Recent Trends in the Availability & Affordability of Housing in New York City

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A broad range of interests — from affordable housing advocates to businesses worried about their workforce — are increasingly concerned that housing affordability in the City is declining rapidly, and that at least one of the causes of that decline is a shortage of housing in the City. In this chapter we use the most recent data from the 2005 New York City Housing and Vacancy Survey (HVS) to assess these concerns. First, we examine changes in affordability over the last three years, and do find a striking decrease in the number of units that are affordable to lower-income City residents. Second, we analyze the balance between the demand for, and supply of, housing in the City by looking at the extent to which the housing stock has grown relative to changes in population in recent years. After looking at those trends, we offer a snapshot assessment of the size of the imbalance between housing demand and supply as of 2005.

RECENT TRENDS IN HOUSING AFFORDABILITY

Despite strong growth in the overall housing stock in recent years, a combination of falling real incomes (adjusted for inflation) and rising rents has significantly increased the burden of housing costs for New Yorkers. Real median household income decreased between 2002 and 2005 by more than 6.3 percent. During the same time, median monthly rent increased by more than 8 percent in real terms. That combination of decreasing real income and increasing real rents (not to mention other rising housing costs, such as heating bills), left individuals and families in a serious bind: the median share of income spent on rent by New York City renters rose from 28.6 percent in 2002 to 31.2 percent in 2005, surpassing the 30 percent threshold that is commonly considered the maximum burden households should bear.

From 2002 to 2005, the citywide housing stock grew considerably faster than during the 1990s. As indicated in **Table 1**, total available units in the City increased by an annual average of over 14,000 units between 2002 and 2005, compared to just 8,000 in the 1990s. But despite the brisk pace of production in recent years, the number of rental units grew significantly slower than owner housing. There were 35,000 owner units added to the stock between 2002 and 2005, but the City gained just 7,600 rental units over this same period. This figure is particularly striking considering that two-thirds of units in the City are rentals.

While the City's overall rental stock experienced modest growth over the last three years, the size of the subsidized housing stock fell by 11 percent, from 345,000 in 2002 to about 308,000 in 2005.[1] This decline — remarkable in that it took place over the course of just three years — has also been documented in various recent reports.[2] The trend in subsidized housing in New York City is an important component of affordability, but the story is incomplete without an examination of affordability that also includes unsubsidized rental units.

Table 2 reveals significant changes in overall rent levels in the City. Even after controlling for inflation, the number of rental units available at rents affordable to low and moderate income households has fallen significantly since 2002.[3] These increases in rent levels are especially disconcerting given the decline in citywide median income from 2002 to 2005.

As indicated in panel A of **Table 2**, the number of units available citywide for less than $600 a month (reported in 2005 dollars) decreased by more than 56,000 units — or 11 percent — from 2002 to 2005. The number of units renting for between $600 and $799 decreased by almost 90,000 units, or 17.6 percent. On the other hand, the number of units renting for $1,000 or above grew by over 30 percent, or 172,000 units, in just three years.

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1 These figures are calculated from Table 2 by subtracting unsubsidized rental units (panel B) from total rental units (panel A).

2 See, for example, Waters and Bach 2006.

3 Note that our analysis of affordability does not account for changes in average unit size (number of rooms) or average household size that may have occurred between 2002 and 2005. However, Census estimates indicate that average household size in New York City remained steady (about 2.5 persons) between 2000 and 2004. Additionally, the average number of bedrooms in rental units remained virtually unchanged (about 2.6 bedrooms) between 2002 and 2005.

Table 1. Housing Stock in New York City, 1990-2000 and 2002-2005

A. Changes in Housing Stock, 1990-2000

	1990	2000	Change	% Change	Annual Avg.
Total Available Housing Stock[1,2]	3,029,127	3,107,734	78,607	2.6%	7,861

B. Changes in Housing Stock, 2002-2005

	2002	2005	Change	% Change	Annual Avg.
Total Available Housing Stock[2]	3,081,772	3,124,144	42,372	1.4%	14,124
Owner Housing Stock	997,003	1,031,780	34,777	3.5%	11,592
Rental Housing Stock[3]	2,084,769	2,092,363	7,595	0.4%	2,532

Notes:

1   Housing stock in 1990 is adjusted to reflect the undercount in the 1990 Census, based on estimates produced by the NYC Department of City Planning (NYC DCP). Total available housing stock is obtained for 1990 by applying borough-level percent total available units as reported by NYC DCP unit counts.

2   Total available housing stock in 2002 and 2005 excludes units classified in HVS as either "vacant unavailable" or "vacant dilapidated." For 1990 and 2000, it was not possible to remove dilapidated vacant units, as Census counts do not identify these units. However, HVS data suggest that the number of vacant dilapidated units was miniscule; in 2002 and 2005, respectively, there were 718 and 211 dilapidated vacant units citywide.

