



New York Metropolitan Transportation Council

NYMTC 2050
Socioeconomic and
Demographic (SED) Forecast

**Summaries & Analysis of
Existing Trends & Key
Factors for Forecasting**

Technical Memorandum | Task 2.3

January 16, 2015



Disclaimer

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Submitted by:



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Glossary of Abbreviations

ACS – American Community Survey conducted by the U.S. Census Bureau

ASDR – Age-specific death rate

ASFR – Age-specific fertility rate

BEA – U.S. Department of Commerce, Bureau of Economic Analysis

BLS – U.S. Bureau of Labor Statistics

CC – Cohort component model used for population forecasting

CDC – Centers for Disease Control and Prevention

CES – Current Employment Statistics program overseen by the U.S. Bureau of Labor Statistics

CMR – Crude migration rate

COG – Regional council of governments

CPS – Current Population Survey conducted by the U.S. Bureau of Labor Statistics

DCP – New York City Department of City Planning

GDP – Gross Domestic Product

JTW – Journey to Work commuting data from the American Community Survey conducted by the U.S. Census Bureau

LBG – The Louis Berger Group, Inc.

MPO – Metropolitan Planning Organization

NAICS – North American Industry Classification System

NCHS - Centers for Disease Control and Prevention, National Center for Health Statistics

NYMTC – New York Metropolitan Transportation Council

PUMS – Public Use Microdata Sample from the American Community Survey conducted by the U.S. Census Bureau

QCEW – Quarterly Census of Employment and Wages conducted by the U.S. Bureau of Labor Statistics

SAE – State and Area Employment data from the Current Employment Statistics program overseen by the U.S. Bureau of Labor Statistics

SED – Socioeconomic and demographic

SIDS – Sudden Infant Death Syndrome

TAZ – Transportation Analysis Zone

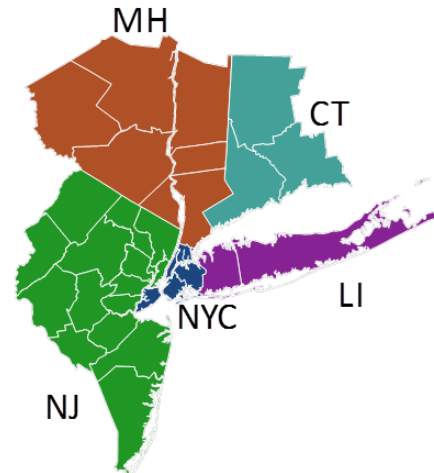
TFR – Total Fertility Rate

Executive Summary

The purpose of this paper is to identify past and current trends in the 31-County Region - consisting of the 31 counties listed in Table 1-1 that will provide context and guidance for the 2050 SED forecasting effort. In pursuit of this end, the Project Team conducted a review of the economic and demographic data that will be used in forecasting population, households, employment and labor force. This paper is broadly divided into four sections, each discussing and analyzing trends related to each of the individual modules supporting the overall forecast. To facilitate review across the 31-County Region, much of the analysis is presented at the subregional level established by the New York Metropolitan Transportation Council (NYMTC), below in Table 1-1:

TABLE 1-1. SUBREGIONS IN 31-COUNTY REGION

New York City	Long Island	Mid-Hudson	New Jersey	Connecticut
Bronx	Nassau	Dutchess	Bergen	Fairfield
Kings	Suffolk	Orange	Essex	Litchfield
New York		Putnam	Hudson	New Haven
Queens		Rockland	Hunterdon	
Richmond		Sullivan	Mercer	
		Ulster	Middlesex	
		Westchester	Monmouth	
			Morris	
			Ocean	
			Passaic	
			Somerset	
			Sussex	
			Union	
			Warren	



SUMMARY OF KEY TRENDS

The Project Team identified several key trends from the review of historical data that will serve as guidance and factors to consider in the forecasting effort. These summary highlights are broken out by the paper's four sections:

Population Trends:

- Population growth across the 31-County Region has increased 11 percent since 1990. A significant proportion of the increase occurred between 1990 and 2000.
 - While all subregions grew at least 9 percent over that 20-year period, growth was highest in New Jersey (14 percent), followed by Mid-Hudson (13 percent).
- The racial composition of the 31-County Region has changed considerably since 1990, with the non-Hispanic White share of the population shrinking noticeably in comparison with increases in the share of Hispanic and non-Hispanic Asian populations.
 - This trend is consistent across the five subregions, and particularly outside NYC. While the share of the Hispanic population rose four percentage points between 1990 and

2010 in NYC, the remaining subregions saw increases between eight and ten percentage points.

- Between 2000 and 2010, the number of Hispanics grew by over 50 percent in Long Island, Mid-Hudson and Connecticut, while the number of non-Hispanic Asians grew by over 50 percent in Long Island, New Jersey and Connecticut.
 - The non-Hispanic White population has declined across all subregions.
- The 31-County Region's population is aging, with the subregions outside NYC seeing the largest increases in their median age estimates.
 - This aging trend is most evident through the relatively high levels of growth in the older age cohorts (45 and older) that is generally accompanied by declines in the younger age cohorts (ranging between 20 and 40 years). NYC is the only subregion that has not experienced noticeable declines in the younger age cohorts (20 to 30).
 - Based on observed changes in the age profiles, the estimated median age for the entire 31-County Region has grown from 34.3 years in 1990 to 37.8 in 2010 (a change of 3.5 years)
 - The estimated median age in NYC has only increased by 1.9 years while the remaining sub regions have seen increases ranging between 4.0 and 5.5 years over the same time frame.
- The number of births and deaths has been declining across the region since 1990.
 - The drop in deaths and corresponding increase in life expectancy in the region has been driven by a reduction in deaths from HIV/AIDS, homicide and drugs (particularly in New York City), declines in infant mortality and substantial advances in public health.
- In the period spanning 1990-2010, fertility rates in the region have generally decreased in the younger age cohorts (ages 30 and younger) and conversely increased in the older age cohorts.
- Over the last several decades, the general age-specific net migration patterns in each subregion have remained consistent. Outside New York City there is a tendency for net out-migration among young adults (20-30), while net in-migration occurs for those between ages 30-40. In New York City, there has been pattern of strong net in-migration for young adults (20-30) with net out-migration for all other age groups.
 - Despite these distinct patterns of age-specific net migration, there has been a significant degree of volatility in individual age-specific rates of net migration such that no clear trend has emerged that indicates likely future rates of net migration for each age group.

Household Trends:

- The distribution of household sizes over time have remained largely unchanged for the NYC region, however the remaining subregions have all displayed an increase in the number of single person households. This has resulted in gradual declines of average household sizes in those regions.
- Headship rates have generally declined across all 5-year age cohort classifications; however the largest decreases are observed in older age groups (55 and older).

- Across the region, while the share of single family detached homes has remained relatively stable between 1990 and 2010, the share of attached single family homes has risen, most notably in New York City.

Labor Force Trends:

- Labor force participation rates have marginally decreased almost uniformly in all age cohorts for males between 1990 and 2010. The biggest reduction in the male labor force participation rates at the regional level is in the early age cohorts (16-19 and 20-24) where participation rates have reduced by 15 and 7 percent, respectively.
- Labor force participation rates for females show notable gains across all age cohorts except 16-19 and 20-24. The largest gains in female labor force participation is observed in the age cohorts spanning ages 50-65, where the regional labor participation rate for women has increased by an average of approximately nine percentage points.
- The increases in female labor participation rates are likely to continue into the future particularly as college enrollment for women has recently surpassed that of men and thereby adding to structural factors driving the narrowing of the labor participation gender gap; e.g the transition from manufacturing/industrial base to a service economy.

Employment Trends:

National GDP Growth

- Consumer spending on goods and services, which comprises roughly two-thirds of Gross Domestic Product (GDP), has already resumed trend growth following the “Great Recession.” Yet, continued adjustments can be expected in the remaining GDP components:
 - *Investment Spending.* Growth in this component remains low by historical measures, due to the oversupply of residential (and to a lesser extent, commercial) construction in the 2000s. Growth is expected to rebound to pre-recession rates over the next 2-4 years.
 - *Government Spending.* Since 2008, the combination of stimulus and social safety-net programs led to historically high government spending levels. Looking forward, continued labor market improvement and pressure to reduce the national debt will likely lead to slower growth in this component.
 - *Net Exports.* Beginning in the 1990s, a number of domestic and international factors allowed for the development of a large structural trade deficit. Looking forward, there will likely be domestic pressure to reduce this deficit, and this reversion will likely lead to an increase in the U.S. trade surplus in services, as well as a reduction in the trade deficit in goods.
- When controlling for price changes, the mix of personal consumption expenditures – across goods and services – has remained remarkably stable over the last 30 years. In the context of projecting national and regional employment, this relative stability is important because it provides a solid basis for projecting industry growth by sector.
- Relative to historical trends, health care services may be reasonably expected to increase as a share of GDP (in chained \$2009). This trend, driven by the entry of boomers into retirement, is likely to accelerate through the 2030s, but then attenuate in the 2040s.

Labor Productivity

- The relative stability of personal consumption expenditures over the last 30 years indicates that large-scale shifts in employment across sectors have been primarily driven by productivity trends.
- The most noteworthy productivity trends are as follows:
 - Labor productivity in services – which account for the majority of national and regional employment – has grown very slowly, indicating that, across all sectors, services will likely continue to provide strongest job growth potential.
 - The continued increase in manufacturing productivity, which has doubled (in real terms) since the mid-1980s will likely result in declining national and regional manufacturing employment, even though demand for goods remains stable.
 - The labor productivity of wholesale and retail trade has grown steadily since the mid-1980s, driven by the rise of big-box and online retail methods. This productivity growth has not been as significant as manufacturing, and has also attenuated to a greater degree since the mid-2000s.
 - Labor productivity for construction and transportation & warehousing – two relatively large employment sectors in the 31-County Region – has been roughly constant.

National & 31-County Region Employment

- Generally, employment will grow fastest in sectors with strong GDP growth yet stable productivity.
- The majority of private job growth nationally over the next ten years is likely to be generated by three sectors: Professional, Scientific, Technical Services; Administrative, Support, Waste Management Services; Health Care & Social Services.
- Since 1980, the region's share of national population has declined from 8.3 percent to 7.2 percent. This highlights the fact that the region has been growing more slowly than the rest of the country.
- Regional employment growth generally resembles national employment growth, with adjustments for growing or declining regional shares. As with the national picture, the region has made the largest employment gains in health care, professional, and administrative services since 1982. Accommodation and food services have also generated noticeable employment growth, spurred by gains in both national employment levels and the region's share. In contrast, the rapid decline in regional manufacturing employment can be seen as the product of declining national jobs compounded by a declining regional share.

Subregional Trends

- New York City's share of total regional employment declined through the 1970s and the 1980s, leveling off around the early 1990s. Since then, subregional shares of employment have remained relatively stable, although New York City's share has increased slightly over the last 10 years.
- All five subregions have experienced a noticeable decline in manufacturing and corresponding rise in education, health care, and social services.

- Certain industry concentrations (and their changes) are visible across subregions. These include New York City's large relative concentration of finance, insurance, and real estate, Long Island's large share of the region's transportation jobs, and New Jersey's large (and growing) share of business services.

Commutation Trends:

- Since 1990, commutation patterns within the 31-County Region have displayed remarkable consistency as residents of subregions generally either work within their own residential county (intra-county commuting) or journey to neighboring counties for work.
- The 31-County Region is unique, as commuters travelling from Brooklyn, Queens and the Bronx to Manhattan comprise the top three inter-county commutes in the nation, in terms of daily volume.
- The region is further home to a significant portion of "extreme" commuters, with the vast majority of counties in the region having a greater share of workers spending over 60 minutes getting to work compared to the U.S. as a whole. Roughly one in three commuters in Bronx, Richmond and Queens commute for over an hour, and one out of every ten workers in Richmond spends over 90 minutes getting to work.

1.0 INTRODUCTION

NYMTC is a regional council of governments (COG) that is the metropolitan planning organization (MPO) for New York City, Long Island and the lower Hudson Valley. NYMTC provides a collaborative planning forum to address transportation-related issues, develop regional plans and make decisions on the use of federal transportation funds. Socioeconomic and demographic (SED) forecasts are crucial components in the development of regional transportation plans, air quality analysis for transportation conformity and making decisions on the use of these funds. In order to produce the 2050 SED forecasts, NYMTC retained the services of The Louis Berger Group (LBG), in collaboration with the New York City Department of City Planning (DCP), to create population, employment, labor force, and household forecasts for the region at the county level, and to develop a tool that allocates the county-level SED projections down to the Transportation Analysis Zone (TAZ) level.

The purpose of this paper is to document, identify and analyze historical SED data to develop a review of existing trends for key variables identified for this forecasting process. The trends identified for the input variables into the forecasting process will be further evaluated in Technical Memorandum 3.1, Modeling Methodology, to determine if and how the trends should be carried forward in the forecast models. The data in this document are evaluated on an individual county basis, but are presented at the aggregate subregional level described in Table 1-1. Where appropriate and significant, individual county trends are called out to aid the discussion.

2.0 POPULATION TRENDS

The 31-County Region, with over 22 million residents, comprises approximately seven percent of the nation's population. A crucial element of the population, household, and labor force projections is understanding how this large population has changed over time and the implications for the modeling process. This section will detail key components of the population model, focusing on large-scale trends in the subregions. Additionally, key metrics will be presented to demonstrate the changing structure of the 31-County Region. The first section briefly describes the population forecast methodology, in order to provide additional context to the discussion of trends in key variables driving this forecasting process.

2.1 Population Forecast Methodology Summary

Population forecasts will be generated using a disaggregated cohort component forecasting approach that accounts for changes in population through the application of age-specific rates of both natural increase (births and deaths) and net migration. Age-specific rates of natural increase are derived from historical (1990-2010) vital statistics records obtained from the various state departments of health while rates of net migration are obtained from a survival analysis conducted over the same 1990-2010 historical time period. For the New York City forecast only, an extensive additional land use analysis will be used to adjust the population projection generated from the cohort component model.

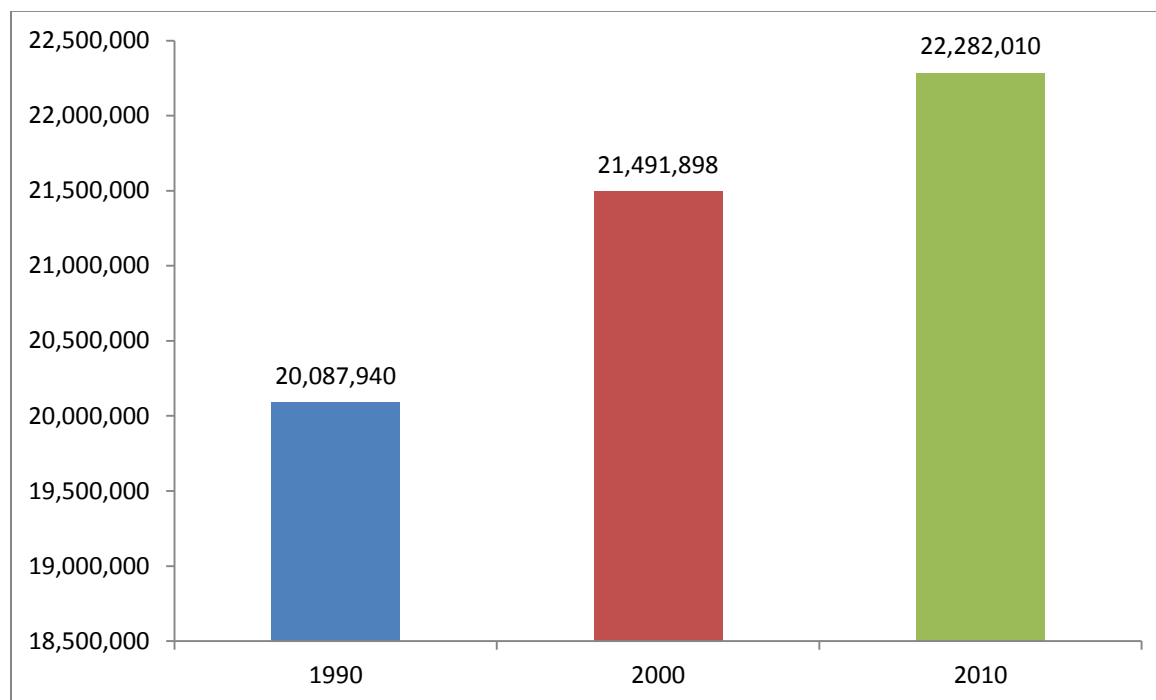
2.2 Population

Census data shows that New York City, Long Island, Mid-Hudson, New Jersey and Connecticut all had positive population growth between 1990 and 2010. New Jersey has seen the highest increase in population over the past 20 years, rising 14 percent between 1990 and 2010, followed by Mid-Hudson (13 percent). The remaining subregions – New York City, Long Island and Connecticut – all increased by nine percent. The bulk of these increases, however, took place between 1990 and 2000, with more

moderate increases over the past decade (Figure 2-1 and Table 2-1). The pace of growth in the 31-County Region is slower relative to the nation as a whole; while the fastest growing subregion (New Jersey) grew by 14 percent between 1990 and 2010, the population of the U.S. grew by 24 percent over the 20-year span.

The large increase in New Jersey has been driven by strong growth in Somerset, Ocean and Middlesex Counties. On Long Island, the population of Nassau County has remained relatively stable, with Suffolk County accounting for the bulk of the subregion's growth. In the five boroughs of New York City, Staten Island witnessed the strongest rates of growth between 1990 and 2010.

FIGURE 2-1. 31-COUNTY REGION POPULATION, 1990-2010



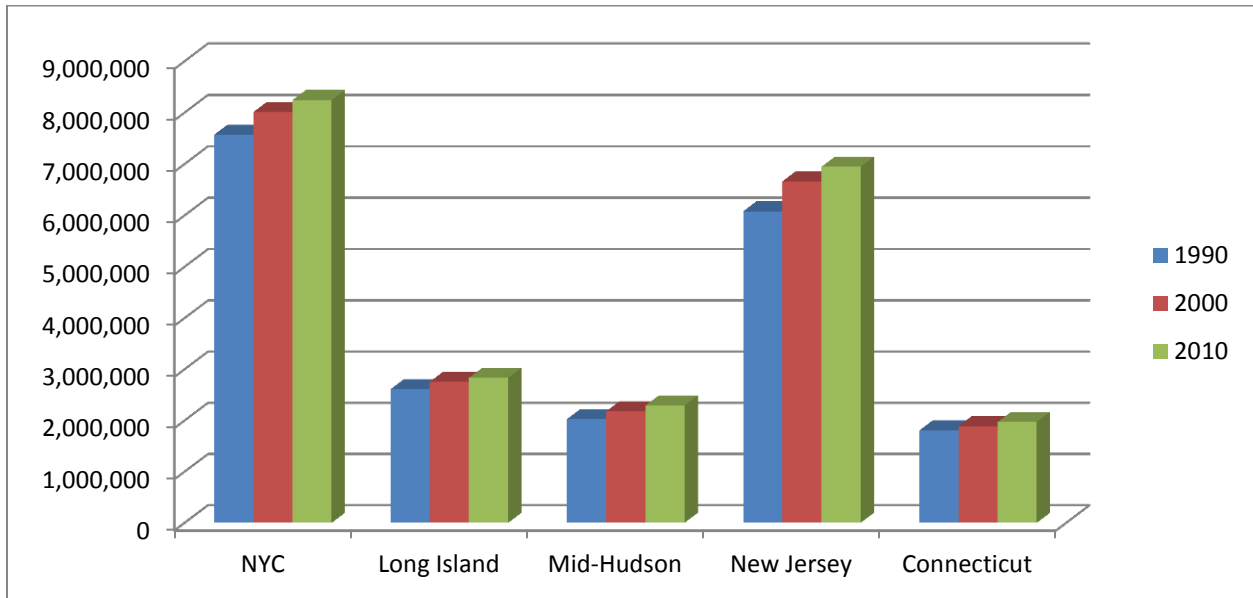
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

TABLE 2-1. POPULATION GROWTH RATE, 1990-2010

	Population			Growth Rate		
	1990	2000	2010	1990-2000	2000-2010	1990-2010
NYC	7,567,347	8,008,278	8,242,624	6%	3%	9%
Long Island	2,609,212	2,753,913	2,832,882	6%	3%	9%
Mid-Hudson	2,025,972	2,179,189	2,290,851	8%	5%	13%
New Jersey	6,079,453	6,661,750	6,946,420	10%	4%	14%
Connecticut	1,805,956	1,888,768	1,969,233	5%	4%	9%
31-County Region	20,087,940	21,491,898	22,282,010	7%	4%	11%
United States	248,709,873	281,421,906	308,745,538	13%	10%	24%

Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-2. POPULATION OF SUBREGIONS, 1990-2010



Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

2.3 Race¹

The 31-County Region has experienced a rise in minority populations across all geographies and the accompanying decline in the non-Hispanic White population. The trends in the region reflect similar movements observed in the nation as a whole as depicted in Figure 2-3. To the left of the black line, the historic Census populations for 2000 and 2010 show the share of the non-Hispanic White population decline from 69 to 64 percent and the share of the Hispanic population increase from 13 to 16 percent. The U.S. Census Bureau's population projections by race and Hispanic origin for 2060 continue this trend, with the share of the non-Hispanic White population projected to decline by 21 percentage points between 2010 and 2060, while the share of the Hispanic population is projected to rise by 15 percentage points over the same time frame. The Census projects the share of the non-Hispanic Black population to remain stable, while the shares of the non-Hispanic Asian population and non-Hispanic Other population are expected to increase slightly.

¹ According to a 2011 Census brief, "An individual's responses to the race question and to the Hispanic origin question were based upon self-identification. The U.S. Census Bureau collects race and Hispanic origin information following the guidance of the U.S. Office of Management and Budget's (OMB) 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. These federal standards mandate that race and Hispanic origin (ethnicity) are separate and distinct concepts and that when collecting these data via self-identification, two different questions must be used." For the purposes of this analysis, the share of the population identifying as Hispanic is presented, regardless of what race the individual identifies as. The racial categories, therefore, are based on those not identifying as Hispanic. Caution should be exercised when looking at race categories over time, as the 2000 Census was the first time individuals were "presented with the option to self-identify with more than one race and this continued with the 2010 Census, as prescribed by OMB." A 2001 release from the Census, *Questions and Answers for Census 2000 Data on Race* states that data "on race from Census 2000 are not directly comparable with those from the 1990 census and previous censuses due, in large part, to giving respondents the option to report more than one race. Other factors, such as reversing the order of the questions on race and Hispanic origin and changing question wording and format, also may affect comparability." Despite these caveats Census and ACS data on race are the most comprehensive measure available and are robust enough to show how these categories have changed over time.

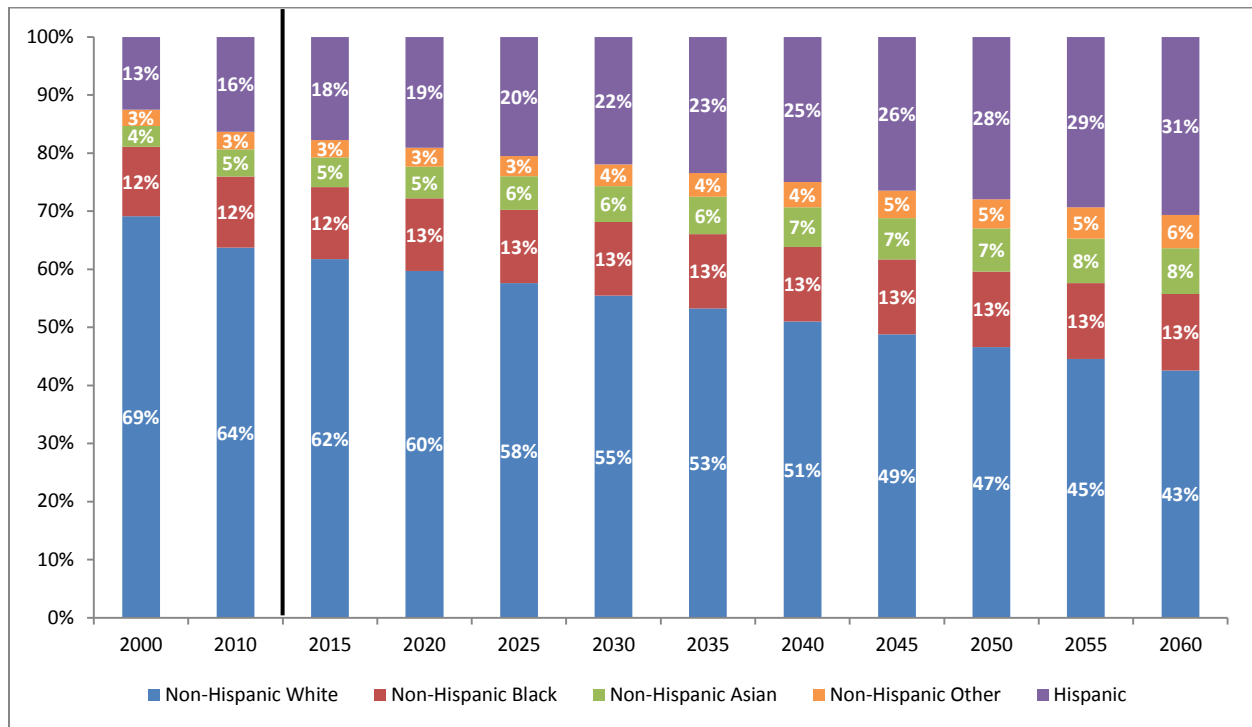
The categories are defined as follows for each Census year:

Defined Category	1990	2000	2010
Non-Hispanic White	Non-Hispanic: White	Non-Hispanic: White Alone	Non-Hispanic: White Alone
Non-Hispanic Black	Non-Hispanic: Black	Non-Hispanic: Black Alone	Non-Hispanic: Black Alone
Non-Hispanic Asian	Non-Hispanic: Asian or Pacific Islander	Non-Hispanic: Asian Alone	Non-Hispanic: Asian Alone
Non-Hispanic Other	Non-Hispanic: American Indian, Eskimo, or Aleut; Non-Hispanic: Other race	Non-Hispanic: American Indian and Alaska Native Alone; Non-Hispanic: Native Hawaiian and Other Pacific Islander Alone; Non-Hispanic: Some other race alone; Non-Hispanic: Two or more races	Non-Hispanic: American Indian and Alaska Native Alone; Non-Hispanic: Native Hawaiian and Other Pacific Islander Alone; Non-Hispanic: Some other race alone; Non-Hispanic: Two or more races
Hispanic	Hispanic	Hispanic	Hispanic

Overview of Race and Hispanic Origin: 2010 (2011). <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>

Questions and Answers for Census 2000 Data on Race (2001). <https://www.census.gov/census2000/raceqandas.html>

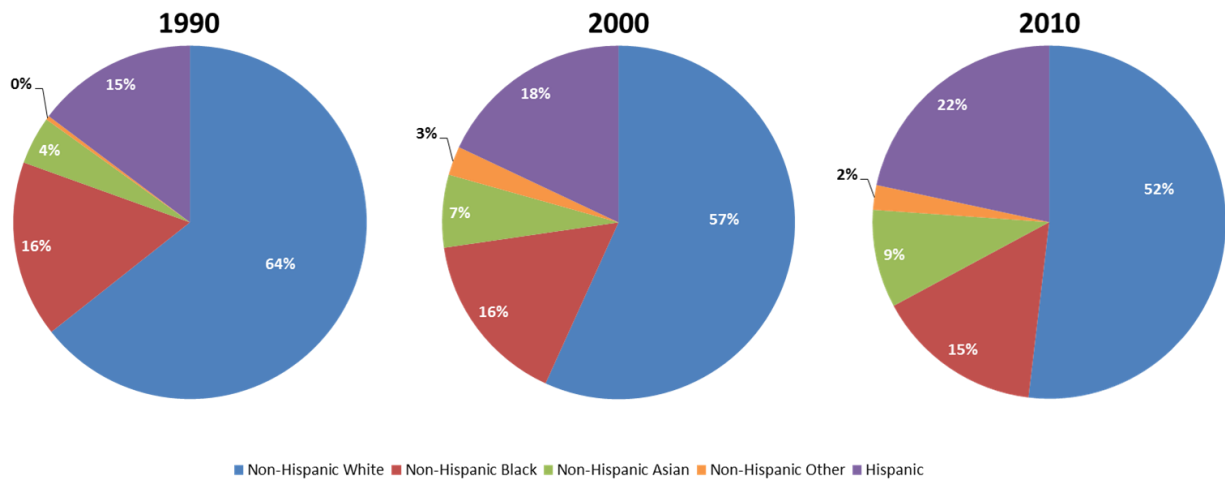
FIGURE 2-3. HISTORIC AND PROJECTED RACIAL COMPOSITION, NATIONAL, 2000-2060



Source: 2000, and 2010 Census; U.S. Census 2012 National Population Projections

The 31-County Region has already begun to experience some of the nationally projected shifts in racial composition. Over the past 20 years the share of the non-Hispanic White population in the 31-County Region has dropped 12 percentage points, moving from two-thirds of the population to just above the 50 percent mark (Figure 2-4). Meanwhile, the Hispanic share is up seven points, passing the non-Hispanic Black population as the largest minority group; over one in five residents of the 31-County Region are now Hispanic. The share of non-Hispanic Asians in the region also increased from four to nine percent.

