there is no requirement that transaction prices be disclosed and they are not considered a matter of public record (though mortgages, liens and other attachments to title are).

Another source of difficulty with the real estate markets and a repeat sales index is time. Unlike stocks and bonds that trade daily, real estate is generally placed on the market for sale, offered on and purchased over an extended period of time. A ninety-day transaction period is considered extremely expeditious. Economic conditions may shift during the long delays that often plague sales. Time also factors into another criticism of transaction-based real estate indices, which is the frequency with which the assets trade. Stocks, for example, trade multiple times over the course of a year and price is accurately reflected through this activity. It is highly unusual for a building of any kind to be sold more than once a year and our research tells us that it was unusual for properties to trade more than once every five to ten years.

Despite the difficulties in collecting and verifying primary data and the shortcomings of real estate market, a transaction-based real estate index this is the most appropriate

[12] M. Miles, Hartzell, Guilkey and Shears, *Journal of Property Research*, 1991, 8, 203-217.

measure. The repeat sales method examines only transactions in which the same building has sold more than once during the time period under examination. Since the repeat sales approach is based on multiple transactions of the same building, the repeat sales estimates "are automatically quality controlled if there have been no alterations or renovations between the transactions."[13] Renovations and improvements can overstate the increase (or decrease) in price as we will discuss later. Less than 18% of the buildings (eleven out of 45) in our working data set indicate that renovations have been made. Of those eleven buildings, eight were sold after the noted renovation. The average sale takes place 10.25 years after the renovations.

An additional strength of the repeat sales index is the focus of the data. Real estate not only actively trades in two parallel asset markets, "it trades as a series of local markets".[14] Recognizing the difficulty of measuring real estate's inflation hedging ability, our data for the index is location and property specific.

This process, therefore, allows us to produce a sale price per square foot of net rentable space for each property at each sale, which then provides a framework for creating an index. As a result of our methodology, this index can be used for on-going performance evaluation.

Total Development Cost

Deriving a starting value for a given building was challenging. There are few cases within the data in which we are certain of what were the total development costs for a building. In most cases, we were able to find a construction value from the *Record & Guide Quarterly*, a secondary source drawn from a review of construction permit applications to the New York City Department of Buildings. New building permit fees are not based on a construction contract or value, audited or otherwise, as submitted by

[13] DiPasquale and Wheaton, Urban Economics, page 191.
[14] Miles, Hartzell et al., page 205.

the architect, contractor or owner. In fact, the Department of Buildings charges new building permit fees based on the gross square footage or gross cubic footage. This is not unwise as it is much harder to distort the actual size and volume of a building than it is to under-represent the contract value of the construction - nonetheless, it does present certain problems for building researchers. Although each permit application requires a stated construction cost, we are aware that there is little if any rigor applied to the number and it could easily be inaccurate. In fact, there were one or two cases (noted within the larger data set) whereby the construction value was derived as $1 per cubic foot – this was easily confirmed when the cubic footage of the building and contract value were found to be the same. Thus we are aware that our construction values are proximate at best.

We created a land cost by looking at the few situations in which a confirmed land or assemblage cost was known – these values ranged from 50% to 125% of construction value, with the majority grouping in the 75% range. In fact, assemblage costs range widely. As a consequence, we derived a land cost as 75% of the construction cost, unless otherwise known.

The final significant number in the Total Development Cost is the soft cost – expenditures incurred in the course of development for debt carry, architectural and engineering fees, permits, insurance, finance and legal costs. Experience and discussions with large developers suggested that this value tended to be between 13-15% of the Total Development Cost, which we used. It is worthwhile to note that in all cases, it is quite possible that our projected costs (75% of construction for land, 15% of Total Development Cost for soft costs) could be quite low. In fact, we know that the costs for the land assemblage of a development today in New York City are very likely to be considerably higher than the construction, and that the impact of expensive wind, seismic and other studies mandated by the updated 1961 Zoning Code are likely to increase the soft cost values as well.

Once the Total Development Cost was derived, we focused on identifying "transactions" and "sales."

Types of Deed Transfer Activity

We defined a "transaction" as any deed transfer or conveyance noted within the registers or printouts at the New York City Registry of Deeds or noted as a "sale" or "transfer" in the building card file library at the Real Estate Board of New York, the building card library at First American Real Estate Solutions or as noted within the *Directory of Manhattan Real Estate*, *New York Times* or other business publication. It is important to note that as discussed in the previous section, our data was drawn from primary and secondary sources and while we often were able to cross-reference a particular value, it was more difficult to identify precisely what type of transaction took place. For older buildings, our first data source was the old block and lot registers at the Registry of Deeds at the New York City Department of Finance, which generally cover all activity on a building from the 1700s to the 1960s. We focused on the conveyance and deed transfer pages specific to a given building block and lot.

We defined a "sale" as an activity in which ownership of the building and consideration in the form of money, commercial stock shares or valued private stock shares were exchanged. This is an important distinction because there are a number of other transactions that did not involve consideration – namely, nominal transfers, related transfers and assignments. If we were unable to derive a value, regardless of how the transaction was noted, we assumed that it was a nominal transfer and thus not a valid sale for our purposes. More often than not, we were able to cross-reference and confirm the type of transaction from another source.

Nominal and related transfers - deed transfers occurring between two distinct legal entities with substantially the same owners or managers – did not have a value or

transfer tax noted. As a consequence, we did not consider that a "sale." In our data set, we tracked the names and principals of both entities involved in the transaction. In cases were the principal(s) were substantially the same and no transfer tax or value was noted, we considered the transaction to be a nominal transfer and thus not a valid sale.

Particularly before the advent of Limited Liability Companies (LLCs), frequent nominal or related transfers were common as a means of diluting the legal and financial liabilities of the principals. In fact, there are buildings that we researched that had over 30 nominal transfers in a two year period.

In a very few cases, the deed activity was noted as a Foreclosure or Bank Insolvency. In these cases, the bank that owned the building failed or the building was foreclosed upon by the note-holders and auctioned or sold, either immediately or soon thereafter. In those cases, we considered it a valid sale if there was a transfer tax or value assigned to the transaction. In cases in which a transfer tax or value was not noted, we assumed that the building was conveyed to the note-holders and hence there was no valid sale.

Values of Sales

This paper focuses solely on sales transactions of entire buildings whether purchased by a REIT, a pension fund or an individual investor(s). We did not concern ourselves with the forms of financing. Actual stated sales values were infrequently found in our data sources although mortgage values were available. As a consequence, we had to extrapolate values based on transfer taxes noted in the registers, card files and/or databases. In addition to filing and recording fees, the New York City Department of Finance charges a New York City transfer tax (sometimes also noted as an "IRS transfer tax" in the older registers) for all sales. When pulling liber and page microfiche sheet recordings of pre-1966 transactions or microfiche reel book and page recordings of post-1966 transactions, the actual market value of the transaction was rarely noted –

however, the transfer tax was almost always noted and served as our basis for deriving a sales value. The methodology of transfer taxes is noted as following:

> for all transactions from 1700 to April 1983, the transfer tax was $1.10 per $1000 of the transaction value; and
>
> for all transactions from May 1983 to present, the transfer tax was $4.00 per $1000 of the transaction value.

In some cases, particularly for transactions prior to 1920, values were occasionally noted but actual transfer tax stamps were applied to the deed transfer. In those cases, we literally added up the value of the stamps – fortunately, these were infrequent and were often confirmed from other data sources.

In some cases, a partial interest in the building was conveyed for a value. In these cases, we extrapolated the overall building value based on the percentage interest conveyed.

In one case (noted within the data set), the building was exchanged for commercial stock shares and, in addition to the transfer tax, the share price on the day of transfer was noted and enabled us to derive a sales value.

CPI-adjustment

To bring all transaction values to the year 2001, we accessed the Consumer Price Index for New York City, which gave us annual index values from 1914 through 2001. For years prior to 1914, we accessed the United States Historic Consumer Price Index, 1800-1914. From the first index, we were able to create a real value for 1914-2001 transactions (of assets in year t, but normalized to 2001 dollars) by:

> Price (year t) * Annual Index Value (2001) / Annual Index Value (year t)

From the second index, we created a real value for 1900-1914 transactions by:

> Price (year t1900-1914) * [Annual Index Value (1967) / Annual Index Value (year t1900-1914)] * [Annual Index Value (2001) / Annual Index Value (1967)]

There is some variation evident between index values in 1914 for the New York City and the United States that we were not able to rationalize due to the lack of New York City-specific index data prior to 1914. Therefore we expect that the multipliers we have used for transactions between 1900-1914 are slightly lower than they should be.

Qualifying Data

Once we were able to identify valid sales with normalized values, we were still faced with sales that did not fulfill values that are rational.

For example, in reviewing the Midtown data set, it was decided that normalized (CPI-adjusted to 2001) development (first transaction) or following transaction values below $75 per square net foot were inconsistent with the realities of development (construction, land assemblage, soft costs, et cetera) in New York City at any given period. In fact, over the past ten to fifteen years, construction, linkage and permitting costs have risen to a point where total development costs on a net square foot cost of $350 are unreasonable!

We further qualified the data for cases in which sales values seemed too high. Three transactions from the overall data set (two in Midtown, one in Downtown) showed values well in excess of $1000 per net square foot, normalized, which again is not in line with realities of sales values in New York City. In those cases, we assumed that the transaction involved more than one building (in fact, we have one transaction in which it was noted that multiple properties were exchanged) and they were thrown out.

Quality Level - Obsolescence, Maintenance and Renovations

Because the index ultimately looks at variation in transaction values of a given building, the relative quality or condition of a given building is not relevant vis a vis other buildings, as long as we can safely assume that the quality of the building remained relatively stable over time.

Buildings do, however, lose value over time if the building managers/owners do not maintain the property. Further, buildings can increase in value through renovations and improvements of building systems. Therefore, it is necessary to differentiate between the renovations and maintenance.

We defined obsolescence as the general and un-extraordinary wear and tear experienced by a property in a given year. We defined maintenance as those costs incurred by a building manager/owner to offset ongoing obsolescence and maintain the buildings value in a given year. We defined renovations and improvements as costs incurred by a building manager/owner in the interest of increasing the value of the property.

We felt uncomfortable applying a static percentage for obsolescence – this can vary based on building type, age, use and materials. Similarly, we have no data to support annual building management/owner expenditures for maintenance of the property. However, we did feel comfortable that on par, most building owners annually will maintain their building to approximately the value of the obsolescence. This is described by:

$$B_x + B_x(\delta_x) = B_x + B_x(m_x)$$

where Bx is the building value in year x;

δx is the obsolescence and general wear experienced by the building over year x; and

mx is value of the maintenance and upkeep of the building over year x.

Therefore, δx and mx will cancel and the building will end year x with no loss (or gain) in building value. As a consequence, we did not adjust transaction values for obsolescence and maintenance. This is essentially the logic presented in Geltner & Eichholtz 2002, which suggests that although upkeep and improvements occur, they tend to "occur in very small increments, almost continuously through time."[15]

Renovations present a greater challenge. Our data set notes the year that the building was commissioned (following initial development) and the year (if any) of a renovation. Although we have no definition for what the value of a renovation might be, we assumed it was a significant core/shell renovation including significant upgrades and/or improvements to building systems like vertical transportation, HVAC and lobby work. Needless to say, this work should significantly increase the value of a building. However, the values of these renovations are not readily available. Therefore, we were forced to eliminate transactions after which a renovation was noted.

Pairing Transactions

Once valid sales were identified, eliminating all non-sales transactions cleaned the data. This left us with a string of valid transactions for every building. We then paired the transactions by date of occurrence – thus the initial development of the building could be the first part of the first transaction pair and the next chronological sale would be the second part of the transaction pair. If there were additional sales data available, the sale from the first transaction pair would then become the first part of the second transaction pair. In this fashion, we were able to string a consistent history of sales with no "gaps"

[15] Eichholtz & Geltner, "Four Centuries of Location Value: Implications for Real Estate Capital Gain in Central Places", *Journal of Real Estate Economics*, March 2002

or missing years. It is important to note, however, that the pairs represent pairs of valid sales transactions on a building but not necessarily the chronological order of any transaction activity on the building. For example, there may have been a series of nominal transfers between the date of development and the date of the first valid sale. As well, the Total Development Cost of the building may have been below the aforementioned $75 per square foot threshold and hence invalid, while others transactions were valid.

Decades

To communicate the carry period of a building with a transaction pair, we applied a fraction that represented the amount of time the building was carried in a given decade for a given transaction pair. For example, for a transaction pair ranging from 1934 through 1968, a zero value (representing 0% of each decade) was entered for decades 1 (ranging from 1901 through 1910), 2 (ranging from 1911 through 1920), and 3 (ranging from 1921 through 1930), as the transaction pair was not held during that time. Because the pair started in 1934, comprising six of the ten years in that decade, .6 (representing 60% of the decade) was entered for decade 4. With the transaction pair carried throughout the entire 1940s and 1950s, 1 (representing 100% of each decade) was entered for decades 5 and 6. The transaction pair ends in 1968, so a .8 (representing 80% of the decade) was entered for decade 7.

STATISTICAL ANALYSIS

In the end, the overwhelming majority of buildings had only one pair of transactions – the breakdown is as follows:

Downtown market - 31 pairs of observations drawn from 17 buildings
52.94% (9 total) of the buildings had one transaction pair;
23.52% (4 total) of the buildings had two transaction pairs;
17.65% (3 total) of the buildings had three transaction pairs;
0.0% (0 total) of the buildings had four transaction pairs;
0.0% (0 total) of the buildings had five transaction pairs; and
5.88% (1 total) of the buildings had six transaction pairs

Midtown market - 54 pairs of observations drawn from 28 buildings
50.00% (14 total) of the buildings had one transaction pair;
32.14% (9 total) of the buildings had two transaction pairs;
3.57% (1 total) of the buildings had three transaction pairs;
7.140% (2 total) of the buildings had four transaction pairs;
3.57% (1 total) of the buildings had five transaction pairs; and
3.57% (1 total) of the buildings had six transaction pairs

All markets - 85 pairs of observations drawn from 45 buildings
51.11% (23 total) of the buildings had one transaction pair;
28.88% (13 total) of the buildings had two transaction pairs;
8.89% (4 total) of the buildings had three transaction pairs;
4.44.00% (2 total) of the buildings had four transaction pairs;
2.22% (1 total) of the buildings had five transaction pairs; and
4.44% (2 total) of the buildings had six transaction pairs

We feel this is the significant weakness in the dataset because while multiple transactions of the same building should average to the "real" value for property at a given time, one transaction pair can represent an anomaly of transacting at a particular high or low that will provide extreme numbers for the regressions.

Because the price index is multiplicative, we derived a natural log of every sale value and then subtracted the first transaction's natural log from that of the next chronological and valid sales transaction. This is described by:

$$P_t = k_0 e^{\Sigma di}$$

and

$$P_{t+1} = k_0 e^{\Sigma Di}$$

where in the course of deriving a ratio, the k_{oe}s cancel and the ratio is then described as:

$$P_t / P_{t+1} = e^{Dt+1}$$

In doing this, the coefficients do not determine a constant value for each additional unit of each independent variable but will represent the elasticity of price with respect to increases in the dependent variables.[16]

As we proceeded with regressions on the data, we explored a variety of manipulations of the data including:

regressions of the Downtown and Midtown markets individually;
regression of the markets combined:

[16] Dipasquale and Wheaton, pg. 71.

regressions of the above-noted with floating and zero constants;
regressions of the above-noted with dummy variables pertaining to the building location in either the Downtown and Midtown markets; and
regressions of the above-noted in which the two decades with the least amount of transaction history, D1 and D2, are deleted.

The above-noted regressions are derived through two models – the first, which did not incorporate dummy variables for Midtown and Downtown markets, is estimated by:

$$X = d\gamma + \varepsilon$$

in which X is the vector of the lognormal price differences in the transaction pairs;
d is a matrix of time dummy variables pertaining to the decade in which the building was held specific to a transaction pair;
γ is the coefficient vector; and
ε is the vector of regression error terms.

The second, which did incorporate dummy variables for Midtown and Downtown markets, is estimated by:

$$X = d\gamma + m\lambda + \varepsilon$$

in which X is the vector of the lognormal price differences in the transaction pairs;
d is a matrix of time dummy variables pertaining to the decade in which the building was held specific to a transaction pair;
m is a matrix of locational dummy variables pertaining to the building location in either the Downtown or Midtown markets;

γ and λ are coefficient vectors; and

ε is the vector of regression error terms.

In this fashion, we tried to assess the impact that sub-market location has on sales values over time.

e Values and Index Construction

To arrive at a final understanding of the statistics, we took the reverse sign of the co-efficients and exponentiated to e, which gave us a value. We then derived a ratio which represented change from start of period to end of that period. Using an index value of $100 for the beginning of the overall period, we multiplied the current years ratio times the past years index value. For example, in some cases the starting year was 1901, so the starting index value for that regression was $100. The exponeniated e value for D1 was .8689, which lead to a ratio of 1.15076. When multiplied against the previous periods index value ($100), we arrived on a value for the D1 period of $115.08. Thus a building with a starting value in 1901 would have a value of $115.08 in 1910.

A review of the R2s and t-stats indicates that in all the regressions, there is no statistical significance – this is clearly illustrated in the ***Regression Summary*** chart in the ***Results*** section following. There are some t-stat values that suggest co-efficients not having significant differences from zero. However, in at least one case – D8 or the 1970s, the co-efficient value should be quite close to zero, and hence the t-stat, since we know that overall national inflation over the course of that decade was close to zero.

Due to the low number of observations, we were unable to derive a meaningful regression on the Downtown data on their own. Regressions of the Midtown data on its own turned out numbers that were suspect as well.

Out of curiosity, we also ran regressions for the data set after deleting all sales values below $100 per square foot. R2 improved slightly but remained statistically insignificant.

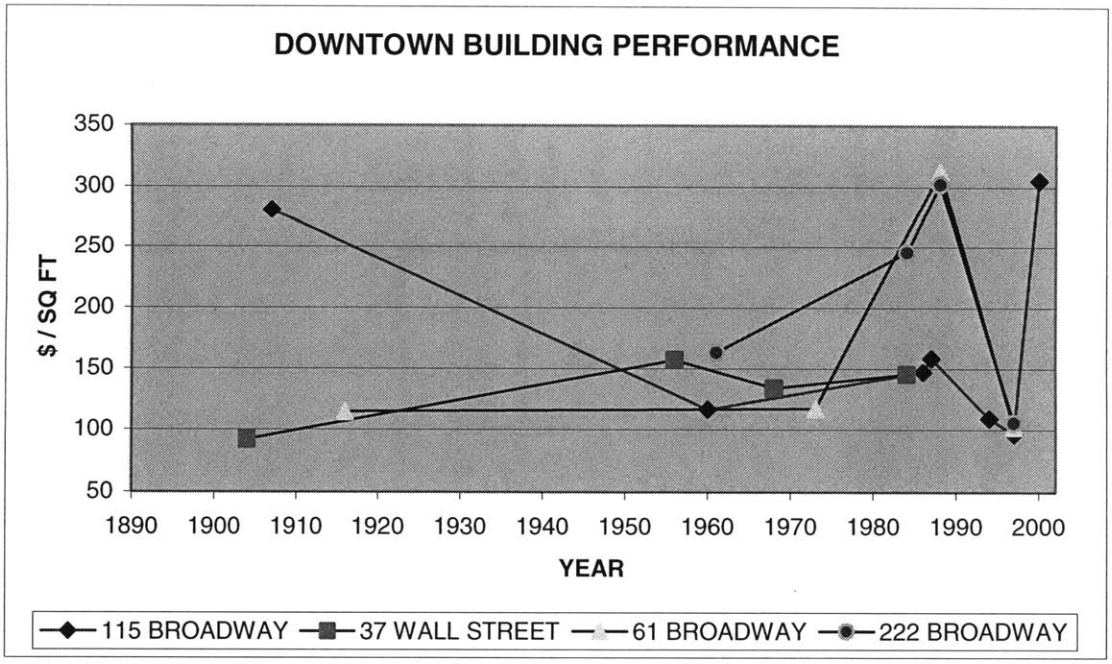
The best R2 values came out of regressions with no intercept and in which dummy variables for Midtown and Downtown were included with D1 through D10.

