CURRENT ESTIMATES OF NEW YORK CITY'S POPULATION FOR JULY 2018

Summary

The U.S. Census Bureau has estimated New York City's population at 8,398,748, as of July 1, 2018. This represented an increase of 223,615 residents (or 2.7 percent) over the April 1, 2010 decennial census count of 8,175,133. Post-2010 growth translates into an average annual gain of about 27,000 persons, or a compounded 0.3 percent. Population growth has been fueled by the continued surplus of births over deaths (partly due to record high life expectancy), which has been partially offset by net outflows from the city.

Each of the city's five boroughs registered gains in population. The Bronx saw the largest increase, up 3.4 percent, followed by Brooklyn (3.1 percent), Manhattan (2.7 percent), and Queens (2.2 percent); Staten Island showed the smallest gain (1.6 percent) over the 99-month period.

While the city's population has shown an overall increase, growth rates have varied in the post-2010 period: It was high during the initial years of the decade, slowed subsequently, and has experienced small declines since 2016. While population growth has likely slowed, the Census Bureau's methodology is not robust enough to precisely quantify the magnitude of these year-to-year changes.

For these new estimates, the Census Bureau revised its estimation methodology, which lowered the estimated number of international migrants coming to New York City. This decline, however, is likely overstated and has lowered total population estimates for the city, which now paint a different picture than the estimates issued just one year ago.

COMPLETE ANALYSIS OF U.S. CENSUS BUREAU ESTIMATES FOR JULY 1, 2018

Introduction

The U.S. Census Bureau prepares estimates of total population for all counties in the United States on an annual basis, using a demographic procedure known as the "administrative records method" (described below). This method assumes that post-census population change can be closely approximated using vital statistics data on births and deaths, along with other administrative and survey data that provide a picture of migration patterns.

Total Population

According to U.S. Census Bureau population estimates, New York City's population increased from 8,175,133 in April of 2010 to 8,398,748 in July of 2018. This is an increase of about 224,000 residents over the 2010 mark, or 2.7 percent. Among the boroughs, the Bronx saw the largest change in population in this 99-month period, growing by 3.4 percent or 47,000 persons, followed by Brooklyn (3.1 percent or 78,000 persons), Manhattan (2.7 percent or 43,000 persons), and Queens (2.2 percent or 48,000 persons). The lowest growth occurred in Staten Island (1.6 percent or 7,000 persons).

Change in Population, Census Bureau Estimates
April 2010 to July 2018

	Census 2010	Estimates 2018	Change: Census 2010 and Estimates 2018	
			Number	Percent
New York State	19,378,102	19,542,209	164,107	0.8
New York City	**8,175,133**	**8,398,748**	**223,615**	**2.7**
Bronx	1,385,108	1,432,132	47,024	3.4
Brooklyn	2,504,700	2,582,830	78,130	3.1
Manhattan	1,585,873	1,628,701	42,828	2.7
Queens	2,230,722	2,278,906	48,184	2.2
Staten Island	468,730	476,179	7,449	1.6
NYC as % of NYS	*42.2*	*43.0*	*136.3*	

Source: 2010 Census; Census Bureau Current Estimates Program

Although the city grew by roughly 224,000 persons since 2010, New York State grew only by 164,000 people due to a population decrease of 60,000 for the counties outside the city. Of the State's 62 counties, 46 lost population.

COMPONENTS OF POPULATION CHANGE

Demographers divide population change into components. *Natural increase* represents the difference between births and deaths. *Net migration* represents the balance between persons entering and leaving an area. Together, these components describe how populations change over time. The U.S. Census Bureau constructs population estimates for all counties in the United States by separately estimating the components of change. Births and deaths are compiled using data from the national vital statistics system. Net migration is a summation of two flows: migration of persons coming in from and leaving for other counties in the 50 states (*net domestic migration*) and the balance of people who immigrate from and emigrate to other nations and Puerto Rico (*net international migration*). The net domestic migration rate is derived using income tax returns from the Internal Revenue Service and Medicare enrollment data from the Social Security Administration. It is important to note that the estimation methodology for net international migration has changed significantly, resulting in a revised 2010-2017 international migration estimate that is 31 percent lower than the previous vintage. While international net migration for the city is estimated at 624,000 in the previous vintage, the latest vintage provides a lower estimate of 431,000 over the same period, which is likely too low. This has resulted in lowered overall population estimates for the city, painting a different picture now than did the estimates issued just one year ago.