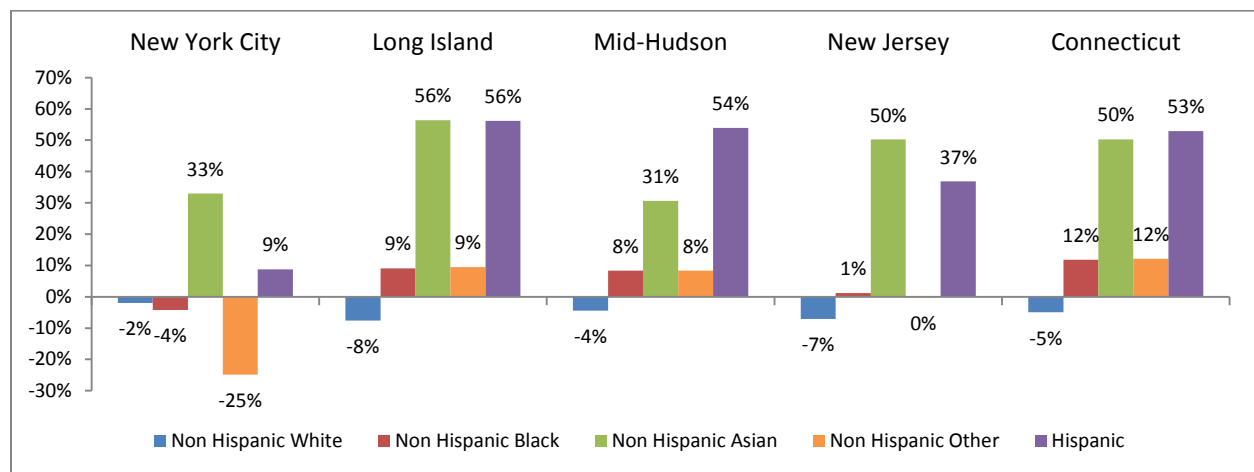
FIGURE 2-4. RACIAL COMPOSITION OF 31-COUNTY REGION, 1990-2010



Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

Between 2000 and 2010², the non-Hispanic Asian and Hispanic populations have all risen substantially across the region (Figure 2-5). Across the five subregions the number of non-Hispanic Asians rose, on average, 44 percent and the number of Hispanics rose, on average, 42 percent, with Long Island and Connecticut experiencing gains over 50 percent for each group. New Jersey, Mid-Hudson and New York City also experienced considerable gains in the non-Hispanic Asian population. The non-Hispanic Black population grew around ten percent between 2000 and 2010 in Long Island, Mid-Hudson and Connecticut, while declining in New York City and remaining stable in New Jersey. Across the region, the number of non-Hispanic Whites has decreased on average by five percent, most notably in Long Island and New Jersey.

FIGURE 2-5. GROWTH RATE BY RACE BY SUBREGION, 2000-2010

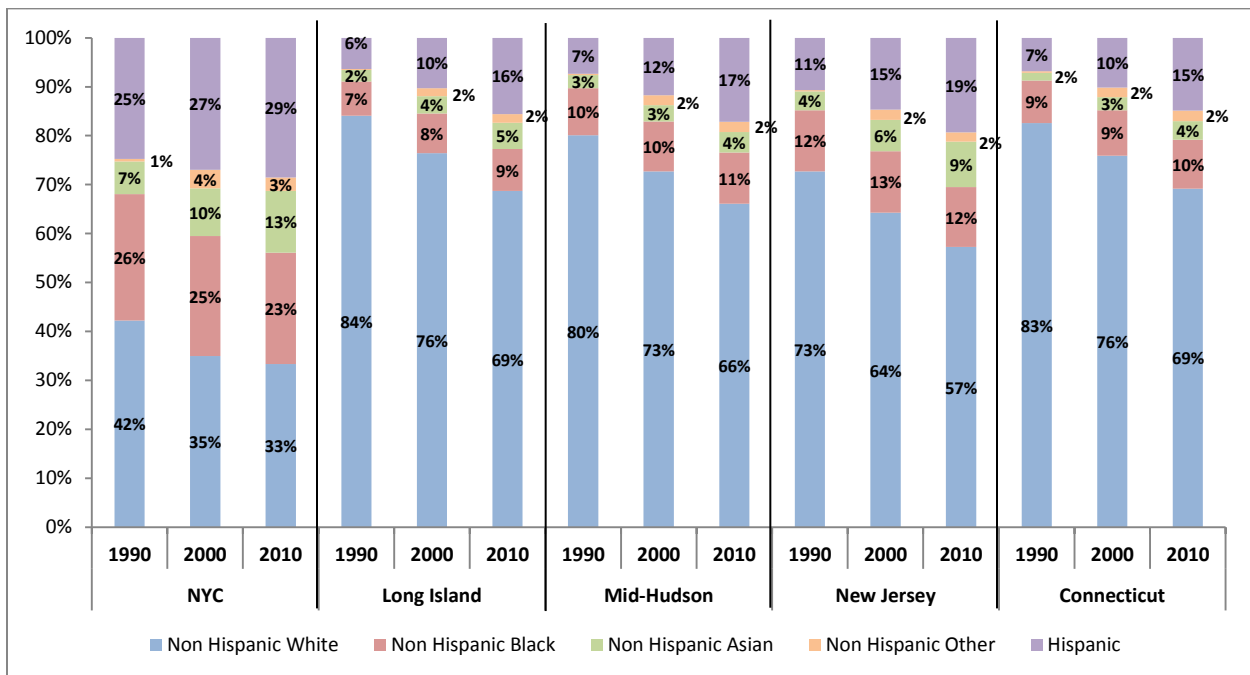


Source: 2000, and 2010 Census; DCP adjusted NYC values for 2010

² Growth rates between 1990 and 2010 are not presented as the question wording change between the 1990 and 2000 Census renders a direct comparison difficult and the categorization of additional individuals identifying as non-Hispanic Other establishes illogical growth rates in that category.

The changing racial composition of the 31-County Region is further illustrated by examining how each race changes as a share of the population from 1990 through 2010 (Figure 2-6). For each of the subregions outside NYC, the non-Hispanic White share of the population fell approximately 14 percentage points. Despite this reduction, the white share of the population in those subregions remains between 57 percent and 69 percent. In NYC, whites dropped nine percentage points, as they now comprise a third of NYC's population. The share of Hispanics in Long Island, Mid-Hudson, New Jersey and Connecticut rose roughly nine points, indicating the shift in demographics outside the five boroughs. In New York City, the Hispanic share of the population increased by four points. The non-Hispanic Black population made very moderate increases in share throughout the region, while declining in New York City. Despite a significant rise in numbers, the non-Hispanic Asian share of the population experienced a more modest increase across the 31-County Region.

FIGURE 2-6. RACIAL COMPOSITION BY SUBREGION, 1990–2010



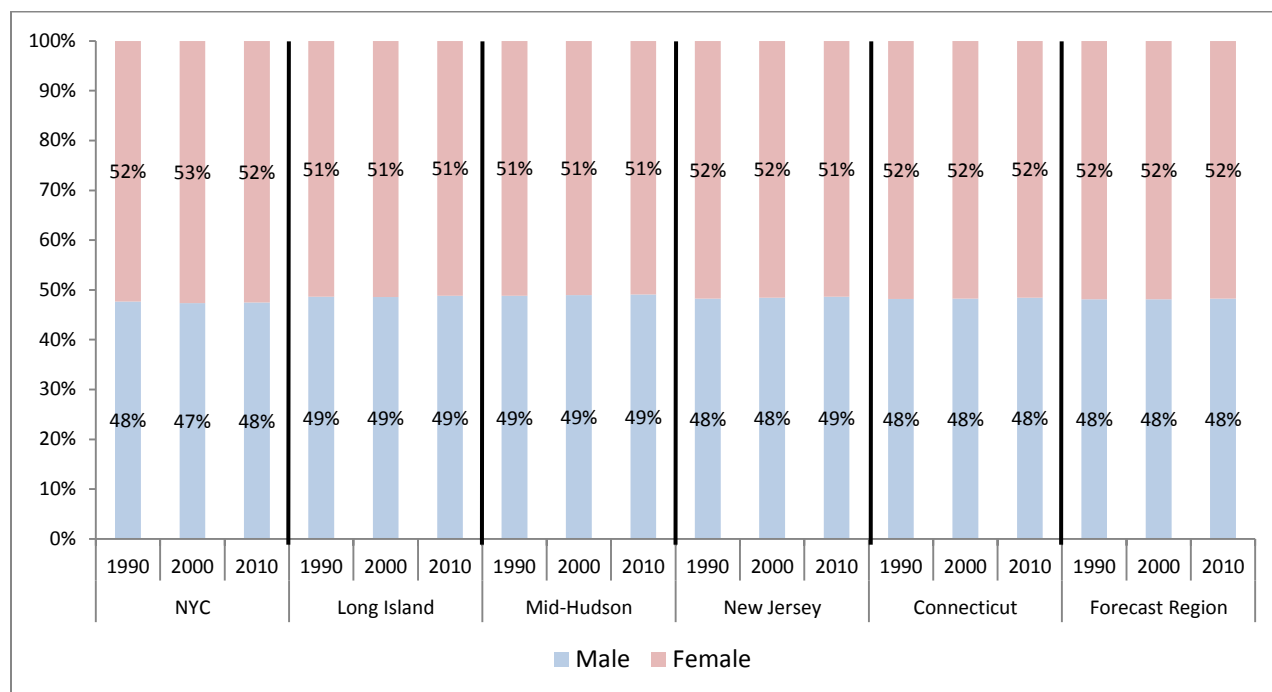
Source: 1990, 2000, and 2007-2011 Census PUMS

The shifting demographics of the 31-County Region have significant implications for the forecast effort. It will be critical to use this historical data as a starting point, as the population projections will incorporate a race-specific “overlay,” where the racial shares assumptions will be applied to the population projections. Coupled with knowledge about factors driving these changes, such as immigration, it will be possible to construct reasonable assumptions about the relative distribution of these groups.

2.4 Gender & Age

The gender split across the 31-County Region has remained steady since 1990. On both the regional and subregional level, women comprise slightly more than half of the population; this proportion has not shifted over the last 20 years (Figure 2-7).

FIGURE 2-7. GENDER COMPOSITION OF 31-COUNTY REGION, 1990-2011



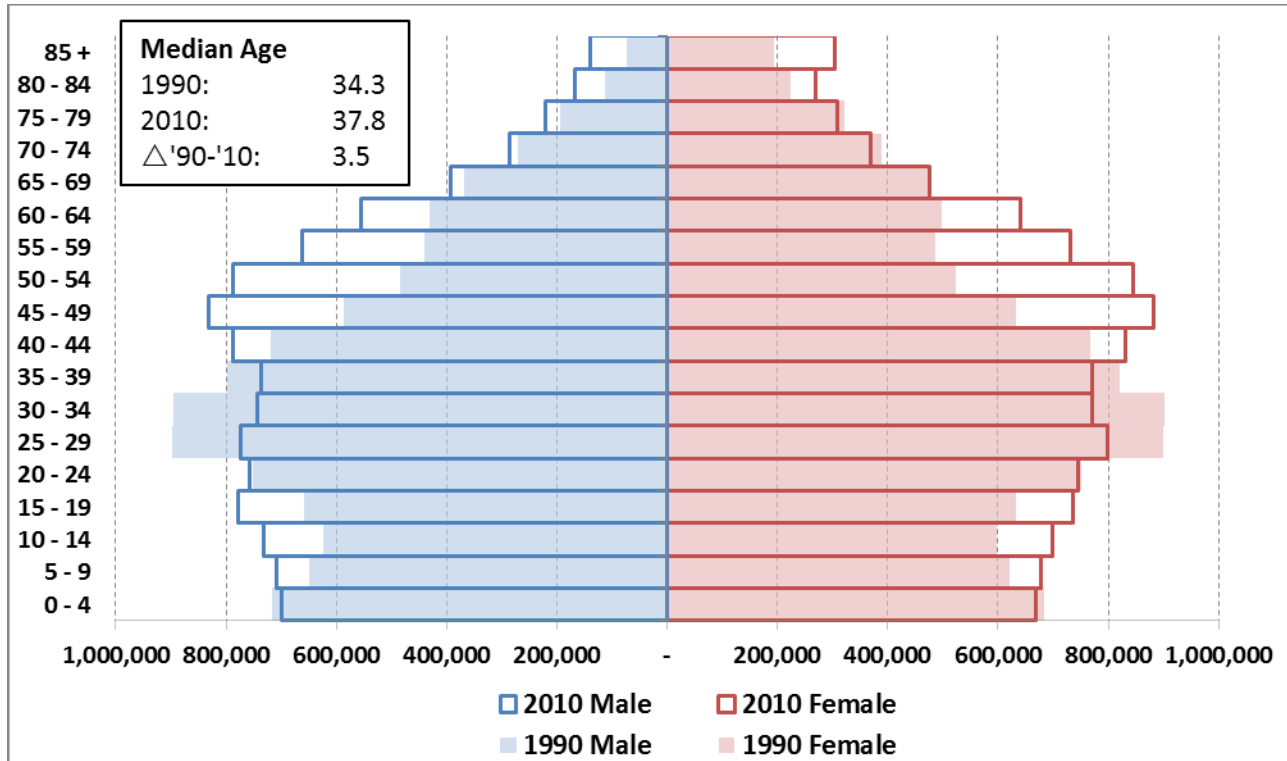
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

The cohort component model uses births, deaths and migration to move age/sex cohorts forward through time, creating a new age/sex distribution at each five year interval. The Project Team therefore tracked changes in the age profile of the 31-County Region population between 1990 and 2010, using five-year age cohorts (Figure 2-8 - Figure 2-13). The overarching trend in the age profile of the 31-County Region is towards an older population, particularly in the subregions outside NYC. The estimated median age for the entire 31-County Region has grown from 34.3 years in 1990 to 37.8 in 2010 (a change of 3.5 years) – New York City’s median age is estimated to have only increased by 1.9 years while the median ages for Long Island, Mid-Hudson, New Jersey and Connecticut are estimated to have increased by 5.5, 4.8, 4.0, and 5.0 years, respectively, over the same time period. This slower transition to an older population in NYC is likely driven by stronger rates of net in-migration in the younger age groups relative to the rest of the 31-County Region (refer to discussion in Section 2.7 of this report – as well as Figure 2-35).

The trend toward an aging population is evident through the increase in the 50-59 cohorts, particularly 50-54. In all four subregions outside of NYC, the 50-54 cohort for both males and females increased by over 50 percent between 1990 and 2010 (see Table 2-2; growth rates over 50 percent are highlighted in green and negative growth rate over 20 percent are highlighted in red). In both Mid-Hudson and New Jersey subregions, the population of the 50-54 and 55-59 cohorts increased by at least 50 percent over the last two decades. While the population of both males and females in this age group has risen substantially, the growth rate is skewed slightly toward men, particularly in the 50-54 age group, across the four subregions outside of NYC. The population of men 50-54 in Connecticut and New Jersey has increased 79 percent and 76 percent, respectively; these increases are the most significant in this cohort. Turning to the 85+ cohort, the number of men and women has roughly doubled in the subregions outside of NYC, particularly in Long Island.

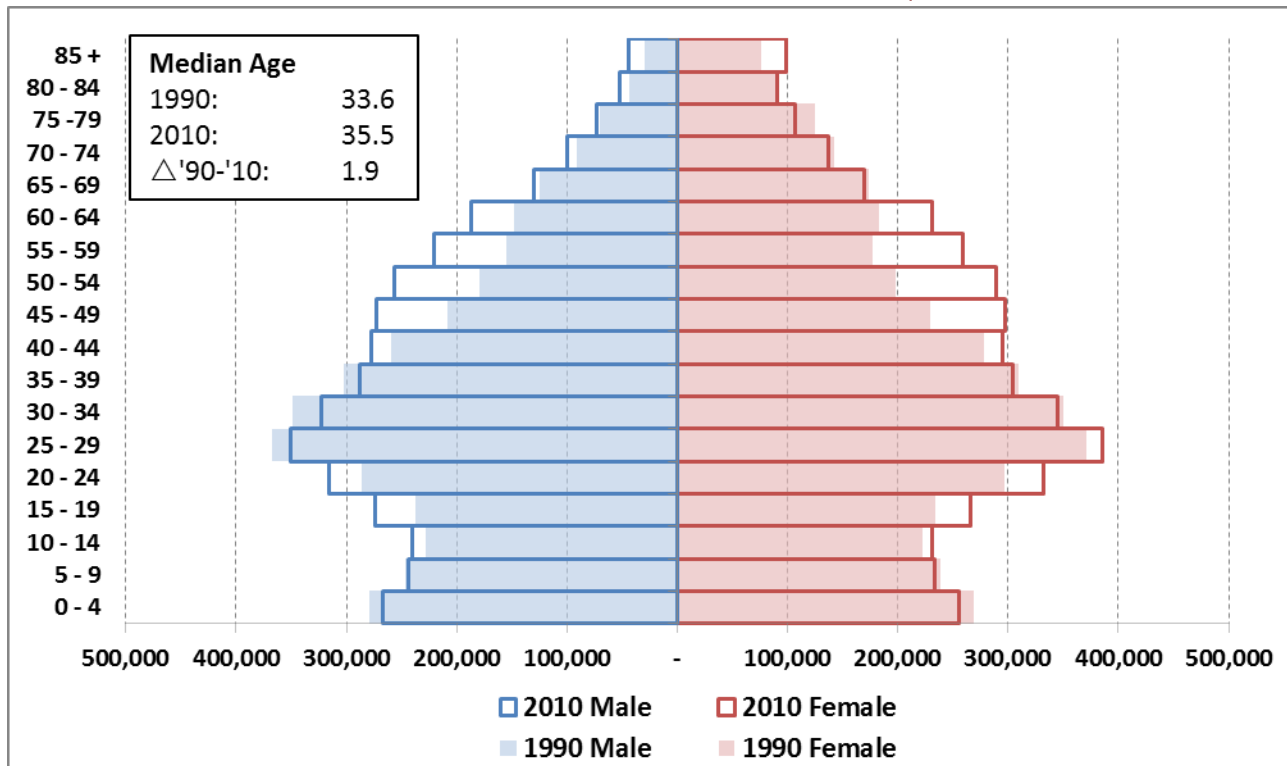
Contributing to the aging population is the sharp decrease in the 25-34 cohorts. In the subregions of Long Island, Mid-Hudson and Connecticut, the population for men and women in both the 25-29 and 30-34 cohorts has dropped between 25-30 percent over the last 20 years; New Jersey's drop is just under 20 percent. As the children of boomers have entered this cohort, the drop can be attributed to the lower birth rate among boomers themselves. Across the 31-County Region, this aging trend can be expected to continue as the boomers retire and the subsequent generations with lower birth rates move through the cohorts. The population projections must take into account this trend, serving as either direct input or a check on the output.

FIGURE 2-8. 31-COUNTY REGION POPULATION BY AGE AND GENDER, 1990-2011



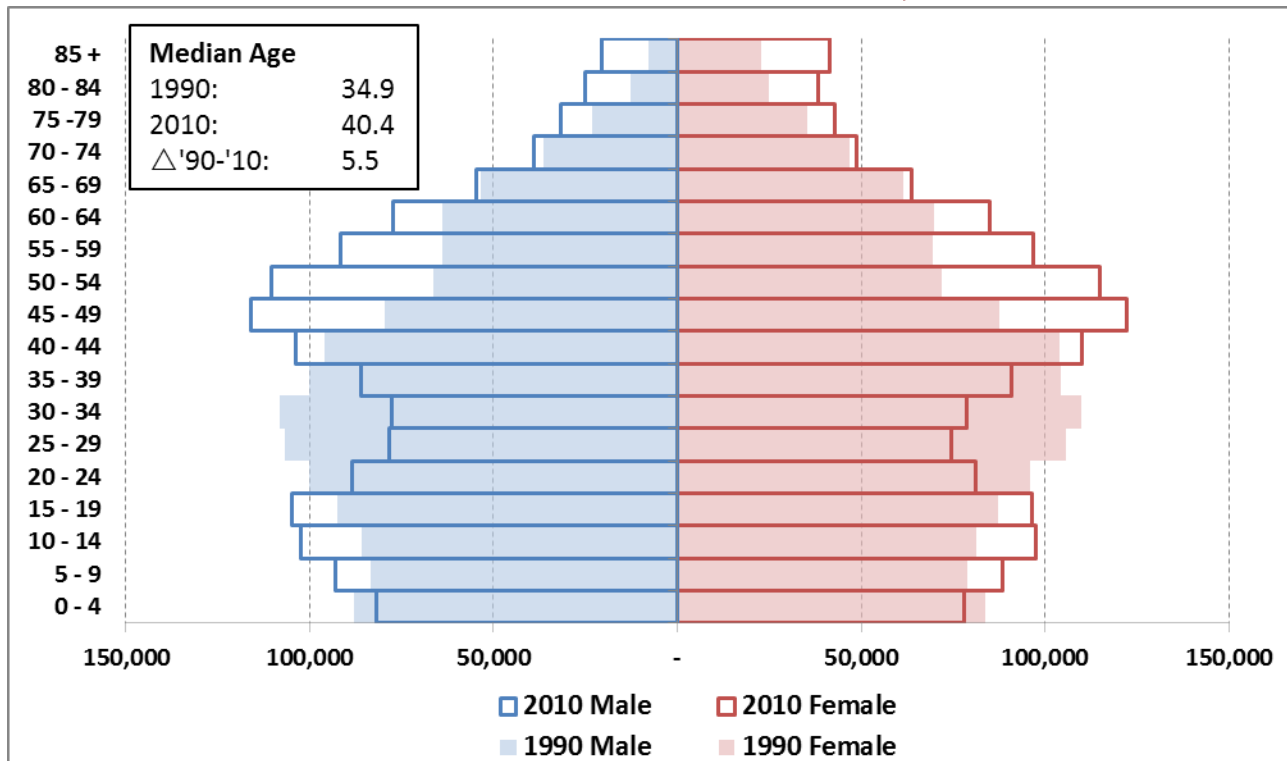
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-9. NEW YORK CITY POPULATION BY AGE AND GENDER, 1990-2011



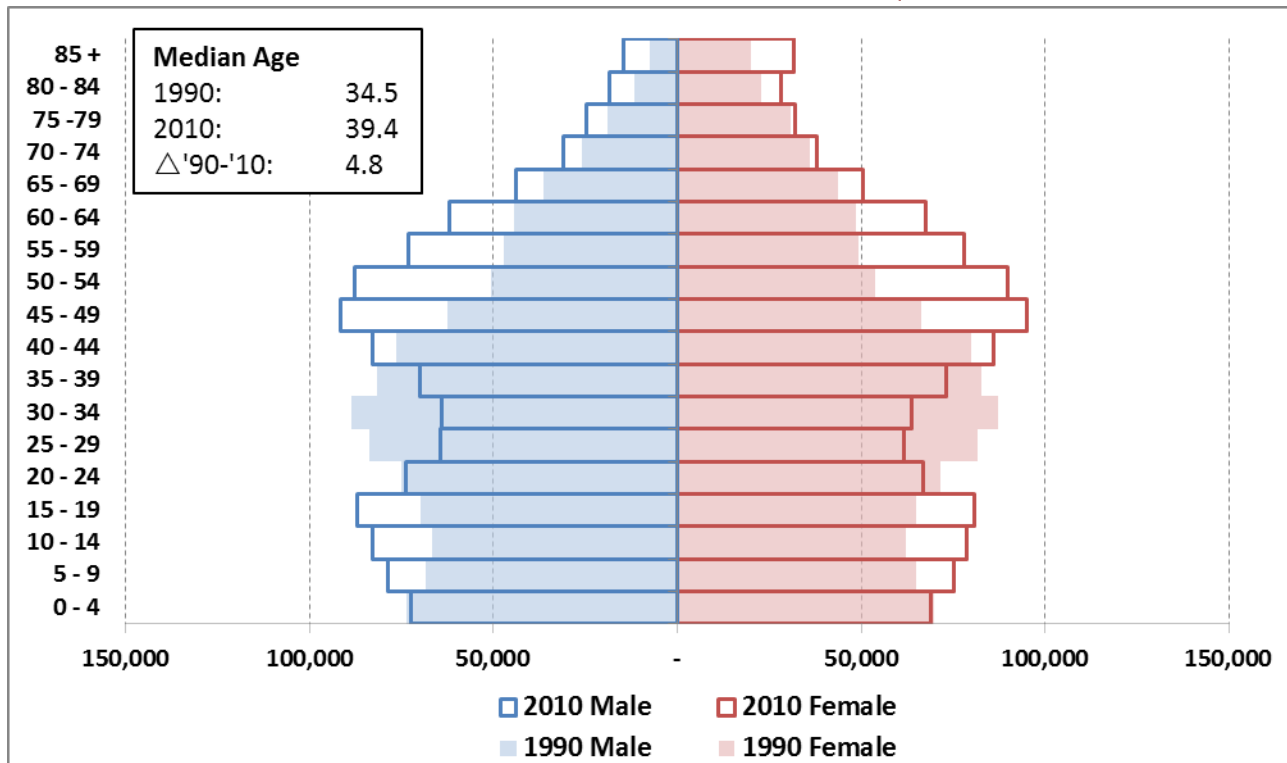
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-10. LONG ISLAND POPULATION BY AGE AND GENDER, 1990-2011