RESULTS

As noted in the ***Regression Summary*** charts within this section, we can conclude based on the statistics derived from this data that the Downtown, Midtown and All Markets have witnessed slight appreciation over CPI in the course of the last 100 years. The percentage growth varies with the manner in which we manipulate the data for the regression – it ranges from approximately ¼ to ½ percent per year annualized over inflation, and is found to be more statistically significant with the introduction of MID and DOWN dummy variables than without. This finding suggests that as an asset class, larger commercial office buildings in these sub-markets of New York City have, over time, significantly under-performed equities and bonds. Furthermore, location is a valid variable as well as time in predicting value.

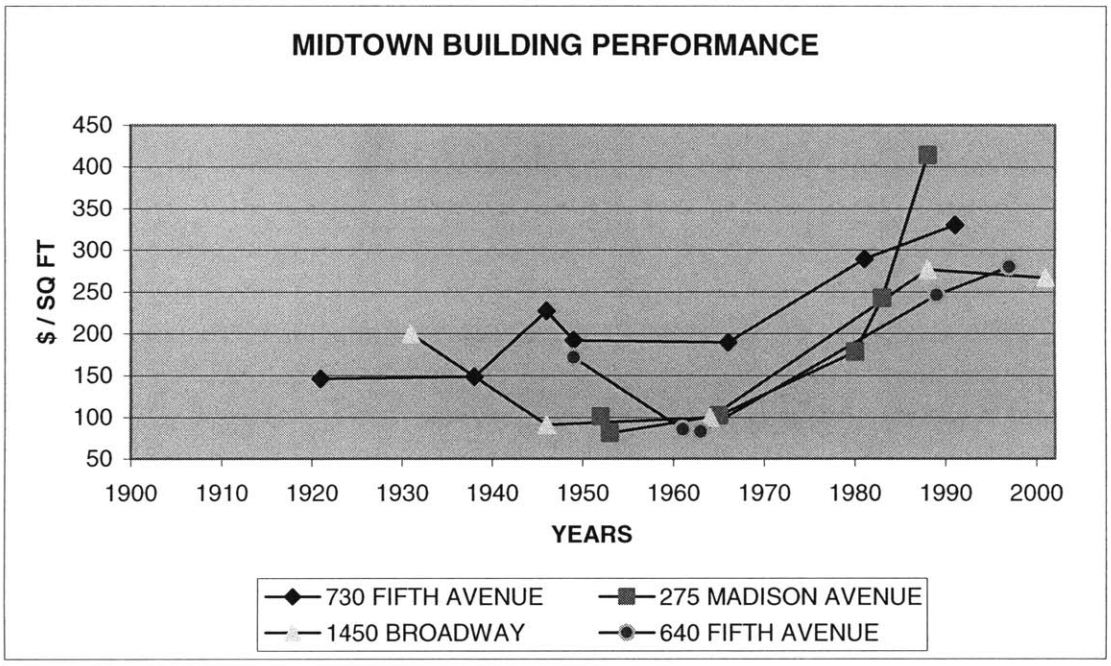
Representative Building Performance

We identified four buildings in each market that had at least three transactions and charted their sales. The Downtown chart displays flat to slightly negative appreciation



up until 1970, at which time movement tends to be positive, though quite volatile. From 1990 to 2000, transaction values dropped, in some cases significantly, and we have only one observation that suggests a rebound at the end of the decade.

The trends in the Midtown chart are a little tighter and clearer. As with Downtown, appreciation from 1920 to about 1970 looks flat. In contrast to the Downtown, though,



the latter third of the century appears to rally, with values strongly trending upwards. One observation notes flat movement in the last decade, but the chart in no way displays the volatility seen in Downtown.

These charts roughly coincide with the broader data presented in the ***Regression Summaries*** as well as the data and regression information provided in the ***Appendix***.

Our observations suggest that the regression – All Markets (observations), MID and DOWN dummy variables and No Intercept – best describes the dynamics we anticipated in our Hypothesis. With an R2 of 27%, it represents one our most statistically significant regressions. It projects that overall market values in the data set have grown by 38.5% from start of period, 1901, to end of period, 2000. This represents an annualized average annual growth of .38%, or about 1/3%, per year over inflation. When we apply the co-efficients for the MID and DOWN dummies, it illustrates a Midtown market that appreciated only 26% over inflation in a century – approximately ¼ per year over inflation. Downtown did considerably better – 45% over the century or just under a ½ percent per year over inflation. A synopsis of the Overall (not sub-market) performance derived from this regression follows:

1901-1910 – 15.08% growth in value from start of period to end;
1911-1920 – 22.84% growth in value from start of period to end;
1921-1930 – 43.5% loss in value from start of period to end;
1931-1940 – 148.34% growth in value from start of period to end;
1941-1950 – 62.46% loss in value from start of period to end;
1951-1960 – 61.89% growth in value from start of period to end;
1961-1970 – 103.94% growth in value from start of period to end;
1971-1980 – 17.24% loss in value from start of period to end;
1981-1990 – 36.47% loss in value from start of period to end; and
1991-2000 – 110.26% growth in value from start of period to end.

These results make intuitive sense and we can focus on the two decades of the greatest percentage change in value to illustrate. The final decade growth, 1991 – 2000, is represented by a very low starting point as the country was in the midst of a recession in the early 1990s, and the 110.26% growth was buoyed by the market rally of the mid-1990s. Softening prices in the last two years of the decade are probably under-represented in the data. As well, the decade of the Great Depression, 1931-1940,

mimics the dynamics of the 1990s – close on the heels of the crash of 1929 with values so low at the early part of the decade, and with our metric being percentage change rather than real numbers, 148.34% (1.5 times) growth is entirely understandable. It is worthwhile to note that the other regressions, noted in the ***Statistical Analysis*** section and provided in the ***Appendix***, more or less mirror these findings.

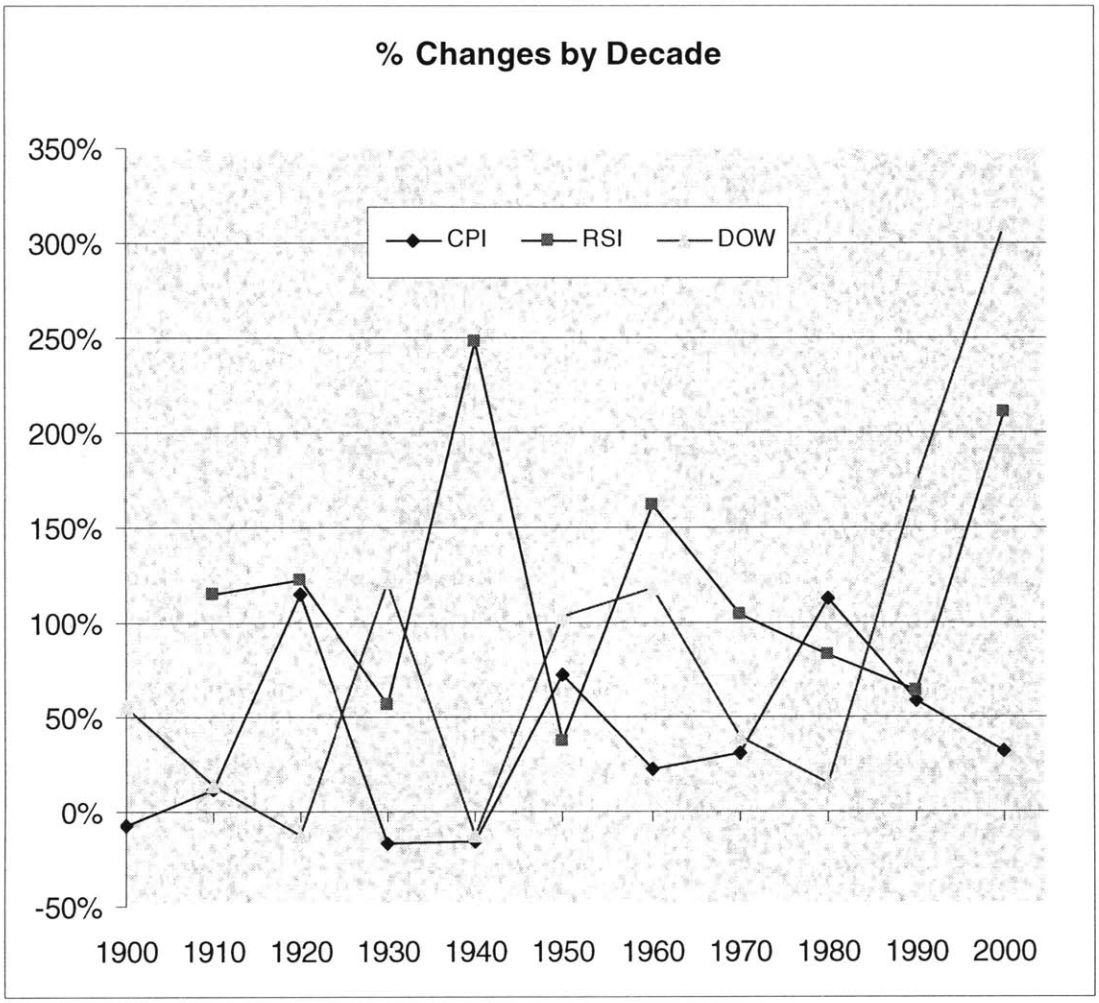
As previously mentioned, the best R2 values came out of regressions with no intercept and in which dummy variables for Midtown and Downtown were included with D1 through D10 although percentage growth for two similar regressions – All Markets, Zero Constant and All Markets, MID & DOWN dummies added, Zero Constant – were remarkably similar with both exhibiting overall market growth of 38% over 100 years.

Interestingly, the All Markets regression summary, as well as others, provided some surprises. We had assumed that Midtown appreciation would be slightly positive and Downtown would be flat to negative, largely as a function of older buildings with less desirable footprints. However, when we included MID and DOWN dummy variables, the greatest percentage growth occurred in the Downtown market. One possible reason is that Downtown office space has been and is utilized very consistently by one industry - finance - while the Midtown market seems to be where other industries have settled over time i.e. publishing in the 1940s, communications in the 1980s, television, some finance. Downtown has benefited from more consistent use from a growing industry that has a strong locational preference, which leads to more demand, and this has lead to more appreciation.

Unfortunately, we were not able to do a regression of the Midtown or Downtown data sets alone with no intercept, so it is difficult to compare our findings derived from the dummies versus what our findings would be for each individual sub-market (with no extra-market observations). Our best comparison of regressions does not provide meaningful evidence. We were able to regress the Midtown observations with a floating

constant and an R2 of 13% but the exponentiation of e to the negative sum of the co-efficients did not give us a valid number. Surmising that some of the problems may be from the first decades, where we have only one transaction pair, we tried to regress the data with the same terms noted above and not including D1 and D2 matrices. This gave us a better R2 of 21.2% but exponentiation that suggested a 71% loss of value from 1920 to 2000. This does not ring true with our knowledge of national economic events. We then compared these regression results with those from All Markets, Floating Constant, MID & DOWN dummies added and D1 and D2 deleted. From this regression, which had a 26.7% R2, we find that Midtown values have grown by 9.4% from start of period 1920, to end of period 2000. Intuitively, this makes more sense.

The chart following depicts the percentage changes by decade in the Consumer Price Index, the Dow Jones Industrial Averages and the growth or loss in value of our overall working dataset.



As illustrated above, changes in the three measures do not necessarily follow each other but there are some noteworthy trends. Let's first take a look at actual changes in the measures. In the first decade of the century, the Dow grew, the CPI grew and real estate appreciated. The following decade, we see the Dow lose value while the CPI and real estate increased. This trend is then reversed in the roaring twenties with the Dow more than doubling, the CPI dropping and real estate losing more than fifty percent of its value. With the onset of the great depression, both the Dow and inflation continue to increase on a decade-by-decade basis while real estate's ups and downs act independently until the 1990's.

Let's also look at changes in our overall data set to changes in the CPI by decades. Overall, changes in real estate, whether positive or negative, are always greater than inflationary changes, for instance:

1901-1910 – The 15% increase in real estate is way ahead of the 12% increase in inflation;

1911-1920 – During this period, real estate appreciation at 22% is slightly ahead of the 15% increase in inflation;

1921-1930 – Here real estate loses 43% in value while the CPI falls only 17%;

1931-1940 – The 148% increase in appreciation is magnified by the second decade of falling inflation, another 16% from the previous decade;

1941-1950 – The economic recovery of this decade marks one of only two decades where percentage increases in inflation are greater than appreciation in real estate. Here the CPI increases 72% while real estate depreciates by 62%;

1951-1960 – Real estate experiences a tremendous rebound of 62% and although the CPI is adjusted upward by 23%, inflationary pressures fall during this prosperous decade;

1961-1970 – This decade is another decade with across-the-board growth. Inflation continues to inch upward with a 31% increase and real estate displays a moderate 4% increase

1971-1980 – This is the first of a two-decade loss in real estate values with converse increases in inflation similar to the years following 1911. There is 17loss of value versus 112% increase in inflation;

1981-1990 – Again, real estate suffers a start of period to end of period loss of 36% while inflation increase again, this time just 59% from the beginning of the period; and

1991-2000 – For the first time in two decades growth in real estate outpaced inflation. Real estate experienced a 110% growth in value and the CPI was adjusted 32%.

Regression Summary
All Markets

DESCRIPTION OF OUTPUT	R2	e^(- Σ, coefficients)	annualized % Δ (over inflation)	SUMMARY	INDEX ENDING VALUE
ALL MARKETS, FLOATING CONSTANT	0.25347	0.68965155		Values have increased by 31% from the start of period, 1900, to end of period, 2001.	-
ALL MARKETS, ZERO CONSTANT	0.25156	0.7207695	0.3836%	Values have increased by 38.74% from the start of period, 1900, to end of period, 2001.	$138.74
ALL MARKETS, FLOATING CONSTANT, D1 & D2 DELETED	0.24983	0.81336079		Values have increased by 28.7% from the start of period, 1920, to end of period, 2001.	-
ALL MARKETS, ZERO CONSTANT, D1 & D2 DELETED	0.24659	0.86530599	0.1542%	Values have increased by 15.57% from the start of period, 1921, to end of period, 2001.	$115.57
ALL MARKETS, MID & DOWN DUMMIES, FLOATING CONSTANT	0.2708	0.47138692		Overall values have increased by 53% from start of the period, 1900, to end of period, 2001.	-
MIDTOWN		0.79313612		Midtown values have increased by 20.7% from start of period, 1900, to end of period, 2001.	-
DOWNTOWN		0.68586392		Downtown values have increased 31.5% from start of period, 1900, to end of period, 2001.	-
ALL MARKETS, MID & DOWN DUMMIES, ZER0 CONSTANT	0.2708	0.7220464	0.3812%	Overall values have increased by 38.5% from start of the period, 1900, to end of period, 2001.	$138.50
MIDTOWN		0.79313612	0.2574%	Midtown values have increased by 26% from start of period, 1900, to end of period, 2001.	$126.08
DOWNTOWN		0.68586392	0.4535%	Downtown values have increased 45.8% from start of period, 1900, to end of period, 2001.	$145.80
ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, FLOATING CONSTANT	0.26721	0.60937941		Overall values have increased by 39.1% from start of the period, 1920, to end of period, 2001.	-
MIDTOWN		0.90670377		Midtown values have increased by 9.4% from start of period, 1920, to end of period, 2001.	-
DOWNTOWN		0.78245865		Downtown values have increased 31.2% from start of period, 1920, to end of period, 2001.	-
ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, ZERO CONSTANT	0.26721	0.81504578	0.2801%	Overall values have increased by 22.7% from start of the period, 1920, to end of period, 2001.	$122.69
MIDTOWN		0.90670377	0.1270%	Midtown values have increased by 20.3% from start of period, 1920, to end of period, 2001.	$110.29
DOWNTOWN		0.78245865	0.3432%	Downtown values have increased 27.8% from start of period, 1920, to end of period, 2001.	$127.80

Regression Summary
Midtown

DESCRIPTION OF OUTPUT	R2	e^(- Σ, coefficients)	SUMMARY	INDEX ENDING VALUE
MIDTOWN ONLY, FLOATING CONSTANT	0.13444	0	No findings.	-
MIDTOWN ONLY, FLOATING CONSTANT, D1 & D2 DELETED	0.21209	1.7187894	Midtown values decreased by 71% from start of period, 1920, to end of period, 2001.	-

Regression Summary
All Markets: transactions under $100/sf deleted

CONCLUSION

The question immediately comes to mind – why such little real appreciation? There are a few reasons, some endemic to the real estate industry and some broader. As we commented in the ***Introduction***, appreciation is one of a few reasons to invest in real estate. Negative correlation with the equities and bond markets, tax advantages and cashflow are some of the other reasons. A well-managed building turning out a 15-20% ROI over a ten-year period, only to be sold at a CPI-adjusted value equal to it's acquisition, would still be defined as a good investment by many. It is often said in real estate circles, "you buy cashflows, and appreciation of the residual is icing on the cake." Therefore, a building value is so much more than a price – it is a confluence of cashflows, cost of money, discount rates, management capabilities, optimistic re-leasing plans, competitor's plans, pessimistic building conditions and so on. In essence, a buildings value is comprised of a range of tangible and intangible values – all of which can be interpreted differently.

Because it so closely moves with the CPI, we can argue that while real estate values seem to have a low correlation with the equities and bond markets, it is highly correlated to inflation.

As suggested in the ***Description of Data*** and ***Methodology*** sections of this paper, there are weaknesses in our data set that may have seriously skewed our findings:

1. Primary source data is susceptible to the whims to the original scribes, writers and data-enterers. If the data is incorrectly entered, or lost to time, it is useless and unfortunately, you may not know when the errors occurred.
2. Total Development Cost: We were forced to extrapolate land/assemblage and soft costs that may have been wildly inaccurate. As well, primary source data on construction values was subject to no rigor, and may also have been severely skewed.

3. Quality Level: We chose a rather easy way out in addressing obsolescence, maintenance and renovations, by ignoring those possible values (or lack thereof) for obsolescence and maintenance and eliminating buildings with a recorded major renovation. Nonetheless, it is likely that these buildings did not maintain a consistent quality level over time and that this variation in quality can be reflected in sales values.
4. As well, there have been a number of New York City-specific economic events, like the bond default crisis in the 1970's, which could have had an impact on sales values on New York City buildings but not on other properties across the United States.

We believe that the lack of statistical significance for our regressions is largely a function of the lack of data and the inability to convert presently invalid data into valid data i.e. rationalizing renovation values or combining fee and leasehold values to represent the overall value on the parcel.

Future Studies and Applications of this Data

As a consequence, we are interested in expanding our data set to resolve the significance issues, although we do not expect that additional data will change the trend of flat appreciation. We often had conversations with people who commented that our repeat sales index would be very interesting but, unfortunately, impossible to execute because the data was simply not available. Now that we have shown that it can be done and know how and where to find and organize the data, we hope that someone will expand on our efforts and add 100 or so observations to buttress our findings. Access to the data of other papers, like Shilton & Zaccaria 1994, would also be helpful as a cross-reference and to add additional buildings that we were not able to research.

As stated previously, the lion's share of our transaction pairs were single pairs for a building and we feel this very likely skewed the data. Cleaning the data of all single-

transaction pair buildings would leave us with too few observations to do any analysis. We believe that if additional data can be researched, it would be wise to regress only multiple transaction pair buildings to see how the regressions perform – it is our suspicion that the R2 will be much better, although again we do think it will fundamentally change the trend of flat appreciation.

Lack of time is probably the other weakness of our paper. Research simply took much longer than expected. We suspect that fresh eyes may be able to suggest additional dummy variables or ways of structuring the data that could lead to more meaningful results. Options include looking at the time variables on a twenty-year or quarter-century basis and looking for specific data on older buildings, which should have deeper transaction histories. A comparison of our index data, particularly after more observations are incorporated, and CPI values may also show a high level of correlation.

Additionally, we suggest that similar indices be created from major office markets, including Chicago, Tokyo, London and Berlin, to compare and contrast our findings.

