CURRENT ESTIMATES OF NEW YORK CITY'S POPULATION FOR JULY 2020

On May 4, 2021, the Census Bureau's Population Estimates Program released the 2020 population estimate, and the components of population change, for all counties in the nation, including the five boroughs of New York City. (Population *estimates* for these geographies should not be confused with their *enumerated* 2020 census populations, which are not yet released.) The city's July 1, 2020 population was estimated at 8,253,213. This figure needs to be used with caution, as the Census Bureau's Estimates Program is likely to have significantly underestimated New York City's population.

Even with the extraordinary challenges of 2020, a census enumeration is considered the gold standard for population counts. The 2020 Census enumeration for New York City will not be released until August 2021. State-level 2020 Census results, however, have already been released and show an enumerated population of approximately 20.2 million for New York State, compared to an independent estimate from the Bureau's Population Estimates Program of approximately 19.4 million. (This estimate is based on the 2010 Census and was created without incorporation or consideration of the 2020 Census results.) Thus the 2020 Census enumeration for the state was higher than its estimate by over 800,000 persons, or by 4.2 percent. New York City accounts for over 40 percent of the state's population, and it is very likely that the 2020 enumerated population of the city will exceed its 2020 estimate of 8,253,213 by a comparable margin.

Summary of Findings

The Census Bureau's Population Estimates Program releases annual estimates of the nation, states, and counties as well as components of change – i.e. births, deaths, and net migration. The Vintage 2020 estimates, which include population estimates for each July 1 time point from 2010 to 2020, build on

results from the 2010 Census. The Vintage 2020 population estimates do not incorporate or consider results of the 2020 Census.

The U.S. Census Bureau has estimated New York City's population at 8 253,213, as of July 1, 2020. This represents an increase of 78,100 residents, or 1.0 percent, over the April 1, 2010 decennial census count of 8,175,133. Post-2010 growth translates into an average annual gain of about 7,600 persons, or .09 percent compounded annually. Population growth has been fueled by the continued surplus of births over deaths, which has been partially offset by net outflows from the city.

While the city grew by roughly 78,100 persons since 2010, New York State saw a decline of 41,300 people due to a decrease of 119,400 persons in counties outside the city. Of the State's 62 counties, 51 lost population since 2010. In New York City, four out of five boroughs showed an increase: Manhattan saw the largest increase (1.6 percent), followed by Staten Island and Brooklyn (each with 1.4 percent), and the Bronx (1.2 percent); Queens was the only borough to show a decline (-0.2 percent) over the 123 month period.

Although the city's population has shown an overall increase since 2010, these estimates also reveal a pattern of population losses in each of the last four years. In the first years of this decade, however, growth averaged around 1.0 percent, a rate the city had not seen for nearly a century. This growth was unsustainable in the long term and was followed by population declines in recent years. However, despite these recent declines in the city's population, there has been growth of 78,100 persons since 2010.

The decline in the city's estimated population is closely related to sharp declines in immigration to the U.S. that are linked, most recently, to federal policies. Net international inflows to the city have fallen by 60 percent since 2016, which mirrors the 55 percent decline in net international migration to the U.S. during the same period. Net domestic losses for the city have also increased 28 percent since 2016.

Another major reason for the recent decline in population has to do with natural increase (the difference between births and deaths), which has declined nearly 40 percent since 2016, and by close to one-half since its 2011 peak of 68,200. These declines in natural increase reflect overall declines in the U.S. The

drop in NYC has been fueled by increases in deaths due to an aging population, and a decrease in births over time, which is also related to a fall in net international flows.

To summarize, the declines in the city's estimated population since 2016 are a result of lower net international inflows that are also tied to fewer births, increases in net domestic outflows, and an aging population that has increased the number of deaths.

COMPLETE ANALYSIS OF U.S. CENSUS BUREAU ESTIMATES FOR JULY 1, 2020

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-2010 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. These estimates were created without incorporation or consideration of the 2020 Census results.

Population estimates are most useful for identifying patterns of change in the city's population. It is important to keep in mind that the Census Bureau's methodology is not robust enough to precisely quantify the magnitude of year-to-year changes.