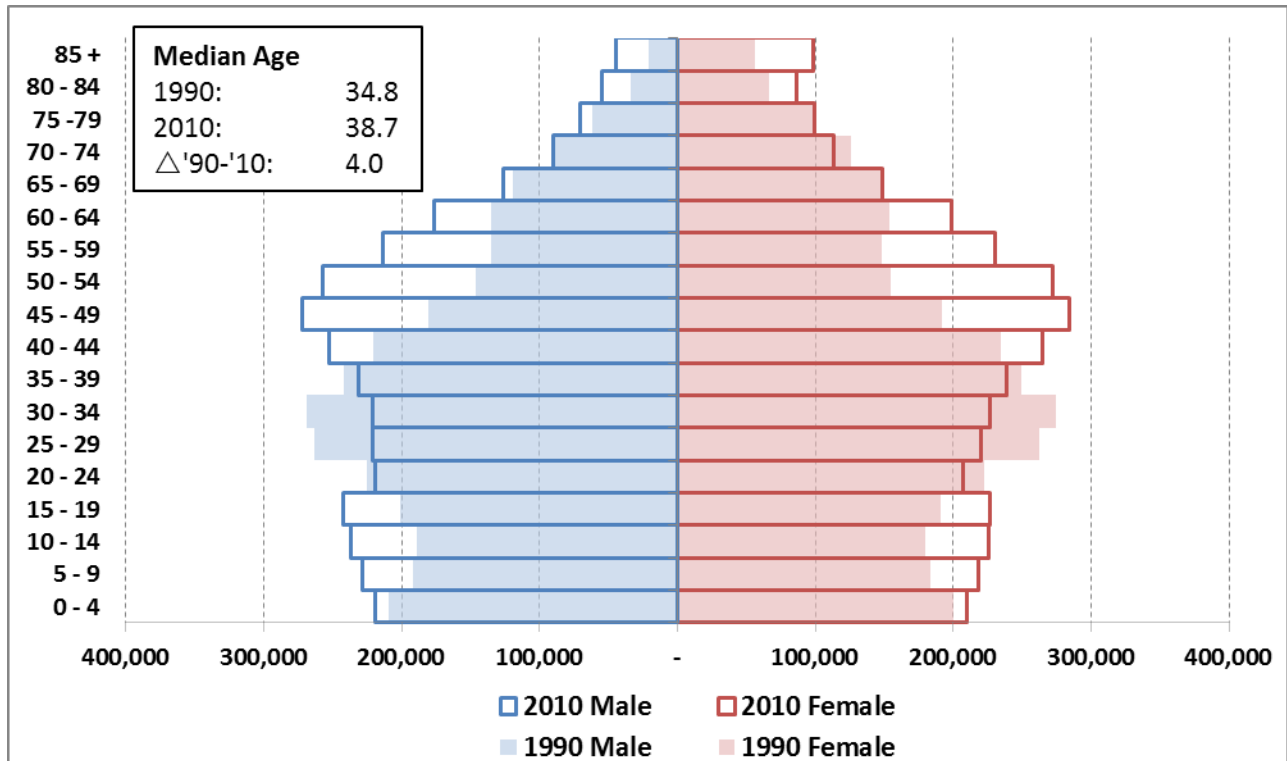
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-11. MID-HUDSON POPULATION BY AGE AND GENDER, 1990-2011



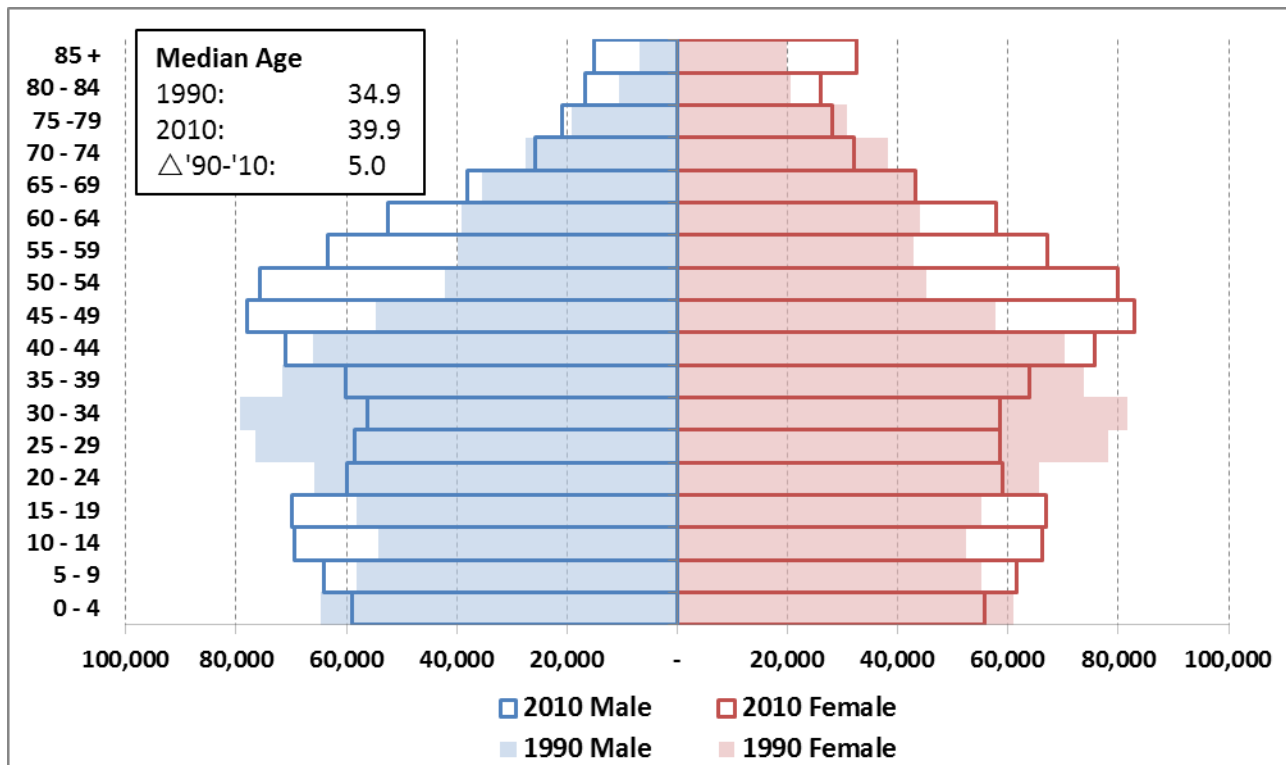
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-12. NEW JERSEY POPULATION BY AGE AND GENDER, 1990-2011



Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-13. CONNECTICUT POPULATION BY AGE AND GENDER, 1990-2011



Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

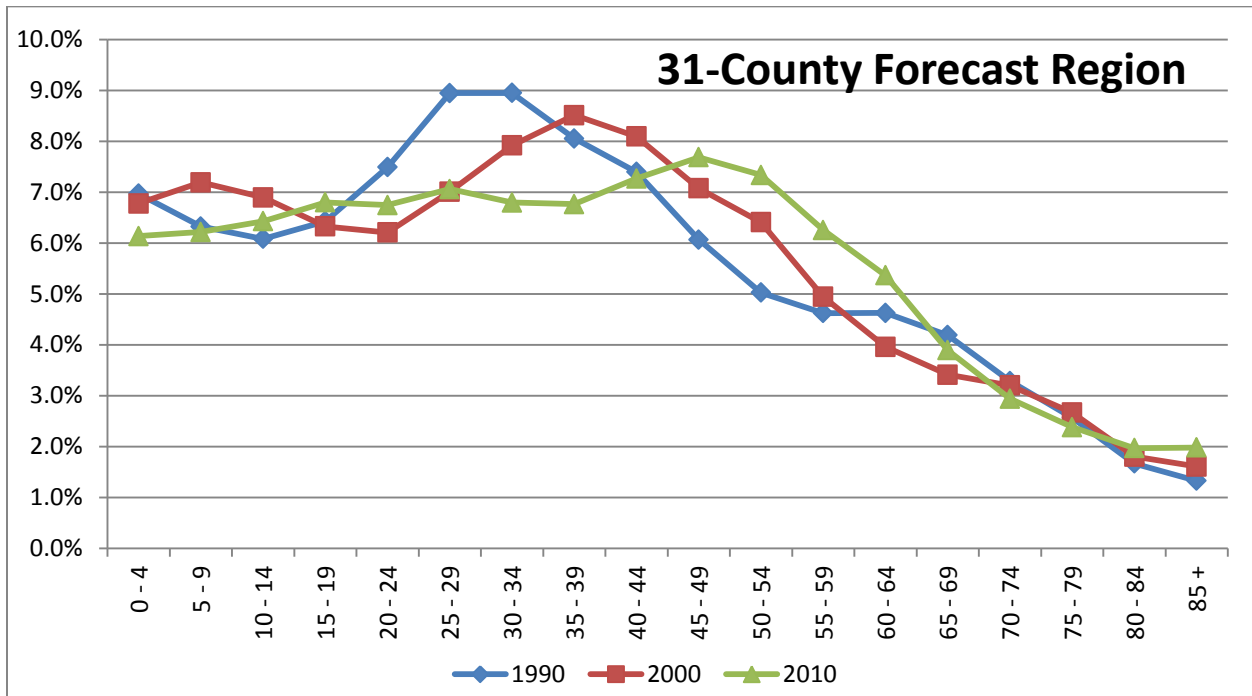
TABLE 2-2. SUMMARY OF GROWTH RATES IN POPULATION BY 5-YEAR COHORT, 1990-2010

	31-County Region		NYC		Long Island		Mid-Hudson		New Jersey		Connecticut	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
85 +	91.2%	56.1%	48.3%	31.2%	159.7%	82.1%	95.3%	56.9%	115.1%	76.1%	119.8%	63.7%
80 - 84	50.4%	21.0%	22.7%	3.0%	100.6%	54.0%	61.0%	23.8%	60.9%	29.9%	57.5%	26.7%
75 - 79	14.3%	-4.0%	3.5%	-14.4%	37.1%	21.5%	31.0%	3.7%	14.5%	-1.1%	9.1%	-8.7%
70 - 74	5.6%	-5.1%	8.9%	-3.9%	7.6%	4.4%	19.5%	5.3%	1.1%	-9.5%	-6.7%	-16.5%
65 - 69	6.3%	0.6%	4.1%	-2.2%	2.3%	3.7%	20.7%	15.3%	5.6%	-1.4%	7.7%	-0.6%
60 - 64	28.8%	28.5%	26.0%	26.7%	21.0%	21.6%	40.0%	39.2%	30.5%	29.5%	34.1%	31.6%
55 - 59	50.1%	49.9%	41.8%	46.0%	43.6%	39.4%	55.5%	58.0%	58.5%	55.1%	58.6%	56.2%
50 - 54	62.6%	61.3%	43.5%	45.7%	66.3%	59.7%	72.9%	67.5%	75.9%	75.5%	79.3%	76.4%
45 - 49	41.9%	39.3%	31.2%	29.5%	45.7%	39.5%	46.7%	43.4%	50.5%	48.2%	42.5%	43.5%
40 - 44	9.6%	8.5%	6.6%	6.0%	8.1%	5.9%	8.5%	7.7%	14.6%	13.0%	7.7%	7.8%
35 - 39	-7.7%	-6.0%	-4.7%	-1.8%	-14.0%	-12.8%	-14.4%	-11.6%	-4.2%	-4.3%	-16.0%	-13.5%
30 - 34	-17.0%	-14.5%	-7.5%	-1.6%	-28.2%	-28.3%	-27.5%	-26.9%	-17.9%	-17.5%	-29.3%	-28.3%
25 - 29	-13.9%	-11.1%	-4.4%	3.7%	-26.7%	-29.4%	-22.9%	-24.6%	-16.2%	-16.3%	-23.5%	-25.2%
20 - 24	0.6%	-0.8%	10.4%	11.9%	-11.7%	-15.1%	-1.3%	-6.4%	-3.0%	-7.0%	-8.8%	-10.1%
15 - 19	18.2%	16.5%	15.5%	13.8%	13.2%	10.3%	24.6%	24.4%	20.9%	18.5%	19.9%	21.0%
10 - 14	17.5%	17.0%	5.7%	4.0%	19.4%	19.7%	24.5%	27.1%	25.3%	25.6%	27.9%	26.4%
5 - 9	9.0%	9.1%	-1.5%	-2.0%	11.3%	12.1%	14.8%	15.6%	19.0%	19.4%	10.2%	11.5%
0 - 4	-2.3%	-2.3%	-4.6%	-4.9%	-7.1%	-6.8%	-1.6%	-1.5%	4.4%	4.6%	-8.7%	-8.7%

Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

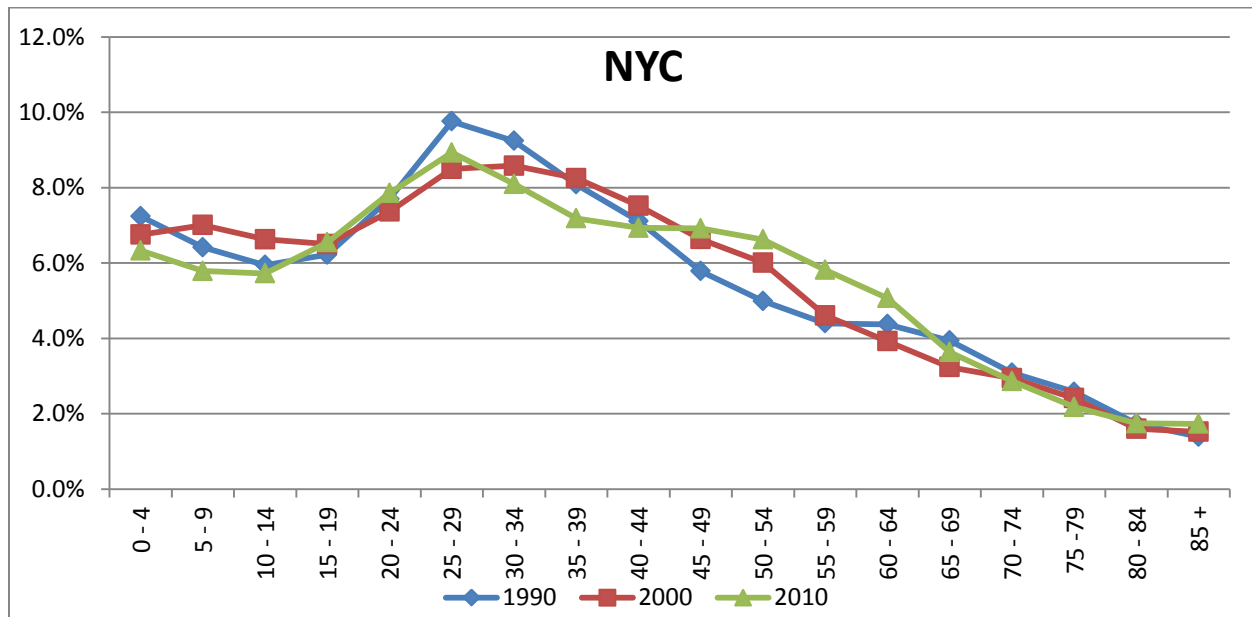
Figure 2-14 through Figure 2-19 show the population distribution over time for each of the subregions, clearly demonstrating the aging of the population between 1990 and 2010. With the exception of NYC, the peak of each graph clearly shifts from the 25-35 cohort ranges in 1990 (blue trace) to the 40-55 cohort ranges in 2010 (green trace). What can also be observed from the charts is the population growth in the 80-84 and 85+ age groups. These two phenomena are a reflection of the gradual ageing of the population described above in Figure 2-8 through Figure 2-13.

FIGURE 2-14. POPULATION DISTRIBUTION IN 31-COUNTY REGION BY 5-YEAR COHORT, 1990-2010



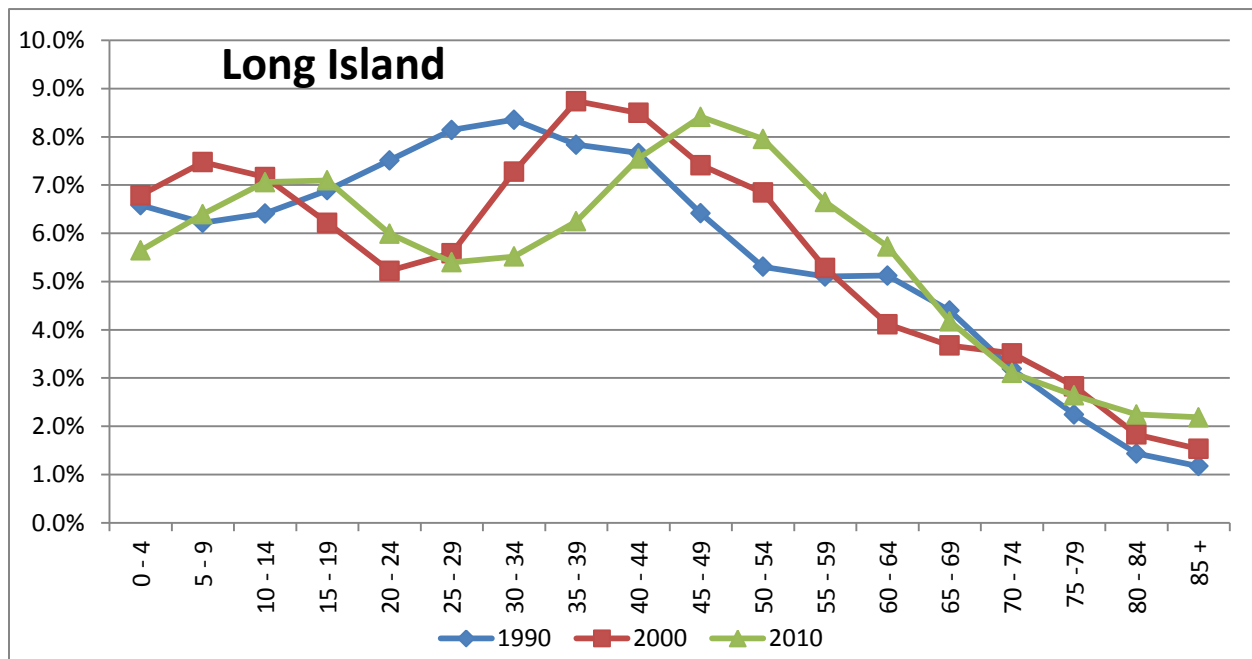
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-15. POPULATION DISTRIBUTION IN NYC BY 5-YEAR COHORT, 1990-2010



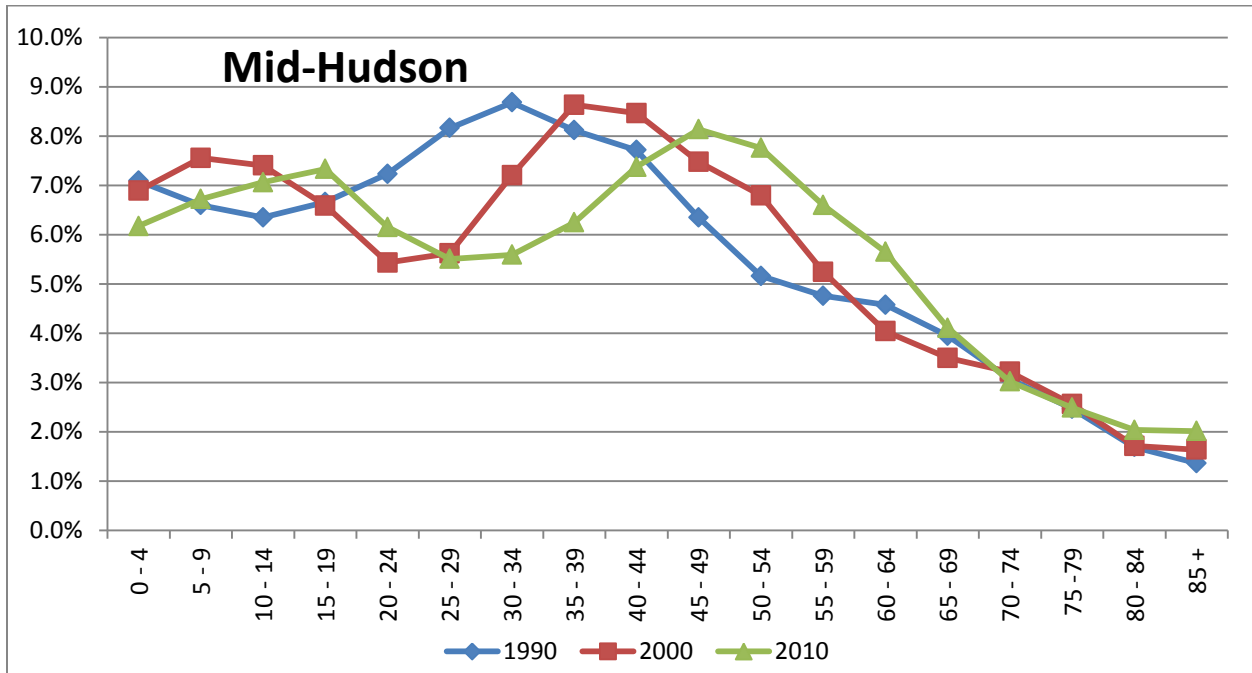
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-16. POPULATION DISTRIBUTION IN LI BY 5-YEAR COHORT, 1990-2010



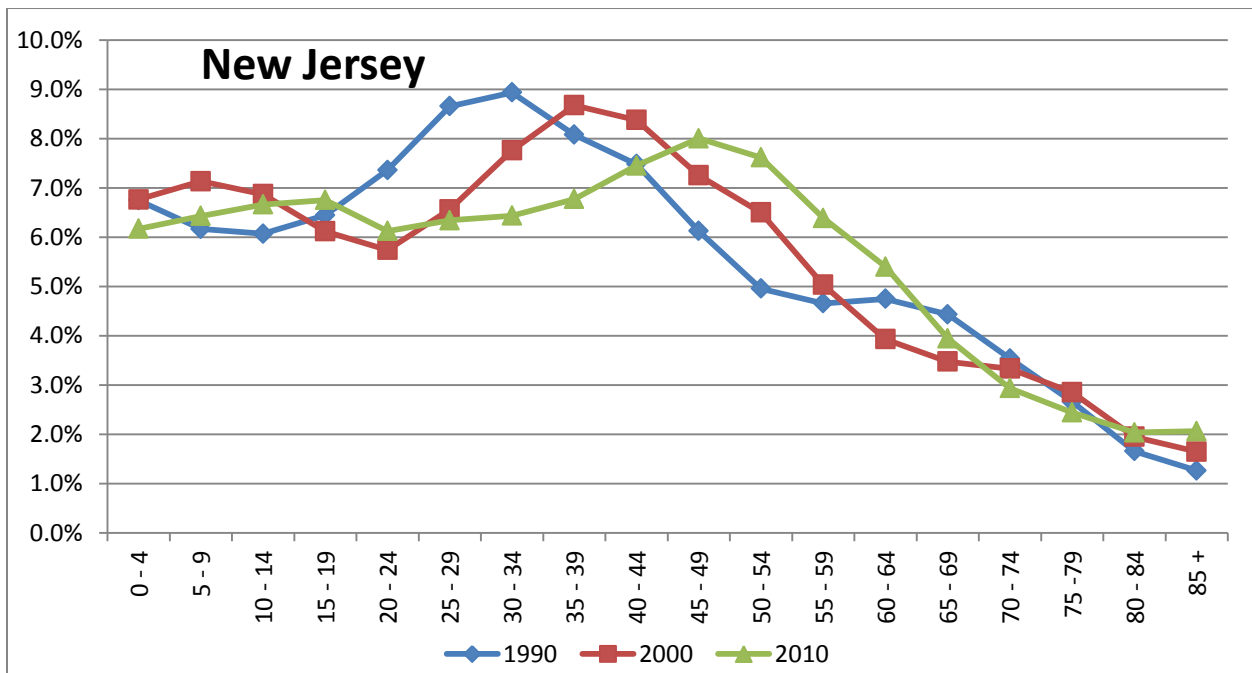
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-17. POPULATION DISTRIBUTION IN MH BY 5-YEAR COHORT, 1990-2010