APPENDIX

All Markets

# :	Address:	Dir.	Street		P1	Lognorm, P_1		P2	Lognorm, P_2	Log, P1 - Log, P2	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
											1901 - 1910	1911 - 1920	1921 - 1930	1931 - 1940	1941 - 1950	1951 - 1960	1961 - 1970	1971 - 1980	1981 - 1990	1991 - 2000
2	1466 (1462-1470)		BROADWAY	Price 1:	135.797	4.91115959	Price 2:	267.896	5.59059925	-0.67943967	0.3	1	1	1	1	1	1	1	1	0.8
6	730 (730-734)		FIFTH AVE	Price 1:	146.079	4.98414468	Price 2:	148.727	5.00211099	-0.01796631	0	0	0.9	0.8	0	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	Price 2:	148.727	5.00211099	Price 3:	227.076	5.42528343	-0.42317244	0	0	0	0.2	0.6	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	Price 3:	227.076	5.42528343	Price 4:	191.856	5.2567447	0.16853872	0	0	0	0	0.3	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	Price 4:	191.856	5.2567447	Price 5:	189.511	5.2444445	0.0123002	0	0	0	0	0.1	1	0.6	0	0	0
6	730 (730-734)		FIFTH AVE	Price 5:	189.511	5.2444445	Price 6:	289.19	5.66708506	-0.42264056	0	0	0	0	0	0	0.4	1	0.1	0
6	730 (730-734)		FIFTH AVE	Price 6:	289.19	5.66708506	Price 7:	330.276	5.79992825	-0.13284319	0	0	0	0	0	0	0	0	0.9	0.1
8	535 (531-537)		FIFTH AVE	Price 1:	255.521	5.54330503	Price 2:	172.995	5.15326025	0.39004478	0	0	0.5	1	1	1	0.3	0	0	0
8	535 (531-537)		FIFTH AVE	Price 2:	172.995	5.15326025	Price 3:	228.727	5.43252845	-0.2792682	0	0	0	0	0	0	0.7	1	0.4	0
10	220 (216-236)	E	42ND ST	Price 1:	107.126	4.67400597	Price 2:	199.956	5.29809512	-0.62408915	0	0	0.2	1	1	1	1	1	0.2	0
12	275 (273-277)		MADISON AVE	Price 1:	101.141	4.61651403	Price 2:	81.0032	4.39448853	0.22202551	0	0	0	0	0	0.1	0	0	0	0
12	275 (273-277)		MADISON AVE	Price 2:	81.0032	4.39448853	Price 3:	102.026	4.62522284	-0.23073432	0	0	0	0	0	0.7	0.5	0	0	0
12	275 (273-277)		MADISON AVE	Price 3:	102.026	4.62522284	Price 4:	178.252	5.18320043	-0.55797758	0	0	0	0	0	0	0.5	1	0	0
12	275 (273-277)		MADISON AVE	Price 4:	178.252	5.18320043	Price 5:	242.33	5.49030051	-0.30710008	0	0	0	0	0	0	0	0	0.3	0
12	275 (273-277)		MADISON AVE	Price 5:	242.33	5.49030051	Price 6:	414.07	6.02603444	-0.53573393	0	0	0	0	0	0	0	0	0.5	0
13	1450 (1446-1450)		BROADWAY	Price 1:	199.505	5.29584035	Price 2:	90.9187	4.5099652	0.78587515	0	0	0	0.9	0.6	0	0	0	0	0
13	1450 (1446-1450)		BROADWAY	Price 2:	90.9187	4.5099652	Price 3:	99.441	4.59956422	-0.08959902	0	0	0	0	0.4	1	0.4	0	0	0
13	1450 (1446-1450)		BROADWAY	Price 3:	99.441	4.59956422	Price 4:	276.324	5.62157356	-1.02200933	0	0	0	0	0	0	0.6	1	0.8	0
13	1450 (1446-1450)		BROADWAY	Price 4:	276.324	5.62157356	Price 5:	266.875	5.58677896	0.0347946	0	0	0	0	0	0	0	0	0.2	1
14	500 (500-506)		FIFTH AVE	Price 1:	168.847	5.12899528	Price 2:	340.441	5.83024172	-0.70124644	0	0	0	0.8	1	1	1	1	0.6	0
14	500 (500-506)		FIFTH AVE	Price 2:	340.441	5.83024172	Price 3:	174.575	5.16235559	0.66788613	0	0	0	0	0	0	0	0	0.4	0.6
18	640		FIFTH AVE	Price 1:	171.863	5.1466983	Price 2:	85.7478	4.45141062	0.69528748	0	0	0	0	0.1	1	0.1	0	0	0
18	640		FIFTH AVE	Price 2:	85.7478	4.45141082	Price 3:	82.7621	4.41597012	0.0354407	0	0	0	0	0	0	0.2	0	0	0
18	640		FIFTH AVE	Price 3:	82.7621	4.41597012	Price 4:	246.023	5.50542667	-1.08945655	0	0	0	0	0	0	0.7	1	0.9	0
18	640		FIFTH AVE	Price 4:	246.023	5.50542667	Price 5:	279.78	5.63400361	-0.12857694	0	0	0	0	0	0	0	0	0.1	0.7
20	1740 (1730-1750)		BROADWAY	Price 1:	246.457	5.50718709	Price 2:	246.578	5.50767908	-0.00049199	0	0	0	0	0	1	1	1	1	0
21	1120 (1120-1136)		AVE. of the AMERICAS/	Price 1:	207.632	5.33576744	Price 2:	100.509	4.61024347	0.72552396	0	0	0	0	0	0	0.4	0.8	1	0.8
22	150 (130-164)	E	42ND ST	Price 1:	259.56	5.55898663	Price 2:	161.813	5.08643826	0.47254837	0	0	0	0	0	0.1	0	0	0	0
22	150 (130-164)	E	42ND ST	Price 2:	161.813	5.08643826	Price 3:	312.145	5.74346882	-0.65703057	0	0	0	0	0	0.5	1	1	0.7	0
24	530 (530-544)		FIFTH AVE	Price 1:	330.731	5.80130401	Price 2:	187.571	5.23415752	0.56714649	0	0	0	0	0	0.2	1	0.8	0	0
24	530 (530-544)		FIFTH AVE	Price 2:	187.571	5.23415752	Price 3:	125.155	4.82955097	0.40460655	0	0	0	0	0	0	0	0.2	1	0.4
25	666 (660-672)		FIFTH AVE	Price 1:	206.261	5.32914255	Price 2:	102.381	4.62870266	0.70043988	0	0	0	0	0	0.3	1	0.7	0	0
25	666 (660-672)		FIFTH AVE	Price 2:	102.381	4.62870266	Price 3:	396.461	5.98257783	-1.35387517	0	0	0	0	0	0	0	0.3	0.7	0
26	717 (715-719)		FIFTH AVE	Price 1:	385.907	5.95559663	Price 2:	177.48	5.17885899	0.77673764	0	0	0	0	0	0.2	1	0.8	0	0
26	717 (715-719)		FIFTH AVE	Price 2:	177.48	5.17885899	Price 3:	251.107	5.52588016	-0.34702118	0	0	0	0	0	0	0	0.2	1	0.4
27	1285 (1281-1297)		AVE. of the AMERICAS/	Price 1:	389.111	5.96386419	Price 2:	528.087	6.26926013	-0.30539594	0	0	0	0	0	0	1	1	0.9	0
28	685 (681-701)		THIRD AVE	Price 1:	90.4397	4.50468302	Price 2:	167.542	5.12123439	-0.61655137	0	0	0	0	0	0	0	0	0	0.3
29	1180 (1180-1186)		AVE. of the AMERICAS/	Price 1:	106.335	4.66659915	Price 2:	131.861	4.88175149	-0.21515234	0	0	0	0	0	0	0.8	1	1	0.5
30	1301 (1301-1315)		AVE. of the AMERICAS/	Price 1:	167.674	5.12202202	Price 2:	300.524	5.70552885	-0.56350684	0	0	0	0	0	0	7	1	0.8	0
32	6 (6-14)	E	43RD ST	Price 1:	153.881	5.03618182	Price 2:	140.764	4.94708674	0.08909508	0	0	0	0	0	0	0.2	1	1	0.4
34	1250 (1240-1258)		BROADWAY	Price 1:	176.783	5.17492487	Price 2:	158.675	5.06686064	0.10806424	0	0	0	0	0	0	0.2	1	1	0.9
35	150 (146-170)	E	58TH ST	Price 1:	141.855	4.95480773	Price 2:	307.489	5.72844071	-0.77363298	0	0	0	0	0	0	0.2	1	0.2	0
35	150 (146-170)	E	58TH ST	Price 2:	307.489	5.72844071	Price 3:	242.011	5.48898319	0.23945752	0	0	0	0	0	0	0	0	0.8	0.8
37	1500 (1492-1512)		BROADWAY	Price 1:	103.352	4.63813848	Price 2:	111.8	4.71670853	-0.07857005	0	0	0	0	0	0	0	0	0.1	0	0
37	1500 (1492-1512)		BROADWAY	Price 2:	111.8	4.71670853	Price 3:	126.541	4.84056885	-0.12386032	0	0	0	0	0	0	0	0	0.9	1	0.5
38	10 (4-10)	E	53RD ST	Price 1:	112.935	4.72681345	Price 2:	170.947	5.14135512	-0.41454167	0	0	0	0	0	0	0	0	0.5	0	0
38	10 (4-10)	E	53RD ST	Price 2:	170.947	5.14135512	Price 3:	325.876	5.78651703	-0.64516191	0	0	0	0	0	0	0	0	0.3	0.2	0
38	10 (4-10)	E	53RD ST	Price 3:	325.876	5.78651703	Price 4:	202.028	5.30840496	0.47811207	0	0	0	0	0	0	0	0	0	0.8	0.3
39	600 (600-618)		THIRD AVE	Price 1:	117.631	4.76755368	Price 2:	215.123	5.37121095	-0.60365727	0	0	0	0	0	0	0	0	0.6	0	0
41	1211 (1201-1217)		AVE. of the AMERICAS/	Price 1:	133.613	4.89495129	Price 2:	161.75	5.08605215	-0.19110086	0	0	0	0	0	0	0	0	0.7	0	0
41	1211 (1201-1217)		AVE. of the AMERICAS/	Price 2:	161.75	5.08605215	Price 3:	297.253	5.69458272	-0.60853057	0	0	0	0	0	0	0	0	1	1
48	825 (815-829)		EIGHTH AVE	Price 1:	219.875	5.3930586	Price 2:	337.584	5.821813	-0.42875441	0	0	0	0	0	0	0	0	0.3	0.8
51	750 (742-762)		LEXINGTON AVE	Price 1:	286.065	5.65621769	Price 2:	289.736	5.66897132	-0.01275363	0	0	0	0	0	0	0	0	0.4	0.7
52	1177 (1161-1177)		AVE. of the AMERICAS/	Price 1:	162.749	5.09221071	Price 2:	104.623	4.65036023	0.44185049	0	0	0	0	0	0	0	0	0	0.1
1	100 (96-106)		BROADWAY	Price 1:	153.94	5.03656308	Price 2:	150.458	5.01368148	0.0228816	0	0	0	0	0	0	0.8	1	0.1	0
2	37-43		WALL ST	Price 1:	91.8603	4.52026864	Price 2:	157.123	5.05703007	-0.53676143	0.6	1	1	1	1	0.6	0	0	0	0
2	37-43		WALL ST	Price 2:	157.123	5.05703007	Price 3:	134.053	4.89823721	0.15879287	0	0	0	0	0	0.4	0.8	0	0	0
2	37-43		WALL ST	Price 3:	134.053	4.89823721	Price 4:	145.517	4.98029588	-0.08205867	0	0	0	0	0	0	0.2	1	0.4	0
3	90 (87-93)		WEST ST	Price 1:	253	5.53338949	Price 2:	112.804	4.72565516	0.80773433	0.5	1	1	1	1	1	1	1	0.1	0
3	90 (87-93)		WEST ST	Price 2:	112.804	4.72565516	Price 3:	244.841	5.5006096	-0.77495444	0	0	0	0	0	0	0	0	0.3	0
4	115 (115-119)		BROADWAY	Price 1:	280.814	5.63769236	Price 2:	116.702	4.75962507	0.87806729	0.3	1	1	1	1	1	0	0	0	0
4	115 (115-119)		BROADWAY	Price 2:	116.702	4.75962507	Price 3:	147.228	4.99198177	-0.2323567	0	0	0	0	0	0	0	1	0.6	0
4	115 (115-119)		BROADWAY	Price 3:	147.228	4.99198177	Price 4:	158.55	5.06607	-0.07408823	0	0	0	0	0	0	0	0	0.1	0
4	115 (115-119)		BROADWAY	Price 4:	158.55	5.06607	Price 5:	109.425	4.69523827	0.37083173	0	0	0	0	0	0	0	0	0.3	0.4
4	115 (115-119)		BROADWAY	Price 5:	109.425	4.69523827	Price 6:	96.5791	4.57036208	0.12487619	0	0	0	0	0	0	0	0	0	0.3
4	115 (115-119)		BROADWAY	Price 6:	96.5791	4.57036208	Price 7:	305.221	5.72103648	-1.1506744	0	0	0	0	0	0	0	0	0	0.3
7	14 (8-20)		WALL ST	Price 1:	119.914	4.78677386	Price 2:	259.796	5.55989685	-0.773123	0.0	0.8	1.0	1.0	1.0	1.0	1.0	1.0	0.7	0.0
7	14 (8-20)		WALL ST	Price 2:	259.796	5.55989685	Price 3:	117.122	4.76321866	0.79667819	0	0	0	0	0	0	0	0	0.3	0.9
8	233 (227-237)		BROADWAY	Price 1:	146.802	4.98908714	Price 2:	142.909	4.96220899	0.02687815	0.7	1	1	1	1	1	1	1	1	0.9
10	61 (57-61)		BROADWAY	Price 1:	114.73	4.74257727	Price 2:	117.292	4.76466946	-0.02209219	0	0.4	1	1	1	1	1	0.3	0	0
10	61 (57-61)		BROADWAY	Price 2:	117.292	4.76466946	Price 3:	312.642	5.74505976	-0.9803903	0	0	0	0	0	0	0	0.7	0.8	0
10	61 (57-61)		BROADWAY	Price 3:	312.642	5.74505976	Price 4:	102.599	4.63082819	1.11423157	0	0	0	0	0	0	0	0	0.2	0.7
12	25 (21-27)		BROADWAY	Price 1:	125.425	4.8317109	Price 2:	113.639	4.7330235	0.0986874	0	0	0.9	1	1	1	0.2	0	0	0
22	110 (110-126)		WILLIAM ST	Price 1:	227.938	5.42907388	Price 2:	119.975	4.78728295	0.64179094	0	0	0	0	0	0.2	1	0	0	0
22	110 (110-126)		WILLIAM ST	Price 2:	119.975	4.78728295	Price 3:	146.82	4.98920512	-0.20192217	0	0	0	0	0	0	0	1	0.1	0
25	222 (212-222)		BROADWAY	Price 1:	163.27	5.09540648	Price 2:	245.552	5.50350875	-0.40810227	0	0	0	0	0	0	0.9	1	0.4	0
25	222 (212-222)		BROADWAY	Price 2:	245.552	5.50350875	Price 3:	302.423	5.711826	-0.20831725	0	0	0	0	0	0	0	0	0.4	0
25	222 (212-222)		BROADWAY	Price 3:	302.423	5.711826	Price 4:	105.744	4.66102325	1.05080275	0	0	0	0	0	0	0	0	0.2	0.7
29	59 (41-65)		MAIDEN LN	Price 1:	217.888	5.38398169	Price 2:	342.757	5.83702162	-0.45303993	0	0	0	0	0	0	0	0.5	1	0.1	0
29	59 (41-65)		MAIDEN LN	Price 2:	342.757	5.83702162	Price 3:	199.398	5.29530394	0.54171768	0	0	0	0	0	0	0	0	0.9	0.9
31	140 (126-146)		BROADWAY	Price 1:	233.198	5.45188975	Price 2:	171.534	5.14478101	0.30710874	0	0	0	0	0	0	0.6	1	1	0.8
35	95 (91-97)		WALL ST	Price 1:	172.564	5.15077006	Price 2:	234.488	5.45740465	-0.30663459	0	0	0	0	0	0	0.2	1	1	0.9
36	100		WALL ST	Price 1:	312.069	5.74322516	Price 2:	136.225	4.91430843	0.82891673	0	0	0	0	0	0	0.1	1	1	0.8
40	100 (88-102)		GOLD ST	Price 1:	94.305	4.54653422	Price 2:	204.5	5.32056879	-0.77403457	0	0	0	0	0	0	0	1	0.3	0
42	100 (98-106)		WILLIAM ST	Price 1:	141.144	4.94978258	Price 2:	133.204	4.89188324	0.05789934	0	0	0	0	0	0	0	0	0.7	1	0.9
43	40 (38-44)		BROAD ST	Price 1:	167.904	5.1233901	Price 2:	132.569	4.88710689	0.23628321	0	0	0	0	0	0	0	0	0.8	0.8
											2.4	6.2	9.5	12.7	13.1	17.3	33.1	37.6	33.3	20.4