New York City has a dynamic population, with several hundred thousand people coming and going each year. This "churn" has long characterized the city, and represents a fluidity that is difficult to capture using the net migration measures presented herein. This dynamism is a testament to the city being a magnet for those seeking opportunities, then moving on, only to be replaced by the next set of individuals aspiring for a better life. This vibrancy is one aspect of what makes New York City's population extraordinary and different from most other places in the nation and, perhaps, the world.

The most recent estimates from the U.S. Census Bureau indicate the following for the 2010-2018 period:

a) Positive natural increase — The surplus of births over deaths added 512,000 persons to New York City's population between April of 2010 and July of 2018.

b) Net out-migration — In a return to its customary pattern of migration, New York City experienced a net loss through migration during the 2010-2018 period. This loss totaled 288,000, the net result of domestic losses (768,000) offset by international gains (480,000).

c) Variation in migration flows by borough — Much of these migration losses were concentrated in Brooklyn (128,000), followed by net migration losses in Queens and the Bronx (81,000 and 50,000, respectively).

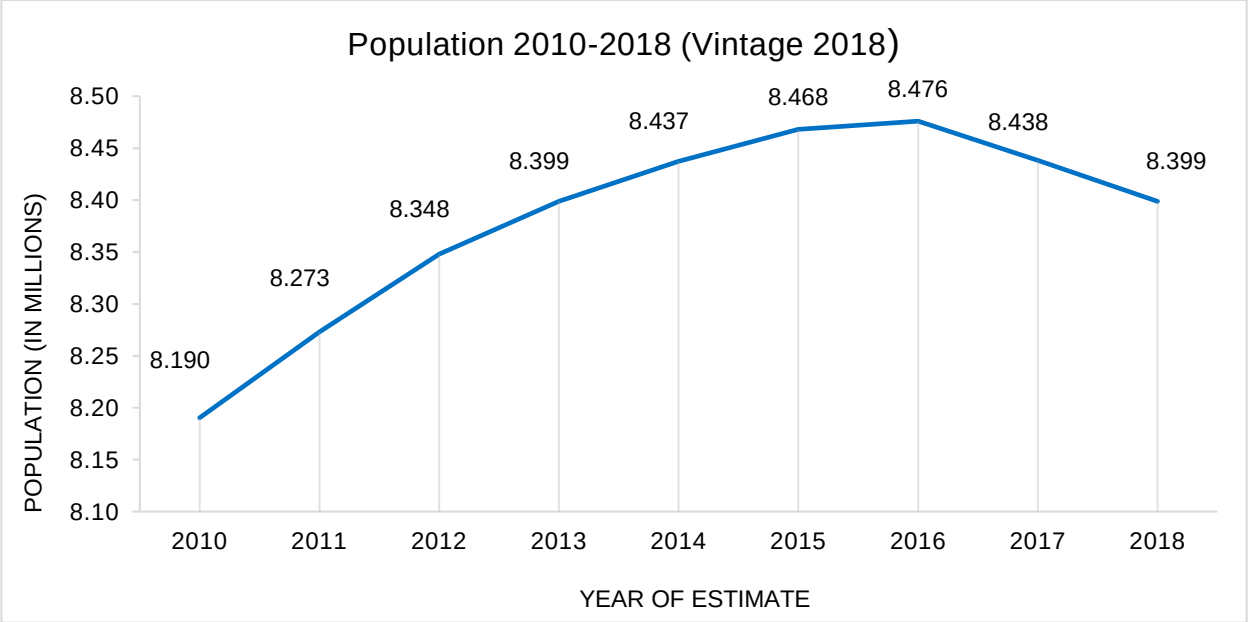
Estimates of the Components of Population Change for New York City and Counties: April 1, 2010 to July 1, 2018