Total Population

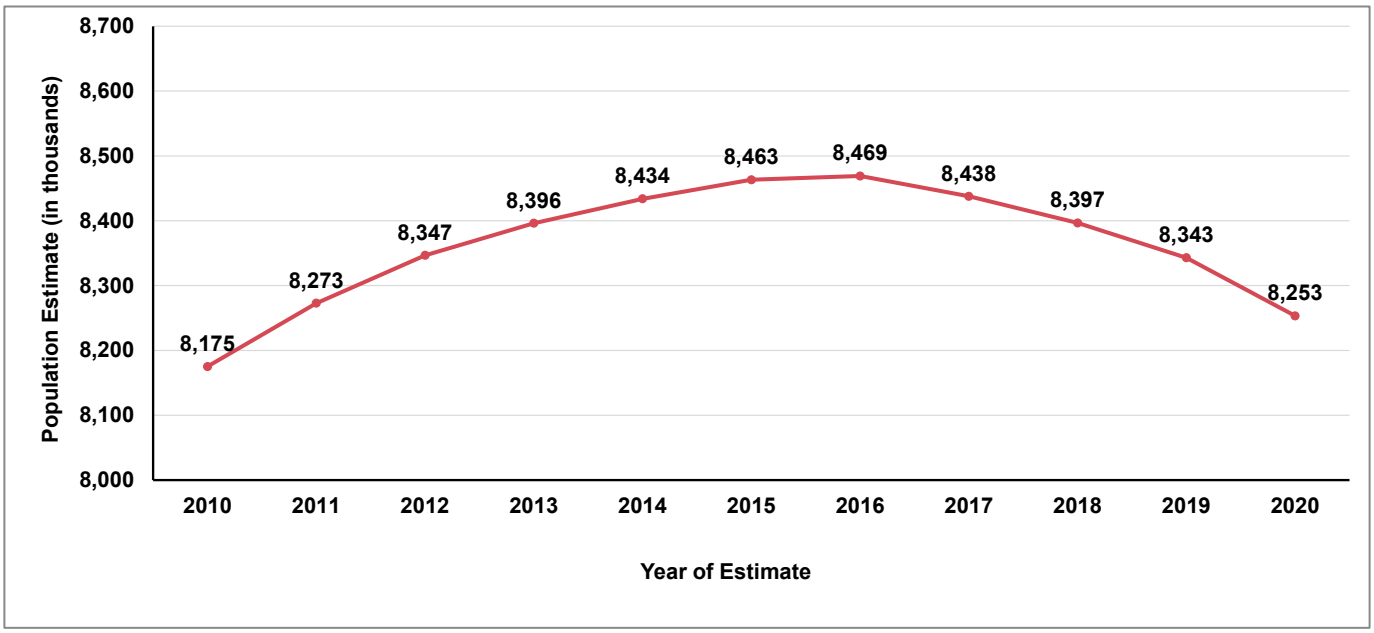
According to U.S. Census Bureau population estimates, New York City's population increased from 8,175,133 in April 2010 to 8,253,213 in July 2020. This is an increase of 78,100 residents over the 2010 mark, or about 1.0 percent. Among the boroughs, Manhattan saw the largest percentage increase, growing by 1.6 percent or 26,100 persons, followed by Staten Island (1.4 percent or 6,600 persons) and Brooklyn (1.4 percent or 34,200 persons), and the Bronx (1.2 percent or 16,000 persons); Queens showed a decline (-0.2 percent or a loss of 4,900 persons) over the 123 month period.

Change in Population, Census Bureau Estimates April 2010 to July 2020				
	Census 2010	Estimates 2020	Change: Census 2010 and Estimates 2020	
			Number	Percent
New York State	19,378,102	19,336,776	-41,326	-0.2
New York City	**8,175,133**	**8,253,213**	**78,080**	**1.0**
Bronx	1,385,108	1,401,142	16,034	1.2
Brooklyn	2,504,700	2,538,934	34,234	1.4
Manhattan	1,585,873	1,611,989	26,116	1.6
Queens	2,230,722	2,225,821	-4,901	-0.2
Staten Island	468,730	475,327	6,597	1.4
NYC as % of NYS	*42.2*	*42.7*		

Source: 2010 Census; Census Bureau Current Estimates Program

While the city's population has shown an overall increase since 2010, these estimates also reveal a pattern of population losses in each of the last four years. In the first years of this decade, however, growth averaged around 1 percent, a rate the city had not seen for nearly a century. This growth was unsustainable in the long term and was followed by population declines in recent years. It is important to note that the Census Bureau's estimation methodology is not robust enough to precisely quantify the magnitude of these year-to-year changes. However, despite the recent declines in the city's population, there has been growth of 78,100 persons since 2010.

New York City Population, 2010-2020 (Vintage 2020)



While the city grew by 78,100 persons since 2010, New York State declined by 41,300 people due to a population decrease of 119,400 for the counties outside the city. Of the State's 62 counties, 51 lost population since 2010.

COMPONENTS OF POPULATION CHANGE, 2010-2020

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, as well as data from the Social Security Administration.