3   For the purposes of this table, rental housing stock includes all rental units, regardless of reported rent. Note that the rent level analysis in Table 2 reports a somewhat smaller rental housing stock due to exclusion of units with missing or zero rent.

Sources:
1990 and 2000: Census; NYC Dept. of City Planning
2002 and 2005: HVS

Table 2. Rent Levels in New York City,[1] 2002-2005

A. Total Available Rental Units by Rent Level, Adjusted for Inflation

Rent Level Expressed in 2005$	2002	2005	Change	% Change	Distribution of Units Across Rent Levels 2002	2005
$1 - $599	515,381	458,840	-56,541	-11.0%	25.3%	22.3%
$600 - $799	509,525	419,740	-89,785	-17.6%	25.0%	20.4%
$800 - $999	452,437	441,931	-10,506	-2.3%	22.2%	21.5%
$1,000 - $1,199	186,090	241,312	55,222	29.7%	9.1%	11.7%
$1,200 - $1,399	118,526	172,213	53,688	45.3%	5.8%	8.4%
$1,400 and above	257,825	321,012	63,187	24.5%	12.6%	15.6%
Total Units[2]	2,039,784	2,055,049	15,264	0.7%	100%	100%

B. Unsubsidized Rental Units[3] by Rent Level, Adjusted for Inflation

Rent Level Expressed in 2005$	2002	2005	Change	% Change	Distribution of Units Across Rent Levels 2002	2005
$1 - $599	295,650	250,919	-44,730	-15.1%	17.4%	14.4%
$600 - $799	460,683	372,980	-87,703	-19.0%	27.2%	21.3%
$800 - $999	418,557	414,133	-4,423	-1.1%	24.7%	23.7%
$1,000 - $1,199	171,319	229,477	58,158	33.9%	10.1%	13.1%
$1,200 - $1,399	109,816	167,366	57,550	52.4%	6.5%	9.6%
$1,400 and above	238,454	312,886	74,432	31.2%	14.1%	17.9%
Total Unsubsidized Units[2]	1,694,478	1,747,762	53,284	3.1%	100.0%	100.0%

Notes:

1   Rent is expressed in constant 2005 dollars for both 2002 and 2005; monthly rent is calculated as the contract rent rounded to the nearest dollar, since gross rent was unavailable for vacant units. Contract rent is also the more conservative measure of affordability.

2   All counts exclude units where rent is missing or zero. As a result, total available rental units in this table are somewhat smaller than the total number of available rental units reported in Table 1. Total available housing stock excludes units classified in HVS as either "vacant unavailable" or "vacant dilapidated."

3   Unsubsidized units include market rate and rent-controlled/rent-stabilized units.

Sources: HVS 2002, 2005

At the same time, the stock of units renting for between $800 and $999 remained relatively steady, dropping by only 2.3 percent over this period.

Focusing solely on the unsubsidized rental stock (**Table 2**, panel B), the recent decrease in affordability is even more pronounced. Whereas the number of total units renting for less than $800 (in 2005 dollars) decreased by 14 percent across all rental units, unsubsidized units experienced a decline of 18 percent.

To assess what the rise in rents (and the decrease in the number of rental units available at lower rents) means for New Yorkers, it is helpful to look at the number of housing units that households with modest incomes could afford (in other words, that require less than 30 percent of the household's gross income). In **Table 3**, we show the number and share of rental units in the City that would be affordable to households making various percentages of the City's median income, in 2002 and in 2005, and calculate the change in those numbers during that period. **Table 3** shows that, in 2002, almost 632,000 units rented at rates affordable to a household making 60 percent of the City's median income in 2002. In 2005, however, only 540,000 apartments were available at rents affordable to a household making 60 percent of the City's median income in 2005. The number of units available at rents that would qualify as affordable for

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Table 3. Affordability of Rental Housing in New York City, 2002-2005

A. Affordable Rental Units (Where Rent Burden ≤ 30%), by Income Level

Household Income Level[1] (% of New York City Median Income)	Number of Affordable Units[2] by Income Level (Cumulative count)				Share of Total Rental Units that Are Affordable by Income Level	
	2002	2005	Change	% Change	2002	2005
30% median	175,673	172,295	-3,378	-1.9%	8.6%	8.4%
60% median	631,734	540,083	-91,652	-14.5%	31.0%	26.3%
80% median	1,189,962	985,063	-204,899	-17.2%	58.3%	47.9%
100% median	1,564,355	1,425,688	-138,667	-8.9%	76.7%	69.4%
Total Rental Units[3]	2,039,784	2,055,049	15,264	0.7%		

B. Maximum Affordable Rent, by Income Level

Household Income Level[1] (% of New York City Median Income)	2002 (in 2002$)		2005 (in 2005$)	
	Annual income[1]	Maximum affordable rent	Annual income[1]	Maximum affordable rent
30% median	$11,994	$300	$12,451	$311
60% median	$23,988	$600	$24,902	$623
80% median	$31,984	$800	$33,203	$830
100% median	$39,980	$999	$41,504	$1,038

Notes:

1   For the purposes of this table, median monthly income is taken from HVS 2002 and 2005. HVS 2002 reports income as of 2001 (in 2001 dollars), while HVS 2005 reports 2004 income (in 2004 dollars). To ensure a valid comparison of rent and income, we transform median monthly income figures for 2001 into 2002 dollars and for 2004 into 2005 dollars.