All Markets: MID and DOWN dummies added

# :	Address:	Dir.	Street		P1	Lognorm, P_1		P2	Lognorm, P_2	Log, P1 - Log, P2	1901 - 1910 D1	1911 - 1920 D2	1921 - 1930 D3	1931 - 1940 D4	1941 - 1950 D5	1951 - 1960 D6	1961 - 1970 D7	1971 - 1980 D8	1981 - 1990 D9	1991 - 2000 D10	MID	DOWN
2	1466 (1462-1470)		BROADWAY	Price 1:	154.771	5.04194689	Price 2:	267.896	5.59059925	-0.54865256	0.3	1	1	1	1	1	1	1	0.8	1	0
6	730 (730-734)		FIFTH AVE	Price 1:	146.079	4.98414468	Price 2:	148.727	5.00211099	-0.01796631	0	0	0.9	0.8	0	0	0	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 2:	148.727	5.00211099	Price 3:	227.076	5.42528343	-0.42317244	0	0	0	0.2	0.6	0	0	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 3:	227.076	5.42528343	Price 4:	191.856	5.2567447	0.16853872	0	0	0	0	0.3	0	0	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 4:	191.856	5.2567447	Price 5:	189.511	5.2444445	0.0123002	0	0	0	0	0.1	1	0.6	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 5:	189.511	5.2444445	Price 6:	289.19	5.66708506	-0.42264056	0	0	0	0	0	0	0.4	1	0.1	0	1	0
6	730 (730-734)		FIFTH AVE	Price 6:	289.19	5.66708506	Price 7:	330.276	5.79992825	-0.13284319	0	0	0	0	0	0	0	0	0.9	0.1	1	0
8	535 (531-537)		FIFTH AVE	Price 1:	255.521	5.54330503	Price 2:	172.995	5.15326025	0.39004478	0	0	0.5	1	1	1	0.3	0	0	0	1	0
8	535 (531-537)		FIFTH AVE	Price 2:	172.995	5.15326025	Price 3:	228.727	5.43252845	-0.2792682	0	0	0	0	0	0	0.7	1	0.4	0	1	0
10	220 (216-236)	E	42ND ST	Price 2:	107.126	4.67400597	Price 3:	199.956	5.29809512	-0.62408915	0	0	0.2	1	1	1	1	1	0.2	0	1	0
12	275 (273-277)		MADISON AVE	Price 1:	101.141	4.61651403	Price 2:	81.0032	4.39448853	0.22202551	0	0	0	0	0	0.1	0	0	0	0	1	0
12	275 (273-277)		MADISON AVE	Price 2:	81.0032	4.39448853	Price 3:	102.026	4.62522284	-0.23073432	0	0	0	0	0	0.7	0.5	0	0	0	1	0
12	275 (273-277)		MADISON AVE	Price 3:	102.026	4.62522284	Price 4:	178.252	5.18320043	-0.55797758	0	0	0	0	0	0	0.5	1	0	0	1	0
12	275 (273-277)		MADISON AVE	Price 4:	178.252	5.18320043	Price 5:	242.33	5.49030051	-0.30710008	0	0	0	0	0	0	0	0	0.3	0	1	0
12	275 (273-277)		MADISON AVE	Price 5:	242.33	5.49030051	Price 6:	414.07	6.02603444	-0.53573393	0	0	0	0	0	0	0	0	0.5	0	1	0
13	1450 (1446-1450)		BROADWAY	Price 1:	199.505	5.29584035	Price 2:	90.9187	4.5099652	0.78587515	0	0	0	0.9	0.6	0	0	0	0	0	1	0
13	1450 (1446-1450)		BROADWAY	Price 2:	90.9187	4.5099652	Price 3:	99.441	4.59956422	-0.08959902	0	0	0	0	0.4	1	0.4	0	0	0	1	0
13	1450 (1446-1450)		BROADWAY	Price 3:	99.441	4.59956422	Price 4:	276.324	5.62157356	-1.02200933	0	0	0	0	0	0	0	0	0.8	0	1	0
13	1450 (1446-1450)		BROADWAY	Price 4:	276.324	5.62157356	Price 5:	266.875	5.58677896	0.0347946	0	0	0	0	0	0	0	0	0.2	1	1	0
14	500 (500-506)		FIFTH AVE	Price 1:	168.847	5.12899528	Price 2:	340.441	5.83024172	-0.70124644	0	0	0	0.8	1	1	1	1	0.6	0	1	0
14	500 (500-506)		FIFTH AVE	Price 2:	340.441	5.83024172	Price 3:	174.575	5.16235559	0.66788613	0	0	0	0	0	0	0	0	0.4	0.6	1	0
18	640		FIFTH AVE	Price 1:	171.863	5.1468983	Price 2:	85.7478	4.45141082	0.69528748	0	0	0	0	0.1	1	0.1	0	0	0	1	0
18	640		FIFTH AVE	Price 2:	85.7478	4.45141082	Price 3:	82.7621	4.41597012	0.0354407	0	0	0	0	0	0	0.2	0	0	0	1	0
18	640		FIFTH AVE	Price 3:	82.7621	4.41597012	Price 4:	246.023	5.50542667	-1.08945655	0	0	0	0	0	0	0.7	1	0.9	0	1	0
18	640		FIFTH AVE	Price 4:	246.023	5.50542667	Price 5:	279.78	5.63400361	-0.12857694	0	0	0	0	0	0	0	0	0.1	0.7	1	0
20	1740 (1730-1750)		BROADWAY	Price 1:	246.457	5.50718709	Price 2:	246.578	5.50767908	-0.00049199	0	0	0	0	0	1	1	1	0	1	0	0
21	1120 (1120-1136)		AVE. of the AMERICAS/	Price 1:	207.632	5.33576744	Price 2:	100.509	4.61024347	0.72552396	0	0	0	0	0	0	0.4	0.8	1	0.8	1	0
22	150 (130-164)	E	42ND ST	Price 1:	259.56	5.55898663	Price 2:	161.813	5.08643826	0.47254837	0	0	0	0	0	0.1	0	0	0	0	1	0
22	150 (130-164)	E	42ND ST	Price 2:	161.813	5.08643826	Price 3:	312.145	5.74346882	-0.65703057	0	0	0	0	0	0.5	1	1	0.7	0	1	0
24	530 (530-544)		FIFTH AVE	Price 1:	330.731	5.80130401	Price 2:	187.571	5.23415752	0.56714649	0	0	0	0	0	0.2	1	0.8	0	0	1	0
24	530 (530-544)		FIFTH AVE	Price 2:	187.571	5.23415752	Price 3:	125.155	4.82955097	0.40460655	0	0	0	0	0	0	0	0	0.2	1	0.4	1	0
25	666 (660-672)		FIFTH AVE	Price 1:	206.261	5.32914255	Price 2:	102.381	4.62870266	0.70043988	0	0	0	0	0	0.3	1	0.7	0	0	1	0
25	666 (660-672)		FIFTH AVE	Price 2:	102.381	4.62870266	Price 3:	396.461	5.98257783	-1.35387517	0	0	0	0	0	0	0	0	0.3	0.7	0	1	0
26	717 (715-719)		FIFTH AVE	Price 1:	385.907	5.95559663	Price 2:	177.48	5.17885899	0.77673764	0	0	0	0	0	0.2	1	0.8	0	0	1	0
26	717 (715-719)		FIFTH AVE	Price 2:	177.48	5.17885899	Price 3:	251.107	5.52588016	-0.34702118	0	0	0	0	0	0	0	0.2	1	0.4	1	0
27	1285 (1281-1297)		AVE. of the AMERICAS/	Price 1:	389.111	5.96386419	Price 2:	528.087	6.2692613	-0.30539594	0	0	0	0	0	0	1	1	0.9	0	1	0
28	685 (681-701)		THIRD AVE	Price 1:	90.4397	4.50468302	Price 2:	167.542	5.12123439	-0.61655137	0	0	0	0	0	0	0	0	0	0.3	1	0
29	1180 (1180-1186)		AVE. of the AMERICAS/	Price 1:	106.335	4.66659915	Price 2:	131.861	4.88175149	-0.21515234	0	0	0	0	0	0	0.8	1	1	0.5	1	0
30	1301 (1301-1315)		AVE. of the AMERICAS/	Price 1:	167.674	5.12202202	Price 2:	300.524	5.70552885	-0.58350684	0	0	0	0	0	0	7	1	0.8	0	1	0
32	6 (6-14)	E	43RD ST	Price 1:	153.881	5.03618182	Price 2:	140.764	4.94708674	0.08909508	0	0	0	0	0	0	0.2	1	1	0.4	1	0
34	1250 (1240-1258)		BROADWAY	Price 1:	176.783	5.17492487	Price 2:	158.675	5.06686064	0.10806424	0	0	0	0	0	0	0.2	1	1	0.9	1	0
35	150 (146-170)	E	58TH ST	Price 1:	141.855	4.95480773	Price 2:	307.489	5.72844071	-0.77363296	0	0	0	0	0	0	0.2	1	0.2	0	1	0
35	150 (146-170)	E	58TH ST	Price 2:	307.489	5.72844071	Price 3:	242.011	5.48898319	0.23945752	0	0	0	0	0	0	0	0	0.8	0.8	1	0
37	1500 (1492-1512)		BROADWAY	Price 1:	103.352	4.63813848	Price 2:	111.8	4.71670853	-0.07857005	0	0	0	0	0	0	0	0	0.1	0	0	1	0
37	1500 (1492-1512)		BROADWAY	Price 2:	111.8	4.71670853	Price 3:	126.541	4.84056885	-0.12386032	0	0	0	0	0	0	0	0	0.9	1	0.5	1	0
38	10 (4-10)	E	53RD ST	Price 1:	112.935	4.72681345	Price 2:	170.947	5.14135512	-0.41454167	0	0	0	0	0	0	0	0	0.5	0	0	1	0
38	10 (4-10)	E	53RD ST	Price 2:	170.947	5.14135512	Price 3:	325.876	5.78651703	-0.64516191	0	0	0	0	0	0	0	0	0.3	0.2	0	1	0
38	10 (4-10)	E	53RD ST	Price 3:	325.876	5.78651703	Price 4:	202.028	5.30840496	0.47811207	0	0	0	0	0	0	0	0	0	0.8	0.3	1	0
39	600 (600-618)		THIRD AVE	Price 1:	117.631	4.76755368	Price 2:	215.123	5.37121095	-0.60365727	0	0	0	0	0	0	0	0	0.6	0	0	1	0
41	1211 (1201-1217)		AVE. of the AMERICAS/	Price 1:	133.613	4.89495129	Price 2:	161.75	5.08605215	-0.19110086	0	0	0	0	0	0	0	0	0.7	0	0	1	0
41	1211 (1201-1217)		AVE. of the AMERICAS/	Price 2:	161.75	5.08605215	Price 3:	297.253	5.69458272	-0.60853057	0	0	0	0	0	0	0	0	0	1	1	1	0
48	825 (815-829)		EIGHTH AVE	Price 1:	219.675	5.3930586	Price 2:	337.584	5.821813	-0.42875441	0	0	0	0	0	0	0	0	0	0.3	0.8	1	0
51	750 (742-762)		LEXINGTON AVE	Price 1:	286.065	5.65621769	Price 2:	289.736	5.66897132	-0.01275363	0	0	0	0	0	0	0	0	0	0.4	0.7	1	0
52	1177 (1161-1177)		AVE. of the AMERICAS/	Price 1:	162.749	5.09221071	Price 2:	104.623	4.65036023	0.44185049	0	0	0	0	0	0	0	0	0	0	0.1	1	0
1	100 (96-106)		BROADWAY	Price 1:	153.94	5.03656308	Price 2:	150.458	5.01368148	0.0228816	0	0	0	0	0	0	0	0.8	1	0.1	0	0	1	
2	37-43		WALL ST	Price 1:	91.8603	4.52026864	Price 2:	157.123	5.05703007	-0.53676143	0.6	1	1	1	1	0.6	0	0	0	0	0	1	
2	37-43		WALL ST	Price 2:	157.123	5.05703007	Price 3:	134.053	4.89823721	0.15879287	0	0	0	0	0	0.4	0.8	0	0	0	0	1	
2	37-43		WALL ST	Price 3:	134.053	4.89823721	Price 4:	145.517	4.98029588	-0.08205867	0	0	0	0	0	0	0	0.2	1	0.4	0	0	1	
3	90 (87-93)		WEST ST	Price 1:	253	5.53338949	Price 2:	112.804	4.72565516	0.80773433	0.5	1	1	1	1	1	1	1	0.1	0	0	1	
3	90 (87-93)		WEST ST	Price 2:	112.804	4.72565516	Price 3:	244.841	5.5006096	-0.77495444	0	0	0	0	0	0	0	0	0.3	0	0	1	
4	115 (115-119)		BROADWAY	Price 1:	280.814	5.63769236	Price 2:	116.702	4.75962507	0.87806729	0.3	1	1	1	1	1	0	0	0	0	0	1	
4	115 (115-119)		BROADWAY	Price 2:	116.702	4.75962507	Price 3:	147.228	4.99198177	-0.2323567	0	0	0	0	0	0	0	1	1	0.6	0	0	1	
4	115 (115-119)		BROADWAY	Price 3:	147.228	4.99198177	Price 4:	158.55	5.06607	-0.07408823	0	0	0	0	0	0	0	0	0	0.1	0	0	1	
4	115 (115-119)		BROADWAY	Price 4:	158.55	5.06607	Price 5:	109.425	4.69523827	0.37083173	0	0	0	0	0	0	0	0	0	0.3	0.4	0	1	
4	115 (115-119)		BROADWAY	Price 5:	109.425	4.69523827	Price 6:	96.5791	4.57036208	0.12487619	0	0	0	0	0	0	0	0	0	0	0.3	0	1	
4	115 (115-119)		BROADWAY	Price 6:	96.5791	4.57036208	Price 7:	305.221	5.72103648	-1.1506744	0	0	0	0	0	0	0	0	0	0	0.3	0	1	
7	14 (8-20)		WALL ST	Price 1:	119.914	4.78677386	Price 2:	259.796	5.55989685	-0.773123	0	0.8	1	1	1	1	1	1	0.7	0	0	1	
7	14 (8-20)		WALL ST	Price 2:	259.796	5.55989685	Price 3:	117.122	4.76321866	0.79667819	0	0	0	0	0	0	0	0	0	0.3	0.9	0	1	
8	233 (227-237I)		BROADWAY	Price 1:	146.802	4.98908714	Price 2:	142.909	4.96220899	0.02687815	0.7	1	1	1	1	1	1	1	1	0.9	0	1	
10	61 (57-61)		BROADWAY	Price 1:	114.73	4.74257727	Price 2:	117.292	4.76466946	-0.02209219	0	0.4	1	1	1	1	1	0.3	0	0	0	1	
10	61 (57-61)		BROADWAY	Price 2:	117.292	4.76466946	Price 3:	312.642	5.74505976	-0.9803903	0	0	0	0	0	0	0	0	0.7	0.8	0	0	1	
10	61 (57-61)		BROADWAY	Price 3:	312.642	5.74505976	Price 4:	102.599	4.63082819	1.11423157	0	0	0	0	0	0	0	0	0	0.2	0.7	0	1	
12	25 (21-27)		BROADWAY	Price 1:	125.425	4.8317109	Price 2:	113.639	4.7330235	0.0986874	0	0	0.9	1	1	1	0.2	0	0	0	0	1	
22	110 (110-126)		WILLIAM ST	Price 1:	227.938	5.42907388	Price 2:	119.975	4.78728295	0.64179094	0	0	0	0	0	0.2	1	0	0	0	0	1	
22	110 (110-126)		WILLIAM ST	Price 2:	119.975	4.78728295	Price 3:	146.82	4.98920512	-0.20192217	0	0	0	0	0	0	0	1	0.1	0	0	1	
25	222 (212-222)		BROADWAY	Price 1:	163.27	5.09540648	Price 2:	245.552	5.50350875	-0.40810227	0	0	0	0	0	0	0.9	1	0.4	0	0	1	
25	222 (212-222)		BROADWAY	Price 2:	245.552	5.50350875	Price 3:	302.423	5.711826	-0.20831725	0	0	0	0	0	0	0	0	0.4	0	0	1	
25	222 (212-222)		BROADWAY	Price 3:	302.423	5.711826	Price 4:	105.744	4.66102325	1.05080275	0	0	0	0	0	0	0	0	0	0.2	0.7	0	1	
29	59 (41-65)		MAIDEN LN	Price 1:	217.888	5.38398169	Price 2:	342.757	5.83702162	-0.45303993	0	0	0	0	0	0	0	0.5	1	0.1	0	0	1	
29	59 (41-65)		MAIDEN LN	Price 2:	342.757	5.83702162	Price 3:	199.398	5.29530394	0.54171768	0	0	0	0	0	0	0	0	0	0.9	0.9	0	1	
31	140 (126-146)		BROADWAY	Price 1:	233.198	5.45188975	Price 2:	171.534	5.14478101	0.30710674	0	0	0	0	0	0	0	0.6	1	1	0.8	0	1	
35	95 (91-97)		WALL ST	Price 1:	172.564	5.15077006	Price 2:	234.488	5.45740465	-0.30663459	0	0	0	0	0	0	0	0.2	1	1	0.9	0	1	
36	100		WALL ST	Price 1:	312.069	5.74322516	Price 2:	136.225	4.91430843	0.82891673	0	0	0	0	0	0	0	0.1	1	1	0.8	0	1	
40	100 (88-102)		GOLD ST	Price 1:	94.305	4.54653422	Price 2:	204.5	5.32056879	-0.77403457	0	0	0	0	0	0	0	0	1	0.3	0	0	1	
42	100 (98-106)		WILLIAM ST	Price 1:	141.144	4.94978258	Price 2:	133.204	4.89188324	0.05789934	0	0	0	0	0	0	0	0	0.7	1	0.9	0	1	
43	40 (38-44)		BROAD ST	Price 1:	167.904	5.1233901	Price 2:	132.569	4.88710689	0.23628321	0	0	0	0	0	0	0	0	0	0.8	0.8	0	1	

All Markets

ALL MARKETS, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.50345609
R Square	0.253468035
Adjusted R Square	0.15393044
Standard Error	0.503906636
Observations	86

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	6.466007572	0.646600757	2.546455278	0.010564367
Residual	75	19.04414235	0.253921898		
Total	85	25.51014992			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95.0%*	*e^(-Coeff)*
Intercept	-0.042424391	0.09698996	-0.437410132	0.663070929	-0.235638345	0.150789562	1.043337168
D1	0.200106713	0.976258806	0.204973017	0.838148481	-1.744701018	2.144914444	0.818643389
D2	0.168677262	0.69204202	0.243738469	0.808098862	-1.209941463	1.547295988	0.844781502
D3	-0.431065786	0.584073015	-0.738034073	0.462796817	-1.594599173	0.7324676	1.538896785
D4	0.794626523	0.671294033	1.183723502	0.240260787	-0.542660082	2.131913128	0.451749922
D5	-0.908644575	0.60632753	-1.498603529	0.138173969	-2.116511239	0.299222088	2.480957502
D6	0.441236886	0.246885804	1.787210439	0.077943695	-0.050584972	0.933058744	0.643240314
D7	0.033134998	0.074998184	0.441810671	0.659897507	-0.116269082	0.182539078	0.967407952
D8	-0.17040434	0.149256618	-1.141686996	0.257216205	-0.467738841	0.126930161	1.185784214
D9	-0.483332398	0.194575359	-2.484037038	0.015222011	-0.870946482	-0.095718315	1.621468789
D10	0.769657913	0.208812048	3.685888428	0.000428317	0.353682883	1.185632943	0.463171486
Σ	0.371568804						0.689651553

Values have increased by 31% from the start of period, 1900, to end of period, 2001.

ALL MARKETS, FLOATING CONSTANT, D1 & D2 DELETED

Regression Statistics	
Multiple R	0.499831305
R Square	0.249831333
Adjusted R Square	0.171891731
Standard Error	0.498529203
Observations	86

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	6.373234759	0.796654345	3.205447902	0.003406934
Residual	77	19.13691516	0.248531366		
Total	85	25.51014992			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	-0.053984654	0.093595156	-0.576788976	0.565764472	-0.240356644	0.132387336	1.055468405
D3	-0.216140539	0.389647027	-0.554708554	0.580701771	-0.992027829	0.559746751	1.241276814
D4	0.646870612	0.59717378	1.083220049	0.282091132	-0.542255736	1.835996959	0.52368202
D5	-0.777968108	0.545884322	-1.425151952	0.158154257	-1.864963974	0.309027759	2.177044249
D6	0.426673409	0.24308085	1.755273641	0.083189799	-0.057362986	0.910709805	0.652676675
D7	0.033007366	0.074195797	0.444868416	0.657662884	-0.114735518	0.180750251	0.967531432
D8	-0.156241802	0.14555941	-1.073388535	0.286449238	-0.446087967	0.133604363	1.169108862
D9	-0.48342865	0.191722307	-2.521504446	0.013751067	-0.865196998	-0.101660303	1.621624866
D10	0.787792852	0.20403642	3.861040362	0.000233475	0.381503945	1.194081759	0.454847604
Σ	0.206580486						0.813360794

Values have increased by 28.7% from the start of period, 1920, to end of period, 2001.

All Markets: MID and DOWN dummies added

ALL MARKETS, MID & DOWN DUMMIES, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.520387464
R Square	0.270803113
Adjusted R Square	0.150935131
Standard Error	0.503388294
Observations	86

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	6.869702505	0.572475209	2.259178053	0.017007215
Residual	73	18.49818352	0.253399774		
Total	85	25.36788603			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	0.426410175	0	65535	#NUM!	0.426410175	0.426410175	0.652848505
D1	0.14042502	0.975254605	0.143988061	0.885906656	-1.803255924	2.084105963	0.86898882
D2	0.205674788	0.691471559	0.297445044	0.766971574	-1.172426976	1.583776552	0.814097788
D3	-0.570972456	0.593381578	-0.962234889	0.339108217	-1.753581037	0.611636124	1.76998745
D4	0.909624042	0.67647008	1.344662637	0.18289746	-0.438579798	2.257827882	0.402675585
D5	-0.979734927	0.608053016	-1.611265633	0.111437519	-2.191583661	0.232113807	2.66375006
D6	0.481757601	0.248595836	1.93791501	0.056501491	-0.013693521	0.977208723	0.617696773
D7	0.038687752	0.07504091	0.515555475	0.607722798	-0.110868668	0.188244172	0.962051061
D8	-0.189274607	0.150116465	-1.260851749	0.211377178	-0.488456494	0.109907279	1.208372735
D9	-0.453702034	0.195897044	-2.316022873	0.023368217	-0.844124543	-0.063279524	1.57412889
D10	0.743180692	0.210595943	3.528941157	0.000726214	0.323463298	1.162898086	0.475598774
MID	-0.52031563	0	65535	#NUM!	-0.52031563	-0.52031563	1.682558632
DOWN	-0.375	0	65535	#NUM!	-0.375	-0.375	1.454991415
Σ, Int. through D10	0.752076045						0.471386916
MID + Σ	0.231760415						0.793136124
DOWN + Σ	0.377076045						0.685863915

Overall values have increased by 53% from start of the period, 1900, to end of period, 2001.

Midtown values have increased by 20.7% from start of period, 1900, to end of period, 2001.