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 it 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 2010-2020 period:

a) Positive natural increase — The surplus of births over deaths added 611,500 persons to New York City's population between April 2010 and July 2020.
b) Net out-migration — In its customary pattern of migration, New York City experienced losses through migration during the 2010-2020 period. This loss totaled 532,500, the net result of domestic losses (1,051,200) offset by international gains (518,800).
c) Variation in migration flows by borough — Much of these migration losses were concentrated in Brooklyn (213,700), followed by net migration losses in Queens and the Bronx (157,000 and 98,900, respectively).

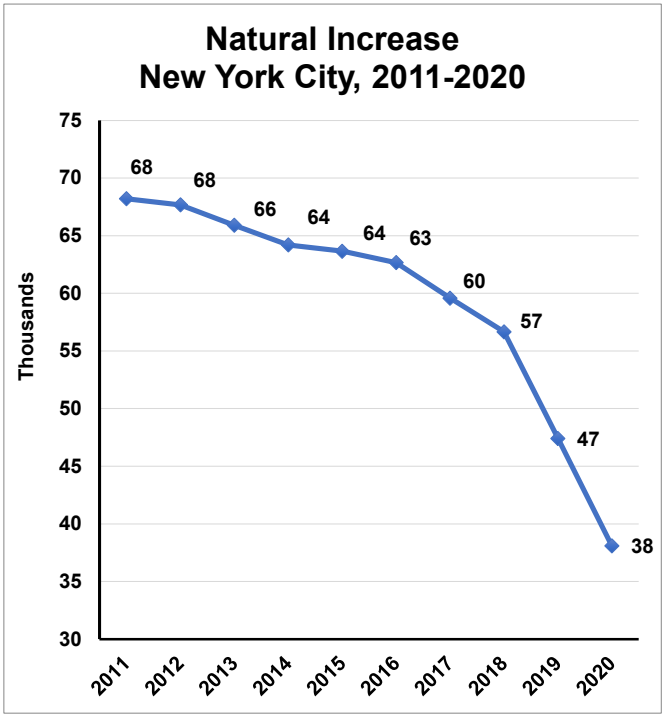
Estimates of the Components of Population Change for New York City and Counties: April 1, 2010 to July 1, 2020					
Geographic Area	Total Population Change*	Natural Increase (Births-Deaths)	Net Migration		
			Total	Net Domestic Migration	Net International Migration
New York City	**78,080**	**611,532**	**-532,477**	**-1,051,242**	**518,765**
Bronx	16,034	115,116	-98,945	-220,168	121,223
Brooklyn	34,234	248,617	-213,664	-347,005	133,341
Manhattan	26,116	78,621	-52,552	-156,539	103,987
Queens	-4,901	152,119	-156,967	-310,320	153,353
Staten Island	6,597	17,059	-10,349	-17,210	6,861

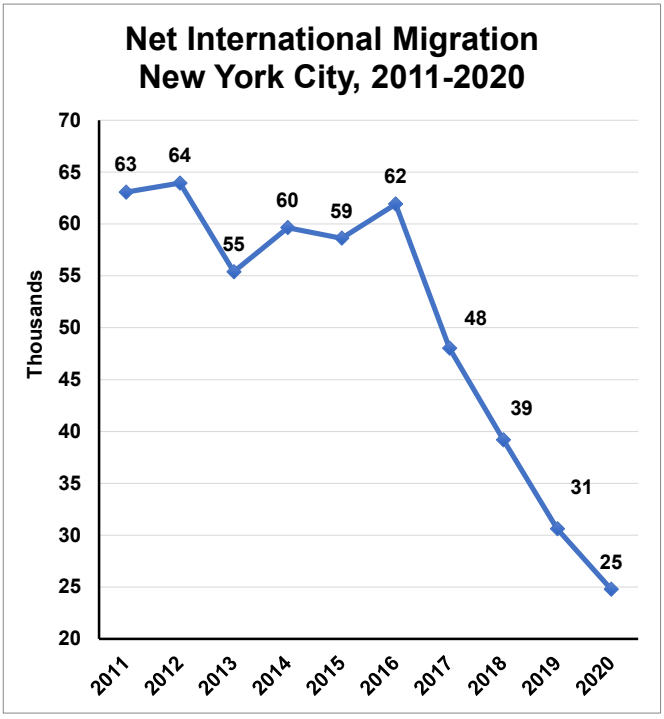
*Note: Population change was calculated using the 2010 Decennial Census (as opposed to the 2010 Estimates Base) and the 2020 Population Estimate. The estimated components of population change will not equal the numerical population change also because of a small residual after controlling to the national totals.