2   Affordable units are defined as those renting for up to 30% of household income. Monthly rent for each units is calculated as the contract rent rounded to the nearest dollar, since gross rent was unavailable for vacant units. Contract rent is also the more conservative measure of affordability.

3   All counts exclude units where rent is missing or zero. As a result, total available rental units in this table are somewhat smaller than the total number of available rental units reported in Table 1. The counts also exclude units classified in HVS as either "vacant unavailable" or "vacant dilapidated."

Sources: HVS 2002, 2005

such a household thus fell by 91,652 units from 2002 to 2005.[4] That is a drop of 15 percent in just three years. The drop leaves only 26 percent of the City's housing units affordable to such households in 2005.

Similarly, the number of rental units affordable to households earning 80 percent of the City's median income fell by almost 205,000 units in the last three years. Although 58 percent of the City's rental housing was affordable to such a household in 2002, only 48 percent of the rental stock was affordable to that household in 2005. To put those numbers in perspective, 80 percent of the City's median income in 2005 was $33,203, which was higher than the starting salary in 2006 for the City's firefighters.[5]

RECENT TRENDS IN HOUSING AVAILABILITY

It is often said that the City faces a housing shortage, and that the disparity between the supply of and demand for housing in the City is large and growing. However, there are no accurate estimates of just how large this imbalance is. Commentators often provide only anecdotal evidence to support assertions about the

housing shortage.[6] In this section, we present an analysis of the housing imbalance in New York City, which improves upon prior research methods and uses the most recent housing data from the 2005 New York City Housing and Vacancy Survey (HVS).

Our analysis focuses on two questions: 1) what are the recent trends in the imbalance of housing supply and demand in New York City and how do they compare with changes in the 1990s?; and 2) what was the size of the housing imbalance in New York City in 2005?

Methodology and Data

For the purpose of this research, we use data from the 1990 and 2000 Census, the 2002 and 2005 HVS, and annual intercensal population estimates produced by the Census Bureau.[7] We also use estimates of the homeless population in 2005 from the NYC Department of Homeless Services. Our main analysis is carried out for the city as a whole. In an appendix, we also include the results of a borough-level analysis.[8]

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4   The U.S. Department of Housing and Urban Development (HUD) and the New York City Housing Preservation and Development (HPD) use a different "area median income" for their calculations about the affordability of housing, defined for the broader metropolitan area and differentiated by household size. The HUD/HPD area median income for a 3-person family (the approximate household size in New York City), was $56,500 in both 2002 and 2005 (meaning that median income declined in real terms over this three-year period at the same rate as inflation). Using that figure in the analysis would show that the number of units affordable for low income households earning 60% of the area median income dropped even more significantly, by 311,278 units, or 23.7 percent. To be consistent with this report's focus on trends specific to New York City, we have used the more conservative estimate based on only the City's median income, which was considerably lower than the broader metropolitan area's median.

5   The source for the firefighters' salary is http://www.nyc.gov/html/fdny/html/community/firefighter_faq.shtml#start_salary.

6   Several researchers have attempted to quantify the housing gap. For example, Salins provided the first in-depth empirical analysis of the difference between housing supply and demand in New York City in a series of reports (1996, 2002, 2004). In his latest report "New York City's Housing Gap: The Road to Recovery" (2004), Salins constructs a measure of the change in the housing gap between 1999 and 2002 by comparing the net change in housing stock with the growth in the number of households during this period. Most of the data used in Salins' analysis come from the New York City Housing and Vacancy Survey (HVS) 1999 and 2002. Salins estimated changes in the housing gap over time, but not the magnitude of the existing housing shortage at a given point in time. The scope of our study is broader; we estimate both changes in the housing imbalance over time and the existing shortage in 2005.

There are several notable drawbacks in Salins' latest analysis. First, although he revises the 1999 housing stock from HVS upwards to account for a significant undercount that plagues all the HVS data of the past decade – as well as the 1990 Census – he fails to make the necessary adjustment for the number of households. Given the extent of the undercount, this inconsistency is likely to result in a substantial over-estimation of the housing gap. Second, and perhaps more fundamentally, Salins uses the HVS number of households to estimate the gap. Since the number of households in HVS is identical to the number of occupied housing units, it is impossible – by definition – to uncover a housing shortage. The estimated shortage then is mostly an artifact of the inconsistent adjustment mentioned above. Third, it is not clear why rehabilitated, previously vacant units are included among the components of the increase in the total housing stock. Before renovation these units were, presumably, still part of the housing stock but probably listed as vacant/unavailable; upon renovation, they would be added to the stock of *available* housing, but deleted from the stock of unavailable housing, thus leaving the total housing stock unchanged. In addition, it is not clear why demolitions are not included among the components of change in housing stock. Finally, Salins does not allow for a "healthy" vacancy rate in his estimation.