Downtown values have increased 31.5% from start of period, 1900, to end of period, 2001.

ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.516922428
R Square	0.267208797
Adjusted R Square	0.169503303
Standard Error	0.497853576
Observations	86

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	6.778522304	0.67785223	2.73483902	0.00634976
Residual	75	18.58936373	0.247858183		
Total	85	25.36788603			

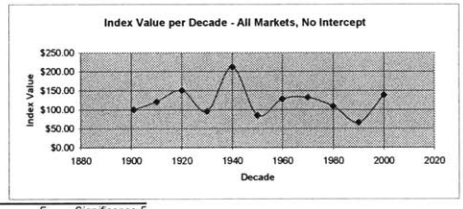
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	0.290803205	0	65535	#NUM!	0.290803205	0.290803205	0.7476628
D3	-0.345847158	0.406841284	-0.850078817	0.397986884	-1.156316749	0.464622433	1.413186605
D4	0.755409302	0.604056402	1.250560875	0.214982259	-0.447933041	1.958751645	0.469818278
D5	-0.843899072	0.548424531	-1.538769738	0.128069108	-1.93641702	0.248618876	2.325416289
D6	0.46783801	0.244785999	1.911212288	0.059798429	-0.019800822	0.955476841	0.626354979
D7	0.038601719	0.074214313	0.520138473	0.604499057	-0.109240808	0.186444247	0.962133832
D8	-0.175050713	0.146464488	-1.195175131	0.235784202	-0.466823003	0.116721577	1.19130663
D9	-0.452304978	0.192951267	-2.344141007	0.021721046	-0.836683705	-0.067926252	1.57193128
D10	0.759763884	0.205854944	3.690773076	0.000421423	0.34967971	1.169848058	0.467776864
MID	-0.397374715	0	65535	#NUM!	-0.397374715	-0.397374715	1.487913369
DOWN	-0.25	0	65535	#NUM!	-0.25	-0.25	1.284025417
Σ, Int. through D10	0.495314199						0.609379411
MID + Σ	0.097939485						0.906703772
DOWN + Σ	0.245314199						0.782458652

Overall values have increased by 39.1% from start of the period, 1920, to end of period, 2001.

Midtown values have increased by 9.4% from start of period, 1920, to end of period, 2001.

Downtown values have increased 31.2% from start of period, 1920, to end of period, 2001.

All Markets



ALL MARKETS, ZERO CONSTANT

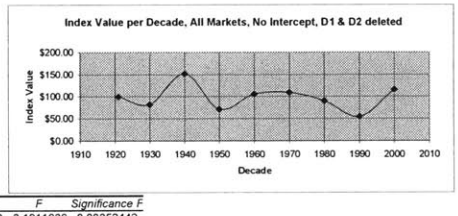
Regression Statistics	
Multiple R	0.501561169
R Square	0.251563606
Adjusted R Square	0.149775085
Standard Error	0.501218576
Observations	86

ANOVA

	df	SS	MS	F	Significance F
Regression	10	6.417425299	0.64174	2.5545035	0.01033767
Residual	76	19.09272462	0.25122		
Total	86	25.51014992			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	e^(-Coeff)	Ratio	Index Year ($100 starting value in 1901)	Index Value
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1901	$100.00
D1	0.189101557	0.970728482	0.1948	0.8460664	-1.74427425	2.1224774	0.8277024	1.20816	1910	$120.82
D2	0.220024521	0.678374976	0.32434	0.7465712	-1.13107807	1.5711271	0.8024991	1.24611	1920	$150.55
D3	-0.456716637	0.578021661	-0.79014	0.4319059	-1.60794802	0.6945147	1.5788814	0.63336	1930	$95.35
D4	0.798990198	0.667639317	1.19674	0.235128	-0.53073045	2.1287108	0.4497829	2.22329	1940	$212.00
D5	-0.920771498	0.602462313	-1.52835	0.1305779	-2.12068072	0.2791377	2.511227	0.39821	1950	$84.42
D6	0.417671863	0.239650821	1.74284	0.0854071	-0.05963473	0.8949785	0.6585783	1.51842	1960	$128.18
D7	0.031444284	0.074498971	0.42208	0.6741606	-0.11693347	0.179822	0.9690449	1.03194	1970	$132.28
D8	-0.195291187	0.13725085	-1.42288	0.1588635	-0.4686503	0.0780679	1.2156649	0.8226	1980	$108.81
D9	-0.496091085	0.19135038	-2.59258	0.0114201	-0.87719888	-0.114983	1.6422891	0.60891	1990	$66.26
D10	0.739073876	0.195708032	3.77641	0.0003139	0.34928705	1.1288607	0.477556	2.094	2000	$138.74
Σ	0.327435892						0.7207695	1.38741		
						Σ, (D1coeff * D2 coeff * ....D10coeff)	0.7207695		*Ending Value, 2000*	***$138.74***

Values have increased by 38.74% from the start of period, 1900, to end of period, 2001.



ALL MARKETS, ZERO CONSTANT, D1 & D2 DELETED

Regression Statistics	
Multiple R	0.496578454
R Square	0.246590161
Adjusted R Square	0.166155944
Standard Error	0.496392085
Observations	86

ANOVA

	df	SS	MS	F	Significance F
Regression	8	6.290551972	0.78632	3.1911636	0.00352442
Residual	78	19.21959795	0.24641		
Total	86	25.51014992			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	e^(-Coeff)	Ratio	Index Year ($100 starting value in 1901)	Index Value
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1921	$100.00
D3	-0.195365859	0.386315561	-0.50572	0.6144824	-0.96446124	0.5737295	1.2157557	0.82253	1930	$82.25
D4	0.61512423	0.59208284	1.03892	0.3020537	-0.56362243	1.7938709	0.5405737	1.84989	1940	$152.16
D5	-0.761860881	0.542832503	-1.40349	0.1644389	-1.84255762	0.3188359	2.142259	0.4668	1950	$71.03
D6	0.392291272	0.234648419	1.67183	0.098566	-0.07485795	0.8594405	0.6755073	1.48037	1960	$105.15
D7	0.030692049	0.07376953	0.41605	0.6785136	-0.11617184	0.1775559	0.9697742	1.03117	1970	$108.42
D8	-0.186304221	0.135325497	-1.37671	0.1725402	-0.45571665	0.0831082	1.2047887	0.83002	1980	$89.99
D9	-0.499505464	0.188872223	-2.64467	0.0098834	-0.87552126	-0.12349	1.6479061	0.60683	1990	$54.61
D10	0.749600965	0.192166136	3.9008	0.0002019	0.36702749	1.1321744	0.4725551	2.11616	2000	$115.57
Σ	0.14467209						0.865306	1.15566		
						Σ, (D1coeff * D2 coeff * ....D10coeff)	0.865306		*Ending Value, 2000*	***$115.57***

Values have increased by 15.57% from the start of period, 1921, to end of period, 2001.

All Markets: MID and DOWN dummies added

ALL MARKETS, MID & DOWN DUMMIES, ZERO CONSTANT

Regression Statistics	
Multiple R	0.520387464
R Square	0.270803113
Adjusted R Square	0.148695468
Standard Error	0.499975452
Observations	86

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	6.869702505	0.57248	2.2901257	0.01552164
Residual	74	18.49818352	0.24998		
Total	86	25.36788603			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*	*Ratio*	*Index Year ($100 starting value in 1901)*	*Index Value*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1901	$100.00
D1	0.14042502	0.968642634	0.14497	0.885128	-1.78963779	2.0704878	0.8689888	1.15076	1910	$115.08
D2	0.205674788	0.686783562	0.29948	0.7654169	-1.16277149	1.5741211	0.8140978	1.22835	1920	$141.35
D3	-0.570972456	0.589358605	-0.9688	0.3357993	-1.74529525	0.6033503	1.7699875	0.56498	1930	$79.86
D4	0.909624042	0.67188379	1.35384	0.1799075	-0.42913379	2.2483819	0.4026756	2.48339	1940	$198.33
D5	-0.979734927	0.603930575	-1.62226	0.1089999	-2.18309301	0.2236232	2.6637501	0.37541	1950	$74.45
D6	0.481757601	0.246910421	1.95114	0.0548258	-0.01022221	0.9737374	0.6176968	1.61892	1960	$120.54
D7	0.038687752	0.074532152	0.51907	0.6052577	-0.10982082	0.1871963	0.9620511	1.03945	1970	$125.29
D8	-0.189274607	0.149098715	-1.26946	0.2082556	-0.48636032	0.1078111	1.2083727	0.82756	1980	$103.68
D9	-0.453702034	0.194568913	-2.33183	0.0224338	-0.8413891	-0.066015	1.5741289	0.63527	1990	$65.87
D10	0.743180692	0.209168158	3.55303	0.0006672	0.32640399	1.1599574	0.4755988	2.10261	2000	$138.50
MID	-0.093905455	0.10421176	-0.9011	0.3704574	-0.30155194	0.113741	1.0984559	0.91037		$126.08
DOWN	0.051410175	0.125803636	0.40865	0.6839737	-0.19925907	0.3020794	0.949889	1.05275		$145.80
Σ, Int. through D10	0.32566587						0.7220464	1.38495		
MID + Σ	0.231760415						0.7931361	1.26082		
DOWN + Σ	0.377076045						0.6858639	1.45802		

Overall values have increased by 38.5% from start of the period, 1900, to end of period, 20(Σ, (D1coeff * D2 coeff * ....D10coeff) 0.7220464 *Overall Ending Value, 2000* ***$138.50***

Midtown values have increased by 26% from start of period, 1900, to end of period, 2001. Σ, (D1coeff * D2 coeff * ....MIDcoeff) 0.7931361 *Midtown Ending Value, 2000* ***$126.08***

Downtown values have increased 45.8% from start of period, 1900, to end of period, 2001. Σ, (D1coeff * D2 coeff * ....DOWNcoeff) 0.6858639 *Downtown Ending Value, 2000* ***$145.80***

ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, ZERO CONSTANT

Regression Statistics	
Multiple R	0.516922428
R Square	0.267208797
Adjusted R Square	0.167272996
Standard Error	0.494567378
Observations	86

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	6.778522304	0.67785	2.7713035	0.00575246
Residual	76	18.58936373	0.2446		
Total	86	25.36788603			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*	*Ratio*	*Index Year ($100 starting value in 1901)*	*Index Value*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1921	$100.00
D3	-0.345847158	0.404155834	-0.85573	0.3948385	-1.15079429	0.4591	1.4131866	0.70762	1930	$70.76
D4	0.755409302	0.600069187	1.25887	0.2119303	-0.43973359	1.9505522	0.4698183	2.12848	1940	$150.62
D5	-0.843899072	0.544804528	-1.54899	0.1255375	-1.92897272	0.2411746	2.3254163	0.43003	1950	$64.77
D6	0.46783801	0.243170232	1.92391	0.0581101	-0.0164781	0.9521541	0.626355	1.59654	1960	$103.41
D7	0.038601719	0.073724444	0.52359	0.602084	-0.10823343	0.1854369	0.9621338	1.03936	1970	$107.48
D8	-0.175050713	0.145497715	-1.20312	0.2326657	-0.4648349	0.1147335	1.1913066	0.83941	1980	$90.22
D9	-0.452304978	0.191677648	-2.35972	0.020857	-0.83406459	-0.070545	1.5719313	0.63616	1990	$57.39
D10	0.759763884	0.20449615	3.7153	0.0003854	0.35247398	1.1670538	0.4677769	2.13777	2000	$122.69
MID	-0.10657151	0.10068412	-1.05847	0.2931921	-0.30710157	0.0939586	1.1124575	0.89891		$110.29
DOWN	0.040803205	0.123036259	0.33164	0.7410772	-0.20424506	0.2858515	0.960018	1.04165		$127.80
Σ, Int. through D10	0.204510994						0.8150458	1.22692		
MID + Σ	0.097939485						0.9067038	1.1029		
DOWN + Σ	0.245314199						0.7824587	1.27802		

Overall values have increased by 22.7% from start of the period, 1920, to end of period, 20(Σ, (D1coeff * D2 coeff * ....D10coeff) 0.8150458 *Overall Ending Value, 2000* ***$122.69***

Midtown values have increased by 20.3% from start of period, 1920, to end of period, 2001. Σ, (D1coeff * D2 coeff * ....MIDcoeff) 0.9067038 *Midtown Ending Value, 2000* ***$110.29***

Downtown values have increased 27.8% from start of period, 1920, to end of period, 2001. Σ, (D1coeff * D2 coeff * ....DOWNcoeff) 0.7824587 *Downtown Ending Value, 2000* ***$127.80***

Midtown

#:	Address:	Dir.	Street		P1	Lognorm, P_1		P2	Lognorm, P_2	Log, P1 - Log, P2	1901 - 1910 D1	1911 - 1920 D2	1921 - 1930 D3	1931 - 1940 D4	1941 - 1950 D5	1951 - 1960 D6	1961 - 1970 D7	1971 - 1980 D8	1981 - 1990 D9	1991 - 2000 D10
2	1466 (1462-1470)		BROADWAY	Price 1:	135.7968	4.911159585	Price 2:	267.8961	5.59059925	-0.67943967	0.3	1	1	1	1	1	1	1	1	0.8
6	730 (730-734)		FIFTH AVE	Price 1:	146.0786	4.984144677	Price 2:	148.7268	5.00211099	-0.01796631	0	0	0.9	0.8	0	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	Price 2:	148.7268	5.002110989	Price 3:	227.0757	5.42528343	-0.42317244	0	0	0	0.2	0.6	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	Price 3:	227.0757	5.425283426	Price 4:	191.8559	5.2567447	0.16853872	0	0	0	0	0.3	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	Price 4:	191.8559	5.256744703	Price 5:	189.5105	5.2444445	0.0123002	0	0	0	0	0.1	1	0.6	0	0	0
6	730 (730-734)		FIFTH AVE	Price 5:	189.5105	5.244444503	Price 6:	289.1903	5.66708506	-0.42264056	0	0	0	0	0	0	0.4	1	0.1	0
6	730 (730-734)		FIFTH AVE	Price 6:	289.1903	5.667085064	Price 7:	330.2759	5.79992825	-0.13284319	0	0	0	0	0	0	0	0	0.9	0.1
8	535 (531-537)		FIFTH AVE	Price 1:	255.5211	5.543305031	Price 2:	172.9946	5.15326025	0.39004478	0	0	0.5	1	1	1	0.3	0	0	0
8	535 (531-537)		FIFTH AVE	Price 2:	172.9946	5.153260247	Price 3:	228.7268	5.43252845	-0.2792682	0	0	0	0	0	0	0.7	1	0.4	0
10	220 (216-236)	E	42ND ST	Price 1:	107.126	4.674005966	Price 2:	199.9556	5.29809512	-0.62408915	0	0	0.2	1	1	1	1	1	0.2	0
12	275 (273-277)		MADISON AVE	Price 1:	101.1408	4.616514033	Price 2:	81.00319	4.39448853	0.22202551	0	0	0	0	0	0.1	0	0	0	0
12	275 (273-277)		MADISON AVE	Price 2:	81.00319	4.394488527	Price 3:	102.0255	4.62522284	-0.23073432	0	0	0	0	0	0.7	0.5	0	0	0
12	275 (273-277)		MADISON AVE	Price 3:	102.0255	4.625222845	Price 4:	178.2524	5.18320043	-0.55797758	0	0	0	0	0	0	0.5	1	0	0
12	275 (273-277)		MADISON AVE	Price 4:	178.2524	5.183200428	Price 5:	242.33	5.49030051	-0.30710008	0	0	0	0	0	0	0	0	0.3	0
12	275 (273-277)		MADISON AVE	Price 5:	242.33	5.490300509	Price 6:	414.0697	6.02603444	-0.53573393	0	0	0	0	0	0	0	0	0.5	0
13	1450 (1446-1450)		BROADWAY	Price 1:	199.5052	5.295840351	Price 2:	90.91865	4.5099652	0.78587515	0	0	0	0.9	0.6	0	0	0	0	0
13	1450 (1446-1450)		BROADWAY	Price 2:	90.91865	4.5099652	Price 3:	99.44097	4.59956422	-0.08959902	0	0	0	0	0.4	1	0.4	0	0	0
13	1450 (1446-1450)		BROADWAY	Price 3:	99.44097	4.599564224	Price 4:	276.3239	5.62157356	-1.02200933	0	0	0	0	0	0	0.6	1	0.8	0
13	1450 (1446-1450)		BROADWAY	Price 4:	276.3239	5.621573555	Price 5:	268.8746	5.58677896	0.0347946	0	0	0	0	0	0	0	0	0.2	1
14	500 (500-506)		FIFTH AVE	Price 1:	168.8474	5.128995277	Price 2:	340.441	5.83024172	-0.70124644	0	0	0	0.8	1	1	1	1	0.6	0
14	500 (500-506)		FIFTH AVE	Price 2:	340.441	5.830241717	Price 3:	174.5752	5.16235559	0.66788613	0	0	0	0	0	0	0	0	0.4	0.6
18	640		FIFTH AVE	Price 1:	171.8631	5.146698297	Price 2:	85.74783	4.45141082	0.69528748	0	0	0	0	0.1	1	0.1	0	0	0
18	640		FIFTH AVE	Price 2:	85.74783	4.451410819	Price 3:	82.76209	4.41597012	0.0354407	0	0	0	0	0	0	0.2	0	0	0
18	640		FIFTH AVE	Price 3:	82.76209	4.41597012	Price 4:	246.0234	5.50542667	-1.08945655	0	0	0	0	0	0	0.7	1	0.9	0
18	640		FIFTH AVE	Price 4:	246.0234	5.505426668	Price 5:	279.78	5.63400361	-0.12857694	0	0	0	0	0	0	0	0	0.1	0.7
20	1740 (1730-1750)		BROADWAY	Price 1:	246.4569	5.507187089	Price 2:	246.5782	5.50767908	-0.00049199	0	0	0	0	0	1	1	1	1	0
21	1120 (1120-1136)		AVE. of the AMERICAS/S	Price 1:	207.632	5.335767439	Price 2:	100.5086	4.61024347	0.72552396	0	0	0	0	0	0	0.4	0.8	1	0.8
22	150 (130-164)	E	42ND ST	Price 1:	259.5597	5.558986626	Price 2:	161.8125	5.08643826	0.47254837	0	0	0	0	0	0.1	0	0	0	0
22	150 (130-164)	E	42ND ST	Price 2:	161.8125	5.086438258	Price 3:	312.1453	5.74346882	-0.65703057	0	0	0	0	0	0.5	1	1	0.7	0
24	530 (530-544)		FIFTH AVE	Price 1:	330.7306	5.801304012	Price 2:	187.571	5.23415752	0.56714649	0	0	0	0	0	0.2	1	0.8	0	0
24	530 (530-544)		FIFTH AVE	Price 2:	187.571	5.234157518	Price 3:	125.1548	4.82955097	0.40460655	0	0	0	0	0	0	0	0.2	1	0.4
25	666 (660-672)		FIFTH AVE	Price 1:	206.261	5.329142545	Price 2:	102.3812	4.62870266	0.70043988	0	0	0	0	0	0	0.3	1	0.7	0	0
25	666 (660-672)		FIFTH AVE	Price 2:	102.3812	4.628702662	Price 3:	396.4611	5.98257783	-1.35387517	0	0	0	0	0	0	0	0.3	0.7	0
26	717 (715-719)		FIFTH AVE	Price 1:	385.9071	5.955596631	Price 2:	177.4802	5.17885899	0.77673764	0	0	0	0	0	0	0.2	1	0.8	0	0
26	717 (715-719)		FIFTH AVE	Price 2:	177.4802	5.178858988	Price 3:	251.1073	5.52588016	-0.34702118	0	0	0	0	0	0	0	0	0.2	1	0.4
27	1285 (1281-1297)		AVE. of the AMERICAS/S	Price 1:	389.1108	5.963864195	Price 2:	528.0865	6.26926013	-0.30539594	0	0	0	0	0	0	0	1	1	0.9	0
28	685 (681-701)		THIRD AVE	Price 1:	90.43967	4.504683017	Price 2:	167.5421	5.12123439	-0.61655137	0	0	0	0	0	0	0	0	0	0.3
29	1180 (1180-1186)		AVE. of the AMERICAS/S	Price 1:	106.3355	4.666599148	Price 2:	131.8614	4.88175149	-0.21515234	0	0	0	0	0	0	0.8	1	1	0.5
30	1301 (1301-1315)		AVE. of the AMERICAS/S	Price 1:	167.6741	5.122022016	Price 2:	300.5244	5.70552885	-0.58350684	0	0	0	0	0	0	7	1	0.8	0
32	6 (6-14)	E	43RD ST	Price 1:	153.8813	5.036181819	Price 2:	140.7643	4.94708674	0.08909508	0	0	0	0	0	0	0.2	1	1	0.4
34	1250 (1240-1258)		BROADWAY	Price 1:	176.7833	5.174924874	Price 2:	158.6754	5.06686064	0.10806424	0	0	0	0	0	0	0.2	1	1	0.9
35	150 (146-170)	E	58TH ST	Price 1:	141.8553	4.954807725	Price 2:	307.4894	5.72844071	-0.77363298	0	0	0	0	0	0	0.2	1	0.2	0
35	150 (146-170)	E	58TH ST	Price 2:	307.4894	5.728440705	Price 3:	242.011	5.48898319	0.23945752	0	0	0	0	0	0	0	0	0.8	0.8
37	1500 (1492-1512)		BROADWAY	Price 1:	103.3518	4.638138476	Price 2:	111.7997	4.71670853	-0.07857005	0	0	0	0	0	0	0	0	0.1	0	0
37	1500 (1492-1512)		BROADWAY	Price 2:	111.7997	4.716708528	Price 3:	126.5413	4.84056885	-0.12386032	0	0	0	0	0	0	0	0	0.9	1	0.5
38	10 (4-10)	E	53RD ST	Price 1:	112.9351	4.726813448	Price 2:	170.9473	5.14135512	-0.41454167	0	0	0	0	0	0	0	0	0.5	0	0
38	10 (4-10)	E	53RD ST	Price 2:	170.9473	5.141355115	Price 3:	325.876	5.78651703	-0.64516191	0	0	0	0	0	0	0	0	0.3	0.2	0
38	10 (4-10)	E	53RD ST	Price 3:	325.876	5.786517028	Price 4:	202.0277	5.30840496	0.47811207	0	0	0	0	0	0	0	0	0	0.8	0.3
39	600 (600-618)		THIRD AVE	Price 1:	117.6311	4.767553679	Price 2:	215.1232	5.37121095	-0.60365727	0	0	0	0	0	0	0	0	0.6	0	0
41	1211 (1201-1217)		AVE. of the AMERICAS/S	Price 1:	133.6135	4.894951289	Price 2:	161.75	5.08605215	-0.19110086	0	0	0	0	0	0	0	0	0.7	0	0
41	1211 (1201-1217)		AVE. of the AMERICAS/S	Price 2:	161.75	5.086052151	Price 3:	297.2527	5.69458272	-0.60853057	0	0	0	0	0	0	0	0	0	1	1
48	825 (815-829)		EIGHTH AVE	Price 1:	219.8749	5.393058597	Price 2:	337.5835	5.821813	-0.42875441	0	0	0	0	0	0	0	0	0.3	0.8
51	750 (742-762)		LEXINGTON AVE	Price 1:	286.0646	5.656217693	Price 2:	289.7363	5.66897132	-0.01275363	0	0	0	0	0	0	0	0	0.4	0.7
52	1177 (1161-1177)		AVE. of the AMERICAS/S	Price 1:	162.7493	5.092210713	Price 2:	104.6227	4.65036023	0.44185049	0	0	0	0	0	0	0	0	0	0.1
											0.3	1	2.6	5.7	6.1	10.1	22.8	22.9	21.2	11.1