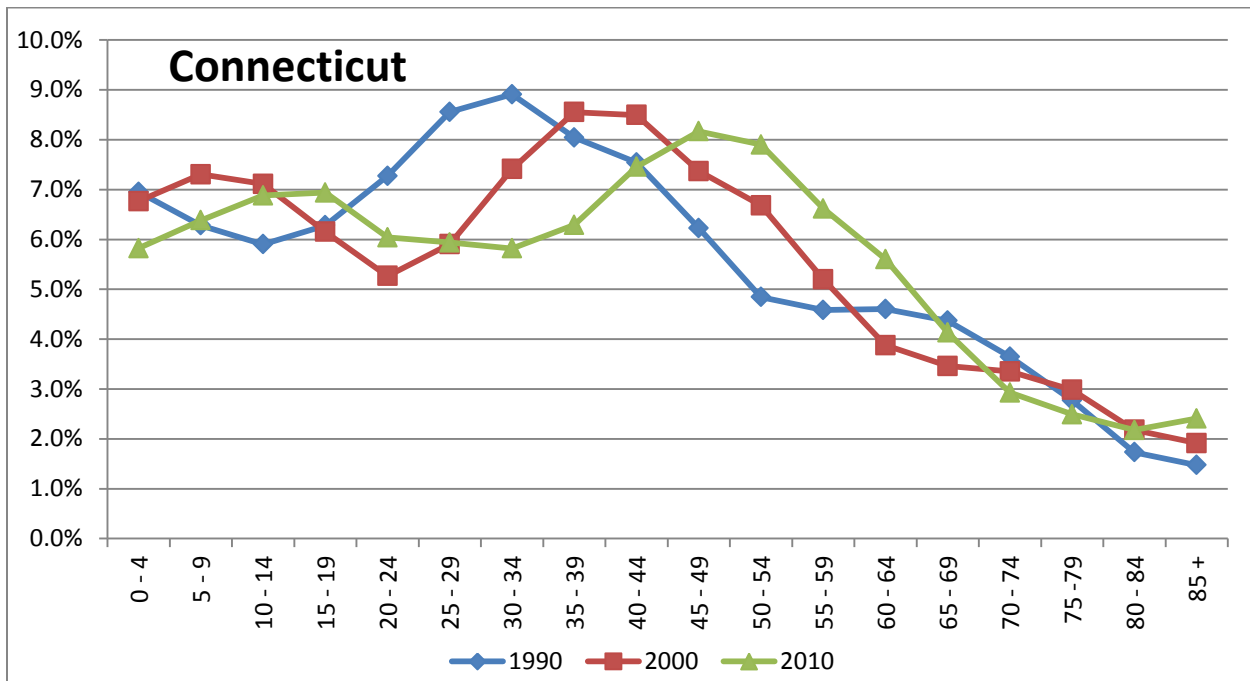
Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-18. POPULATION DISTRIBUTION IN NJ BY 5-YEAR COHORT, 1990-2010



Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

FIGURE 2-19. POPULATION DISTRIBUTION IN CT BY 5-YEAR COHORT, 1990-2010



Source: 1990, 2000, and 2010 Census; DCP adjusted NYC values for 1990 and 2010

2.5 Births & Fertility Trends

2.5.1 Births

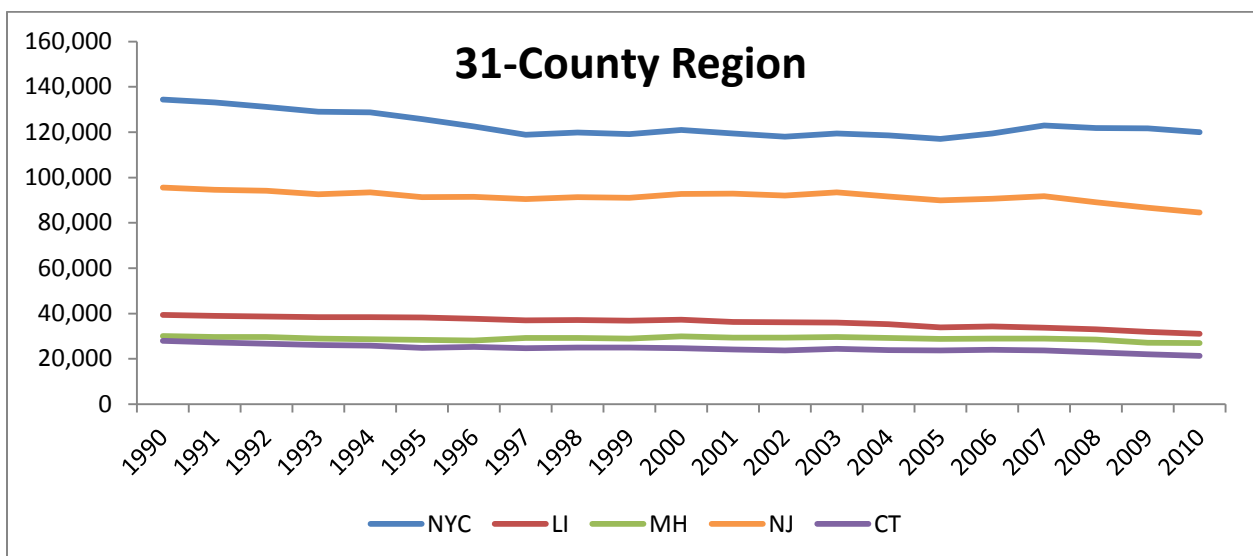
Although relatively stable, the number of births has been gradually declining across the 31-County-Region since 1990 (Table 2-3 and Figure 2-20). The general trend in births displays a fair degree of variation throughout the region; in NYC, there was a relatively sharp drop between 1990 and approximately 1997, which has since leveled off with the overall drop between 1990 and 2010 being -10.7 percent. The fastest relative drop over the past 20 years was in Connecticut where births dropped by 23.6 percent between 1990 and 2010, followed by Long Island at 21.2 percent. New Jersey and Mid-Hudson saw declines of 11.5 percent and 10.2 percent, respectively.

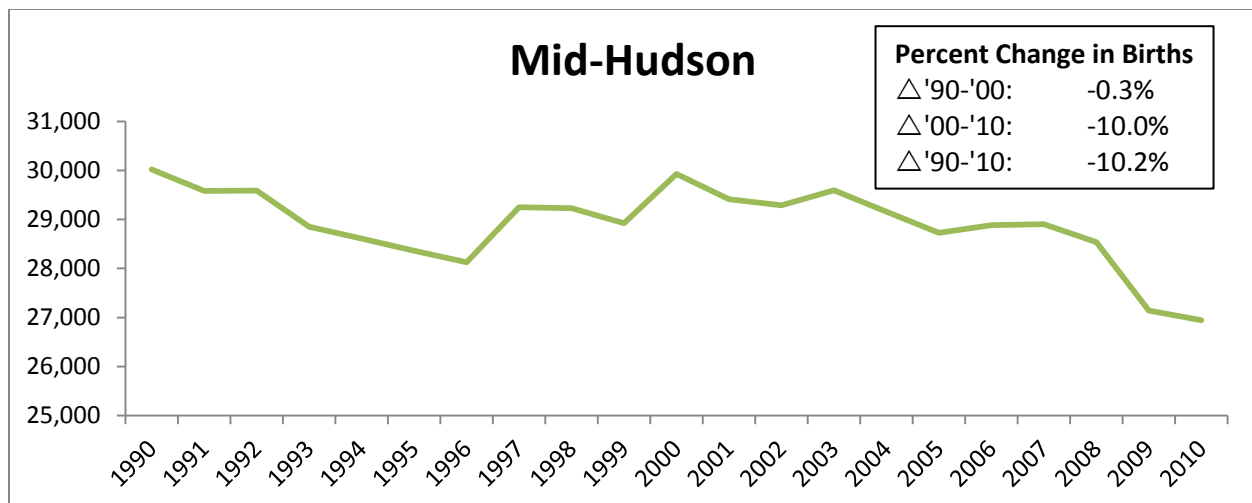
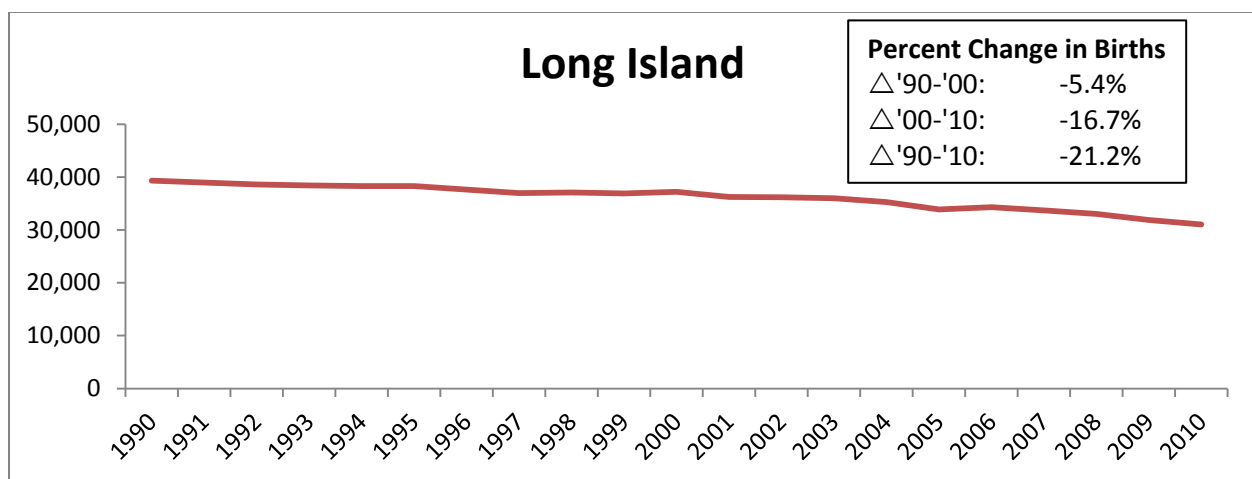
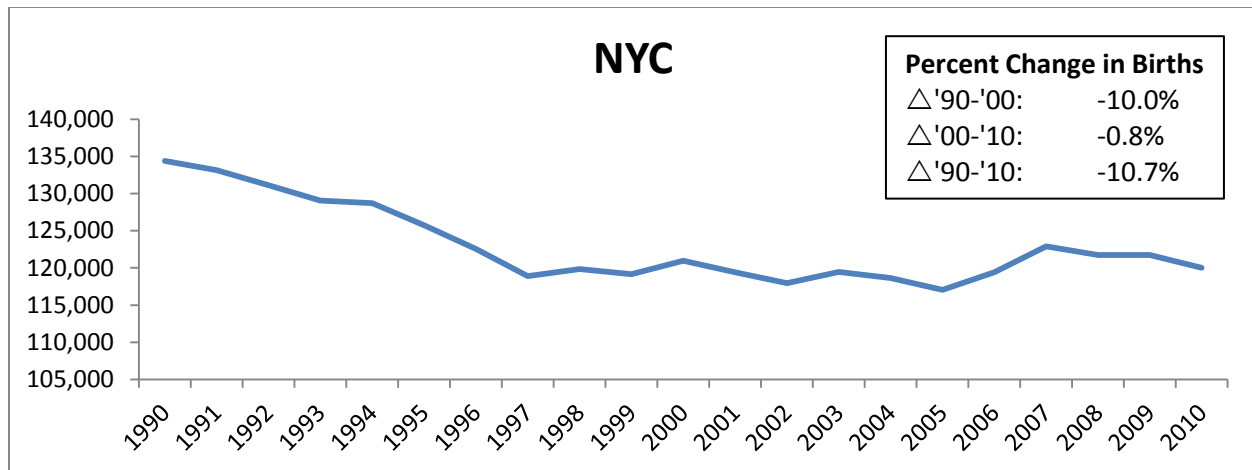
At the county level, Connecticut experienced large drops between 1990 and 2010 in Litchfield (35 percent), New Haven (26 percent) and Fairfield (19 percent). Both Nassau and Suffolk Counties in Long Island had their number of births drop by roughly 21 percent over the past 20 years. In the Mid-Hudson subregion, declines were driven by Ulster (33 percent), Putnam (24 percent) and Sullivan (22 percent). Declines in New Jersey were most notable in Hunterdon (35 percent), Sussex (34 percent), Warren (33 percent) and Essex (28 percent). On the other end of the spectrum, the trend in births has been upward for Ocean County in New Jersey, and Rockland County in Mid-Hudson. The number of births in Ocean County rose by 26 percent over the last 20 years, while Rockland County experienced a 20 percent increase.

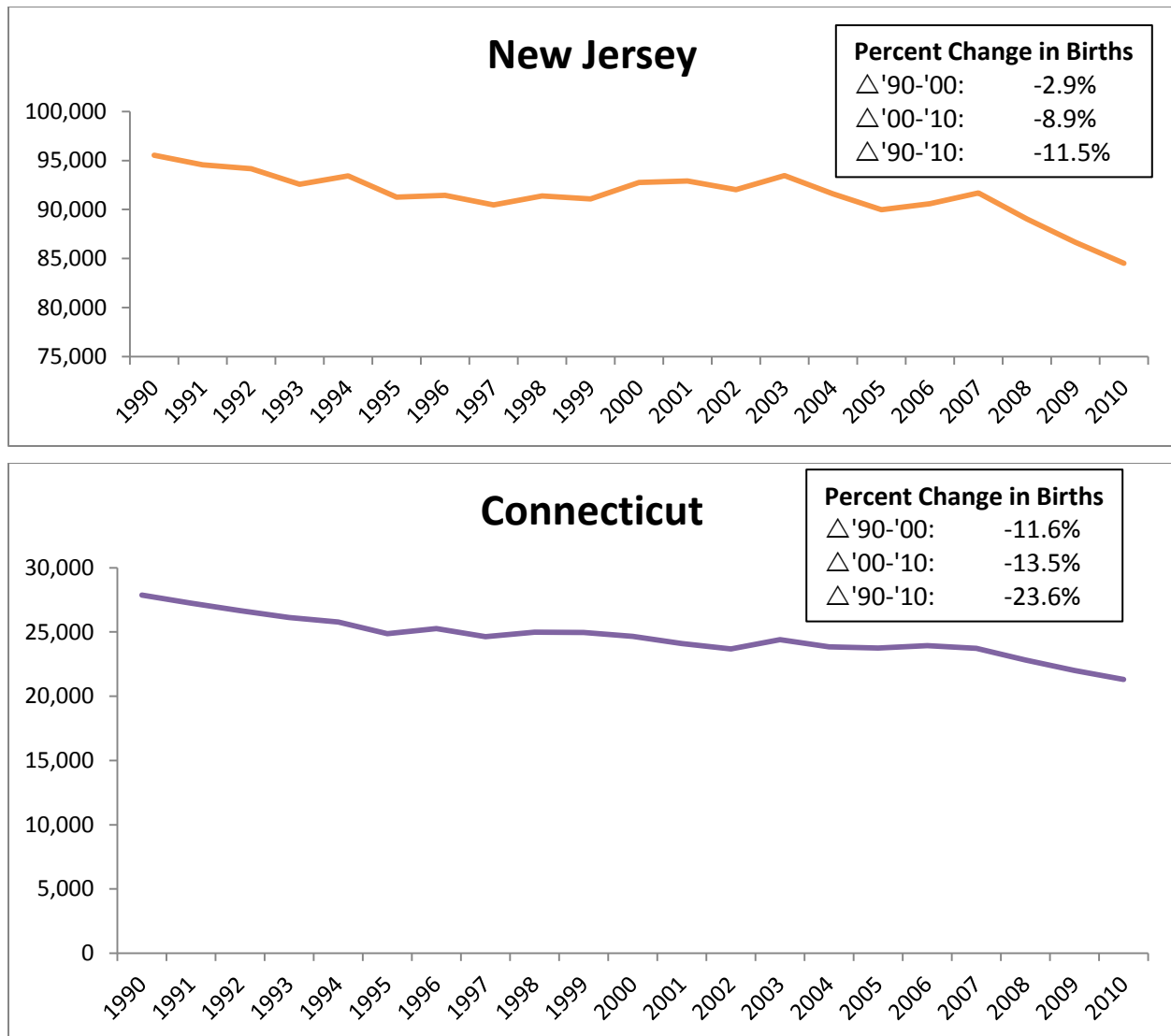
TABLE 2-3. 31-COUNTY REGION BIRTHS (000s), 1990-2010

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Δ (1990-2010)
Forecast Region	327.2	323.5	320.2	315.0	314.9	308.5	305.0	300.2	302.6	301.0	305.5	302.1	299.1	302.9	298.5	293.4	297.1	300.9	295.2	289.4	283.8	-13.3%
Bronx County	27.0	26.9	26.1	25.7	25.4	24.3	23.3	22.5	22.8	22.4	22.8	23.0	22.4	22.6	22.2	22.0	22.5	22.9	23.0	23.0	22.4	-17.0%
Kings County	46.5	45.6	44.7	43.5	43.3	42.0	40.8	39.7	40.0	39.6	39.9	40.0	39.4	39.5	39.7	39.3	40.4	41.9	41.6	42.1	41.8	-10.1%
New York County	22.3	21.9	21.5	21.1	21.1	20.5	19.9	19.4	19.4	19.7	20.1	20.0	19.8	20.6	20.5	20.1	20.3	20.7	20.3	20.2	19.7	-11.4%
Queens County	32.3	32.4	32.4	32.5	32.9	32.9	32.6	31.6	31.9	31.7	32.3	30.8	30.5	30.8	30.4	30.0	30.3	31.6	31.1	30.7	30.5	-5.6%
Richmond County	6.4	6.4	6.5	6.2	6.0	6.0	5.8	5.7	5.8	5.8	5.9	5.6	5.8	5.9	5.8	5.6	5.8	5.9	5.8	5.7	5.6	-12.4%
NYC	134.4	133.1	131.1	129.0	128.7	125.7	122.6	118.9	119.9	119.2	121.0	119.4	117.9	119.5	118.6	117.1	119.4	122.9	121.7	121.7	120.0	-10.7%
Nassau County	18.1	17.8	18.0	17.9	17.9	18.0	17.7	17.1	17.2	16.9	17.0	16.3	16.3	16.0	15.6	15.1	15.2	15.2	15.0	14.7	14.2	-21.7%
Suffolk County	21.2	21.2	20.6	20.5	20.5	20.3	19.9	19.9	19.9	19.9	20.2	20.0	19.9	20.0	19.6	18.8	19.1	18.5	18.0	17.2	16.8	-20.8%
LI	39.3	39.0	38.6	38.4	38.3	38.3	37.6	37.0	37.1	36.9	37.2	36.2	36.2	36.0	35.3	33.9	34.3	33.7	33.0	31.9	31.0	-21.2%
Dutchess County	3.5	3.5	3.5	3.3	3.2	3.2	3.1	3.4	3.3	3.2	3.3	3.2	3.2	3.3	3.2	3.2	3.0	3.1	2.9	2.9	2.9	-19.0%
Orange County	5.1	5.0	5.1	4.9	4.8	4.7	4.8	4.9	4.8	4.9	4.9	4.9	5.0	5.1	5.2	5.2	5.4	5.3	5.4	5.1	5.0	-2.6%
Putnam County	1.2	1.1	1.2	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.0	1.0	1.0	1.0	0.9	0.9	-23.5%
Rockland County	3.8	3.7	3.8	3.8	3.9	3.8	3.9	4.3	4.4	4.5	4.6	4.6	4.5	4.5	4.5	4.6	4.6	4.8	5.0	4.6	4.5	20.3%
Sullivan County	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.9	1.0	0.9	1.0	0.9	0.8	-22.0%
Ulster County	2.5	2.4	2.4	2.2	2.1	2.1	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.7	1.7	-32.6%
Westchester County	12.8	12.9	12.8	12.5	12.6	12.6	12.4	12.7	12.8	12.6	13.3	12.8	12.8	12.8	12.4	12.1	11.9	11.9	11.5	11.1	11.1	-13.2%
MH	30.0	29.6	29.6	28.9	28.6	28.4	28.1	29.2	29.2	28.9	29.9	29.4	29.3	29.6	29.2	28.7	28.9	28.9	28.5	27.1	26.9	-10.2%
Bergen County	10.4	10.6	10.7	10.6	11.0	10.7	10.8	10.7	10.8	10.6	10.9	10.5	10.6	10.8	10.4	9.9	9.8	10.0	9.6	9.4	9.3	-10.2%
Essex County	14.4	14.1	13.6	13.2	13.1	12.7	12.5	12.3	12.1	12.2	12.1	12.2	12.1	12.1	12.0	11.5	11.8	11.9	11.8	11.5	10.4	-27.8%
Hudson County	9.8	9.6	9.6	9.1	9.1	9.0	8.9	8.7	8.7	8.9	8.9	8.9	8.7	8.9	8.9	9.1	9.3	9.7	9.7	9.6	10.0	2.8%
Hunterdon County	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.4	1.5	1.5	1.4	1.5	1.5	1.4	1.3	1.3	1.3	1.2	1.1	1.0	1.0	-34.8%
Mercer County	5.1	5.1	5.0	4.7	4.5	4.5	4.5	4.5	4.4	4.4	4.7	4.6	4.6	4.5	4.6	4.5	4.6	4.7	4.6	4.5	4.4	-13.2%
Middlesex County	10.3	10.4	10.3	10.2	10.2	10.1	10.0	9.8	10.2	10.0	10.6	10.6	10.6	11.0	10.5	10.5	10.8	10.9	10.6	10.2	10.1	-2.1%
Monmouth County	8.4	8.3	8.1	8.1	8.2	8.1	8.2	8.2	8.2	8.0	8.1	8.1	7.9	8.1	7.6	7.6	7.4	7.2	6.9	6.6	6.3	-24.3%
Morris County	5.9	5.8	5.9	6.0	6.2	6.1	6.2	6.1	6.5	6.4	6.4	6.5	6.2	6.4	6.1	5.8	5.7	5.5	5.4	5.1	4.9	-17.2%
Ocean County	6.3	6.1	6.1	6.1	6.2	6.1	6.2	6.2	6.4	6.4	6.5	6.9	7.1	7.4	7.7	7.8	7.7	8.2	7.9	8.0	7.9	26.6%
Passaic County	8.4	8.1	8.2	8.3	8.3	8.1	7.9	7.9	7.9	7.7	7.9	7.9	7.7	7.7	7.6	7.6	7.6	7.9	7.5	7.4	7.2	-14.2%
Somerset County	4.0	3.9	4.2	4.2	4.3	4.0	4.1	4.3	4.4	4.4	4.4	4.5	4.5	4.4	4.3	4.2	4.0	4.1	3.9	3.7	3.6	-11.5%
Sussex County	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.6	1.7	1.6	1.6	1.6	1.5	1.5	1.4	1.4	-33.5%
Union County	7.6	7.6	7.7	7.4	7.7	7.4	7.5	7.3	7.4	7.4	7.7	7.6	7.6	7.6	7.6	7.4	7.6	7.6	7.4	7.3	7.0	-7.6%
Warren County	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.4	1.3	1.3	1.2	1.3	1.3	1.1	1.0	1.0	-32.6%
NJ	95.5	94.6	94.2	92.6	93.4	91.3	91.4	90.5	91.4	91.1	92.8	92.9	92.0	93.5	91.6	90.0	90.6	91.7	89.0	86.7	84.5	-11.5%
Fairfield County	13.0	12.7	12.6	12.5	12.5	12.3	12.5	12.3	12.5	12.5	12.5	11.9	11.7	12.2	11.8	11.7	11.8	11.4	11.1	10.9	10.5	-19.4%
Litchfield County	2.4	2.3	2.2	2.2	2.2	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.7	1.6	1.6	-35.0%
New Haven County	12.4	12.2	11.8	11.4	11.1	10.6	10.7	10.4	10.5	10.4	10.2	10.2	10.1	10.3	10.2	10.2	10.2	10.5	10.0	9.6	9.2	-25.6%
CT	27.9	27.3	26.7	26.1	25.8	24.9	25.3	24.6	25.0	25.0	24.6	24.1	23.7	24.4	23.8	23.7	23.9	23.7	22.8	22.0	21.3	-23.6%

FIGURE 2-20. 31-COUNTY REGION BIRTHS BY SUBREGION, 1990-2010







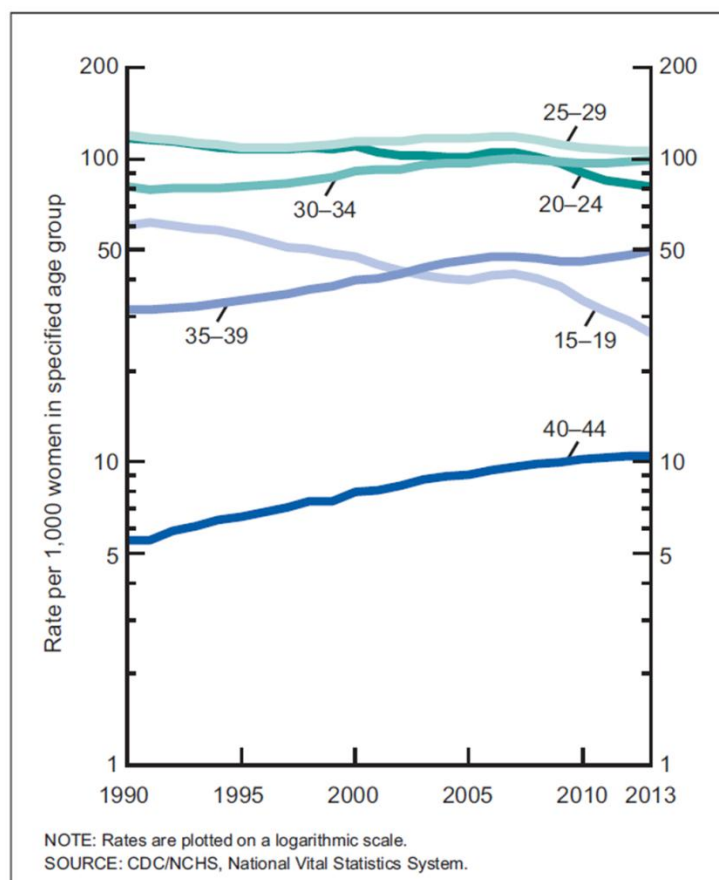
Source: New York, New Jersey, Connecticut State Departments of Health

2.5.2 Fertility

The trends in number of live births described in the previous sub-section are the result of changes in the fertility rates of women in reproductive years – primarily ages 15-45 (although there are a number of births to women outside of that age range, the numbers recorded are very small and therefore the discussion of fertility rates will focus on 15-45 age range).

To examine fertility trends across time and geography, age-specific fertility rates (ASFRs) were calculated or pulled from state departments of health, and also from the National Center for Health Statistics (NCHS). Figure 2-21 displays recent national trends in age-specific fertility rates plotted on a logarithmic scale. The trends in Figure 2-21 generally show that fertility rates (defined as live births per 1,000 women) between 1990 and 2013, have declined in the younger age cohorts (30 and below), and appear to have increased in older age cohorts.

FIGURE 2-21. AGE-SPECIFIC FERTILITY RATES, NATIONAL, 1990–2013



The top half of Figure 2-22 (plotted on a linear scale) shows that local trends in the 31-County region track movements at the national level and are likely driven by similar factors affecting the national trends. Although tracing similar trajectories, ASFRs for women within the 31-County Region stand below national rates for women below 30, and conversely stand above national rates for women 30 and above.

Nationally, the fertility rate for U.S. teenagers fell 57 percent between 1991 and 2013, with significant declines in all states during that time period; New York, New Jersey and Connecticut were among the ten lowest states for teen birth rates in 2012.³ This decline has been attributed to “a variety of initiatives at the federal, state, and local levels, including public, private, and joint efforts to influence the attitudes and behaviors of teenagers with a strong focus on pregnancy prevention through abstinence and, for sexually active teenagers, the use of effective contraception.”⁴ Many of these initiatives were in response to a sharp increase in teen birth rates from 1986 through 1991.