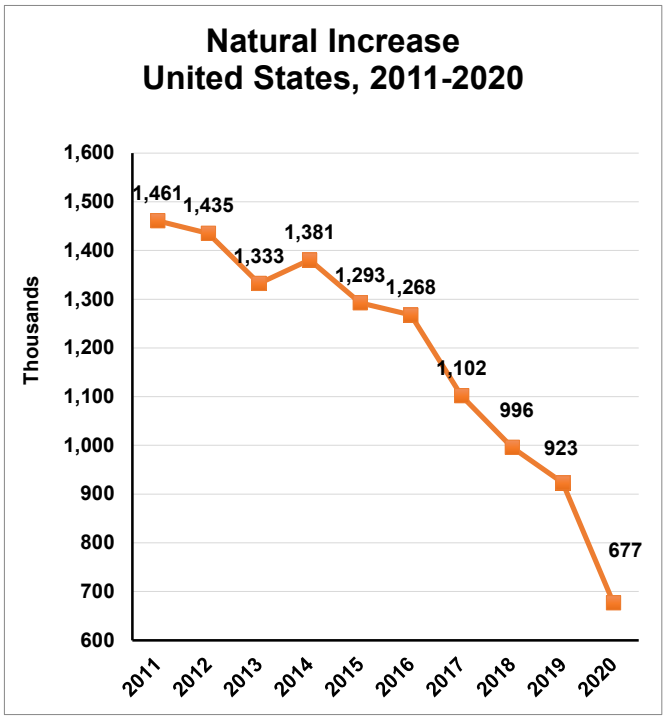
Source: 2010 Census; Census Bureau Current Estimates Program

Declines in the city's population over the past four years are closely related to a sharp drop in immigration to the U.S., linked most recently to changes in federal immigration policies. Net international flows to the city have fallen by nearly 60 percent since 2016, and now stand at 24,800. This mirrors the 55 percent decline in net international migration to the U.S. during the same period. Net domestic outflows from the city have also increased 28 percent since 2016.

Another reason for the recent decline in population has to do with natural increase. Year-on-year changes in natural increase between 2010 and 2020 show that it stands at 38,100 in 2020, a decline of nearly 40 percent since 2016, and of close to one-half since its 2011 peak of 68,200. These declines in natural increase reflect overall declines in the U.S. The drop in NYC has been fueled by increases in deaths due to an aging population, and a decrease in births over time, which is also related to a fall in net international flows.


Natural Increase
New York City, 2011-2020
Thousands
75
70
65
60
55
50
45
40
35
30
68
68
66
64
64
63
60
57
47
38
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020


Net International Migration
New York City, 2011-2020
Thousands
70
65
60
55
50
45
40
35
30
25
20
63
64
55
60
59
62
48
39
31
25
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020


Natural Increase
United States, 2011-2020
Thousands
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
1,461
1,435
1,333
1,381
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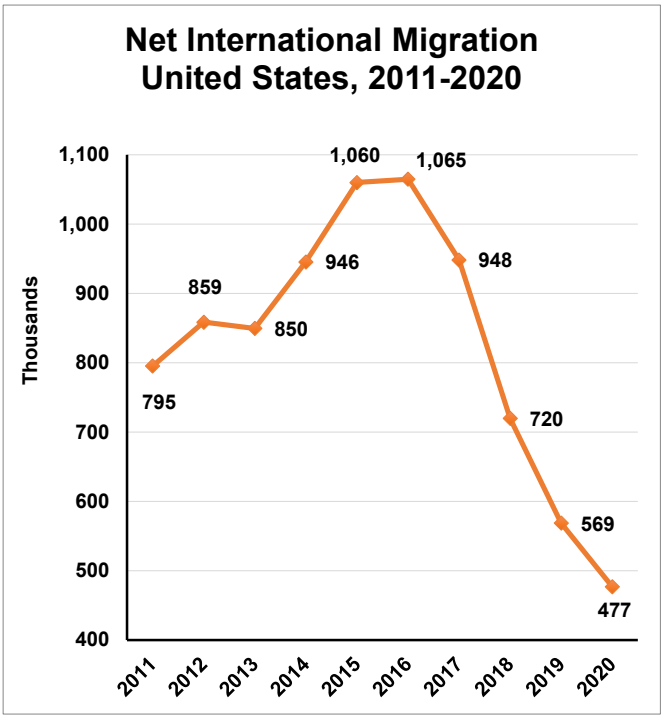
923
677
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020


Net International Migration
United States, 2011-2020
Thousands
1,100
1,000
900
800
700
600
500
400
795
859
850
946
1,060
1,065
948
720
569
477
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020

COMPONENTS OF POPULATION CHANGE, 2019-2020

While year-on-year population change and components of change for the 2019-2020 period are reported below, it is important to keep in mind that these are estimates, which are subject to a degree of error. Due to the limitations of the population estimation methodology, it is better to look at longer-term trends as described above, as opposed to change for a single year shown in the table below.