Midtown

MIDTOWN ONLY, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.366656571
R Square	0.134437041
Adjusted R Square	-0.06685667
Standard Error	0.528200484
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	1.863315201	0.18633152	0.667865082	0.747301409
Residual	43	11.9968173	0.278995751		
Total	53	13.8601325			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-coeff)*	*Ratio 1/e^(-coeff)*
Intercept	-0.079733797	0.126754651	-0.629040406	0.53265036	-0.335358736	0.175891143	1.082998732	0.923362116
D1	1.46732E+16	0	65535	#NUM!	1.46732E+16	1.46732E+16	0	#DIV/0!
D2	-4.40195E+15	0	65535	#NUM!	-4.40195E+15	-4.40195E+15	#NUM!	#NUM!
D3	-0.243495457	0.77211402	-0.315362046	0.754012244	-1.80061071	1.313619795	1.275700523	0.783883037
D4	0.280713439	0.541890285	0.518026337	0.607095176	-0.81211172	1.373538599	0.755244728	1.324074122
D5	-0.093209752	0.162594196	-0.573266173	0.569450585	-0.421111973	0.234692468	1.097691954	0.911002395
D6	0.263745863	0.251214005	1.04988519	0.299635919	-0.242875113	0.77036684	0.768168735	1.30179732
D7	0.000651505	0.082928124	0.007856261	0.993768011	-0.16658888	0.16789189	0.999348707	1.000651717
D8	-0.139369408	0.192835252	-0.722738224	0.473753574	-0.528258489	0.249519674	1.149548674	0.869906619
D9	-0.325788912	0.23380373	-1.39342906	0.170651275	-0.797298747	0.145720923	1.385122955	0.721957568
D10	0.524939003	0.288627057	1.818744956	0.075919289	-0.05713253	1.107010537	0.591591448	1.690355739
Σ	1.02712E+16						0	

No findings.

No regression possible with zero constant

MIDTOWN ONLY, FLOATING CONSTANT, D1 & D2 DELETED

Regression Statistics	
Multiple R	0.460534935
R Square	0.212092427
Adjusted R Square	0.072019969
Standard Error	0.492623439
Observations	54

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	2.939629139	0.367453642	1.514162246	0.17925678
Residual	45	10.92050337	0.242677853		
Total	53	13.8601325			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-coeff)*	*Ratio 1/e^(-coeff)*
Intercept	-0.028642251	0.114844254	-0.24940082	0.804185679	-0.259950443	0.202665941	1.029056385	0.97176405
D3	-0.76917851	0.572697778	-1.343079264	0.185981308	-1.922650995	0.384293975	2.157992756	0.463393585
D4	0.991807612	0.659381724	1.504147864	0.139530051	-0.336255296	2.31987052	0.370905631	2.69610358
D5	-1.020329895	0.601892359	-1.695203269	0.096946818	-2.232603282	0.191943493	2.774109777	0.360476001
D6	0.372333578	0.253816979	1.466937238	0.149347529	-0.138880037	0.883547194	0.689124327	1.451116962
D7	0.011074499	0.077433641	0.143019227	0.886913489	-0.144884852	0.16703385	0.988986597	1.011136049
D8	-0.234104134	0.185588148	-1.261417479	0.213658483	-0.607897837	0.139689568	1.263776088	0.791279412
D9	-0.319172804	0.218195751	-1.462781939	0.150476873	-0.758641588	0.120295979	1.375989081	0.726749953
D10	0.454591698	0.264772963	1.716911322	0.092871907	-0.078688401	0.987871798	0.634707067	1.57552996
Σ	-0.541620206						1.718789401	-1.846312209

Midtown values decreased by 71% from start of period, 1920, to end of period, 2001.

All Markets: transactions under $100/sf deleted

# :	Address:	Dir.	Street		P1	Lognorm, P_1		P2	Lognorm, P_2	Log, P1 - Log, P2	1901 - 1910 D1	1911 - 1920 D2	1921 - 1930 D3	1931 - 1940 D4	1941 - 1950 D5	1951 - 1960 D6	1961 - 1970 D7	1971 - 1980 D8	1981 - 1990 D9	1991 - 2000 D10
2	1466 (1462-1470)		BROADWAY	*Price 1:*	135.797	4.91115959	*Price 2:*	267.896	5.59059925	-0.6794397	0.3	1	1	1	1	1	1	1	1	0.8
6	730 (730-734)		FIFTH AVE	*Price 1:*	146.079	4.98414468	*Price 2:*	148.727	5.00211099	-0.0179663	0	0	0.9	0.8	0	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	*Price 2:*	148.727	5.00211099	*Price 3:*	227.076	5.42528343	-0.4231724	0	0	0	0.2	0.6	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	*Price 3:*	227.076	5.42528343	*Price 4:*	191.856	5.2567447	0.16853872	0	0	0	0	0.3	0	0	0	0	0
6	730 (730-734)		FIFTH AVE	*Price 4:*	191.856	5.2567447	*Price 5:*	189.511	5.2444445	0.0123002	0	0	0	0	0.1	1	0.6	0	0	0
6	730 (730-734)		FIFTH AVE	*Price 5:*	189.511	5.2444445	*Price 6:*	289.19	5.66708506	-0.4226406	0	0	0	0	0	0	0.4	1	0.1	0
6	730 (730-734)		FIFTH AVE	*Price 6:*	289.19	5.66708506	*Price 7:*	330.276	5.79992825	-0.1328432	0	0	0	0	0	0	0	0	0.9	0.1
8	535 (531-537)		FIFTH AVE	*Price 1:*	255.521	5.54330503	*Price 2:*	172.995	5.15326025	0.39004478	0	0	0.5	1	1	1	0.3	0	0	0
8	535 (531-537)		FIFTH AVE	*Price 2:*	172.995	5.15326025	*Price 3:*	228.727	5.43252845	-0.2792682	0	0	0	0	0	0	0.7	1	0.4	0
10	220 (216-236)	E	42ND ST	*Price 1:*	107.126	4.67400597	*Price 2:*	199.956	5.29809512	-0.6240892	0	0	0.2	1	1	1	1	1	0.2	0
12	275 (273-277(		MADISON AVENUE	*Price 3:*	102.026	4.62522288	*Price 4:*	178.252	5.18320043	-0.5579775	0	0	0	0	0	0	0.5	1	0	0
12	275 (273-277(		MADISON AVENUE	*Price 4:*	178.252	5.18320043	*Price 5:*	242.33	5.49030051	-0.3071001	0	0	0	0	0	0	0	0	0.3	0
12	275 (273-277(		MADISON AVENUE	*Price 5:*	242.33	5.49030051	*Price 6:*	414.07	6.02603444	-0.5357339	0	0	0	0	0	0	0	0	0.5	0
13	1450 (1446-1450)		BROADWAY	*Price 4:*	276.324	5.62157355	*Price 5:*	266.875	5.58677896	0.03479459	0	0	0	0	0	0	0	0	0.2	1
14	500 (500-506)		FIFTH AVE	*Price 1:*	168.847	5.12899528	*Price 2:*	340.441	5.83024172	-0.7012464	0	0	0	0.8	1	1	1	1	0.6	0
14	500 (500-506)		FIFTH AVE	*Price 2:*	340.441	5.83024172	*Price 3:*	174.575	5.16235559	0.66788613	0	0	0	0	0	0	0	0	0.4	0.6
18	640		FIFTH AVE	*Price 4:*	246.023	5.50542665	*Price 5:*	279.78	5.63400361	-0.128577	0	0	0	0	0	0	0	0	0.1	0.7
20	1740 (1730-1750)		BROADWAY	*Price 1:*	246.457	5.50718709	*Price 2:*	246.578	5.50767908	-0.000492	0	0	0	0	0	1	1	1	1	0
21	1120 (1120-1136)		AVE. of the AMERICAS	*Price 1:*	207.632	5.33576744	*Price 2:*	100.509	4.61024347	0.72552396	0	0	0	0	0	0	0	0.4	0.8	1	0.8
22	150 (130-164)	E	42ND ST	*Price 1:*	259.56	5.55898663	*Price 2:*	161.813	5.08643826	0.47254837	0	0	0	0	0	0	0.1	0	0	0
22	150 (130-164)	E	42ND ST	*Price 2:*	161.813	5.08643826	*Price 3:*	312.145	5.7434682	-0.6570306	0	0	0	0	0	0	0.5	1	1	0.7	0
24	530 (530-544)		FIFTH AVE	*Price 1:*	330.731	5.80130401	*Price 2:*	187.571	5.23415752	0.56714649	0	0	0	0	0	0	0.2	1	0.8	0	0
24	530 (530-544)		FIFTH AVE	*Price 2:*	187.571	5.23415752	*Price 3:*	125.155	4.82955097	0.40460655	0	0	0	0	0	0	0	0	0.2	1	0.4
25	666 (660-672)		FIFTH AVE	*Price 1:*	206.261	5.32914255	*Price 2:*	102.381	4.62870266	0.70043988	0	0	0	0	0	0	0.3	1	0.7	0	0
25	666 (660-672)		FIFTH AVE	*Price 2:*	102.381	4.62870266	*Price 3:*	396.461	5.98257783	-1.3538752	0	0	0	0	0	0	0	0	0.3	0.7	0
26	717 (715-719)		FIFTH AVE	*Price 1:*	385.907	5.95559663	*Price 2:*	177.48	5.17885899	0.77673764	0	0	0	0	0	0	0.2	1	0.8	0	0
26	717 (715-719)		FIFTH AVE	*Price 2:*	177.48	5.17885899	*Price 3:*	251.107	5.52588016	-0.3470212	0	0	0	0	0	0	0	0	0.2	1	0.4
27	1285 (1281-1297)		AVE. of the AMERICAS	*Price 1:*	389.111	5.96386419	*Price 2:*	528.087	6.26926013	-0.3053959	0	0	0	0	0	0	0	1	1	0.9	0
29	1180 (1180-1186)		AVE. of the AMERICAS	*Price 1:*	106.335	4.66659915	*Price 2:*	131.861	4.88175149	-0.2151523	0	0	0	0	0	0	0	0.8	1	1	0.5
30	1301 (1301-1315)		AVE. of the AMERICAS	*Price 1:*	167.674	5.12202202	*Price 2:*	300.524	5.70552885	-0.5835068	0	0	0	0	0	0	0	7	1	0.8	0
32	6 (6-14)	E	43RD ST	*Price 1:*	153.881	5.03618182	*Price 2:*	140.764	4.94708674	0.08909508	0	0	0	0	0	0	0	0.2	1	1	0.4
34	1250 (1240-1258)		BROADWAY	*Price 1:*	176.783	5.17492487	*Price 2:*	158.675	5.06686064	0.10806424	0	0	0	0	0	0	0	0.2	1	1	0.9
35	150 (146-170)	E	58TH ST	*Price 1:*	141.855	4.95480773	*Price 2:*	307.489	5.72844071	-0.773633	0	0	0	0	0	0	0	0.2	1	0.2	0
35	150 (146-170)	E	58TH ST	*Price 2:*	307.489	5.72844071	*Price 3:*	242.011	5.48898319	0.23945752	0	0	0	0	0	0	0	0	0.8	0.8
37	1500 (1492-1512)		BROADWAY	*Price 1:*	103.352	4.63813848	*Price 2:*	111.8	4.71670853	-0.0785701	0	0	0	0	0	0	0	0	0.1	0	0
37	1500 (1492-1512)		BROADWAY	*Price 2:*	111.8	4.71670853	*Price 3:*	126.541	4.84056885	-0.1238603	0	0	0	0	0	0	0	0	0.9	1	0.5
38	10 (4-10)	E	53RD ST	*Price 1:*	112.935	4.72681345	*Price 2:*	170.947	5.14135512	-0.4145417	0	0	0	0	0	0	0	0	0.5	0	0
38	10 (4-10)	E	53RD ST	*Price 2:*	170.947	5.14135512	*Price 3:*	325.876	5.78651703	-0.6451619	0	0	0	0	0	0	0	0	0.3	0.2	0
38	10 (4-10)	E	53RD ST	*Price 3:*	325.876	5.78651703	*Price 4:*	202.028	5.30840496	0.47811207	0	0	0	0	0	0	0	0	0	0.8	0.3
39	600 (600-618)		THIRD AVE	*Price 1:*	117.631	4.76755368	*Price 2:*	215.123	5.37121095	-0.6036573	0	0	0	0	0	0	0	0	0.6	0	0
41	1211 (1201-1217)		AVE. of the AMERICAS	*Price 1:*	133.613	4.89495129	*Price 2:*	161.75	5.08605215	-0.1911009	0	0	0	0	0	0	0	0	0.7	0	0
41	1211 (1201-1217)		AVE. of the AMERICAS	*Price 2:*	161.75	5.08605215	*Price 3:*	297.253	5.69458272	-0.6085306	0	0	0	0	0	0	0	0	0	1	1
48	825 (815-829)		EIGHTH AVE	*Price 1:*	219.875	5.3930586	*Price 2:*	337.584	5.821813	-0.4287544	0	0	0	0	0	0	0	0	0	0.3	0.8
51	750 (742-762)		LEXINGTON AVE	*Price 1:*	286.065	5.65621769	*Price 2:*	289.736	5.66897132	-0.0127536	0	0	0	0	0	0	0	0	0	0.4	0.7
52	1177 (1161-1177)		AVE. of the AMERICAS	*Price 1:*	162.749	5.09221071	*Price 2:*	104.623	4.65036023	0.44185049	0	0	0	0	0	0	0	0	0	0	0.1
1	100 (96-106)		BROADWAY	*Price 1:*	153.94	5.03656308	*Price 2:*	150.458	5.01368148	0.0228816	0	0	0	0	0	0	0	0.8	1	0.1	0
2	37-43		WALL ST	*Price 2:*	157.123	5.05703007	Price 3:	134.053	4.89823721	0.15879287	0	0	0	0	0	0.4	0.8	0	0	0
2	37-43		WALL ST	*Price 3:*	134.053	4.89823721	Price 4:	145.517	4.98029588	-0.0820587	0	0	0	0	0	0	0.2	1	0.4	0
3	90 (87-93)		WEST ST	*Price 1:*	253	5.53338949	Price 2:	112.804	4.72565516	0.80773433	0.5	1	1	1	1	1	1	1	0.1	0
3	90 (87-93)		WEST ST	*Price 2:*	112.804	4.72565516	Price 3:	244.841	5.5006096	-0.7749544	0	0	0	0	0	0	0	0	0.3	0
4	115 (115-119)		BROADWAY	*Price 1:*	280.814	5.63769236	Price 2:	116.702	4.75962507	0.87806729	0.3	1	1	1	1	1	0	0	0	0
4	115 (115-119)		BROADWAY	*Price 2:*	116.702	4.75962507	Price 3:	147.228	4.99198177	-0.2323567	0	0	0	0	0	0	0	1	1	0.6	0
4	115 (115-119)		BROADWAY	*Price 3:*	147.228	4.99198177	Price 4:	158.55	5.06607	-0.0740882	0	0	0	0	0	0	0	0	0	0.1	0
4	115 (115-119)		BROADWAY	*Price 4:*	158.55	5.06607	Price 5:	109.425	4.69523827	0.37083173	0	0	0	0	0	0	0	0	0	0.3	0.4
7	14 (8-20)		WALL ST	*Price 1:*	259.796	5.55989685	Price 2:	117.122	4.76321866	0.79667819	0	0	0	0	0	0	0	0	0	0.3	0.9
8	233 (227-237)		BROADWAY	*Price 1:*	146.802	4.98908714	Price 2:	142.909	4.96220899	0.02687815	0.7	1	1	1	1	1	1	1	1	0.9
10	61 (57-61)		BROADWAY	*Price 1:*	114.73	4.74257727	Price 2:	117.292	4.76466946	-0.0220922	0	0.4	1	1	1	1	1	0.3	0	0
10	61 (57-61)		BROADWAY	*Price 2:*	117.292	4.76466946	Price 3:	312.642	5.74505976	-0.9803903	0	0	0	0	0	0	0	0	0.7	0.8	0
10	61 (57-61)		BROADWAY	*Price 3:*	312.642	5.74505976	Price 4:	102.599	4.63082819	1.11423157	0	0	0	0	0	0	0	0	0	0.2	0.7
12	25 (21-27)		BROADWAY	*Price 1:*	125.425	4.8317109	Price 2:	113.639	4.7330235	0.0986874	0	0	0.9	1	1	1	0.2	0	0	0
22	110 (110-126)		WILLIAM ST	*Price 1:*	227.938	5.42907388	Price 2:	119.975	4.78728295	0.64179094	0	0	0	0	0	0.2	1	0	0	0
22	110 (110-126)		WILLIAM ST	*Price 2:*	119.975	4.78728295	Price 3:	146.82	4.98920512	-0.2019222	0	0	0	0	0	0	0	1	0.1	0
25	222 (212-222)		BROADWAY	*Price 1:*	163.27	5.09540648	Price 2:	245.552	5.50350875	-0.4081023	0	0	0	0	0	0	0.9	1	0.4	0
25	222 (212-222)		BROADWAY	*Price 2:*	245.552	5.50350875	Price 3:	302.423	5.711826	-0.2083173	0	0	0	0	0	0	0	0	0.4	0
25	222 (212-222)		BROADWAY	*Price 3:*	302.423	5.711826	Price 4:	105.744	4.66102325	1.05080275	0	0	0	0	0	0	0	0	0.2	0.7
29	59 (41-65)		MAIDEN LN	*Price 1:*	217.888	5.38398169	Price 2:	342.757	5.83702162	-0.4530399	0	0	0	0	0	0	0.5	1	0.1	0
29	59 (41-65)		MAIDEN LN	*Price 2:*	342.757	5.83702162	Price 3:	199.398	5.29530394	0.54171768	0	0	0	0	0	0	0	0	0.9	0.9
31	140 (126-146)		BROADWAY	*Price 1:*	233.198	5.45188975	Price 2:	171.534	5.14478101	0.30710874	0	0	0	0	0	0	0.6	1	1	0.8
35	95 (91-97)		WALL ST	*Price 1:*	172.564	5.15077006	Price 2:	234.488	5.45740465	-0.3066346	0	0	0	0	0	0	0.2	1	1	0.9
36	100		WALL ST	*Price 1:*	312.069	5.74322516	Price 2:	136.225	4.91430843	0.82891673	0	0	0	0	0	0	0.1	1	1	0.8
42	100 (98-106)		WILLIAM ST	*Price 1:*	141.144	4.94978258	Price 2:	133.204	4.89188324	0.05789934	0	0	0	0	0	0	0	0.7	1	0.9
43	40 (38-44)		BROAD ST	*Price 1:*	167.904	5.1233901	Price 2:	132.569	4.88710689	0.23628321	0	0	0	0	0	0	0	0	0.8	0.8