³ Ventura, S. J., Hamilton B.E., & Mathews, T.J., (2014) *National and State Patterns of Teen Births in the United States, 1940–2013*, National Vital Statistics Reports. http://www.cdc.gov/nchs/data/nvsr/nvsr63/NVSR63_04.pdf

⁴ Ibid

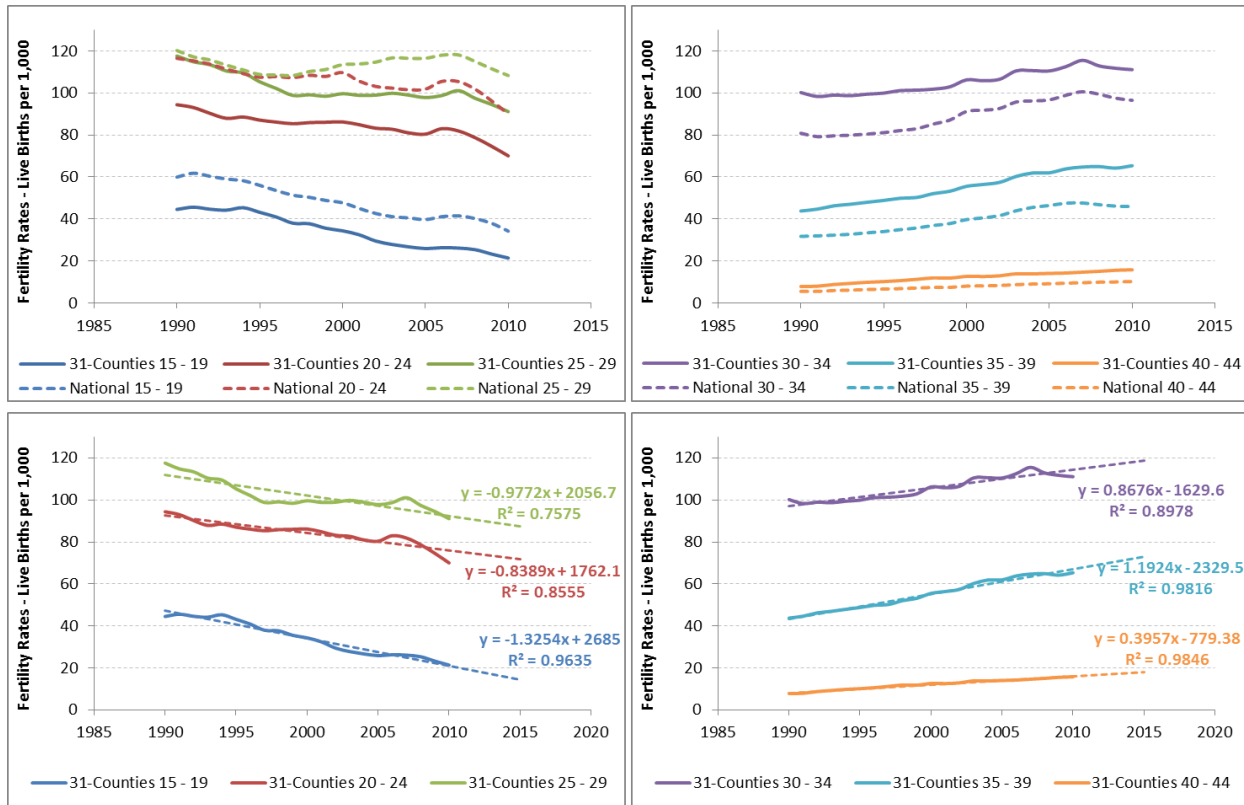
With regard to the increasing fertility rate among those over 30, in 2012 there were more than nine times as many first births to women aged 35 years and older than there were four decades earlier.⁵ Nationally, the fertility rate for women aged 40–44 giving birth to their first child was steady in the 1970s and started increasing in the 1980s; the rate more than doubled from 1990 to 2012. For women 35–39, birth rates rose 64 percent between 1990 and 2012 and between 2000 and 2012; New York was one of eight states (including Washington DC) to see the birth rate rise by over 40 percent.⁶ The trend demonstrates that since 1990 (and earlier), women have been deferring childbirth and starting families later than in previous periods.

The lower half of Figure 2-22 presents the ASFRs for the 31-County Region, together with best fit trend lines associated with each age group. The slopes of the best fit trend lines provide an indication of the magnitude of the trend (annual increase/decrease in live births per 1,000 women), while the R^2 measure (which is simply the square of the correlation coefficient – R) indicates the strength (statistical significance) of the observed linear correlation between ASFR and time – an R^2 of 1.0 indicates a perfectly linear correlation. All the linear trend lines display a statistically significant relationship (measured by the R^2) between ASFR and time over the 20-year observation period: the lowest correlation coefficient that corresponds to the R^2 of 0.7575 in Figure 2-22, implies that there is less than a 0.1 percent chance that observed trend is a random occurrence.

⁵ Mathews, T.J., & Hamilton B.E., (2014) *First Births to Older Women Continue to Rise*, NCHS Data Brief.
<http://www.cdc.gov/nchs/data/databriefs/db152.pdf>

⁶ Ibid

FIGURE 2-22. AGE-SPECIFIC FERTILITY RATES, NATIONAL & 31-COUNTY REGION, 1990-2010

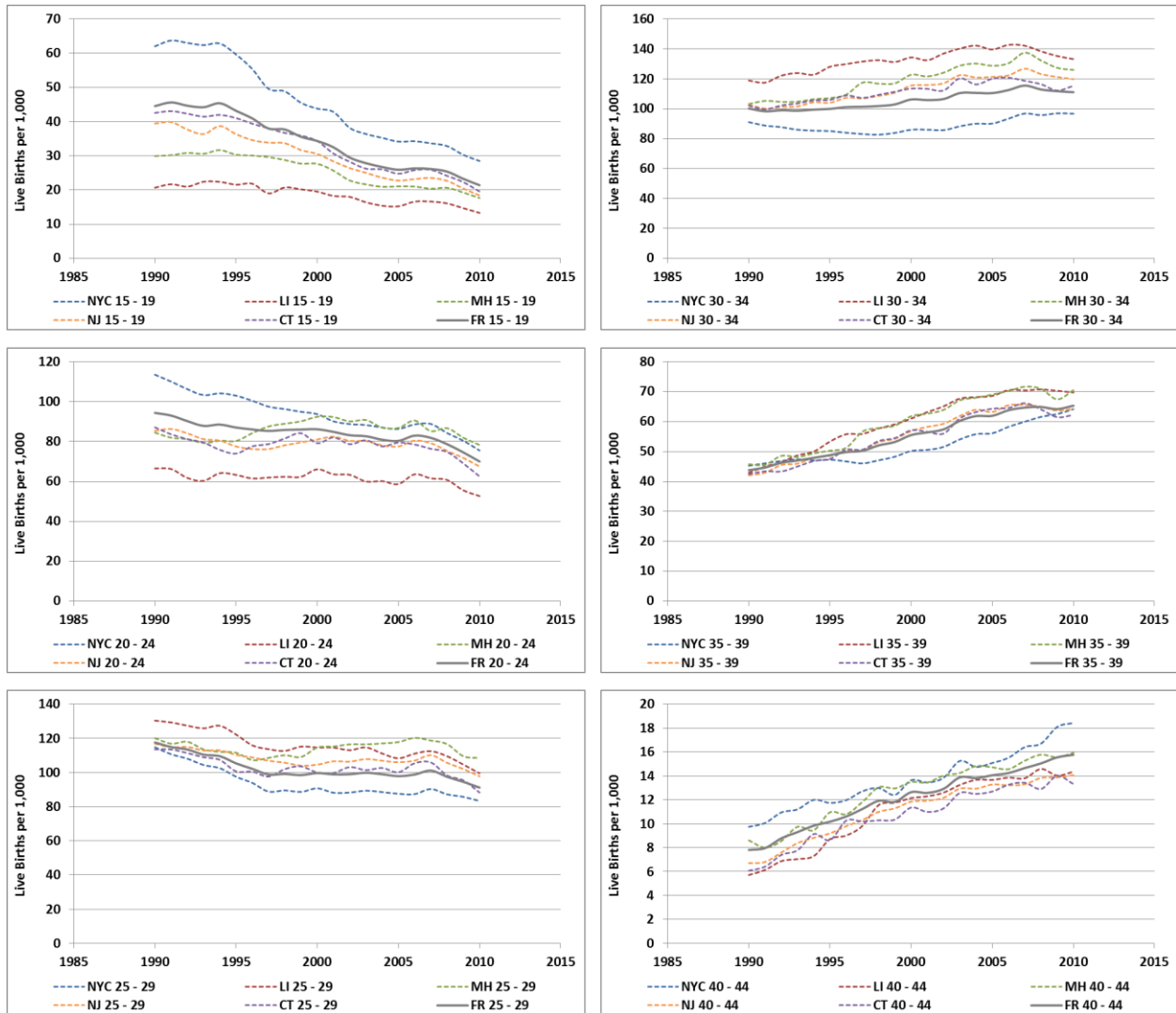


Source: National Center for Health Statistics, & New York, New Jersey, Connecticut State Departments of Health

The linear trend observed among women 15-19 has both the highest magnitude of annual decline between 1990 and 2010 (1.3254 live births per 1,000), as well as the strongest correlation (0.9635). The linear trends of the ASFRs of women 30 and over generally display stronger linear correlations than those below 30, with fertility rates of women 35-39 showing the strongest annual increase (1.1924 births per 1,000). Both the magnitude and strength of the trends in ASFRs will have an impact on the assumptions made regarding future ASFRs to be applied during the forecasting process.

Figure 2-23 further explores the various ASFRs presented in the lower half of Figure 2-22 on a subregional basis. For teens (15-19), New York City has experienced the sharpest drop in fertility, rates with the most substantial decline between 1990 and 2000, reflecting the trend in declining births previously mentioned. The remaining four subregions declined as well, albeit at a slower pace than New York City. New York City experienced a comparatively steeper drop among 20-24 year old women as well. In the 25-29 cohort, the subregions all experienced gradual declines in the fertility rate over the past 20 years. For those above 30-34, fertility rates rose gradually, with Mid-Hudson experiencing the largest growth rate between 1990 and 2010. There was a gradual increase in fertility among 35-39 year olds, while the rate for those between 40 and 44 increased dramatically. Long Island's rate for women 40-44, in particular, rose dramatically from 5.71 births per 1,000 in 1990 to 14.35 births per 1,000 in 2010, an increase of 151 percent.

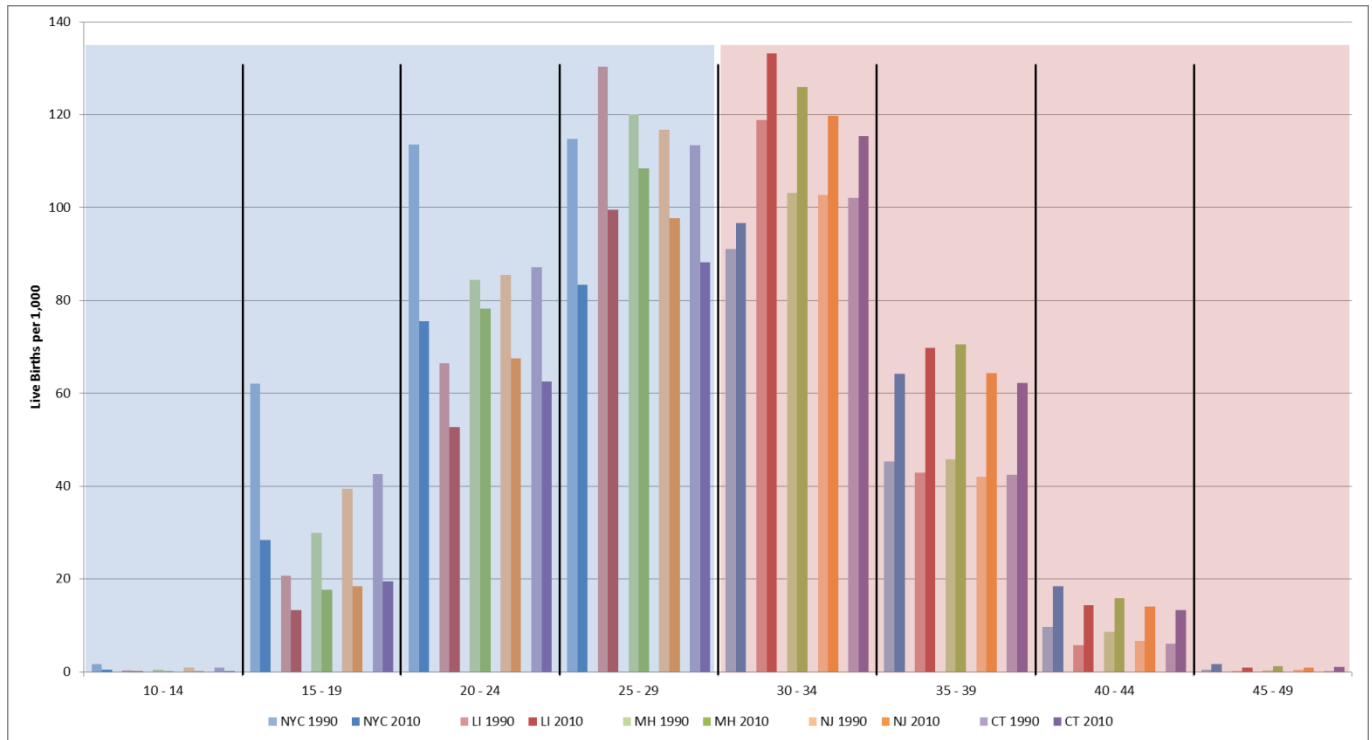
FIGURE 2-23. AGE-SPECIFIC FERTILITY RATES BY SUBREGION, 1990-2010



Source: New York, New Jersey, Connecticut State Departments of Health

Figure 2-24 summarizes the ASFR movements presented in the six charts in Figure 2-23 and emphasizes the aforementioned trend across the region of declining fertility rates for women under 30 and the corresponding increase for those over 30. The light blue shading on the left-hand side of the chart highlights the declining fertility rates, while the light red shading on the right emphasizes the increasing rates. While New York City had a higher fertility rate than the rest of the subregions in younger age cohorts, the sharp declines in fertility rates discussed above has brought NYC rates closer to the other subregions rates (particularly in the 20-24 cohort).

FIGURE 2-24. AGE-SPECIFIC FERTILITY RATES BY SUBREGION, 1990-2010



Source: New York, New Jersey, Connecticut State Departments of Health

The Total Fertility Rate (TFR) estimates the number of births that a hypothetical group of 1,000 women would have over their lifetimes, based on the age-specific birth rates in a given year. It is calculated by summing the ASFR's (calculated on an annual basis) and multiplying by five to account for five year interval within each age cohort. Table 2-4 provides a summary of TFRs for all 31 counties. Since 1990, there have generally been declines in New York City, Long Island, New Jersey and Connecticut; Mid-Hudson has experienced positive growth overall. It should be noted that the TFR does not account for the proportional distribution of women in each reproductive age group and therefore trends in ASFRs could deviate from trends in actual births. In Nassau, Orange, Putnam, Westchester, Bergen, Hudson, Middlesex, Morris and Union this was the case.

TABLE 2-4. TOTAL FERTILITY RATES (TFR) BY SUBREGION, 1990-2010

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Δ (1990-2010)
Forecast Region	2049.2	2029.8	2019.8	1995.8	2011.1	1979.3	1961.0	1931.5	1949.1	1947.1	1979.4	1961.9	1949.4	1982.0	1971.6	1959.8	2000.3	2028.1	1979.1	1927.3	1881.5	-8.2%
Bronx County	2652.4	2634.7	2563.1	2516.7	2483.9	2383.6	2284.1	2180.3	2189.8	2144.6	2165.9	2174.2	2112.3	2133.3	2112.2	2122.5	2187.4	2211.3	2207.5	2182.9	2114.8	-20.3%
Kings County	2408.3	2349.3	2310.3	2248.5	2247.2	2195.6	2136.4	2071.2	2066.3	2042.3	2057.2	2047.5	2010.7	2022.9	2048.1	2043.4	2101.3	2162.8	2116.7	2103.0	2067.1	-14.2%
New York County	1816.1	1791.6	1768.0	1736.4	1720.6	1661.7	1587.4	1529.4	1527.8	1540.6	1562.6	1536.2	1509.0	1547.8	1530.7	1496.7	1502.6	1512.2	1483.6	1478.8	1450.3	-20.1%
Queens County	2001.6	1975.0	1969.5	1965.9	1987.5	1972.3	1941.3	1855.7	1849.2	1823.3	1854.5	1777.1	1771.6	1809.4	1816.5	1818.6	1849.0	1918.8	1868.3	1822.1	1799.9	-10.1%
Richmond County	2015.1	1995.9	2012.3	1916.5	1903.7	1902.7	1851.6	1819.9	1830.8	1852.3	1887.3	1787.3	1855.7	1899.5	1888.7	1834.1	1926.2	1941.5	1886.9	1875.7	1838.2	-8.8%
NYC	2193.0	2157.3	2126.0	2085.1	2081.4	2031.2	1972.1	1897.5	1896.1	1876.6	1899.9	1864.8	1840.3	1867.1	1866.3	1855.7	1895.9	1939.7	1902.7	1880.9	1844.3	-15.9%
Nassau County	1855.9	1837.9	1874.7	1883.7	1911.4	1950.1	1929.3	1896.4	1928.6	1932.1	1961.4	1933.2	1983.0	1984.6	1977.0	1960.0	2017.2	2044.4	2023.2	1962.4	1885.6	1.6%
Suffolk County	1990.6	2015.4	1980.7	1996.9	2026.9	2024.7	2012.8	2023.3	2047.3	2071.3	2116.0	2110.3	2112.8	2139.3	2134.5	2086.5	2169.3	2138.4	2089.3	1998.2	1952.5	-1.9%
LI	1927.7	1931.7	1931.1	1943.8	1972.6	1989.4	1973.2	1963.1	1990.8	2005.1	2042.8	2026.7	2050.8	2066.5	2059.3	2025.7	2096.9	2092.0	2056.2	1979.6	1919.7	-0.4%
Dutchess County	1881.1	1842.4	1896.2	1795.1	1785.6	1815.5	1810.2	1995.2	1938.8	1898.4	1991.6	1949.4	1958.3	1993.8	1941.1	1966.6	1915.3	1958.5	1851.6	1862.8	1812.8	-3.6%
Orange County	2203.2	2172.5	2216.9	2156.0	2164.2	2162.7	2201.3	2252.7	2231.6	2282.8	2314.9	2328.9	2354.6	2362.9	2379.3	2372.0	2512.7	2471.6	2512.2	2357.5	2331.2	5.8%
Putnam County	1767.1	1655.2	1731.9	1705.8	1673.1	1652.7	1793.0	1907.0	1917.8	1829.4	1848.6	1913.7	1946.5	1978.2	1977.4	1826.7	1937.2	1996.6	1909.5	1762.3	1871.7	5.9%
Rockland County	1901.7	1861.4	1927.7	1992.0	2027.3	2031.6	2117.0	2370.2	2448.4	2492.9	2570.4	2614.4	2563.3	2578.6	2645.0	2705.2	2737.2	2834.6	2891.5	2644.9	2594.3	36.4%
Sullivan County	2362.0	2266.6	2077.3	2175.0	2109.1	1919.4	1896.0	2046.4	2061.0	2178.6	2108.2	2216.9	2029.7	2322.5	2088.4	2154.8	2385.4	2286.4	2324.5	2084.2	2020.4	-14.5%
Ulster County	2109.6	2007.7	1997.9	1892.4	1890.0	1878.7	1816.5	1800.5	1750.5	1689.0	1735.9	1793.9	1759.7	1807.7	1826.8	1775.7	1890.9	1879.1	1815.1	1746.4	1735.3	-17.7%
Westchester County	1896.5	1919.3	1915.9	1895.6	1930.3	1949.4	1934.8	1985.7	2031.7	2021.9	2152.5	2100.5	2120.3	2155.6	2141.5	2137.6	2144.8	2142.9	2084.8	2004.8	1993.5	5.1%
MH	1963.5	1943.9	1963.1	1934.8	1952.1	1959.2	1970.6	2065.0	2082.7	2083.4	2168.8	2160.6	2164.3	2201.8	2196.2	2196.8	2241.5	2251.2	2221.4	2111.5	2091.2	6.5%
Bergen County	1600.2	1635.3	1648.3	1638.4	1727.2	1674.7	1705.4	1692.4	1719.3	1716.4	1776.4	1757.6	1796.1	1853.2	1834.9	1775.5	1796.8	1856.4	1759.9	1724.4	1692.8	5.8%
Essex County	2294.6	2260.7	2201.5	2144.2	2162.4	2116.3	2102.2	2084.9	2056.3	2098.3	2100.7	2120.1	2105.8	2122.3	2129.6	2080.0	2159.1	2191.6	2173.4	2109.6	1924.4	-16.1%
Hudson County	2058.9	2018.8	1999.3	1899.9	1912.0	1870.0	1830.8	1773.5	1768.5	1747.8	1771.5	1725.9	1711.6	1748.0	1751.7	1779.9	1835.8	1883.5	1856.2	1797.7	1850.6	-10.1%
Hunterdon County	1765.5	1787.9	1801.9	1733.3	1757.0	1800.9	1792.8	1758.3	1858.1	1945.8	1842.4	1967.8	2020.2	1934.0	1859.6	1979.0	1964.8	1897.3	1924.5	1652.3	1697.2	-3.9%
Mercer County	2070.1	2107.1	2070.5	1971.5	1905.9	1882.3	1900.0	1919.2	1893.9	1901.2	2011.3	1995.7	1977.4	1939.8	1983.6	1949.0	2012.4	2062.9	2046.3	1974.9	1938.0	-6.4%
Middlesex County	1764.9	1782.4	1791.4	1783.2	1799.8	1792.7	1777.3	1761.2	1843.9	1825.9	1923.5	1931.3	1912.2	1987.7	1912.2	1902.5	1978.6	2001.7	1937.3	1860.8	1828.9	3.6%
Monmouth County	1938.1	1940.9	1918.3	1930.5	1970.7	1948.1	1987.5	1990.6	2004.0	1992.3	2006.7	2078.5	2053.5	2144.5	2045.1	2108.6	2100.0	2077.2	1987.2	1901.9	1833.0	-5.4%
Morris County	1721.8	1715.8	1750.2	1775.3	1840.2	1800.1	1820.2	1818.0	1921.3	1920.9	1920.0	2009.1	1939.0	2035.9	2000.2	1938.6	1977.1	1923.5	1897.4	1838.1	1763.2	2.4%
Ocean County	2159.7	2121.0	2140.3	2137.4	2179.5	2144.1	2180.7	2182.0	2264.4	2276.0	2323.9	2444.7	2449.5	2546.4	2615.6	2664.7	2632.3	2795.2	2676.0	2668.9	2604.7	20.6%
Passaic County	2327.2	2201.3	2235.2	2285.2	2314.7	2271.2	2242.7	2240.1	2258.6	2239.4	2290.3	2284.9	2233.1	2260.7	2246.8	2268.5	2276.4	2373.2	2271.4	2216.1	2141.0	-8.0%
Somerset County	1849.7	1800.3	1927.2	1922.7	1983.4	1838.1	1894.9	1952.5	2027.5	2001.6	2034.9	2110.9	2159.7	2171.2	2121.1	2101.2	2063.4	2140.3	2019.5	1942.5	1848.0	-0.1%
Sussex County	1941.6	1917.5	1851.5	1876.3	1842.6	1912.2	1885.3	1923.5	1891.3	1901.5	1901.2	1960.9	1864.8	1968.1	1860.9	1903.0	1982.3	1914.9	1928.1	1774.1	1796.9	-7.5%
Union County	1966.5	1976.7	2013.7	1947.4	2022.2	1957.4	1992.1	1941.5	1972.2	2006.3	2100.1	2062.3	2093.3	2137.2	2155.6	2130.3	2197.0	2222.3	2143.1	2109.0	2009.6	2.2%
Warren County	2036.5	1952.2	1940.4	1953.5	1955.5	1908.1	1893.2	1893.7	1795.5	1992.3	2024.4	2013.1	2111.0	2070.0	2087.8	2002.6	2117.6	2119.4	1841.9	1672.5	1679.8	-17.5%
NJ	1973.4	1961.6	1963.2	1939.6	1974.3	1935.9	1942.3	1929.6	1957.9	1964.7	2007.1	2022.6	2013.7	2058.0	2038.2	2026.0	2064.2	2100.0	2033.9	1971.7	1915.0	-3.0%
Fairfield County	2027.5	1988.4	2002.7	2006.1	2016.7	1992.3	2038.7	2033.9	2076.6	2110.4	2092.7	2052.7	2038.2	2140.4	2113.1	2135.7	2197.7	2125.7	2070.8	2014.9	1931.8	-4.7%
Litchfield County	1830.6	1787.0	1760.8	1812.0	1793.6	1688.9	1739.3	1699.4	1781.1	1881.5	1907.6	1883.0	1820.5	1899.3	1936.5	1880.0	1929.0	1923.0	1849.7	1677.7	1705.6	-6.8%
New Haven County	1956.5	1954.9	1929.0	1894.2	1887.8	1832.4	1877.9	1838.1	1896.6	1910.1	1874.3	1900.8	1886.8	1907.4	1885.8	1910.8	1918.7	1967.4	1858.1	1773.7	1704.2	-12.9%
CT	1975.3	1953.7	1946.7	1937.6	1939.3	1894.9	1942.0	1919.1	1973.2	2004.9	1982.9	1973.1	1955.1	2017.0	1996.5	2014.4	2048.6	2037.6	1957.0	1879.1	1812.7	-8.2%

Source: New York, New Jersey, Connecticut State Departments of Health

2.6 Mortality Trends

2.6.1 Deaths and Mortality

Across the 31-County region deaths have generally declined between 1990 and 2010 (Table 2-5 and Figure 2-25). Across New York City deaths have declined around 30 percent over the past 20 years in each of the five boroughs. This decline has been driven in part by a reduction in deaths attributed to HIV/AIDS, homicide, as well as drugs and alcohol. New York City's campaign "to combat the incidence of and mortality from HIV/AIDS" was an effective tool that contributed to gains in life expectancy.⁷ At the subregional level, the number of deaths in Long Island, Mid-Hudson, New Jersey and Connecticut declined at more muted pace. In New Jersey, declines in Essex and Hudson (27 and 30 percent, respectively) were offset by large increases in counties that have experienced increases in senior populations – Somerset (35 percent), Sussex (30 percent), Ocean (25 percent), Hunterdon (23 percent) and Morris (23 percent). In Long Island, there has been a net neutral effect for the subregion, as a decline in deaths in Nassau was negated by a rise in Suffolk; overall deaths in the subregion dropped by half a percent. In Connecticut, the number of deaths in Fairfield declined by nine percent, while New Haven rose slightly (two percent) and Litchfield rose dramatically (21 percent).