Estimates of the Components of Population Change for New York City and Counties: July 1, 2019 to July 1, 2020

Geographic Area	Total Population Change*	Natural Increase (Births-Deaths)	Net Migration		
			Total	Net Domestic Migration	Net International Migration
New York City	**-89,712**	**38,099**	**-127,115**	**-151,899**	**24,784**
Bronx	-17,045	7,165	-24,053	-30,848	6,795
Brooklyn	-23,395	17,826	-40,985	-46,757	5,772
Manhattan	-20,337	3,409	-23,625	-28,743	5,118
Queens	-28,121	9,109	-37,021	-43,870	6,849
Staten Island	-814	590	-1,431	-1,681	250

*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: 2010 Census; Census Bureau Current Estimates Program

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. Data are from the National Center for Health Statistics, derived from birth and death certificates, as well as from the Federal-State Cooperative for Population Estimates.

Net Domestic Migration represents the net exchange between one county and all other counties in the 50 states and the District of Columbia. This component is estimated for three age groups (0-17, 18-64, and 65 years of age and older). For ages 0 to 64, the U.S. Census Bureau uses data on filers, spouses, 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, 2020 estimates, the addresses of tax filers in 2019 and 2020 are compared. In-migrants to a given county are defined as those with an address in the county in 2019, but outside the county in 2018; out-migrants as those with an address in the county in 2018, but outside the county in 2019; 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 a tax return or is claimed as an exemption, these data cannot be used to directly estimate the number of county-to-county migrants. Instead a net domestic migration

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

rate is calculated by taking the difference between the number of in- and out-migrants (net migrants) and dividing it by the sum of the non-migrants and out-migrants, calculated separately for those age 0-17 and those 18-64. 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 records in much the same way as they use IRS data to determine domestic migration for the population 65 years of age and older.

Net International Migration is the balance of migration flows to and from foreign countries and Puerto Rico. These flows are sub-divided into five parts: immigration of the foreign-born, emigration of the foreign-born, net migration between the U.S. and Puerto Rico, net migration of natives to and from the United States, and net movement of the Armed Forces population to and from the United States.

Except for estimating the movement of the Armed Forces population, net international migration sub-components are estimated at the national level, and then distributed down to states and counties using American Community Survey 1-year and 5-year data. Movement of the Armed Forces population is estimated using a combination of data from the Defense Manpower Data Center and American Community Survey 5-year data.

The Census Bureau relies on the ACS Residence-One-Year-Ago (ROYA) question to estimate foreign-born immigration. Foreign-born immigration is estimated separately for Mexico and All Other Countries. Net migration between the United States and Puerto Rico is also estimated using the ROYA question in the ACS and the Puerto Rico Community Survey, as well as Airline Passenger Traffic and Bureau of Transportation Statistics data. Emigration of the foreign-born is estimated using the residual method. Change in the foreign-born population is estimated using mortality and immigration estimates, which are then compared to change in the foreign-born population estimated using American Community Survey 1-year files. The difference between estimated change in the foreign-born population and what is accounted for by mortality and immigration serves as the basis for estimating emigration rates. Emigration rates are estimated separately for several groups based on country or region of origin and number of years since entry into the United States.

Net migration of the native-born is estimated using population register and census data from approximately 80 countries, comparing U.S.-born or U.S. citizen populations at two points in time.

To account for changes in migration patterns due to Covid-19, additional data sources were used to modify estimates of international migration for the period from March or April through June 2020.

As noted earlier, the Population Estimates Program generates estimates by building on the previous census count with births, deaths, and net migration estimates. While the census enumeration is considered the gold standard, the Population Estimates Program provides intercensal estimates and a point of comparison for the once-in-a-decade census enumeration. Each year, the Population Estimates Program releases revised annual estimates back to the previous census year with each data release. Estimates for previous years change because additional data become available to the Census Bureau to include in their estimates, and the methodology for producing estimates is adjusted from time to time. The figure below shows how the Population Estimates Program's annual estimates for New York City have changed with each vintage, including the Vintage 2020 estimates released on May 4, 2021.

Comparison of Population Estimates for New York City for Vintages 2014 through 2020