In a recent study coordinated by the Newman Real Estate Institute of Baruch College, "The Context of Affordable Housing in New York City," (2005) by Burchell, Braconi, Gross, Traylor, and Uffen, the authors try to quantify the need for affordable housing in New York City. The study defines the affordable housing need as the total of those lower income households who pay too much for their housing (cost-burdened need), those lower income households who live in deteriorated or over-crowded housing (rehabilitation need), and those lower-income households for whom the market will not provide (future need). However, the CUNY study omits the homeless population, a potentially important component of the housing need. And, like Salins, the CUNY study does not account for a "healthy" vacancy rate when quantifying the additional units necessary to satisfy the future need.

7   All population and housing unit counts for 1990 are adjusted to reflect the undercount in the 1990 Census. The adjustment is based on estimates produced by the New York City Department of City Planning.

8   Borough-level comparisons of changes in housing demand and supply are useful to identify borough-level trends that may be driving citywide changes in the housing imbalance over time. However, measures of the housing imbalance at the borough level are not a meaningful indication of unmet housing need in a given borough. To the extent that residents feel free to move between boroughs, boroughs do not represent separate housing markets.

Methods used to estimate changes in the housing imbalance over time

To estimate changes in the housing imbalance over time, we compare population growth – translated into growth in the number of households based on the average household size in the City, 2.59, as reported in the 2000 Census[9] – with the net change in the housing stock. We divide household growth by an occupancy rate of 0.957 to account for the fact that a healthy housing market should have a vacancy rate of 5 percent for rental units and 3 percent for owner-occupied units (and, thus, the occupied units would represent 95.7 percent of the actual total demand).[10]

We estimate changes in the housing imbalance over two periods: from 1990 to 2000 using Census data, and from 2002 to 2005 using HVS data.[11]

Methods used to estimate the housing imbalance in 2005

We estimate the housing imbalance in 2005 as the difference between housing demand and supply in New York City using HVS 2005 data. Housing demand is calculated as:

**Housing Demand =
(Existing occupied units + Additional units homeless + Additional units crowded)/Occupancy rate,**

where:

"Additional units homeless" are the additional units needed to accommodate the current homeless population;

"Additional units crowded" are the additional units needed[12] to house individuals who live in households of 3 or more persons and are crowded above the standard threshold of 1.5 persons per room.[13]

As before, we allow for a 4.3 percent vacancy rate by dividing the sum of these units by an occupancy rate of 0.957.

Quantifying the homeless population is a challenge, and any estimates can be questioned. Our estimates are based on information provided by the New York City Department of Homeless Services (DHS). The most widely cited and used DHS homeless statistics are the average daily counts of people in shelters – the so-called "average daily census" – and survey-based estimates of the street homeless population. However, these counts represent "point-in-time" snapshots of the homeless population, and there is a growing consensus among researchers that, given the significant turnover in the homeless population, such counts are less reliable than the so-called "prevalence" counts, which assess the number of individuals experiencing homelessness over a period of time (Culhane et al., 2000; Coalition for the Homeless, 2004). Previous research consistently showed that point-in-time estimates tend to significantly undercount the homeless population. The count of street homeless individuals is additionally hampered by the difficulty of accurately locating much of this population.

Given the difficulty in arriving at a precise number, we explored two estimates of the homeless population. Our lower-bound estimate is based on the point-in-time counts of the sheltered homeless from the average daily census and estimates of the street homeless population from the HOPE (Homeless Outreach Population Estimate) 2005 survey.[14] We also considered an upper-bound estimate

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9   Admittedly, household size is somewhat arbitrary and may be endogenous; as housing supply increases, people are likely to form smaller households. However, alleviating somewhat these concerns is the fact that household size in New York City has changed little between the last two Decennial Censuses (from 2.54 in 1990 to 2.59 in 2000).

10   The New York State rent stabilization law declares New York City's housing market to be in a state of emergency when the rental vacancy rate is below 5%. More generally, there is a consensus among housing experts that a healthy housing market will have a 3% vacancy rate for owner-occupied housing and a 5% vacancy rate for rental housing (see, for example, www.housingawareness.org/facts.htm). The "healthy" vacancy rate we use here (4.3%) is calculated as the weighted average of a 5% rate for rental units and 3% for owner housing, based on the fact that 67% of units were rental housing in 2005.

11   To calculate changes in the housing imbalance from 2002 to 2005, we use Census population estimates rather than HVS-based population, primarily because HVS does not cover group quarters in its population counts. In addition, the population file for HVS 2005 was not available at the time this report was published.