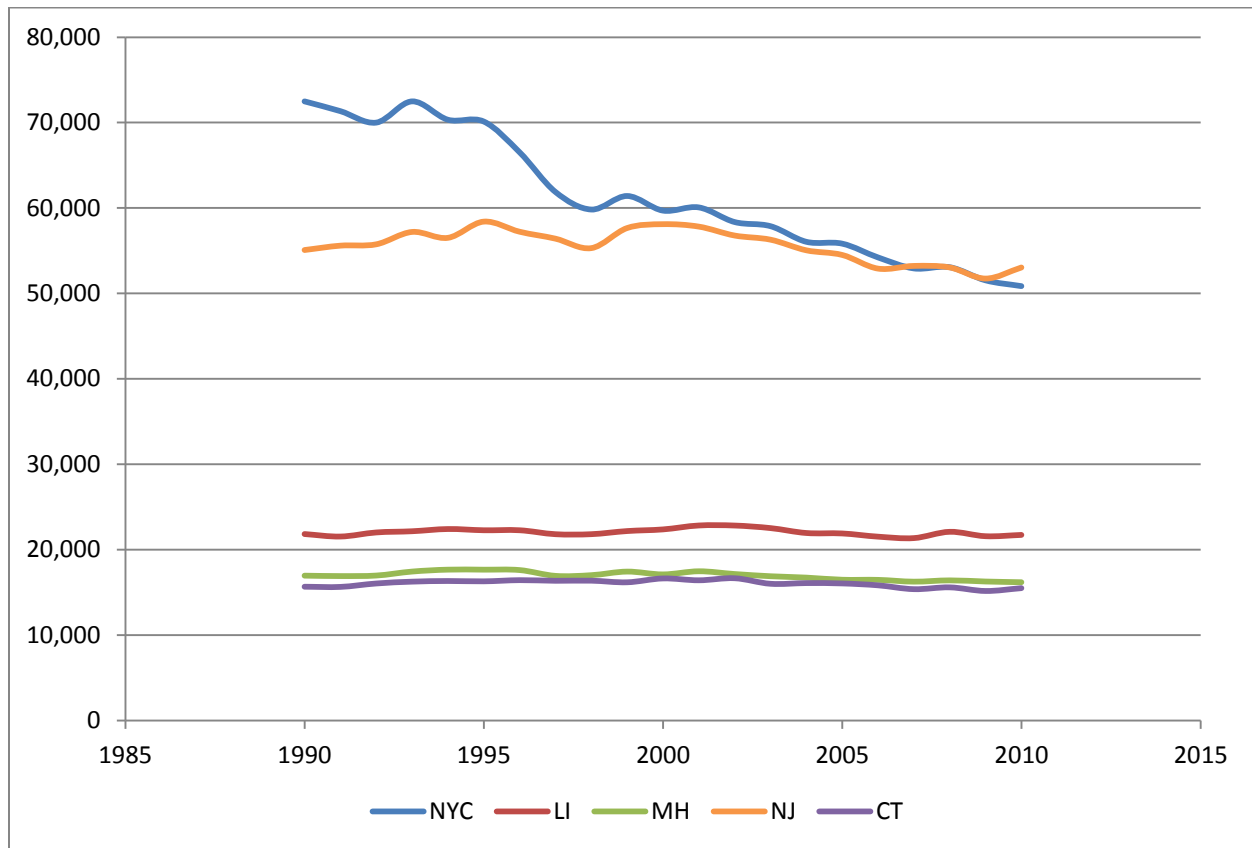
⁷ Preston, S.H., & Elo, I.T., (2014) *Anatomy of a Municipal Triumph: New York City's Upsurge in Life Expectancy*. Population and Development Review.

TABLE 2-5. DEATHS BY SUBREGION (000s), 1990-2010

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Δ (1990-2010)
Forecast Region	182.0	181.0	180.8	185.5	183.2	184.7	180.0	173.4	170.3	174.8	173.9	174.6	171.7	169.6	165.8	164.7	160.9	159.1	160.2	156.3	157.3	-13.6%
NYC	72.5	71.3	70.0	72.5	70.3	70.1	66.5	61.9	59.8	61.4	59.7	60.1	58.4	57.9	56.0	55.8	54.2	52.9	53.1	51.5	50.9	-29.8%
Bronx County	12.6	12.5	12.5	12.7	12.5	12.5	11.7	10.6	10.2	10.5	10.1	10.4	9.9	10.1	9.6	9.5	9.4	9.1	9.1	9.1	8.8	-30.6%
Kings County	22.4	21.8	21.5	22.4	21.7	21.7	20.5	19.1	18.4	18.8	18.4	18.3	18.1	17.8	17.3	17.1	16.3	16.2	16.2	15.4	15.5	-30.9%
New York County	15.4	15.2	14.7	15.1	14.7	14.4	13.4	12.2	11.6	12.1	11.4	11.6	11.1	11.1	10.7	10.7	10.3	10.0	10.2	9.8	9.6	-37.5%
Queens County	18.8	18.5	17.9	18.8	17.9	18.1	17.5	16.6	16.2	16.6	16.2	16.1	15.8	15.4	14.9	15.0	14.6	14.4	14.1	13.8	13.7	-27.2%
Richmond County	3.2	3.3	3.4	3.4	3.5	3.5	3.5	3.4	3.4	3.5	3.5	3.7	3.6	3.6	3.5	3.5	3.5	3.3	3.5	3.4	3.3	1.4%
LI	21.8	21.5	22.0	22.2	22.4	22.3	22.3	21.8	21.8	22.2	22.4	22.8	22.8	22.5	21.9	21.9	21.5	21.4	22.1	21.6	21.7	-0.5%
Nassau County	11.2	11.2	11.4	11.3	11.5	11.3	11.2	11.0	11.0	11.2	11.2	11.5	11.3	11.0	10.7	10.5	10.4	10.4	10.9	10.4	10.6	-5.4%
Suffolk County	10.6	10.3	10.7	10.9	10.9	11.0	11.1	10.8	10.8	10.9	11.2	11.3	11.5	11.5	11.2	11.4	11.1	10.9	11.2	11.2	11.1	4.7%
MH	17.0	16.9	17.0	17.4	17.7	17.7	17.6	16.9	17.0	17.4	17.1	17.5	17.1	16.9	16.7	16.5	16.5	16.3	16.4	16.3	16.2	-4.5%
Dutchess County	1.9	2.0	2.1	2.1	2.2	2.1	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	14.3%
Orange County	2.4	2.4	2.3	2.3	2.5	2.4	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	3.1%
Putnam County	0.5	0.5	0.6	0.5	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	31.9%
Rockland County	2.0	1.9	2.0	2.1	2.0	2.1	2.0	2.0	2.1	2.0	2.1	2.1	2.0	2.1	1.9	1.9	2.0	1.9	2.0	2.0	2.0	-0.5%
Sullivan County	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	-8.6%
Ulster County	1.6	1.5	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-2.8%
Westchester County	7.9	7.7	7.7	8.0	8.0	8.1	7.9	7.5	7.5	7.5	7.4	7.6	7.3	7.3	7.2	7.1	7.1	6.9	6.9	6.7	6.7	-14.7%
NJ	55.1	55.6	55.7	57.2	56.5	58.4	57.2	56.4	55.3	57.7	58.1	57.8	56.8	56.3	55.0	54.5	52.9	53.2	53.0	51.7	53.0	-3.7%
Bergen County	7.5	7.7	7.5	7.6	7.5	7.7	7.6	7.5	7.3	7.6	7.7	7.6	7.6	7.5	7.3	7.0	6.8	7.0	6.9	6.6	6.8	-8.6%
Essex County	8.1	8.1	7.8	8.2	8.0	8.1	7.8	7.4	6.9	7.3	7.3	7.2	7.0	6.9	6.4	6.4	6.2	6.2	6.1	5.7	5.9	-27.2%
Hudson County	5.4	5.4	5.4	5.4	5.1	5.2	5.1	4.8	4.7	4.8	4.8	4.8	4.6	4.4	4.2	4.2	4.1	3.9	3.9	3.8	3.8	-30.2%
Hunterdon County	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	23.1%
Mercer County	2.8	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	2.9	3.1	3.0	2.8	2.9	2.9	2.9	2.9	2.8	2.9	2.7	2.8	-0.4%
Middlesex County	5.1	5.1	5.2	5.4	5.3	5.5	5.6	5.5	5.6	5.8	5.9	5.7	5.5	5.5	5.7	5.5	5.5	5.5	5.6	5.6	5.6	9.8%
Monmouth County	4.9	4.9	5.0	5.2	5.1	5.3	5.2	5.1	5.0	5.3	5.4	5.5	5.3	5.4	5.2	5.2	5.1	5.2	5.3	5.1	5.2	4.9%
Morris County	2.9	2.9	2.9	2.9	3.1	3.2	3.2	3.3	3.2	3.5	3.5	3.5	3.5	3.5	3.3	3.5	3.3	3.5	3.4	3.3	3.5	22.7%
Ocean County	5.5	5.7	5.9	6.1	6.1	6.5	6.6	6.5	6.5	6.9	6.9	7.1	7.0	6.9	7.0	7.0	6.6	6.7	6.7	6.8	7.0	25.4%
Passaic County	4.1	4.2	4.1	4.3	4.3	4.4	4.2	4.2	4.1	4.2	4.0	4.0	4.0	4.1	3.9	3.7	3.7	3.7	3.6	3.4	3.5	-14.1%
Somerset County	1.6	1.7	1.7	1.8	1.8	1.9	1.8	1.9	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.1	1.9	2.1	2.0	2.1	2.1	34.9%
Sussex County	0.9	0.8	0.9	0.9	1.0	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.1	30.4%
Union County	4.7	4.7	4.9	4.8	4.8	5.0	4.6	4.6	4.8	4.8	4.7	4.7	4.5	4.4	4.3	4.4	4.1	4.0	4.0	3.9	3.9	-17.1%
Warren County	0.8	0.7	0.8	0.9	0.8	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	7.4%
CT	15.7	15.6	16.0	16.3	16.3	16.3	16.4	16.4	16.4	16.2	16.6	16.4	16.6	16.0	16.1	16.0	15.8	15.4	15.6	15.2	15.5	-1.1%
Fairfield County	7.0	6.8	7.0	7.2	7.1	7.1	7.2	7.1	7.0	6.9	7.1	7.0	7.1	6.8	6.7	6.7	6.5	6.3	6.5	6.1	6.4	-8.5%
Litchfield County	1.4	1.4	1.5	1.5	1.6	1.5	1.6	1.7	1.6	1.6	1.6	1.7	1.7	1.6	1.7	1.7	1.7	1.6	1.6	1.7	1.7	21.3%
New Haven County	7.3	7.4	7.5	7.6	7.7	7.7	7.7	7.6	7.7	7.6	8.0	7.7	7.8	7.5	7.8	7.6	7.6	7.5	7.5	7.4	7.4	1.7%

Source: New York, New Jersey, Connecticut State Departments of Health

FIGURE 2-25. DEATHS BY SUBREGION, 1990–2010



Source: New York, New Jersey, Connecticut State Departments of Health

Age-specific death rates (ASDRs) are the total number of deaths to residents of a specified age group divided by the population. ASDRs are useful as a means to account for differences in deaths for the various age distributions of the population. Figure 2-26 clearly shows that there has been an overall reduction in death rates for all ages since 1990, with marked declines in New York City. The aforementioned reduction in deaths from HIV/AIDS, homicide and drugs in New York City has resulted in a drastic decline in the death rate - particularly for those under 60.

An important driver of declining death rates has been declines in infant mortality. Nationally, infant mortality rates plateaued from 2000 to 2005, before dropping 12 percent from 2005 through 2011.⁸ Of the five leading causes of infant deaths (congenital malformations, short gestation/low birth weight, Sudden infant death syndrome (SIDS), maternal complications and unintentional injuries) all but unintentional injuries declined from 2005 through 2011.⁹ At the local level, the infant mortality rate in New York State dropped by 17 percent between 2002 and 2012.¹⁰ Characteristics

⁸ MacDorman, M.F., Hoyert, D.L., & Mathews, T.J., (2013) *Recent Declines in Infant Mortality in the United States, 2005–2011*, NCHS Data Brief. <http://www.cdc.gov/nchs/data/databriefs/db120.pdf>

⁹ Ibid

¹⁰ Wang, T., Schoen, L.D., Melnik, T.A., (2012) *Infant Mortality in New York State, 2002–2012*. NYS Department of Health. https://www.health.ny.gov/statistics/vital_statistics/docs/infant_mortality_report_nys_2002-2012.pdf

such as younger age, lower educational attainment, and being unmarried were linked with infant mortality over the ten year time horizon.¹¹

Substantial advances in public health since 2000 have contributed to the decline in death rates. New vaccines and improved prevention and control of infectious diseases have contributed to substantial declines in hospitalizations and deaths. Heart disease and strokes have been on the decline due to reductions in the prevalence of cardiovascular risk factors such as uncontrolled hypertension, elevated cholesterol, and smoking, and improvements in treatments, medications, and quality of care. Additionally, through the efforts of “federal, state, and local health agencies, professional clinician societies, not-for-profit organizations, and patient advocates, standards were developed that have significantly improved cancer screening test quality and use.”¹²

On the social side, tobacco control and improved motor vehicle safety have further helped achieve significant reductions in deaths. Motor vehicle crashes are among the top ten causes of death for U.S. residents of all ages and the leading cause of death for those between five and 34 years old.¹³ From “2000 to 2009, while the number of vehicle miles traveled on the nation's roads increased by 8.5 percent, the death rate related to motor vehicle travel declined from 14.9 per 100,000 population to 11.0, and the injury rate declined from 1,130 to 722.”¹⁴ Protective policies including effective seat belt and child safety legislation have helped foster this trend.

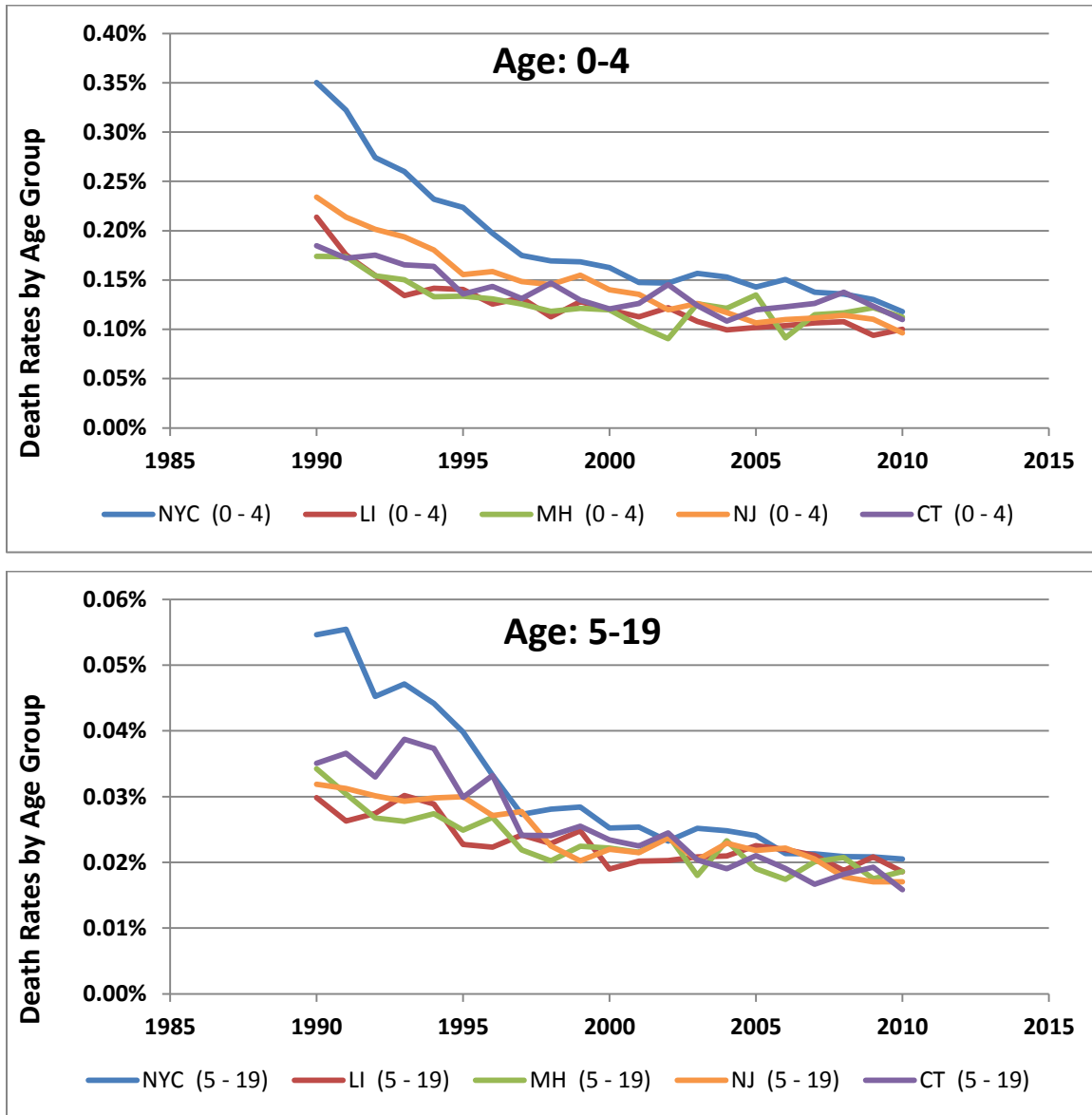
¹¹ Ibid

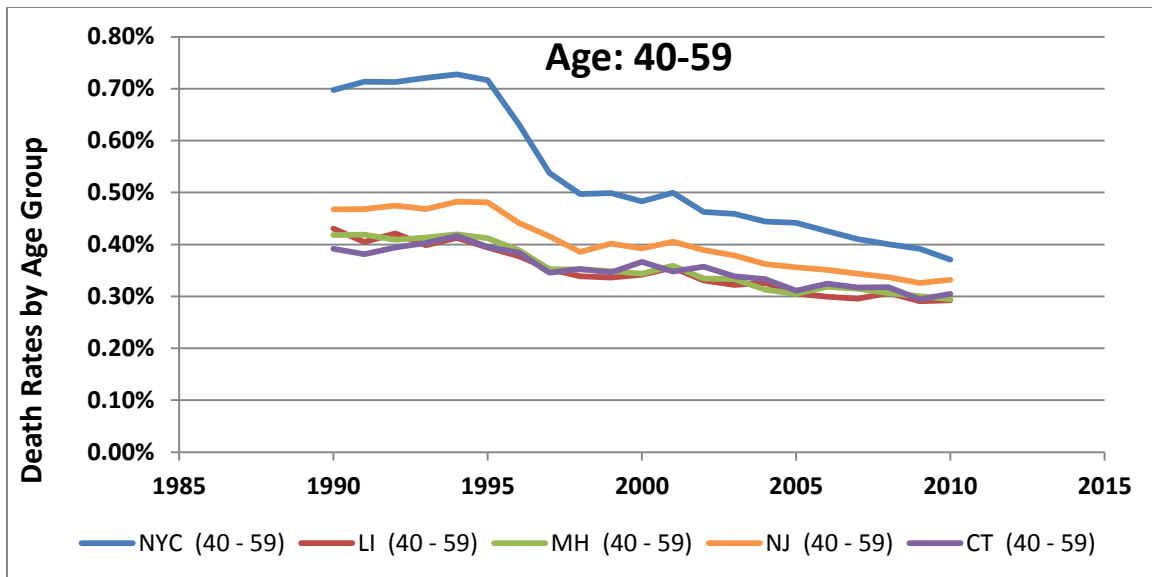
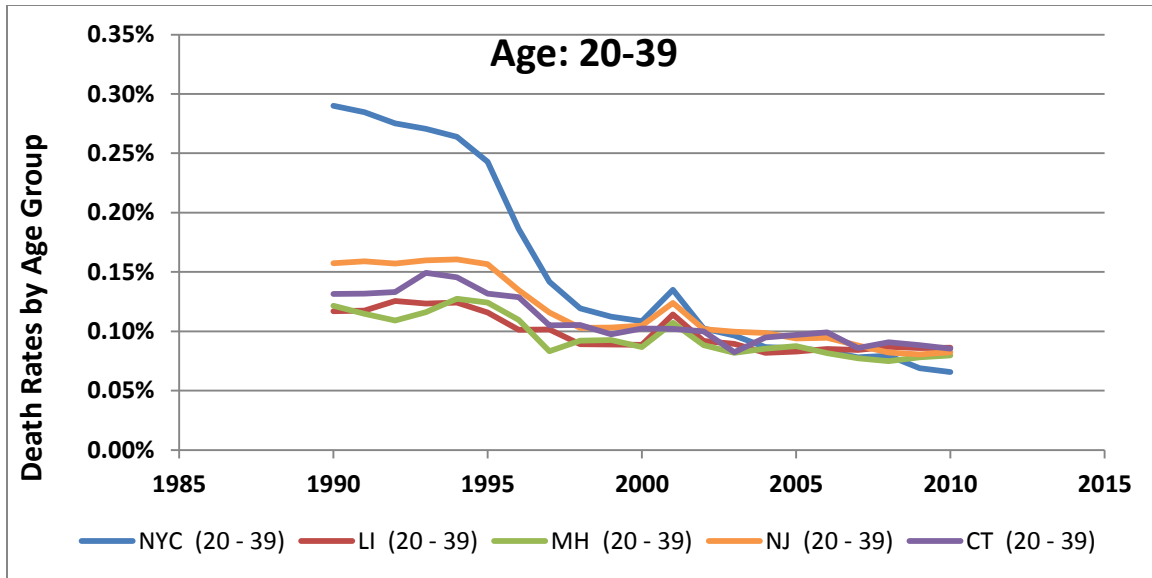
¹² Ibid

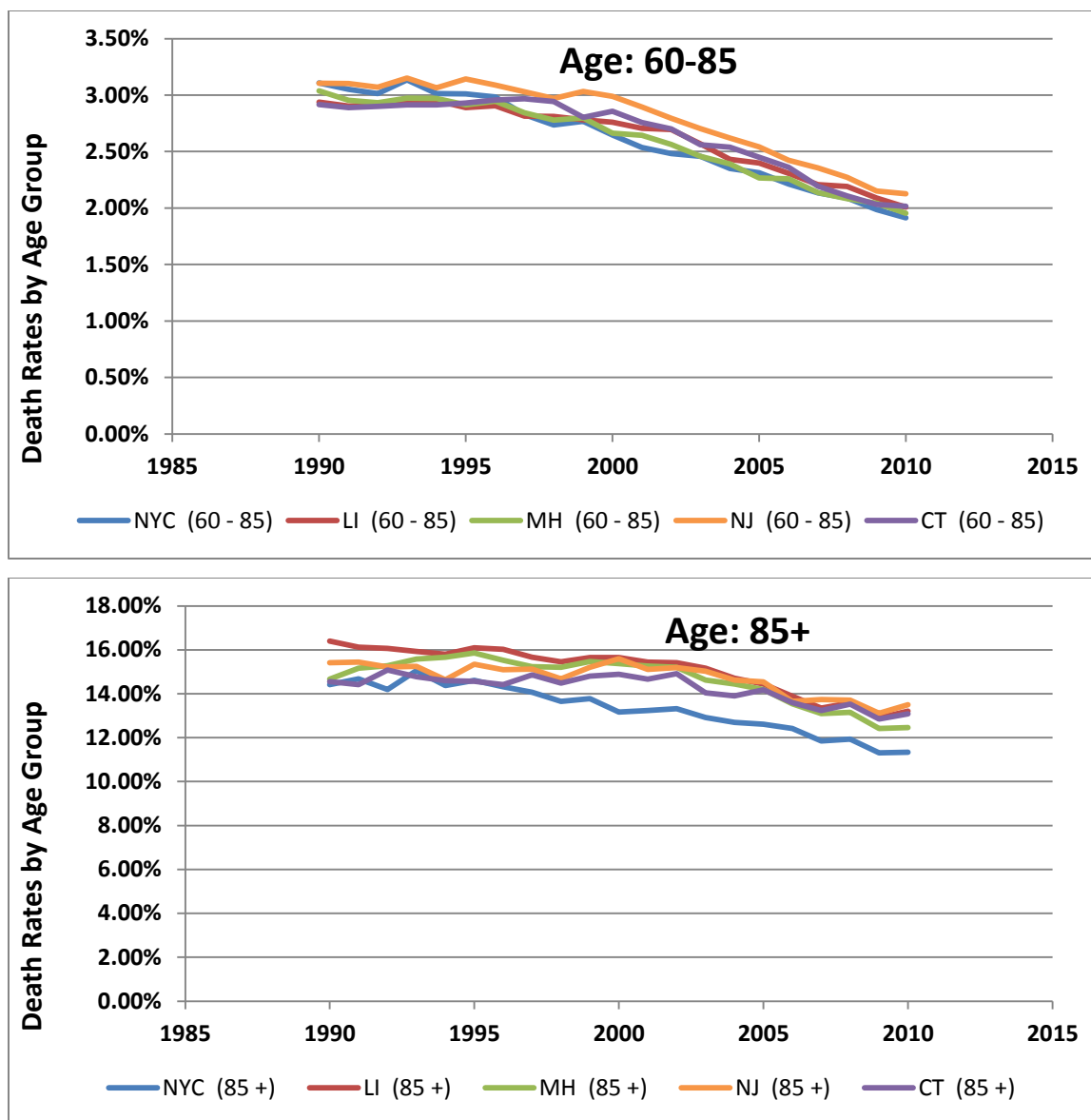
¹³ Ibid

¹⁴ Ibid

FIGURE 2-26. DEATH RATES BY AGE GROUP, 1990-2010







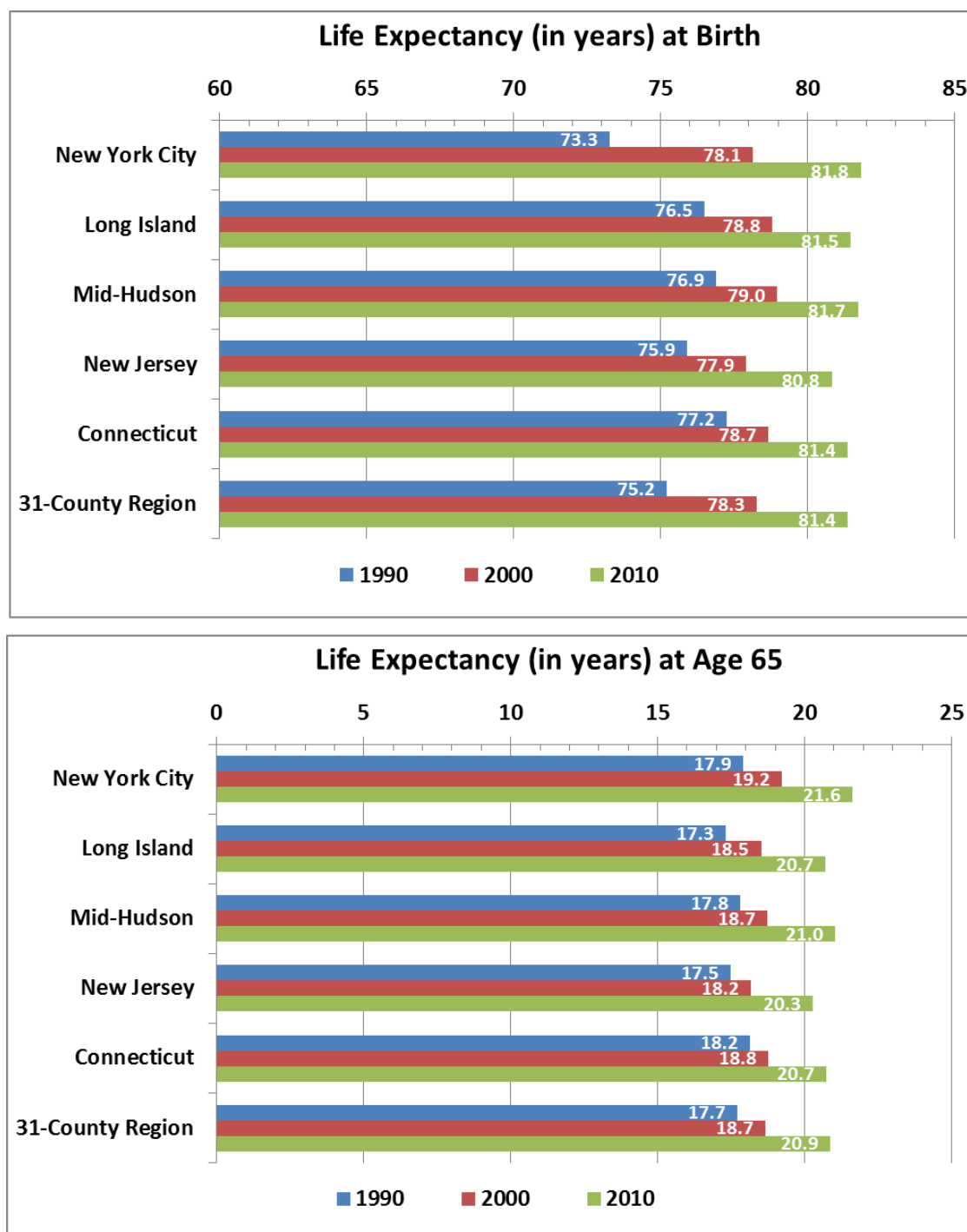
2.6.2 Life Expectancy & Survival Rate

Life tables, generated from ASDRs, are used to represent mortality experience of a population in terms of age-specific life expectancy and survival rates. Survival rates are not precisely the proportion surviving to the next age group. Instead, they are calculated through a life table, which determines survival in terms of life expectancy and person years lived within an interval against all remaining intervals. This is because each age group is not subject to the exact same chances of dying, since people are distributed evenly throughout the age group. For instance, the 0-4 year old age group is not merely comprised of infants at the beginning of the projection. Rather, it includes infants, 1, 2, 3, and 4 year olds alike. This is why a simple proportion cannot be applied to each age group, as people are moving to the next age group before the five year period has concluded and are subsequently subject to a different likelihood of mortality.