Geographic Area	Total Population Change*	Natural Increase (Births-Deaths)	Net Migration		
			Total	Net Domestic Migration	Net International Migration
New York City	**223,760**	**511,558**	**-288,346**	**-768,306**	**479,960**
Bronx	47,529	96,065	-49,646	-157,720	108,074
Brooklyn	78,113	206,516	-127,883	-255,253	127,370
Manhattan	42,341	65,706	-22,964	-117,010	94,046
Queens	48,328	128,622	-80,804	-224,765	143,961
Staten Island	7,449	14,649	-7,049	-13,558	6,509

*Note: Population change was calculated using the 2010 Decennial Census (as opposed to the 2010 Estimates Base) and the 2018 Population Estimate. The estimated components of population change will not equal the numerical population change also because of a small residual after controlling to the national totals.
Source: Population Division, U.S. Census Bureau

NEW PATTERNS OF RECENT GROWTH: 2017-2018 VS. 2010-2017

While the year-to-year changes provided by the Census Bureau's population estimates program are tenuous, the chart below shows that growth in New York City was high in the initial part of this decade, subsequently slowed, then experienced small declines since 2016. While population growth has likely slowed, the Census Bureau's estimation methodology is not robust enough to precisely quantify the magnitude of these year-to-year changes.



While year-to-year population change and components of change for the 2017-2018 period are reported, it is important to keep in mind that these are estimates, which are subject to a degree of error. As noted before, due to the tenuous nature of population estimates, it is necessary to look at longer-term trends, as opposed to short-term changes.

Change in Population, Census Bureau Estimates April 2010, July 2017, and July 2018							
				Annual Change 2010-2017		Change 2017 to 2018	
	Census 2010	Estimates 2017	Estimates 2018	Number	Percent	Number	Percent
New York State	19,378,102	19,590,719	19,542,209	29,326	0.2	-48,510	-0.2
New York City	**8,175,133**	**8,438,271**	**8,398,748**	**36,295**	**0.4**	**-39,523**	**-0.5**
Bronx	1,385,108	1,439,725	1,432,132	7,533	0.5	-7,593	-0.5
Brooklyn	2,504,700	2,596,385	2,582,830	12,646	0.5	-13,555	-0.5
Manhattan	1,585,873	1,629,780	1,628,701	6,056	0.4	-1,079	-0.1
Queens	2,230,722	2,296,865	2,278,906	9,123	0.4	-17,959	-0.8
Staten Island	468,730	475,516	476,179	936	0.2	663	0.1

Source: 2010 Census; Census Bureau Current Estimates Program

Estimates of the Components of Population Change for New York City and Counties: July 1, 2017 to July 1, 2018					
		Natural Increase	Net Migration		
Geographic Area	Total Population Change*	(Births-Deaths)	Total	Net Domestic Migration	Net International Migration
New York City	**-39,523**	**48,083**	**-87,812**	**-137,191**	**49,379**
Bronx	-7,593	9,064	-16,764	-29,477	12,713
Brooklyn	-13,555	20,709	-34,282	-46,706	12,424
Manhattan	-1,079	4,626	-5,635	-15,453	9,818
Queens	-17,959	12,475	-30,596	-44,434	13,838
Staten Island	663	1,209	-535	-1121	586

*Note: The estimated components of population change will not equal the numerical population change because of a small residual after controlling to the national totals.
Source: Population Division, U.S. Census Bureau

U.S. CENSUS BUREAU POPULATION ESTIMATES METHODOLOGY

Each year, the U.S. Census Bureau produces estimates of the population for states, counties, cities and other places, as well as for the nation as a whole. They use data from multiple sources to estimate annual population change since the last decennial census in 2010. For each county in the U.S., the Census Bureau subtracts the annual number of resident deaths from the annual number of resident births to derive annual growth due to ***natural increase.***[1] Births are tabulated by residence of the mother, regardless of where the birth occurred. Similarly, deaths are tabulated by the most recent residence of the decedent, regardless where the death occurred. Birth and death certificates from the National Center for Health Statistics are used as the data source.