All Markets: transactions under $100/sf deleted, MID & DOWN added

# :	Address:	Dir.	Street		P1	Lognorm , P_1		P2	Lognorm , P_2	Log, P1 - Log, P2	1901 - 1910 D1	1911 - 1920 D2	1921 - 1930 D3	1931 - 1940 D4	1941 - 1950 D5	1951 - 1960 D6	1961 - 1970 D7	1971 - 1980 D8	1981 - 1990 D9	1991 - 2000 D10	MID	DOWN
2	1466 (1462-1470)		BROADWAY	Price 1:	154.771	5.04194669	Price 2:	267.896	5.59059925	-0.5486526	0.3	1	1	1	1	1	1	1	0.8	1	0
6	730 (730-734)		FIFTH AVE	Price 1:	146.079	4.98414468	Price 2:	148.727	5.00211099	-0.0179663	0	0	0.9	0.8	0	0	0	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 2:	148.727	5.00211099	Price 3:	227.076	5.42528343	-0.4231724	0	0	0	0.2	0.6	0	0	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 3:	227.076	5.42528343	Price 4:	191.856	5.2567447	0.16853872	0	0	0	0	0.3	0	0	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 4:	191.856	5.2567447	Price 5:	189.511	5.2444445	0.0123002	0	0	0	0	0.1	1	0.6	0	0	0	1	0
6	730 (730-734)		FIFTH AVE	Price 5:	189.511	5.2444445	Price 6:	289.19	5.66708506	-0.4226406	0	0	0	0	0	0	0.4	1	0.1	0	1	0
6	730 (730-734)		FIFTH AVE	Price 6:	289.19	5.66708506	Price 7:	330.276	5.79992825	-0.1328432	0	0	0	0	0	0	0	0	0.9	0.1	1	0
8	535 (531-537)		FIFTH AVE	Price 1:	255.521	5.54330503	Price 2:	172.995	5.15326025	0.39004478	0	0	0.5	1	1	1	0.3	0	0	0	1	0
8	535 (531-537)		FIFTH AVE	Price 2:	172.995	5.15326025	Price 3:	228.727	5.43252845	-0.2792682	0	0	0	0	0	0	0.7	1	0.4	0	1	0
10	220 (216-236)	E	42ND ST	Price 1:	107.126	4.67400597	Price 2:	199.956	5.29809512	-0.6240892	0	0	0.2	1	1	1	1	1	0.2	0	1	0
12	275 (273-277(		MADISON AVENUE	Price 3:	102.026	4.62522288	Price 4:	178.252	5.18320043	-0.5579775	0	0	0	0	0	0	0.5	1	0	0	1	0
12	275 (273-277(		MADISON AVENUE	Price 4:	178.252	5.18320043	Price 5:	242.33	5.49030051	-0.3071001	0	0	0	0	0	0	0	0	0.3	0	1	0
12	275 (273-277(		MADISON AVENUE	Price 5:	242.33	5.49030051	Price 6:	414.07	6.02603444	-0.5357339	0	0	0	0	0	0	0	0	0.5	0	1	0
13	1450 (1446-1450)		BROADWAY	Price 4:	276.324	5.62157355	Price 5:	266.875	5.58677896	0.03479459	0	0	0	0	0	0	0	0	0.2	1	1	0
14	500 (500-506)		FIFTH AVE	Price 1:	168.847	5.12899528	Price 2:	340.441	5.83024172	-0.7012464	0	0	0	0.8	1	1	1	1	0.6	0	1	0
14	500 (500-506)		FIFTH AVE	Price 2:	340.441	5.83024172	Price 3:	174.575	5.16235559	0.66788613	0	0	0	0	0	0	0	0	0.4	0.6	1	0
18	640		FIFTH AVE	Price 4:	246.023	5.50542665	Price 5:	279.78	5.63400361	-0.128577	0	0	0	0	0	0	0	0	0.1	0.7	1	0
20	1740 (1730-1750)		BROADWAY	Price 1:	246.457	5.50718709	Price 2:	246.578	5.50767908	-0.000492	0	0	0	0	0	1	1	1	1	0	1	0
21	1120 (1120-1136)		AVE. of the AMERICAS	Price 1:	207.632	5.33576744	Price 2:	100.509	4.61024347	0.72552396	0	0	0	0	0	0	0.4	0.8	1	0.8	1	0
22	150 (130-164)	E	42ND ST	Price 1:	259.56	5.55898663	Price 2:	161.813	5.08643826	0.47254837	0	0	0	0	0	0.1	0	0	0	0	1	0
22	150 (130-164)	E	42ND ST	Price 2:	161.813	5.08643826	Price 3:	312.145	5.74346882	-0.6570306	0	0	0	0	0	0.5	1	1	0.7	0	1	0
24	530 (530-544)		FIFTH AVE	Price 1:	330.731	5.80130401	Price 2:	187.571	5.23415752	0.56714649	0	0	0	0	0	0.2	1	0.8	0	0	1	0
24	530 (530-544)		FIFTH AVE	Price 2:	187.571	5.23415752	Price 3:	125.155	4.82955097	0.40460655	0	0	0	0	0	0	0	0	0.2	1	0.4	1	0
25	666 (660-672)		FIFTH AVE	Price 1:	206.261	5.32914255	Price 2:	102.381	4.62870266	0.70043988	0	0	0	0	0	0.3	1	0.7	0	0	1	0
25	666 (660-672)		FIFTH AVE	Price 2:	102.381	4.62870266	Price 3:	396.461	5.98257783	-1.3538752	0	0	0	0	0	0	0	0	0.3	0.7	0	1	0
26	717 (715-719)		FIFTH AVE	Price 1:	385.907	5.95559663	Price 2:	177.48	5.17885899	0.77673764	0	0	0	0	0	0.2	1	0.8	0	0	1	0
26	717 (715-719)		FIFTH AVE	Price 2:	177.48	5.17885899	Price 3:	251.107	5.52588016	-0.3470212	0	0	0	0	0	0	0	0	0.2	1	0.4	1	0
27	1285 (1281-1297)		AVE. of the AMERICAS	Price 1:	389.111	5.96386419	Price 2:	528.087	6.26926013	-0.3053959	0	0	0	0	0	0	0	1	1	0.9	0	1	0
29	1180 (1180-1186)		AVE. of the AMERICAS	Price 1:	106.335	4.66659915	Price 2:	131.861	4.88175149	-0.2151523	0	0	0	0	0	0	0	0.8	1	1	0.5	1	0
30	1301 (1301-1315)		AVE. of the AMERICAS	Price 1:	167.674	5.12202202	Price 2:	300.524	5.70552885	-0.5835068	0	0	0	0	0	0	0	7	1	0.8	0	1	0
32	6 (6-14)	E	43RD ST	Price 1:	153.881	5.03618182	Price 2:	140.764	4.94708674	0.08909508	0	0	0	0	0	0	0	0.2	1	1	0.4	1	0
34	1250 (1240-1258)		BROADWAY	Price 1:	176.783	5.17492487	Price 2:	158.675	5.06686064	0.10806424	0	0	0	0	0	0	0	0.2	1	1	0.9	1	0
35	150 (146-170)	E	58TH ST	Price 1:	141.855	4.95480773	Price 2:	307.489	5.72844071	-0.773633	0	0	0	0	0	0	0	0.2	1	0.2	0	1	0
35	150 (146-170)	E	58TH ST	Price 2:	307.489	5.72844071	Price 3:	242.011	5.48898319	0.23945752	0	0	0	0	0	0	0	0	0.8	0.8	1	0
37	1500 (1492-1512)		BROADWAY	Price 1:	103.352	4.63813848	Price 2:	111.8	4.71670853	-0.0785701	0	0	0	0	0	0	0	0	0.1	0	0	1	0
37	1500 (1492-1512)		BROADWAY	Price 2:	111.8	4.71670853	Price 3:	126.541	4.84056885	-0.1238603	0	0	0	0	0	0	0	0	0.9	1	0.5	1	0
38	10 (4-10)	E	53RD ST	Price 1:	112.935	4.72681345	Price 2:	170.947	5.14135512	-0.4145417	0	0	0	0	0	0	0	0	0.5	0	0	1	0
38	10 (4-10)	E	53RD ST	Price 2:	170.947	5.14135512	Price 3:	325.876	5.78651703	-0.6451619	0	0	0	0	0	0	0	0	0.3	0.2	0	1	0
38	10 (4-10)	E	53RD ST	Price 3:	325.876	5.78651703	Price 4:	202.028	5.30840496	0.47811207	0	0	0	0	0	0	0	0	0	0.8	0.3	1	0
39	600 (600-618)		THIRD AVE	Price 1:	117.631	4.76755368	Price 2:	215.123	5.37121095	-0.6036573	0	0	0	0	0	0	0	0	0.6	0	0	1	0
41	1211 (1201-1217)		AVE. of the AMERICAS	Price 1:	133.613	4.89495129	Price 2:	161.75	5.08605215	-0.1911009	0	0	0	0	0	0	0	0	0.7	0	0	1	0
41	1211 (1201-1217)		AVE. of the AMERICAS	Price 2:	161.75	5.08605215	Price 3:	297.253	5.69458272	-0.6085306	0	0	0	0	0	0	0	0	0	1	1	1	0
48	825 (815-829)		EIGHTH AVE	Price 1:	219.875	5.3930586	Price 2:	337.584	5.821813	-0.4287544	0	0	0	0	0	0	0	0	0	0.3	0.8	1	0
51	750 (742-762)		LEXINGTON AVE	Price 1:	286.065	5.65621769	Price 2:	289.736	5.66897132	-0.0127536	0	0	0	0	0	0	0	0	0	0.4	0.7	1	0
52	1177 (1161-1177)		AVE. of the AMERICAS	Price 1:	162.749	5.09221071	Price 2:	104.623	4.65036023	0.44185049	0	0	0	0	0	0	0	0	0	0	0.1	1	0
1	100 (96-106)		BROADWAY	Price 1:	153.94	5.03656308	Price 2:	150.458	5.01368148	0.0228816	0	0	0	0	0	0	0.8	1	0.1	0	0	1	
2	37-43		WALL ST	Price 2:	157.123	5.05703007	Price 3:	134.053	4.89823721	0.15879287	0	0	0	0	0.4	0.8	0	0	0	0	0	1	
2	37-43		WALL ST	Price 3:	134.053	4.89823721	Price 4:	145.517	4.98029588	-0.0820587	0	0	0	0	0	0	0.2	1	0.4	0	0	1	
3	90 (87-93)		WEST ST	Price 1:	253	5.53338949	Price 2:	112.804	4.72565516	0.80773433	0.5	1	1	1	1	1	1	1	0.1	0	0	1	
3	90 (87-93)		WEST ST	Price 2:	112.804	4.72565516	Price 3:	244.841	5.5006096	-0.7749544	0	0	0	0	0	0	0	0	0.3	0	0	1	
4	115 (115-119)		BROADWAY	Price 1:	280.814	5.63769236	Price 2:	116.702	4.75962507	0.87806729	0.3	1	1	1	1	1	0	0	0	0	0	1	
4	115 (115-119)		BROADWAY	Price 2:	116.702	4.75962507	Price 3:	147.228	4.99198177	-0.2323567	0	0	0	0	0	0	1	1	0.6	0	0	1	
4	115 (115-119)		BROADWAY	Price 3:	147.228	4.99198177	Price 4:	158.55	5.06607	-0.0740882	0	0	0	0	0	0	0	0	0.1	0	0	1	
4	115 (115-119)		BROADWAY	Price 4:	158.55	5.06607	Price 5:	109.425	4.69523827	0.37083173	0	0	0	0	0	0	0	0	0.3	0.4	0	1	
7	14 (8-20)		WALL ST	Price 1:	259.796	5.55989685	Price 2:	117.122	4.76321866	0.79667819	0	0	0	0	0	0	0	0	0.3	0.9	0	1	
8	233 (227-237)		BROADWAY	Price 1:	146.802	4.98908714	Price 2:	142.909	4.96220899	0.02687815	0.7	1	1	1	1	1	1	1	1	0.9	0	1	
10	61 (57-61)		BROADWAY	Price 1:	114.73	4.74257727	Price 2:	117.292	4.76466946	-0.0220922	0	0.4	1	1	1	1	1	0.3	0	0	0	1	
10	61 (57-61)		BROADWAY	Price 2:	117.292	4.76466946	Price 3:	312.642	5.74505976	-0.9803903	0	0	0	0	0	0	0	0.7	0.8	0	0	1	
10	61 (57-61)		BROADWAY	Price 3:	312.642	5.74505976	Price 4:	102.599	4.63082819	1.11423157	0	0	0	0	0	0	0	0	0.2	0.7	0	1	
12	25 (21-27)		BROADWAY	Price 1:	125.425	4.8317109	Price 2:	113.639	4.7330235	0.0986874	0	0	0.9	1	1	1	0.2	0	0	0	0	1	
22	110 (110-126)		WILLIAM ST	Price 1:	227.938	5.42907388	Price 2:	119.975	4.78728295	0.64179094	0	0	0	0	0	0.2	1	0	0	0	0	1	
22	110 (110-126)		WILLIAM ST	Price 2:	119.975	4.78728295	Price 3:	146.82	4.98920512	-0.2019222	0	0	0	0	0	0	0	1	0.1	0	0	1	
25	222 (212-222)		BROADWAY	Price 1:	163.27	5.09540648	Price 2:	245.552	5.50350875	-0.4081023	0	0	0	0	0	0	0.9	1	0.4	0	0	1	
25	222 (212-222)		BROADWAY	Price 2:	245.552	5.50350875	Price 3:	302.423	5.711826	-0.2083173	0	0	0	0	0	0	0	0	0.4	0	0	1	
25	222 (212-222)		BROADWAY	Price 3:	302.423	5.711826	Price 4:	105.744	4.66102325	1.05080275	0	0	0	0	0	0	0	0	0.2	0.7	0	1	
29	59 (41-65)		MAIDEN LN	Price 1:	217.888	5.38398169	Price 2:	342.757	5.83702162	-0.4530399	0	0	0	0	0	0	0	0.5	1	0.1	0	0	1	
29	59 (41-65)		MAIDEN LN	Price 2:	342.757	5.83702162	Price 3:	199.398	5.29530394	0.54171768	0	0	0	0	0	0	0	0	0.9	0.9	0	1	
31	140 (126-146)		BROADWAY	Price 1:	233.198	5.45188975	Price 2:	171.534	5.14478101	0.30710874	0	0	0	0	0	0	0.6	1	1	0.8	0	1	
35	95 (91-97)		WALL ST	Price 1:	172.564	5.15077006	Price 2:	234.488	5.45740465	-0.3066346	0	0	0	0	0	0	0.2	1	1	0.9	0	1	
36	100		WALL ST	Price 1:	312.069	5.74322516	Price 2:	136.225	4.91430843	0.82891673	0	0	0	0	0	0	0.1	1	1	0.8	0	1	
42	100 (98-106)		WILLIAM ST	Price 1:	141.144	4.94978258	Price 2:	133.204	4.89188324	0.05789934	0	0	0	0	0	0	0	0.7	1	0.9	0	1	
43	40 (38-44)		BROAD ST	Price 1:	167.904	5.1233901	Price 2:	132.569	4.88710689	0.23628321	0	0	0	0	0	0	0	0	0.8	0.8	0	1	

All Markets: transactions under $100/sf deleted

ALL MARKETS, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.52701752
R Square	0.277747466
Adjusted R Square	0.159345411
Standard Error	0.477470837
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	5.347915889	0.534791589	2.345799374	0.020444577
Residual	61	13.90668242	0.2279784		
Total	71	19.25459831			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	0.018272227	0.108216387	0.168848984	0.866474077	-0.198119874	0.234664328	0.981893698
D1	0.369849152	1.32030459	0.280124113	0.780330063	-2.270263787	3.009962091	0.690838534
D2	-0.065784803	0.835582224	-0.078729299	0.937505639	-1.736635195	1.605065589	1.067996863
D3	0.509259422	0.747010147	0.68173026	0.497989831	-0.984480106	2.002998949	0.600940458
D4	-0.540596977	0.940649188	-0.57470626	0.567603569	-2.421541807	1.340347853	1.717031584
D5	-0.30467455	0.673541938	-0.452346815	0.652623751	-1.651505273	1.042156172	1.356183562
D6	0.503951669	0.304043188	1.657500278	0.102553129	-0.104020432	1.111923769	0.604138581
D7	0.020783854	0.071902739	0.289055102	0.773519313	-0.122994599	0.164562306	0.979430642
D8	-0.138199007	0.152375177	-0.906965359	0.367994061	-0.442892089	0.166494076	1.148204028
D9	-0.508377274	0.195541574	-2.599842387	0.011682779	-0.899386927	-0.11736762	1.662591074
D10	0.730068075	0.210163956	3.473802491	0.000950079	0.309819153	1.150316998	0.481876185
Σ	0.594551788						0.551809838

Values have increased by 44.9% from the start of period, 1900, to end of period, 2001.

ALL MARKETS, D1 & D2 DELETED, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.525595616
R Square	0.276250752
Adjusted R Square	0.184346085
Standard Error	0.470317371
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	5.319097255	0.664887157	3.005840314	0.006391485
Residual	63	13.93550106	0.221198429		
Total	71	19.25459831			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	0.007169224	0.099510939	0.072044582	0.942794662	-0.191687641	0.206026089	0.992856414
D3	0.598296166	0.480492698	1.245172234	0.217680088	-0.361892457	1.55848479	0.549747517
D4	-0.624048983	0.762527583	-0.818395291	0.41621635	-2.147839694	0.899741729	1.866470068
D5	-0.251671382	0.572845283	-0.439335698	0.661921597	-1.396412032	0.893069268	1.286173308
D6	0.509415962	0.298078449	1.708999641	0.092373411	-0.08624665	1.105078573	0.600846394
D7	0.020712716	0.070820663	0.292467137	0.770890542	-0.120811171	0.162236604	0.979500318
D8	-0.125724698	0.144137273	-0.87225667	0.386380626	-0.413760229	0.162310834	1.133969941
D9	-0.506636528	0.192428425	-2.632857004	0.010637489	-0.891174286	-0.12209877	1.659699443
D10	0.743141236	0.203236944	3.656526318	0.000523362	0.337004363	1.149278108	0.47561754
Σ	0.370653714						0.690282936

Values have increased by 31% from the start of period, 1900, to end of period, 2001.