12   Excess population in severely over-crowded housing is estimated using HVS 2005. The most appropriate method for calculating population is to use person-level HVS data; but as of publication of this report, HVS 2005 data were only available at the household level. As a result, population counts were estimated using household-level files, a method that biases population figures downwards. The magnitude of this "household-level downward bias" can be inferred from HVS 2002, when citywide population was 8% higher than the population estimates produced from the household-level file. Our estimates of over-crowded population are taken from HVS 2005 and then adjusted upward by this factor of 1.08 to mitigate the downward bias on population that results from relying on household-level data. Admittedly, this is not an ideal solution, but it can be remedied once HVS 2005 person-level files become available.

13   We limit the analysis to households with a minimum of 3 persons because it seems unrealistic to consider a couple living a studio as severely overcrowded. 1.5 persons per room is the standard threshold to define severely over-crowded households (see, for example, the Housing New York City report prepared periodically by the New York City Department of Housing Preservation and Development, based on HVS data).

14   The HOPE 2005 survey is the latest in a series that started in 2003, and the first that provides estimates of the citywide street homeless population (previous surveys only covered certain boroughs). In addition, HOPE 2005 is the most reliable survey in the series, since it incorporates new quality assurance adjustments.

based on a prevalence count, published by the DHS in a policy brief, "Homeless Demographics in New York City." This count gives the number of different individuals who used the shelter system in a given fiscal year.[15] In line with findings of previous research, the difference between the point-in-time count and the prevalence count citywide in 2005 is considerable – the former (our low estimate) is 40,300, whereas the latter (our high estimate) is 102,600.

The main results of our study rely on the lower point-in-time count of the homeless because this serves as a more conservative baseline and seems more appropriate than a prevalence count in the context of our analysis. In particular, since the prevalence count measures the number of people touched by homelessness at any point within a given year, it is quite likely that at least some of the residents listed in this count would also show up in our measure of the over-crowded population. The point-in-time homeless estimate alleviates this double-counting problem.[16]

The units needed to house the population without a home or living in over-crowded conditions are computed by dividing the total population without adequate housing by the average household size in the city from the 2000 Census (2.59 persons). The housing imbalance in 2005 is then calculated as the difference between housing demand and the existing total available housing stock. To err on the side of caution, we exclude from the housing supply measure both vacant units not available for rent or sale and dilapidated vacant units.[17]

Results

Changes in the housing imbalance, the 1990's and 2002-2005

As shown in **Table 4**, during the 1990s, the citywide population grew by 441,100 persons, resulting in an increase in housing demand of 178,000 units.[18]

Meanwhile, the net increase in the total available housing stock was just 78,600 units. As a result, we estimate an increase in the housing shortage of almost 100,000 units during the 1990s.

The average annual increase in the housing shortage during the 1990s – almost 10,000 units per year – stands in sharp contrast to the 2002-2005 period, when the housing imbalance *decreased* by 9,300 units annually (**Table 5**). This reversal of trends in the housing imbalance was driven by notable changes on both the demand and supply sides. During the 1990s, housing demand far outpaced supply; demand grew at a rate of 17,800 units annually, while housing stock grew less than half as quickly at 7,900 per year. During the 2002-2005 period, housing production accelerated and population growth slowed down, so that housing stock grew almost three times faster than housing demand (the average annual increase in stock was 14,100 units, compared to 4,800 unit increase in demand).[19]

The housing imbalance in 2005

Table 6 presents the lower-bound estimate of the housing imbalance and its components in 2005. As shown in panel A of this table, the excess population in severely over-crowded households (i.e., those individuals who cause the household to cross the 1.5 persons per room threshold) was very substantial – 79,500 persons.[20] An additional 40,300 persons were living without a home. Combined, the homeless and the over-crowded estimates total almost 120,000 persons in need of housing. At an average household size of 2.59, 46,200 housing units would have to be created to accommodate this population. Taking the existing 3,038,000 occupied units, adding 46,200 to accommodate the 120,000 people in need of housing, and building in a healthy vacancy rate, the total demand for housing amounted to 3,224,200 units, compared to a total available housing stock of 3,124,100 units. Therefore, we estimate a citywide housing shortage in 2005 of 100,000 units.[21]

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15   Unfortunately, a similar prevalence count is not available for the street homeless, so the high estimate also relies on the point-in-time estimate from the HOPE survey.

16   Furthermore, unlike the prevalence count, the point-in-time estimate of homelessness is conceptually consistent with the other components of the housing imbalance (over-crowded population, occupied units, total available housing stock) in that it represents a snapshot in time.

17   HVS defines dilapidated units as those failing to provide safe and adequate shelter. The number of dilapidated vacant units is miniscule: in 2002, there were 718 dilapidated vacant units citywide, and in 2005, only 211.