Net Domestic Migration represents the net exchange between one county and other counties in the 50 states. This component is estimated for three age groups (0-17, 18-64, and 65 years and older). For ages 0 to 64, the U.S. Census Bureau uses data on filers and dependents from federal income tax returns supplied by the Internal Revenue Service (IRS). In-migrants and out-migrants between counties, as well as non-migrants, are identified by comparing the addresses of income tax filers from one year to the next to determine residence at two points in time. For example, to produce the July 1, 2018 estimates, the addresses of tax filers in 2016 and 2017 are compared. In-migrants to a given county are defined as those with an address in the county in 2017, but outside the county in 2016; out-migrants as those with an address in the county in 2016, but outside the county in 2017; and non-migrants as individuals who filed tax returns in the same county at both points in time. Since not every U.S. resident files or is claimed as an exemption on a tax return, these data cannot be used to directly estimate the number of county-to-county migrants. Instead a net domestic migration **rate** needs to be calculated by taking the difference between the numbers of in- and out-migrants (net migrants) and dividing it by the sum of the non-migrants and out-migrants. Because many retired persons do not file tax returns, the U.S. Census Bureau compares addresses from one year to another in the individual Medicare enrollee

[1] The data on births and deaths are generally considered to be the most reliable part of the components of change analysis.

records in much the same way as they use IRS data to determine domestic migration for the population 65 years and over.

Net International Migration is the balance of migration flows to and from foreign countries and Puerto Rico. These flows are sub-divided into three parts: immigration of the foreign-born, emigration of the foreign- as well as native-born, and net migration between the U.S. and Puerto Rico. In the Vintage 2018 estimates, the Census Bureau made a series of methodological changes that had a big impact on New York City.

Since 2011, the Census Bureau has relied on the ACS Residence-One-Year-Ago (ROYA) question to estimate foreign-born immigration at the national level, using 1-year ACS files. The main change in the 2018 vintage estimates concerns the distribution of the national estimates to the state level. Previously, the distribution was based on ACS data on Year of Entry (YOE) of the foreign-born population. The YOE question asks, "If you are born abroad, when did you come to the U.S. to live?" Given some research that shows a tendency of YOE estimates to be less accurate than ROYA, the Census Bureau instead now uses 1-year ACS data on ROYA to distribute the national foreign-born population to the state level. The heightened role of ROYA contributed to a decline in net international immigration of 265,000 in New York State and 193,000 in New York City between the vintage 2017 and 2018 estimates. This was the primary reason why New York City's overall population is lower in the current (2018) vintage.

As in earlier vintages, distributions from the ACS YOE question (5-Year files) continue to be used to allocate state-level foreign-born population to the counties. Moreover, as in the past "proxy universes" are created for the assignment of age/sex, race and Hispanic origin characteristics at the county level. The distribution of these characteristics is then used to assign characteristics for states.

Finally, the Census Bureau reworked the life tables underlying the estimation of emigration from the U.S., which has also contributed to a decline in net international migration estimates for the post-2010 period and to lower New York City population estimates in this vintage. In general, emigration of the foreign-born is estimated using the residual method. For example, the foreign-born population in 2010 is survived forward to obtain the expected population in the year 2018. The expected population is then compared to the population estimated in the 2018 ACS. Subtracting the estimated from the expected populations provides the residual, which then serves as the basis of emigration rates for the foreign-born. In the previously employed method, foreign-born population groups were survived forward using U.S.

total life tables developed by the National Center for Health Statistics (NCHS), regardless of race, ethnicity, and foreign-born status. The Census Bureau found this to be problematic because the foreign-born experience a mortality advantage relative to their native-born counterparts. Since nativity-specific life tables are not yet available, the Census Bureau uses Hispanic life tables to survive the Hispanic foreign-born population, given that Hispanic life tables more accurately reflect the mortality rates experienced by the foreign-born population compared to life tables for the total U.S. population as a whole.