All Markets: transactions under $100/sf deleted, MID & DOWN dummies added

ALL MARKETS, MID & DOWN DUMMIES, FLOATING CONSTANT

Regression Statistics	
Multiple R	65535
R Square	-0.605754263
Adjusted R Square	-0.93234835
Standard Error	0.720988749
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	-11.56981415	-0.964151179	-1.85476188	#NUM!
Residual	59	30.66966184	0.519824777		
Total	71	19.09984768			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	-4.41191E+14	0	65535	#NUM!	-4.41191E+14	-4.41191E+14	#NUM!
D1	-5.695266272	1.7037804	-3.342723201	0.001444798	-9.104526565	-2.286005979	297.4559873
D2	5.450514936	1.054422237	5.169195741	2.93345E-06	3.340618694	7.560411179	0.004294093
D3	-4.878077242	0.738366619	-6.606578787	1.24924E-08	-6.355546988	-3.400607495	131.3778131
D4	6.174977066	0.693891859	8.899048159	1.68348E-12	4.786501204	7.563452929	0.002080854
D5	-3.674220489	0.846304654	-4.341486806	5.63483E-05	-5.367673971	-1.980767006	39.41791817
D6	-0.291799762	0.38126703	-0.765342238	0.447118598	-1.054714131	0.471114606	1.338834905
D7	-0.013044063	0.105572989	-0.123554929	0.902087635	-0.224295349	0.198207222	1.013129508
D8	-0.123297979	0.22820132	-0.540303533	0.591021547	-0.579928247	0.333332288	1.131221451
D9	-0.213760478	0.272173955	-0.785381827	0.435372348	-0.758379878	0.330858921	1.238326014
D10	0.18698598	0.262392761	0.712618667	0.478890651	-0.338061275	0.712033235	0.829455365
MID	4.41191E+14	0	65535	#NUM!	4.41191E+14	4.41191E+14	0
DOWN	4.41191E+14	0	65535	#NUM!	4.41191E+14	4.41191E+14	0

ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, FLOATING CONSTANT

Regression Statistics	
Multiple R	0.560553606
R Square	0.314220345
Adjusted R Square	0.201797451
Standard Error	0.463385386
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	6.001560731	0.600156073	2.794985374	0.006497528
Residual	61	13.09828695	0.214726016		
Total	71	19.09984768			

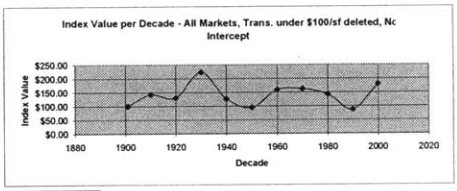
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*
Intercept	1.762211456	7774316.706	2.26671E-07	0.999999827	-15545709.64	15545713.17	0.171664815
D3	0.423705514	0.488639468	0.867112751	0.38927846	-0.553389766	1.400800794	0.654616629
D4	-0.440493035	0.761598875	-0.578379315	0.565137398	-1.963404536	1.082418465	1.553472947
D5	-0.33639608	0.567666919	-0.592594124	0.555643304	-1.471516558	0.798724398	1.399893385
D6	0.52792091	0.293842343	1.796612781	0.07734858	-0.059653335	1.115495154	0.589830006
D7	0.02707389	0.06986956	0.387491915	0.699740845	-0.112638969	0.166786749	0.973289323
D8	-0.144148347	0.142625141	-1.010679787	0.316161994	-0.429345022	0.141048328	1.155055445
D9	-0.471503252	0.190490978	-2.475199917	0.016109915	-0.85241361	-0.090592893	1.602401196
D10	0.707488605	0.201755013	3.50667176	0.000857642	0.30405441	1.1109228	0.492880462
MID	-1.826383264	7774316.706	-2.34925E-07	0.999999815	-15545713.23	15545709.58	6.211381059
DOWN	-1.625	7774316.706	-2.09022E-07	0.99999984	-15545713.03	15545709.78	5.078419037
Σ	2.05585966						0.127982767
MID + Σ	0.229476396						0.794949733
DOWN + Σ	0.43085966						0.649950119

Overall values have increased by 87.3% from the start of period, 1920, to end of period, 2001.

Midtown values have increased by 20.6% from start of period, 1920, to end of period, 2001.

Downtown values have increased 35.1% from start of period, 1920, to end of period, 2001.

All Markets: transactions under $100/sf deleted



ALL MARKETS, ZERO CONSTANT

Regression Statistics	
Multiple R	0.526697163
R Square	0.277409902
Adjusted R Square	0.156388759
Standard Error	0.473715276
Observations	72

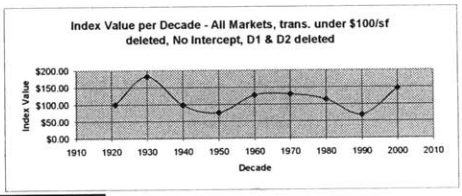
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	5.34141623	0.534141623	2.380244895	0.01873186
Residual	62	13.91318208	0.224406163		
Total	72	19.25459831			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*	*Ratio*	*Index Year ($100 starting value in 1901)*	*Index Value*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1901	$100.00
D1	0.348358724	1.3038191	0.267183326	0.790214763	-2.257935644	2.954653091	0.705845627	1.41674	1910	$141.67
D2	-0.086028326	0.82043206	-0.104857343	0.916827499	-1.726046835	1.553990182	1.089837199	0.917568	1920	$130.00
D3	0.540021313	0.718755023	0.75132875	0.455297328	-0.896747919	1.976790545	0.582735832	1.716043	1930	$223.08
D4	-0.567215592	0.920050631	-0.616504758	0.539818611	-2.406368566	1.271937383	1.763350322	0.567102	1940	$126.51
D5	-0.287396121	0.660486783	-0.43512774	0.664980675	-1.60768893	1.032896688	1.332952119	0.750214	1950	$94.91
D6	0.51243365	0.29750603	1.722431141	0.089976767	-0.082271773	1.107139073	0.59903596	1.669349	1960	$158.43
D7	0.021376901	0.071252026	0.300018146	0.765166925	-0.121053712	0.163807513	0.978849966	1.021607	1970	$161.86
D8	-0.126610171	0.134972317	-0.938045473	0.351861009	-0.396415692	0.143195349	1.134974486	0.881077	1980	$142.61
D9	-0.501638476	0.189919735	-2.64131832	0.01043795	-0.881282198	-0.121994754	1.651424875	0.605538	1990	$86.36
D10	0.741475369	0.197443858	3.755373191	0.000384376	0.346791158	1.136159581	0.476410515	2.09903	2000	$181.26
Σ	0.594777271						0.551685429			

Values have increased by 81.26% from the start of period, 1900, to end of period, 2001.

Σ, (D1coeff * D2 coeff * ... D10coeff) 0.551685429 *Ending Value, 2000* ***$181.26***



ALL MARKETS, D1 & D2 DELETED, ZERO CONSTANT

Regression Statistics	
Multiple R	0.525538889
R Square	0.276191124
Adjusted R Square	0.181399528
Standard Error	0.466647772
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	5.317949142	0.664743643	3.052641464	0.005750834
Residual	64	13.93664917	0.217760143		
Total	72	19.25459831			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*	*Ratio*	*Index Year ($100 starting value in 1901)*	*Index Value*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1921	$100.00
D3	0.598450798	0.476738951	1.255300823	0.213933722	-0.353943882	1.550845477	0.549662515	1.819298	1930	$181.93
D4	-0.623123334	0.756470639	-0.823724414	0.413155292	-2.134345798	0.88809913	1.864743171	0.536267	1940	$97.56
D5	-0.252098659	0.568345259	-0.443566046	0.65885233	-1.387497812	0.883300494	1.286722978	0.777168	1950	$75.82
D6	0.512491095	0.292704783	1.750880493	0.084758166	-0.072253402	1.097235593	0.599001549	1.669445	1960	$126.58
D7	0.020997284	0.070158719	0.299282599	0.765694185	-0.119160742	0.16115531	0.979221625	1.021219	1970	$129.27
D8	-0.121664564	0.131628284	-0.924304111	0.358799968	-0.384622052	0.141292924	1.129375205	0.885445	1980	$114.46
D9	-0.503823077	0.186954037	-2.694903445	0.008983362	-0.877306362	-0.130339792	1.655036523	0.604216	1990	$69.16
D10	0.747216959	0.193681542	3.85796681	0.000268294	0.360293949	1.134139969	0.473682999	2.111117	2000	$146.00
Σ	0.378446502						0.684924612			

Σ, (D1coeff * D2 coeff * ... D10coeff) 0.684924612 *Ending Value, 2000* ***$146.00***

Values have increased by 46% from the start of period, 1920, to end of period, 2001.

All Markets: transactions under $100/sf deleted, MID & DOWN dummies added

ALL MARKETS, MID & DOWN DUMMIES ADDED, ZERO CONSTANT

Regression Statistics	
Multiple R	0.561558617
R Square	0.315348081
Adjusted R Square	0.173161895
Standard Error	0.466846645
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	6.023100309	0.501925026	2.302981061	0.017429141
Residual	60	13.07674738	0.21794579		
Total	72	19.09984768			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*	*Ratio*	*Index Year ($100 starting value in 1901)*	*Index Value*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1901	$100.00
D1	0.093724036	1.293308197	0.072468447	0.942470153	-2.493276693	2.680724765	0.910534002	1.098257	1910	$109.83
D2	0.111953761	0.818300485	0.136812532	0.891637023	-1.524890386	1.748797907	0.894085598	1.118461	1920	$122.84
D3	0.266190871	0.743167548	0.358184197	0.721462598	-1.220365073	1.752746815	0.76629285	1.304984	1930	$160.30
D4	-0.291978214	0.930372087	-0.313829508	0.754739052	-2.152998868	1.56904244	1.339073844	0.746785	1940	$119.71
D5	-0.430800264	0.662316045	-0.650445157	0.517887746	-1.755629176	0.894028649	1.538488227	0.649989	1950	$77.81
D6	0.519408539	0.297416237	1.746402768	0.085858857	-0.075512318	1.114329396	0.594872288	1.681033	1960	$130.80
D7	0.027279232	0.070398253	0.387498699	0.699758276	-0.113538195	0.168096658	0.973089486	1.027655	1970	$134.42
D8	-0.157176788	0.149564837	-1.050893984	0.297521579	-0.456350909	0.141997334	1.170202473	0.854553	1980	$114.87
D9	-0.474016306	0.152083945	-2.467755993	0.01646552	-0.858241278	-0.089791334	1.606433181	0.622497	1990	$71.50
D10	0.695647193	0.206915874	3.361980783	0.001351474	0.281753955	1.109540431	0.498751555	2.005006	2000	$143.37
MID	-0.052265698	0.112848047	-0.463151107	0.644931662	-0.277995327	0.173463932	1.053655659	0.949077		$136.07
DOWN	0.149143889	0.133207819	1.119633145	0.267332202	-0.117311334	0.415599112	0.861445153	1.16084		$166.43
Σ	0.360232061						0.697514442	1.433662		
MID + Σ	0.307966363						0.734940039	1.360655		
DOWN + Σ	0.50937595						0.600870435	1.664252		

Overall values have increased by 43.37% from the start of period, 1900, to end of period, 2001. Σ, (D1coeff * D2 coeff * ...D10coeff) 0.697514442 *Overall Ending Value, 2000* ***$143.37***

Midtown values have increased by 36.07% from start of period, 1900, to end of period, 2001. Σ, (D1coeff * D2 coeff * MIDcoeff) 0.734940039 *Midtown Ending Value, 2000* ***$136.07***

Downtown values have increased 66.43% from start of period, 1900, to end of period, 2001. Σ, (D1coeff * D2 coeff * DOWNcoeff) 0.600870435 *Downtown Ending Value, 2000* ***$166.43***

ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, ZERO CONSTANT

Regression Statistics	
Multiple R	0.560553606
R Square	0.314220345
Adjusted R Square	0.198542653
Standard Error	0.459633216
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	6.001560731	0.600156073	2.840804806	0.005779091
Residual	62	13.09828695	0.211262693		
Total	72	19.09984768			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*e^(-Coeff)*	*Ratio*	*Index Year ($100 starting value in 1901)*	*Index Value*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	1	1	1921	$100.00
D3	0.423705514	0.484682808	0.87419134	0.385387755	-0.545160545	1.392571573	0.654616629	1.527612	1930	$152.76
D4	-0.440493035	0.755431981	-0.583100857	0.561940447	-1.950578382	1.069592311	1.553472947	0.643719	1940	$98.34
D5	-0.33639608	0.56307035	-0.597431707	0.552395001	-1.461956429	0.789164269	1.399893385	0.71434	1950	$70.24
D6	0.52792091	0.291463014	1.811279251	0.074942209	-0.05470471	1.110546529	0.589830006	1.695404	1960	$119.09
D7	0.02707389	0.069303805	0.390655167	0.697391256	-0.11146229	0.165610069	0.973289323	1.027444	1970	$122.36
D8	-0.144148347	0.141470262	-1.018930371	0.312195673	-0.426943059	0.138646366	1.155055445	0.865759	1980	$105.94
D9	-0.471503252	0.188948515	-2.495405966	0.015257042	-0.849205535	-0.093800969	1.602401196	0.624063	1990	$66.11
D10	0.707488605	0.200121342	3.535298127	0.000776833	0.307452184	1.107525026	0.492880462	2.02889	2000	$134.13
MID	-0.064171808	0.104588761	-0.613563138	0.541748644	-0.273241531	0.144897915	1.066275578	0.937844		$125.79
DOWN	0.137211456	0.125663525	1.091895647	0.279103886	-0.113986074	0.388408985	0.871785862	1.147071		$153.86
Σ	0.293648204						0.745538723	1.341312		
MID + Σ	0.229476396						0.794949733	1.257941		
DOWN + Σ	0.43085966						0.649950119	1.53858		

Overall values have increased by 25.5% from the start of period, 1920, to end of period, 2001. Σ, (D1coeff * D2 coeff * ...D10coeff) 0.745538723 *Overall Ending Value, 2000* ***$134.13***

Midtown values have increased by 20.6% from start of period, 1920, to end of period, 2001. Σ, (D1coeff * D2 coeff * MIDcoeff) 0.794949733 *Midtown Ending Value, 2000* ***$125.79***

Downtown values have increased 35.1% from start of period, 1920, to end of period, 2001. Σ, (D1coeff * D2 coeff * DOWNcoeff) 0.649950119 *Downtown Ending Value, 2000* ***$153.86***

Regression Summary
All Markets

DESCRIPTION OF OUTPUT	R2	e^(- Σ, coefficients)	annualized % Δ (over inflation)	SUMMARY	INDEX ENDING VALUE
ALL MARKETS, FLOATING CONSTANT	0.25347	0.68965155		Values have increased by 31% from the start of period, 1900, to end of period, 2001.	-
ALL MARKETS, ZERO CONSTANT	0.25156	0.7207695	0.3836%	Values have increased by 38.74% from the start of period, 1900, to end of period, 2001.	$138.74
ALL MARKETS, FLOATING CONSTANT, D1 & D2 DELETED	0.24983	0.81336079		Values have increased by 28.7% from the start of period, 1920, to end of period, 2001.	-
ALL MARKETS, ZERO CONSTANT, D1 & D2 DELETED	0.24659	0.86530599	0.1542%	Values have increased by 15.57% from the start of period, 1921, to end of period, 2001.	$115.57
ALL MARKETS, MID & DOWN DUMMIES, FLOATING CONSTANT	0.2708	0.47138692		Overall values have increased by 53% from start of the period, 1900, to end of period, 2001.	-
MIDTOWN		0.79313612		Midtown values have increased by 20.7% from start of period, 1900, to end of period, 2001.	-
DOWNTOWN		0.68586392		Downtown values have increased 31.5% from start of period, 1900, to end of period, 2001.	-
ALL MARKETS, MID & DOWN DUMMIES, ZER0 CONSTANT	0.2708	0.7220464	0.3812%	Overall values have increased by 38.5% from start of the period, 1900, to end of period, 2001.	$138.50
MIDTOWN		0.79313612	0.2574%	Midtown values have increased by 26% from start of period, 1900, to end of period, 2001.	$126.08
DOWNTOWN		0.68586392	0.4535%	Downtown values have increased 45.8% from start of period, 1900, to end of period, 2001.	$145.80
ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, FLOATING CONSTANT	0.26721	0.60937941		Overall values have increased by 39.1% from start of the period, 1920, to end of period, 2001.	-
MIDTOWN		0.90670377		Midtown values have increased by 9.4% from start of period, 1920, to end of period, 2001.	-
DOWNTOWN		0.78245865		Downtown values have increased 31.2% from start of period, 1920, to end of period, 2001.	-
ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, ZERO CONSTANT	0.26721	0.81504578	0.2801%	Overall values have increased by 22.7% from start of the period, 1920, to end of period, 2001.	$122.69
MIDTOWN		0.90670377	0.1270%	Midtown values have increased by 20.3% from start of period, 1920, to end of period, 2001.	$110.29
DOWNTOWN		0.78245865	0.3432%	Downtown values have increased 27.8% from start of period, 1920, to end of period, 2001.	$127.80

Regression Summary
Midtown

DESCRIPTION OF OUTPUT	R2	e^(- Σ, coefficients)	SUMMARY	INDEX ENDING VALUE
MIDTOWN ONLY, FLOATING CONSTANT	0.13444	0	No findings.	-
MIDTOWN ONLY, FLOATING CONSTANT, D1 & D2 DELETED	0.21209	1.7187894	Midtown values decreased by 71% from start of period, 1920, to end of period, 2001.	-

Regression Summary
All Markets: transactions under $100/sf deleted

DESCRIPTION OF OUTPUT	R2	e^(- Σ, coefficients)	annualized % Δ (over inflation)	SUMMARY	INDEX ENDING VALUE
ALL MARKETS, FLOATING CONSTANT	0.27775	0.55180984		Values have increased by 44.9% from the start of period, 1900, to end of period, 2001.	-
ALL MARKETS, ZERO CONSTANT	0.27741	0.55168543	0.8046%	Values have increased by 81.26% from the start of period, 1900, to end of period, 2001.	$181.26
ALL MARKETS, D1 & D2 DELETED, FLOATING CONSTANT	0.27625	0.69028294		Values have increased by 31% from the start of period, 1900, to end of period, 2001.	-
ALL MARKETS, D1 & D2 DELETED, ZERO CONSTANT	0.27619	0.68492461	0.4554%	Values have increased by 46% from the start of period, 1920, to end of period, 2001.	$146.00
ALL MARKETS, MID & DOWN DUMMIES ADDED, ZERO CONSTANT	0.31535	0.59751444	0.4294%	Overall values have increased by 43.37% from the start of period, 1900, to end of period, 2001.	$143.37
MIDTOWN		0.73494004	0.3571%	Midtown values have increased by 36.07% from start of period, 1900, to end of period, 2001.	$136.07
DOWNTOWN		0.60087044	0.6577%	Downtown values have increased 66.43% from start of period, 1900, to end of period, 2001.	$166.43
ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, FLOATING CONSTANT	0.31422	0.12798277		Overall values have increased by 87.3% from the start of period, 1920, to end of period, 2001.	-
MIDTOWN		0.79494973		Midtown values have increased by 20.6% from start of period, 1920, to end of period, 2001.	-
DOWNTOWN		0.64995012		Downtown values have increased 35.1% from start of period, 1920, to end of period, 2001.	-
ALL MARKETS, D1 & D2 DELETED, MID & DOWN DUMMIES, ZERO CONSTANT	0.31422	0.74553872	0.4214%	Overall values have increased by 25.5% from the start of period, 1920, to end of period, 2001.	$134.13
MIDTOWN		0.79494973	0.3184%	Midtown values have increased by 20.6% from start of period, 1920, to end of period, 2001.	$125.79
DOWNTOWN		0.64995012	0.6649%	Downtown values have increased 35.1% from start of period, 1920, to end of period, 2001.	$153.86