18   Note that unlike the HVS data, Decennial Census data does not identify dilapidated vacant units. Thus, measures of housing stock for the 1990s (based on Census data) include vacant dilapidated units, whereas those for 2002 and 2005 (based on HVS data) do not. However, as mentioned above, the number of vacant dilapidated units is very small.

19   The increased housing production during recent years fits into a longer-term trend; the 1990s, for example, saw considerable increases in annual production over the 1980s and 1970s.

20   This measure of over-crowding includes both rental and owner-occupied units. Note that other measures of over-crowding in "The State of New York City's Housing and Neighborhoods 2005" reflect over-crowding only in rental units.

21   Using the high estimate of the homeless population (102,600 persons), the housing shortage increases to 125,200 units. If only homelessness is considered in the measure of households without adequate housing, the citywide housing shortage in 2005 decreases to between 68,000 (low homeless estimate) and 93,100 units (high homeless estimate). We also estimated the housing imbalance counting the excess of people in all severely over-crowded units, not just those in households with 3 or more persons. Using this less restrictive – though, in our opinion, also less realistic – approach, we estimate a citywide shortage of almost 106,000 units when using the low homeless count, and of 131,000 units when using the high homeless count.

Table 4. Change in the Housing Imbalance in New York City, 1990-2000

A. Population Changes[1]

Population		Population growth	Household growth[2]
1990	2000	1990-2000	1990-2000
7,567,146	8,008,278	441,132	170,321

B. Housing Stock Changes

Total available housing stock[3,4]		Net increase in total available housing stock
1990[1]	2000	1990-2000
3,029,127	3,107,734	78,607

C. Change in the Housing Imbalance

Growth in housing demand[5]		Net increase in total available housing stock		Change in Housing Shortage[6]	
1990-2000	Annual avg.	1990-2000	Annual avg.	1990-2000	Annual avg.
178,049	17,805	78,607	7,861	99,442	9,944

Notes

1 The 1990 population and total housing unit counts are adjusted to reflect the undercount in the 1990 Census. The adjustment is done based on estimates produced by the NYC Department of City Planning (NYC DCP).

2 Household growth is obtained by dividing population growth by average household size (=2.59, from Census 2000).

3 Total available housing stock for 1990 is obtained by applying borough-level percent total available units from the actual Decennial Census counts to the NYC DCP's adjusted total housing stock estimate.

4 As it is not possible to identify vacant dilapidated units using Census data, we are unable to remove these units from measures of the total available housing stock. However, HVS data indicate that the number of vacant dilapidated units is very small.

5 Growth in housing demand is calculated as household growth divided by 0.9566 to account for the increase in vacant housing stock needed to ensure a healthy vacancy rate of 4.34%. This vacancy rate is a weighted average of a 5% rate for rental units and 3% for owner occupied units, based on the fact that 67% of the stock was rental housing (HVS 2005).

6 Positive values indicate that the housing shortage increased from 1990-2000.

Sources: Census 1990, 2000; NYC Dept. of City Planning

Table 5. Change in the Housing Imbalance in New York City, 2002-2005

A. Population Changes

Population		Population growth	Household growth[1]
2002	2005	2002-2005	2002-2005
8,107,428	8,143,197	35,769	13,810

B. Housing Stock Changes

Total available housing stock[2]		Net increase in total available housing stock
2002	2005	2002-2005
3,081,772	3,124,144	42,372

C. Change in the Housing Imbalance

Growth in housing demand[3]		Net increase in total available housing stock		Change in Housing Shortage[4]	
2002-2005	Annual avg.	2002-2005	Annual avg.	2002-2005	Annual avg.
14,437	4,812	42,372	14,124	(27,935)	(9,312)

Notes

1 Household growth is obtained by dividing population growth by average household size (=2.59, from Census 2000).

2 Total available housing stock excludes units classified in HVS as either "vacant unavailable" or "vacant dilapidated."

3 Growth in housing demand is calculated as household growth divided by 0.9566 to account for the increase in vacant housing stock needed to ensure a healthy vacancy rate of 4.34%. This vacancy rate is a weighted average of a 5% rate for rental units and 3% for owner occupied units, based on the fact that 67% of the stock was rental housing (HVS 2005).

4 Negative values indicate that the size of the housing shortage decreased from 2002 to 2005.

Sources: HVS 2002, 2005; Census population estimates, 2002 and 2005

Table 6. Housing Imbalance in New York City, 2005

A. Population without Adequate Housing

Excess population in severely over-crowded housing units[1,2]	Homeless population (Low estimate)	Total population without adequate housing	Total households without adequate housing[3]
79,451	40,293	119,744	46,233

B. Housing Stock

Total available housing stock[4]	Occupied housing units
3,124,144	3,037,996

C. Imbalance between Housing Supply and Demand

Housing demand[5]	Total available housing stock	Housing shortage
3,224,158	3,124,144	100,014

Notes:

1 Severely over-crowded housing units are considered those with 3 or more persons and with more than 1.5 persons per room.