Figure 2-27 highlights the improvements in life expectancy across the 31-County region. New York City's life expectancy at birth rose from 73.3 in 1990 to 81.8 in 2010, the largest jump across all

subregions, attributable to the above-mentioned reduction in HIV/AIDS, homicide and drug-related deaths. Each subregion's life expectancy at birth increased from under 77.5 in 1990 to over 80.8 in 2010. At age 65, the trend in life expectancy is also positive, particularly marked between 2000 and 2010, with the largest gains over the 20 year span occurring between 2000 and 2010.

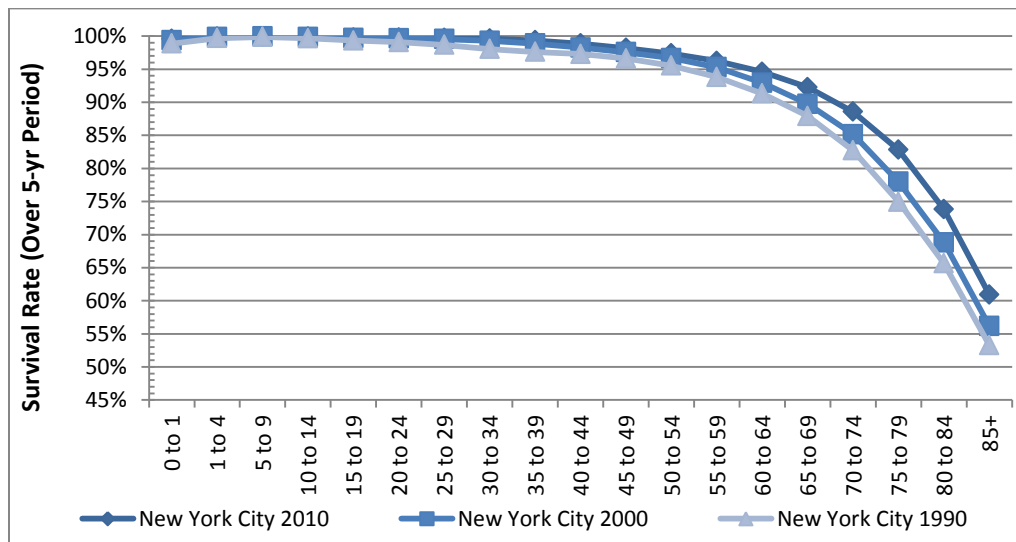
FIGURE 2-27. LIFE EXPECTANCY BY SUBREGION, 1990-2010



Source: New York, New Jersey, Connecticut State Departments of Health

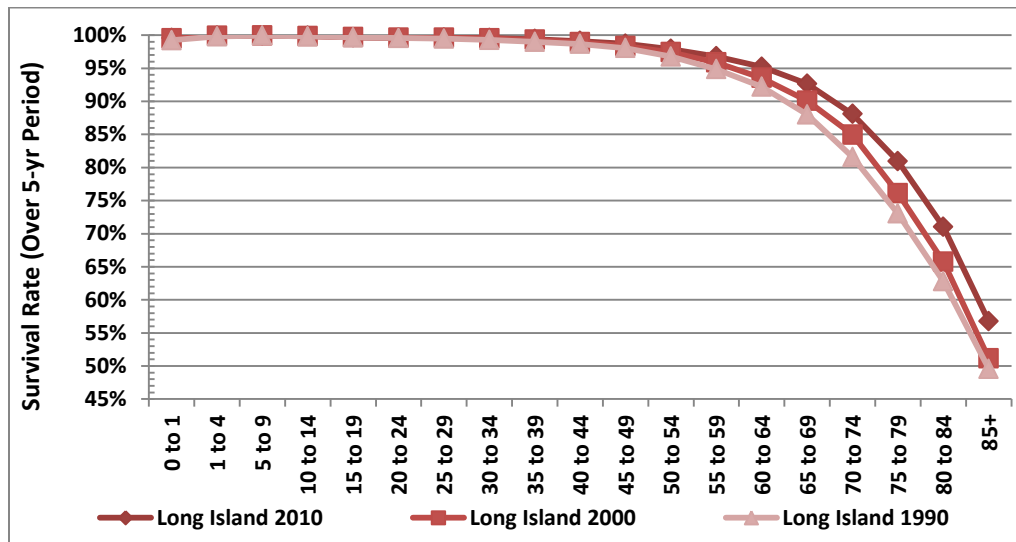
Since 1990, the trend in survival rates and life expectancy has been in the positive direction, a product of improvements in standards of living, lifestyle, health care, and other factors (Figure 2-28 - Figure 2-32). Across the subregions, there is little visually noticeable change in the survival rate for those under 65; the most noticeable positive movement occurs for the older age cohorts. In New York City, Long Island and Mid-Hudson there is general improvement between 1990 and 2000 as well as 2000 to 2010 for those cohorts age 65 and above; in New Jersey and Connecticut the survival rate for those 65 and over increased substantially between 2000 and 2010. Of particular note is the increased rate of survival for those over 80 between 1990 and 2010. In New York City and Long Island, the survival rate for those over 80 increased on average by over 7.5 percentage points between 1990 and 2010. The increases in the remaining subregions were noteworthy, but not as substantial.

FIGURE 2-28. SURVIVAL RATE, NEW YORK CITY, 1990-2010



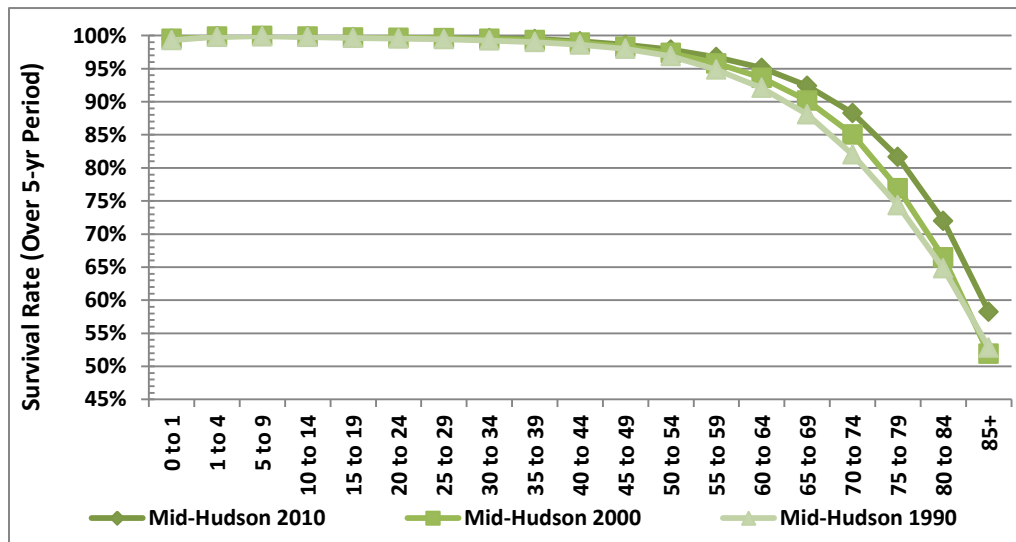
Source: New York, New Jersey, Connecticut State Departments of Health

FIGURE 2-29. SURVIVAL RATE, LONG ISLAND, 1990-2010



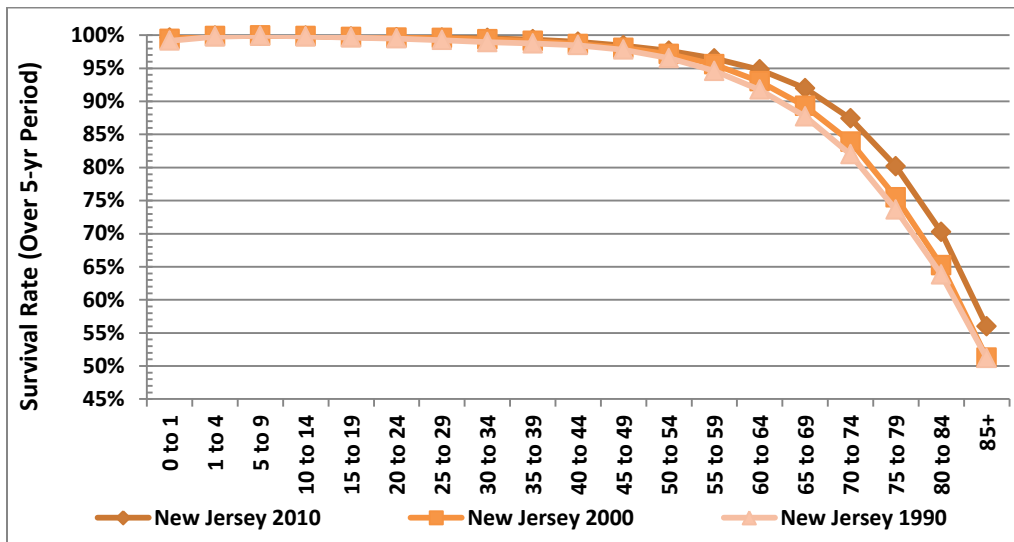
Source: New York, New Jersey, Connecticut State Departments of Health

FIGURE 2-30. SURVIVAL RATE, MID-HUDSON, 1990-2010



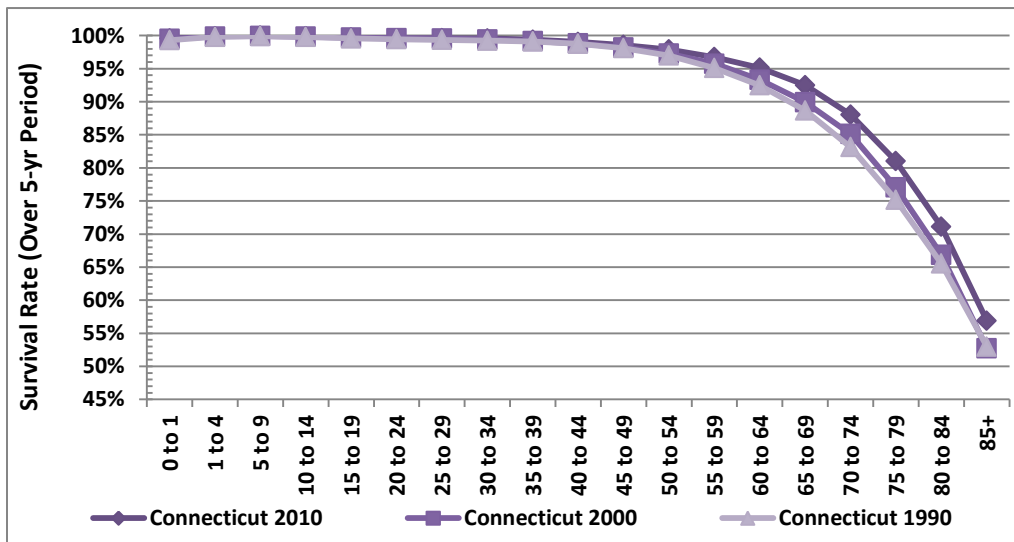
Source: New York, New Jersey, Connecticut State Departments of Health

FIGURE 2-31. SURVIVAL RATE, NEW JERSEY, 1990-2010



Source: New York, New Jersey, Connecticut State Departments of Health

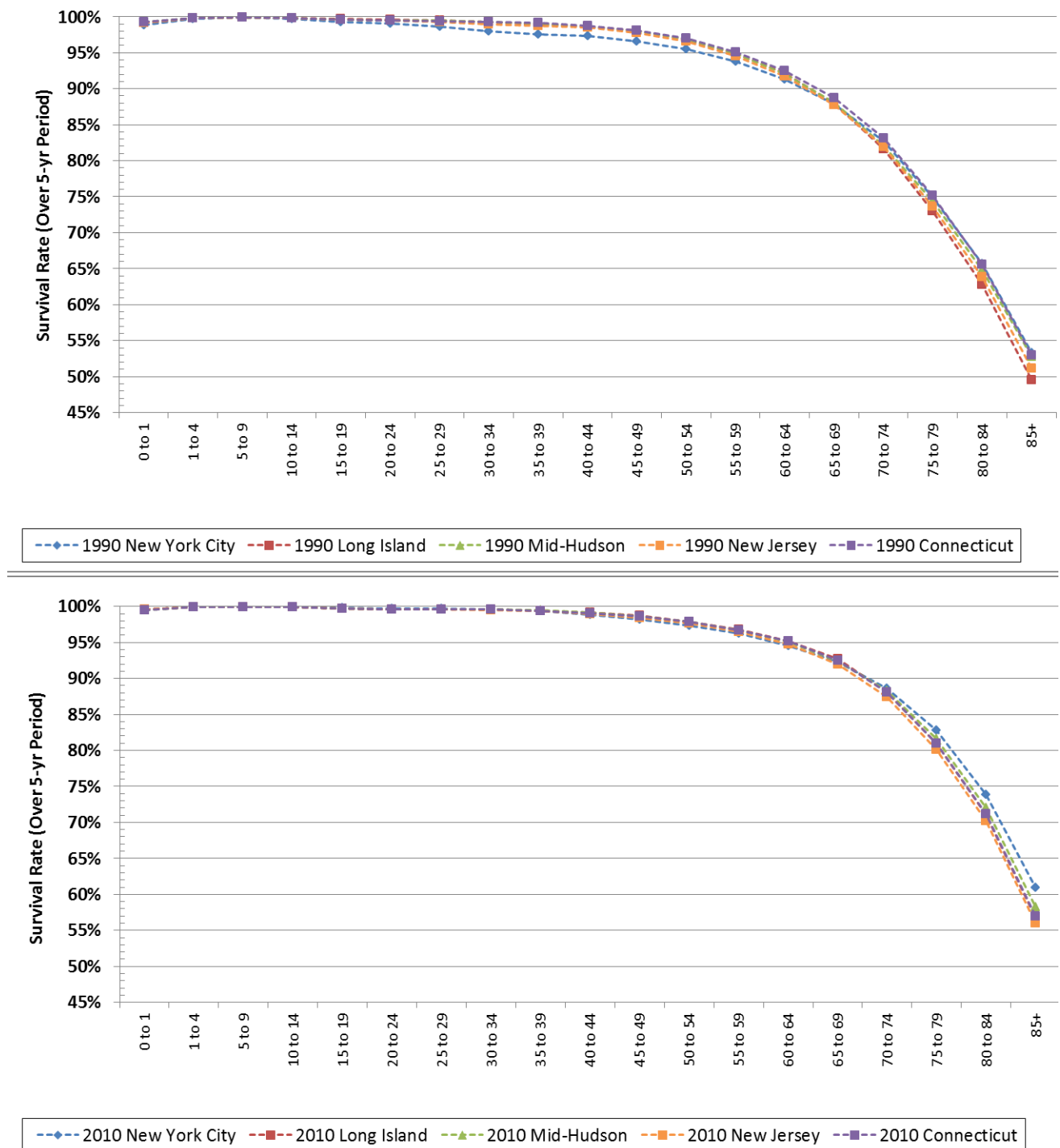
FIGURE 2-32. SURVIVAL RATE, CONNECTICUT, 1990-2010



Source: New York, New Jersey, Connecticut State Departments of Health

Figure 2-33 demonstrates the consistency amongst the subregions over time. In both 1990 and 2010, the trajectory of the survival rate curve is similar for each subregion. In the older cohorts, where there is a larger disparity between the survival rates for each year, New York City has become the subregion with the highest survival rates for ages 70 and above. In 1990, New York City's survival rates for those 80 and above were the highest across the region, with Connecticut's rate highest for those 35 to 79. Over the 20-year span, however, New York City's rates surpassed Connecticut's for the older cohorts, where there is greater differentiation between each subregion.

FIGURE 2-33. SURVIVAL RATE, SUBREGIONS, 1990-2010



2.7 Migration Trends

Migration is another important component of population change. New York City and the surrounding metropolitan region have historically served as the immigrant gateway to the U.S. For this analysis, net migration rates were calculated using net migration data provided by the University of Wisconsin's

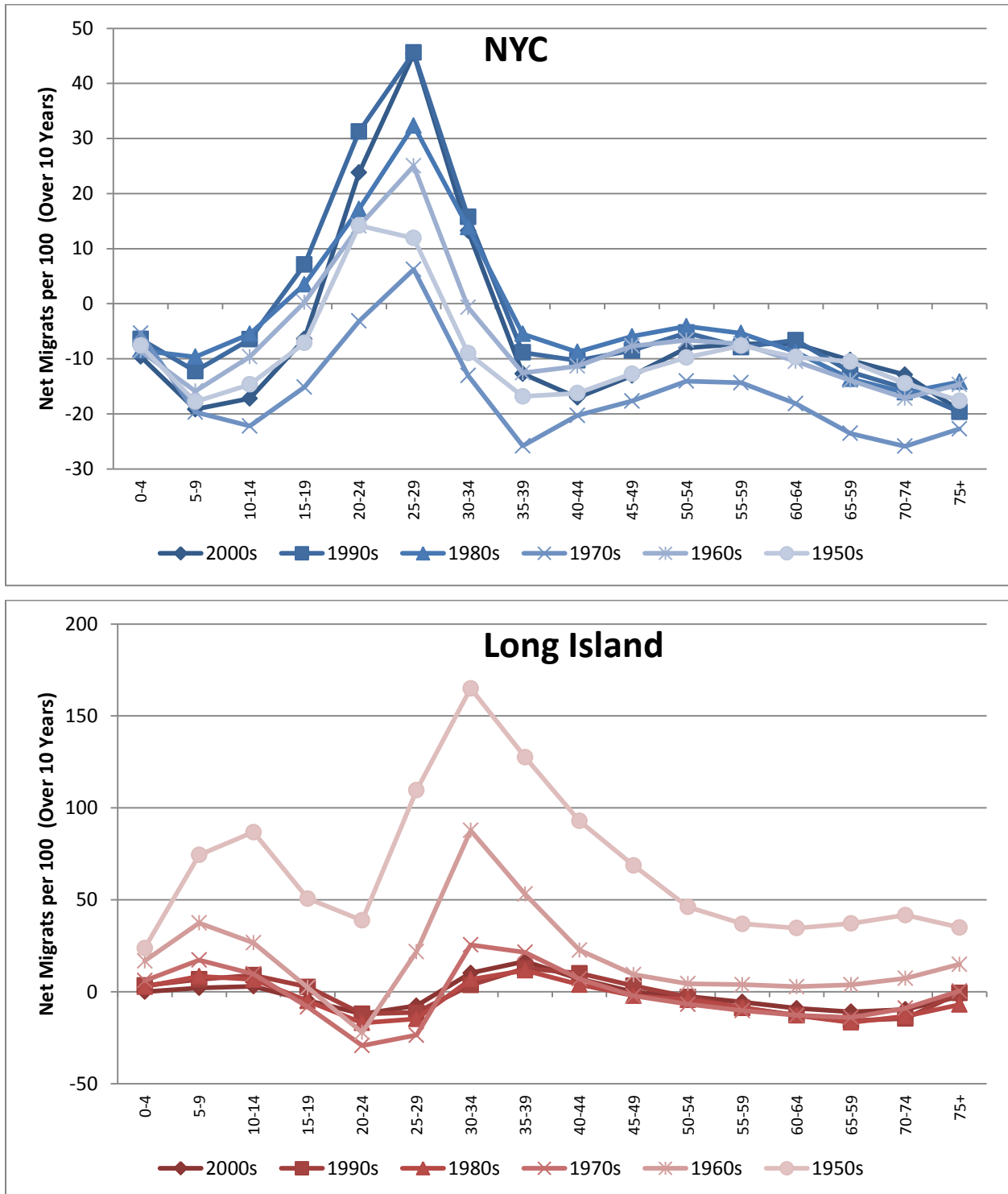
online tool, *Net Migration Patterns for US Counties*¹⁵. As will be performed in the cohort component model, the migration data are generated using a forward survival analysis method based on US Census counts at the beginning and end of each decade and intercensal birth and death records. The population counted at the beginning of the decade is aged forward over time, subtracting out deaths and adding in births, to generate an 'expected/survived population' at the end of the decade. The enumerated population counted in the census at the end of the decade is then subtracted from the survived population to estimate the number of net migrants. Net migration rates are then calculated by dividing the estimated number of migrants in each time period by the survived population.