2 Population counts were estimated using number of persons in a household from the HVS 2005 household file, a method that biases population downwards. For example, total population from HVS 2002 is 7,944,577 (from the person file), but aggregating the number of persons per household from the household file yields an estimated population of 7,355,736, a ratio of 1.08. Thus, the estimates of excess population in severely over-crowded units reported here have been adjusted upwards by this factor of 1.08.

3 Number of households is obtained by dividing population by average household size (=2.59, from Census 2000).

4 Total available housing stock excludes units classified in HVS as either "vacant unavailable" or "vacant dilapidated."

5 Housing demand is the sum of households without adequate housing and occupied housing units, divided by 0.9566 to ensure a healthy vacancy rate of 4.34%. This vacancy rate is a weighted average of a 5% rate for rental units and 3% for owner occupied units, based on the fact that 67% of the stock was rental housing (HVS 2005).

CONCLUSION

From 2002 to 2005, the citywide housing stock grew considerably faster than during the 1990s. Despite strong growth in the overall housing stock in recent years, a combination of falling real incomes and rising rents has significantly increased the burden of housing costs for many New Yorkers. While the City's overall rental stock experienced modest growth over the last three years, the number of rental units available at rents affordable to low and moderate income households has fallen since 2002.

Our housing availability analysis shows that the housing shortage in New York City has been decreasing in recent years, by over 9,000 units per year, compared to an average annual *increase* of about 10,000 units during the 1990s. This differential appears to reflect a combination of slower population growth and rising residential construction activity in recent years. However, despite these recent positive trends, the housing shortage remains severe. Our estimates indicate that in 2005, housing demand exceeded the total housing stock by 100,000 units. If current rates of housing production relative to population growth continue, so that the housing imbalance continues to decline at the rate of 9,000 units annually, it will take 11 years to eliminate the housing shortage entirely.

The significant, albeit shrinking, housing shortage in 2005, coupled with the declining availability of units available for rents affordable to low and moderate income households show that significant challenges remain for the City's housing policy in the coming years.

APPENDIX: Borough-Level Analysis

Changes in the housing imbalance: the 1990's and 2002-2005

Table 7, panel A, reveals that much of the citywide increase in the housing imbalance during the 1990s was driven by the substantial growth of the gap in Queens (by almost 54,000 units). At the other extreme, the housing imbalance in the Bronx and Staten Island increased by only 6,200 and 1,600 units, respectively, over the 1990s.

From 2002-2005, the housing shortage declined in all boroughs except Brooklyn (**Table 7**, panel B). The largest decline by far occurred in Queens (14,400 units). In Manhattan and the Bronx, the drop – although significant – was about half that in Queens. In Brooklyn, the shortage increased slightly, by about 2,600 units. Thus, the recent drop in the citywide housing shortage appears to have been driven by changes that occurred primarily in Queens, and to a smaller extent in Manhattan and the Bronx.

The housing imbalance in 2005[22]

Table 8 shows that, among boroughs, the largest populations in need of housing in 2005 were in Manhattan (32,400) and Brooklyn (31,500). Staten Island was at the other extreme, with only 5,600 people who were homeless or in over-crowded housing. Notably, the Bronx had the highest *share* of its residents as excess population in over-crowded units (1.3 percent), compared to 0.6 percent in Staten Island, 0.7 percent in Manhattan, and 1.0 percent in Brooklyn and Queens. When considering only the homeless, Manhattan was a distant first, with its homeless residents accounting for more than 50 percent of the citywide homeless population.[23]

Translating the population in need of housing into housing units and comparing demand to the supply of housing in each borough, we find the largest housing shortages in Brooklyn (28,800 units) and Queens (26,100 units). The Bronx and Manhattan also had relatively large gaps (20,500 and 18,600 units, respectively), whereas Staten Island had a much lower shortage (6,000 units).

CONCLUSION

Following substantial worsening of the housing imbalance over the course of the 1990s, the housing shortage saw a decline in most boroughs between 2002 and 2005, most notably in Queens. However, despite this recent decline, the housing shortage remains severe in most boroughs, with Brooklyn and Queens exhibiting the largest deficits.

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22   Results based on the low estimate of the homeless population.

23   Sheltered homeless population was not available by borough. To estimate the borough breakdown, we used the distribution of shelter units across boroughs, obtained from the NYC DHS.

Table 7. Changes in the Housing Imbalance by Borough

A. Changes in the Housing Imbalance, 1990-2000[1]

Borough	Growth in housing demand[2]		Net increase in total available housing stock[3]		Change in Housing Shortage[4]	
	1990-2000	Annual avg.	1990-2000	Annual avg.	1990-2000	Annual avg.
NYC	178,049	17,805	78,607	7,861	99,442	9,944
Bronx	35,782	3,578	29,574	2,957	6,208	621
Brooklyn	35,445	3,544	19,180	1,918	16,265	1,626
Manhattan	(11)	(1)	(21,720)	(2,172)	21,710	2,171
Queens	85,807	8,581	32,165	3,217	53,642	5,364
Staten Island	21,026	2,103	19,408	1,941	1,618	162

B. Changes in the Housing Imbalance, 2002-2005

Borough	Growth in housing demand[2]		Net increase in total available housing stock[3]		Change in Housing Shortage[4]	
	2002-2005	Annual avg.	2002-2005	Annual avg.	2002-2005	Annual avg.
NYC	14,437	4,812	42,372	14,124	(27,935)	(9,312)
Bronx	(527)	(176)	6,120	2,040	(6,647)	(2,216)
Brooklyn	2,784	928	144	48	2,640	880
Manhattan	11,305	3,768	18,738	6,246	(7,433)	(2,478)
Queens	(2,701)	(900)	11,723	3,908	(14,424)	(4,808)
Staten Island	3,576	1,192	5,647	1,882	(2,071)	(690)

Notes:

1   The 1990 population and total housing unit counts are adjusted to reflect the undercount in the 1990 Census. The adjustment is done based on estimates produced by the NYC Department of City Planning (NYC DCP). Total available housing stock for 1990 is obtained by applying borough-level % total available units from the actual Decennial Census counts to the NYC DCP's adjusted total housing stock estimate.

2   Growth in housing demand is calculated as household growth divided by 0.9566 to account for the increase in vacant housing stock needed to ensure a healthy vacancy rate of 4.34%. This vacancy rate is a weighted average of a 5% rate for rental units and 3% for owner occupied units, based on the fact that 67% of the stock was rental housing (HVS 2005). Household growth is determined by dividing population growth by average household size (=2.59, from Census 2000).

3   Total available housing stock in 2002 and 2005 excludes units classified in HVS as either "vacant unavailable" or "vacant dilapidated." For 1990 and 2000, it was not possible to remove dilapidated vacant units, as Census counts do not identify these units. However, HVS data suggest that the number of vacant dilapidated units was miniscule; in 2002 and 2005, respectively, there were 718 and 211 dilapidated vacant units citywide.

4   Positive (negative) values indicate that the size of the housing shortage increased (decreased) during the period.

Sources: 1990-2000: Census 1990, 2000; NYC Dept. of City Planning; 2002-2005: HVS 2002, 2005; Census population estimates, 2002 and 2005

Table 8. Housing Imbalance by Borough, 2005

A. Population without Adequate Housing

Borough	Excess population in severely over-crowded housing units[1,2]	Homeless population (Low estimate)	Total population without adequate housing	Total households without adequate housing[3]
NYC	79,451	40,293	119,744	46,233
Bronx	18,110	6,663	24,773	9,565
Brooklyn	24,819	6,719	31,538	12,177
Manhattan	11,901	20,487	32,388	12,505
Queens	21,623	3,802	25,425	9,817
Staten Island	2,998	2,622	5,619	2,170

B. Housing Stock

Borough	Total available housing stock[4]	Occupied housing units
NYC	3,124,144	3,037,996
Bronx	483,198	472,246
Brooklyn	901,342	877,552
Manhattan	765,673	737,768
Queens	806,608	786,766
Staten Island	167,322	163,663

C. Imbalance between Housing Demand and Supply

Borough	Housing demand[5]	Total available housing stock[4]	Housing shortage
NYC	3,224,158	3,124,144	100,014
Bronx	503,670	483,198	20,472
Brooklyn	930,095	901,342	28,753
Manhattan	784,312	765,673	18,639
Queens	832,723	806,608	26,115
Staten Island	173,357	167,322	6,035

Notes:

1   Severely over-crowded housing units are considered those with 3 or more persons and with more than 1.5 persons per room.

2   Population counts were estimated using number of persons in a household from the HVS 2005 household file, a method that biases population downwards. For example, total population from HVS 2002 is 7,944,577 (from the person file), but aggregating the number of persons per household from the household file yields an estimated population of 7,355,736, a ratio of 1.08. Thus, the estimates of excess population in severely over-crowded units reported here have been adjusted upwards by this factor of 1.08.

3   Number of households is obtained by dividing population by average household size (=2.59, from Census 2000).

4   Total available housing stock excludes units classified in HVS as either "vacant unavailable" or "vacant dilapidated."

5   Housing demand is the sum of households without adequate housing and occupied housing units, divided by 0.9566 to ensure a healthy vacancy rate of 4.34%. This vacancy rate is a weighted average of a 5% rate for rental units and 3% for owner occupied units, based on the fact that 67% of the stock was rental housing (HVS 2005).

Sources: HVS 2005; NYC Dept. of Homeless Services ("Average Daily Census", "Critical Activities Report", "HOPE 2005: The NYC Street Survey")