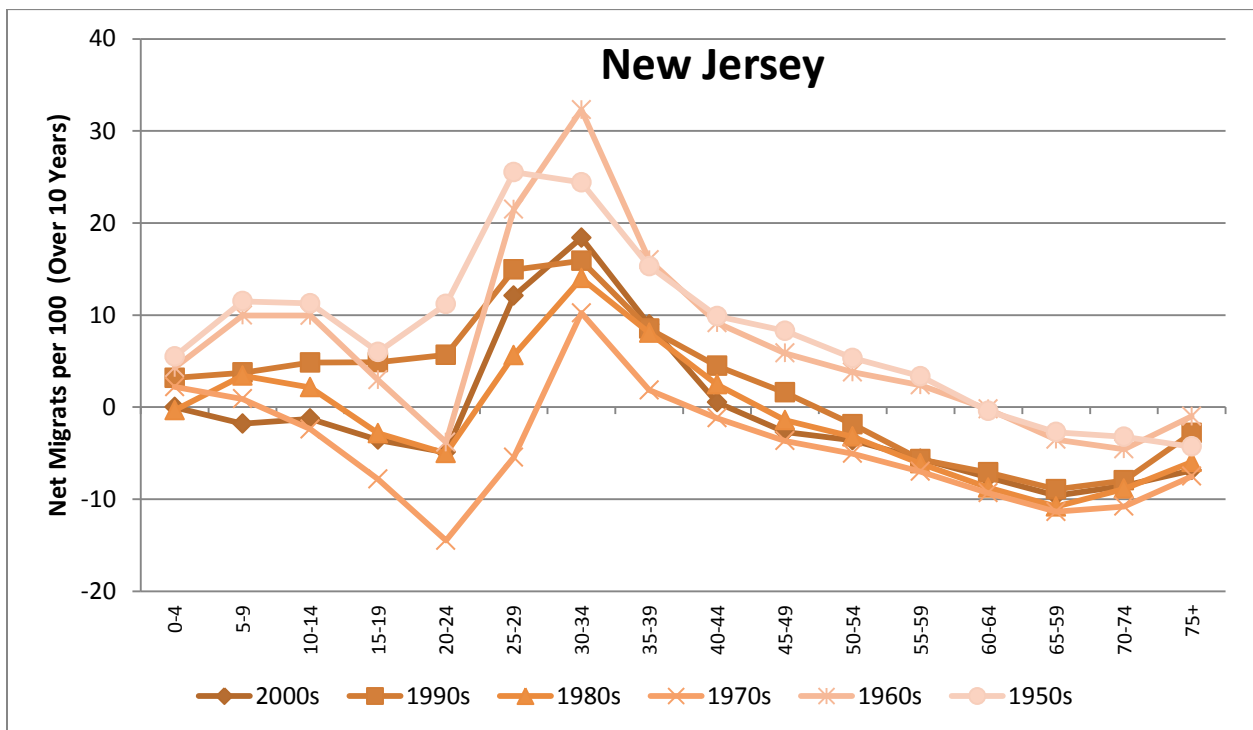
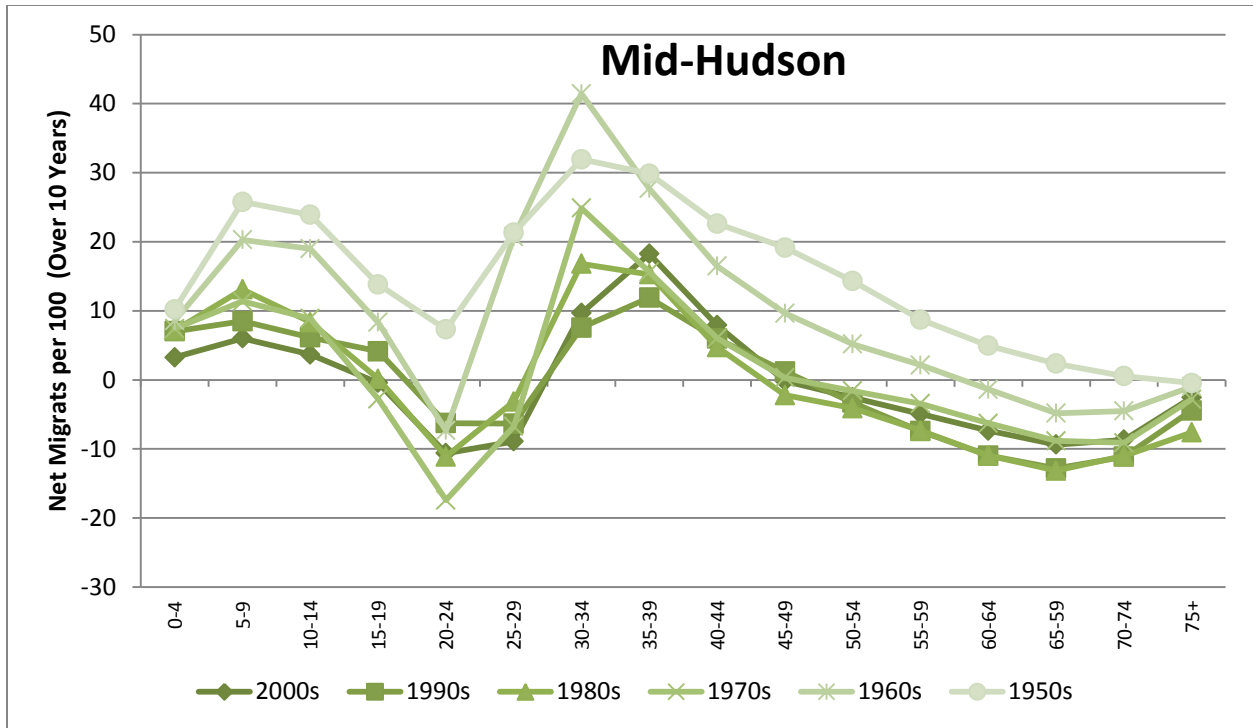
Figure 2-34 shows a detailed view of net migration by subregion for each decade between the 1950 and 2010. Each trace in the various charts represents the estimated net migration calculated for a given decade. The 1950s and 1960s traces of age-specific net-migration rates for Long Island, Mid-Hudson, New Jersey, and Connecticut, generally lie above those for all other following decades and reflect the rapid suburbanization associated with that time period. This suburbanization phenomenon is also reflected in the NYC 1950s and 1960s net migration rates that generally lie below those of all other decades except the 1970s when NYC experienced substantial declines in population.

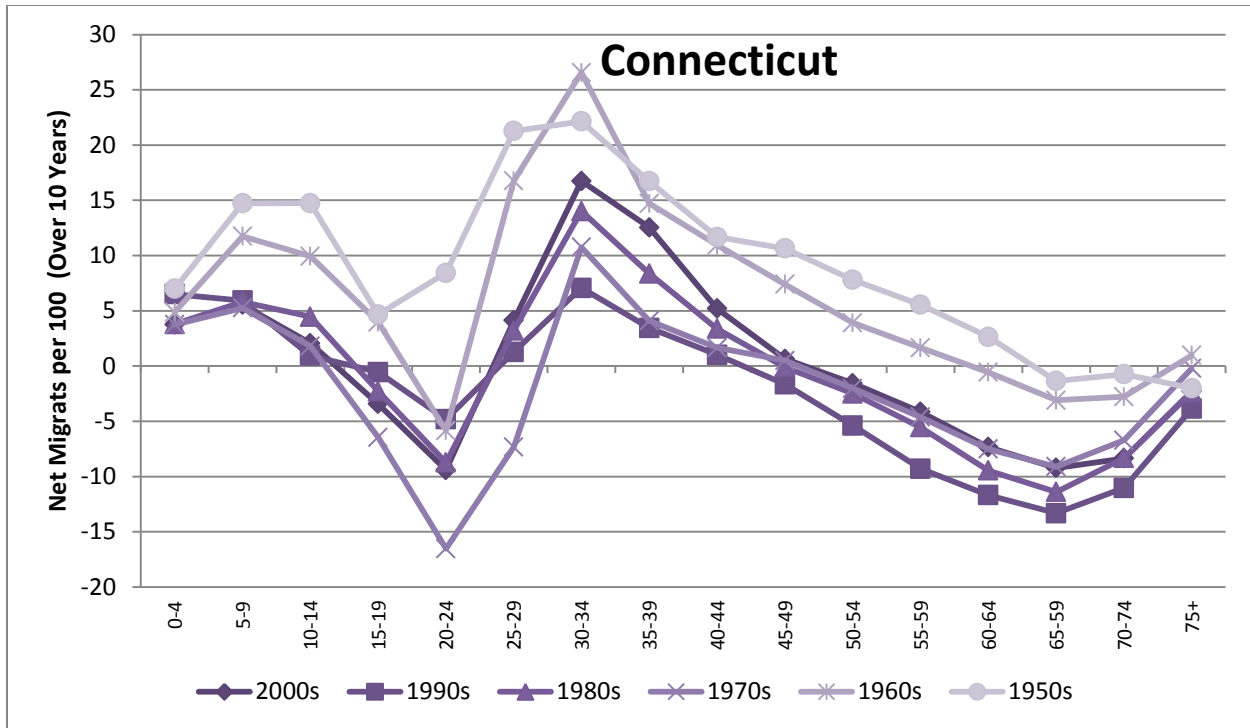
Although the various subregional charts in Figure 2-34 show fairly well defined patterns of age-specific net migration rates over the six historical decades, there is a high degree of variation in the actual rates for any given age group. The range of net migration rates at any age group does not display a linear trend over time. For instance, the general peak net migration rate of the NYC 25-29 age group of 12 net migrants per 100 in the 1950s, climbs to 25 in the 1960s before dropping to 6 in the 1970s and then climbing back up again to 32 in the 1980s. Unlike the age-specific fertility and survival rates that display clear directional trends over time, the variation in age-specific net migration rates are too volatile to chart clear linear or directional trends over time.

¹⁵ <http://www.netmigration.wisc.edu/>

FIGURE 2-34. AGE-SPECIFIC MIGRATION RATES BY SUBREGION, 1950-2010



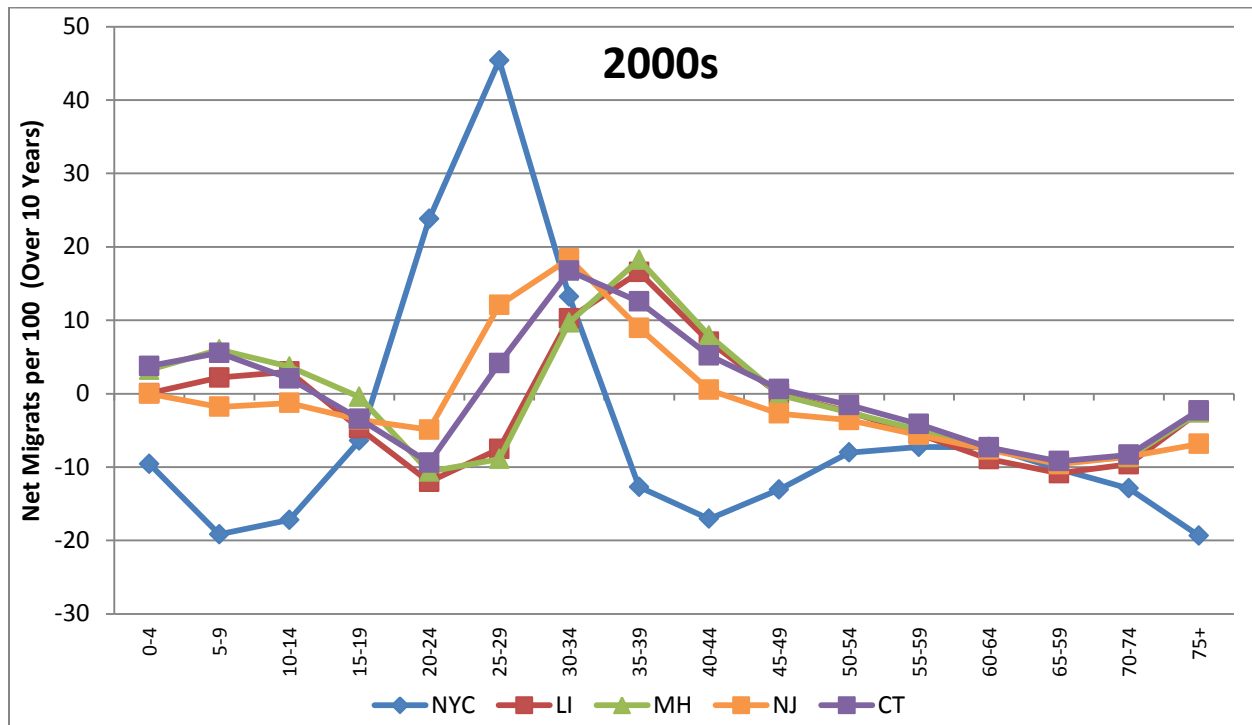




Source: <http://www.netmigration.wisc.edu/>

Figure 2-35 compares the age-specific net migration rates from the five subregions in the 2000-2010 period (2000s). New York City has been and continues to display a unique age-specific pattern of net migration relative to the other four subregions. Net migration rates are negative for the 0-4 cohort, while rates for this cohort are positive for the other subregions. The 25-29 cohort in NYC shows a notably positive net migration rate in contrast to the negative net migration troughs in the surrounding four subregions – implying a local influx of young migrants to NYC. The neighboring subregions display similar peaks in positive net migration rates for the 30-34 and 35-39 age cohorts that correspond with negative net migration rates in NYC – implying a suburban drift out of the city during traditional years of child birth and child rearing.

FIGURE 2-35. AGE-SPECIFIC MIGRATION RATES BY SUBREGION, 2000s



Source: <http://www.netmigration.wisc.edu/>

Historic crude migration rates (CMR) are estimated for the counties and subregions, by taking the number of net migrants and dividing by the corresponding historic census population. These values are then multiplied by 100 arrive at CMRs per 100, as is the case with the age-specific net migration rate. CMRs provide a useful summary of the overall migration picture for all age groups. The historic CMRs (Table 2-6) demonstrate a level of volatility in migration that reflects the scattered fluctuations of individual age-specific rates described above. Even after taking into account rapid suburban growth following World War II, each subregion has experienced periods of positive and negative CMRs, further supporting the finding that there are no definitive trends in net migration at either the subregional or individual county levels.

Examining county-specific patterns reveals a few noteworthy trends. In New York City, Bronx and Kings Counties have had a consistently net negative CMR since 1950, despite the rate approaching zero in more recent history; Richmond County has had a positive CMR since the 1950s. In Mid-Hudson, Ulster has experienced a consistently downward trend of positive migration, similar to Ocean County in New Jersey. Essex and Hudson Counties in New Jersey have had a consistently negative CMR since the 1950s, while trending slightly towards zero.

TABLE 2-6. HISTORIC CRUDE MIGRATION (CMR) PER 100, 1950-2010

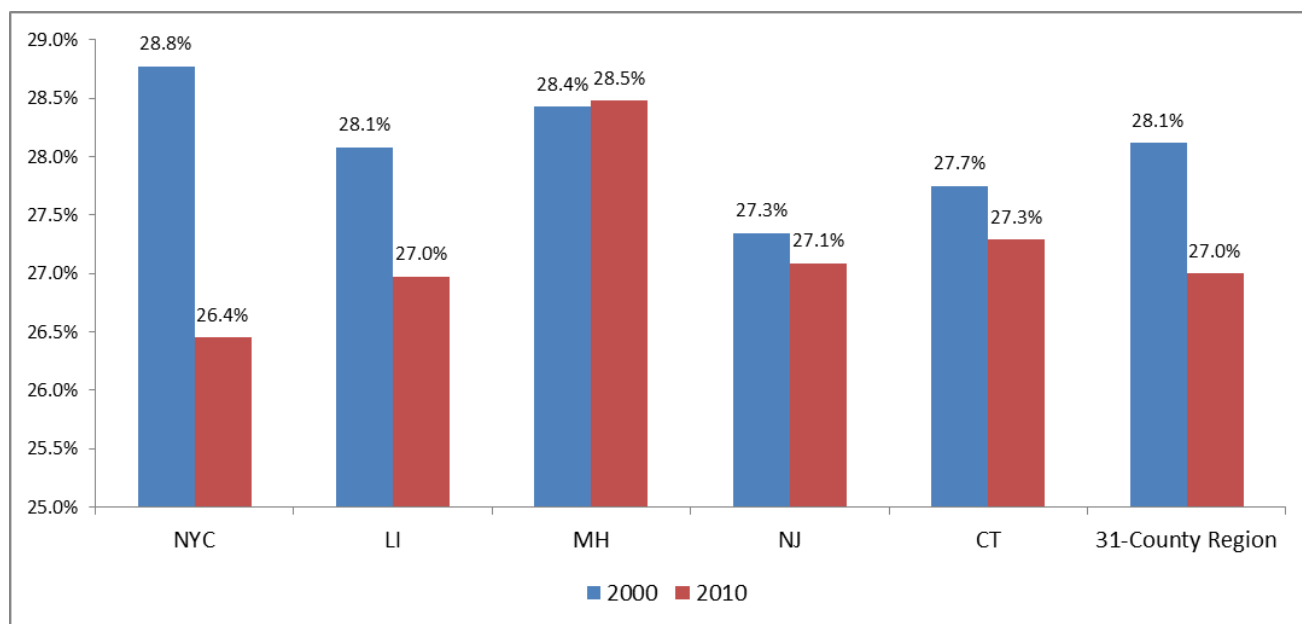
Geography	HISTORIC							
	Crude Migration Rates (CMR) - Rate per 100							
	'50-'60	'60-'70	'70-'80	'80-'90	'90-'00	'00-'10	Max	Min
Bronx County	-10.8	-6.4	-28.4	-3.5	-3.4	-5.5	-3.4	-28.4
Kings County	-14.0	-10.8	-23.1	-3.8	-6.0	-7.7	-3.8	-23.1
New York County	-18.6	-11.9	-9.6	3.1	-4.6	-2.9	3.1	-18.6
Queens County	4.4	1.8	-9.0	0.7	4.6	-6.8	4.6	-9.0
Richmond County	3.9	21.7	11.9	2.4	9.0	0.8	21.7	0.8
New York City	-10.5	-6.4	-16.6	-0.8	-1.7	-5.7	-0.8	-16.6
Nassau County	68.8	1.5	-10.7	-4.8	-0.9	-3.0	68.8	-10.7
Suffolk County	116.6	50.5	4.7	-2.6	0.3	-0.2	116.6	-2.6
Long Island	82.7	18.1	-3.9	-3.7	-0.3	-1.6	82.7	-3.9
Dutchess County	17.1	14.6	3.7	1.8	2.0	3.0	17.1	1.8
Orange County	9.9	10.9	9.4	11.4	2.0	1.3	11.4	1.3
Putnam County	43.8	65.0	26.9	2.3	5.7	-1.0	65.0	-1.0
Rockland County	38.6	52.1	4.6	-3.9	-0.5	-0.5	52.1	-3.9
Sullivan County	4.5	12.5	20.8	5.0	3.1	2.6	20.8	2.6
Ulster County	18.8	10.5	7.7	1.4	3.6	1.3	18.8	1.3
Westchester County	17.3	2.4	-6.8	-1.7	-0.9	-2.4	17.3	-6.8
Mid-Hudson	18.1	11.7	0.9	0.9	0.7	-0.4	18.1	-0.4
Bergen County	28.3	6.4	-8.8	-3.6	3.8	-0.7	28.3	-8.8
Essex County	-8.3	-7.6	-15.3	-12.5	-7.1	-7.7	-7.1	-15.3
Hudson County	-15.2	-7.8	-13.4	-4.2	0.6	-3.7	0.6	-15.2
Hunterdon County	16.8	20.2	18.7	17.1	5.3	1.0	20.2	1.0
Mercer County	3.3	4.4	-5.1	1.6	1.7	-0.3	4.4	-5.1
Middlesex County	42.3	19.8	-5.0	7.3	4.7	1.4	42.3	-5.0
Monmouth County	32.5	26.3	3.1	6.1	6.0	-1.2	32.5	-1.2
Morris County	41.7	32.0	-1.3	-2.0	4.9	-0.4	41.7	-2.0
Ocean County	74.4	79.4	61.4	24.7	18.6	11.7	79.4	11.7
Passaic County	8.1	3.1	-10.0	-4.3	-1.2	-5.4	8.1	-10.0
Somerset County	27.6	23.8	-3.3	12.5	14.6	1.7	27.6	-3.3
Sussex County	29.1	43.6	38.1	4.1	1.9	-1.0	43.6	-1.0
Union County	12.4	-0.8	-11.0	-4.3	-0.2	-3.3	12.4	-11.0
Warren County	6.2	9.8	9.0	3.8	6.5	2.4	9.8	2.4
New Jersey	10.2	7.5	-4.7	0.1	3.2	-1.0	10.2	-4.7
Fairfield County	16.0	10.9	-3.5	-1.8	-0.6	-1.6	16.0	-3.5
Litchfield County	9.0	11.9	4.9	7.4	0.5	3.2	11.9	0.5
New Haven County	7.7	2.9	-3.2	1.5	-2.4	1.8	7.7	-3.2
Connecticut	11.5	7.3	-2.6	0.5	-1.3	0.4	11.5	-2.6
31-County Region	4.7	2.9	-8.7	-0.7	0.3	-2.6	4.7	-8.7

Source: <http://www.netmigration.wisc.edu/>

2.8 School Enrollment

School enrollment in the 31-County region is consistent with U.S. as a whole, with roughly three of every ten people over the age of three enrolled in school. Over the last decade the proportion of school enrollment has remained steady across the subregions, with only New York City experiencing a noteworthy shift, dropping by 2.3 percentage points (Figure 2-36). This drop results in a slight downward trend for the region as a whole, as a result of New York City's larger share of the population.

FIGURE 2-36. SHARE OF POPULATION 3 YEARS AND OVER ENROLLED IN SCHOOL, 2000-2010



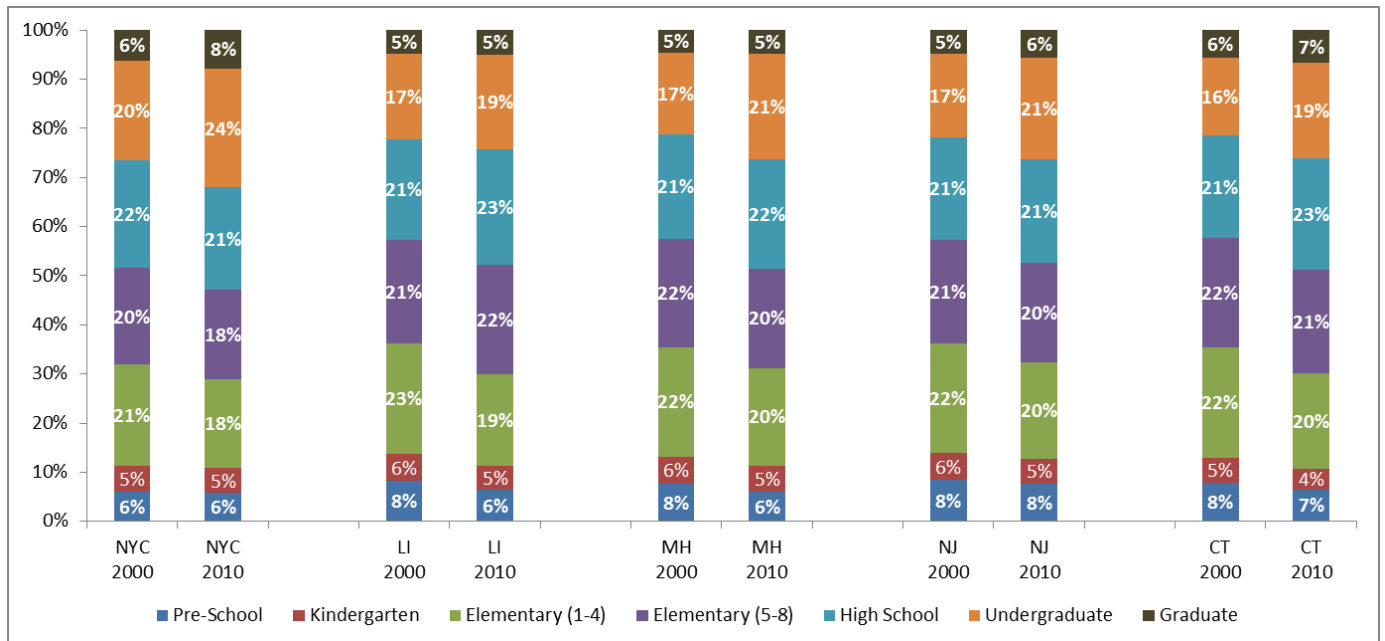
Source: 1990, 2000, and 2010 Census PUMS

The distribution of school type for those enrolled has shifted over the past ten years. Most notably, the proportion enrolled in undergraduate programs has risen across the region by approximately three to four percentage points in each subregion (Figure 2-37). This shift has come at the expense of younger elementary students (grades 1-4), whose proportion has declined. Figure 2-38 further illustrates this trend, as the number of undergraduates has risen over the twenty year time frame, most notably growing by 37 percent in Mid-Hudson and 25 percent in New Jersey and Connecticut. This trend should be interpreted with caution, however, as college enrollment has begun to drop following its peak in 2011.¹⁶ The increase in college attendance leading up to 2011 has been attributed to a rising college-aged population, increased high school graduation rates, colleges drawing students from abroad and the recession sending more people, adults in particular, into college.¹⁷

¹⁶ Molla, Rani (September 24, 2014). *College Enrollment Peaked in 2011*. Wall Street Journal. <http://blogs.wsj.com/numbers/college-enrollment-peaked-in-2011-1776/>

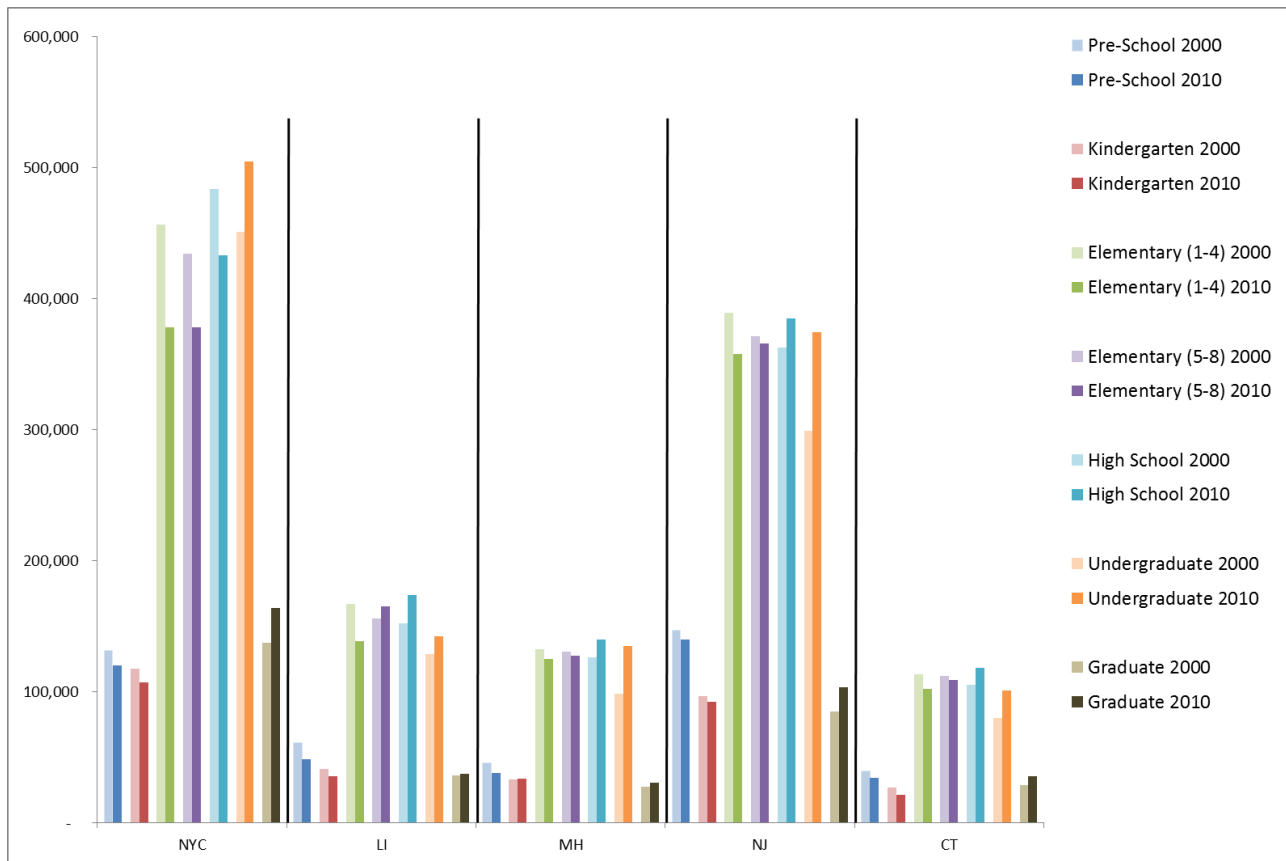
¹⁷ Pérez-Peña, Richard (July 25, 2013). *College Enrollment Falls as Economy Recovers*. New York Times. http://www.nytimes.com/2013/07/26/education/in-a-recovering-economy-a-decline-in-college-enrollment.html?pagewanted=all&_r=0

FIGURE 2-37. SHARE OF SCHOOL ENROLLMENT BY SCHOOL-TYPE FOR POPULATION 3 YEARS AND OVER, 2000-2010



Source: 1990, 2000, and 2010 Census PUMS

FIGURE 2–38. SCHOOL ENROLLMENT BY SCHOOL-TYPE FOR POPULATION 3 YEARS AND OVER, 2000–2010



Source: 1990, 2000, and 2010 Census PUMS

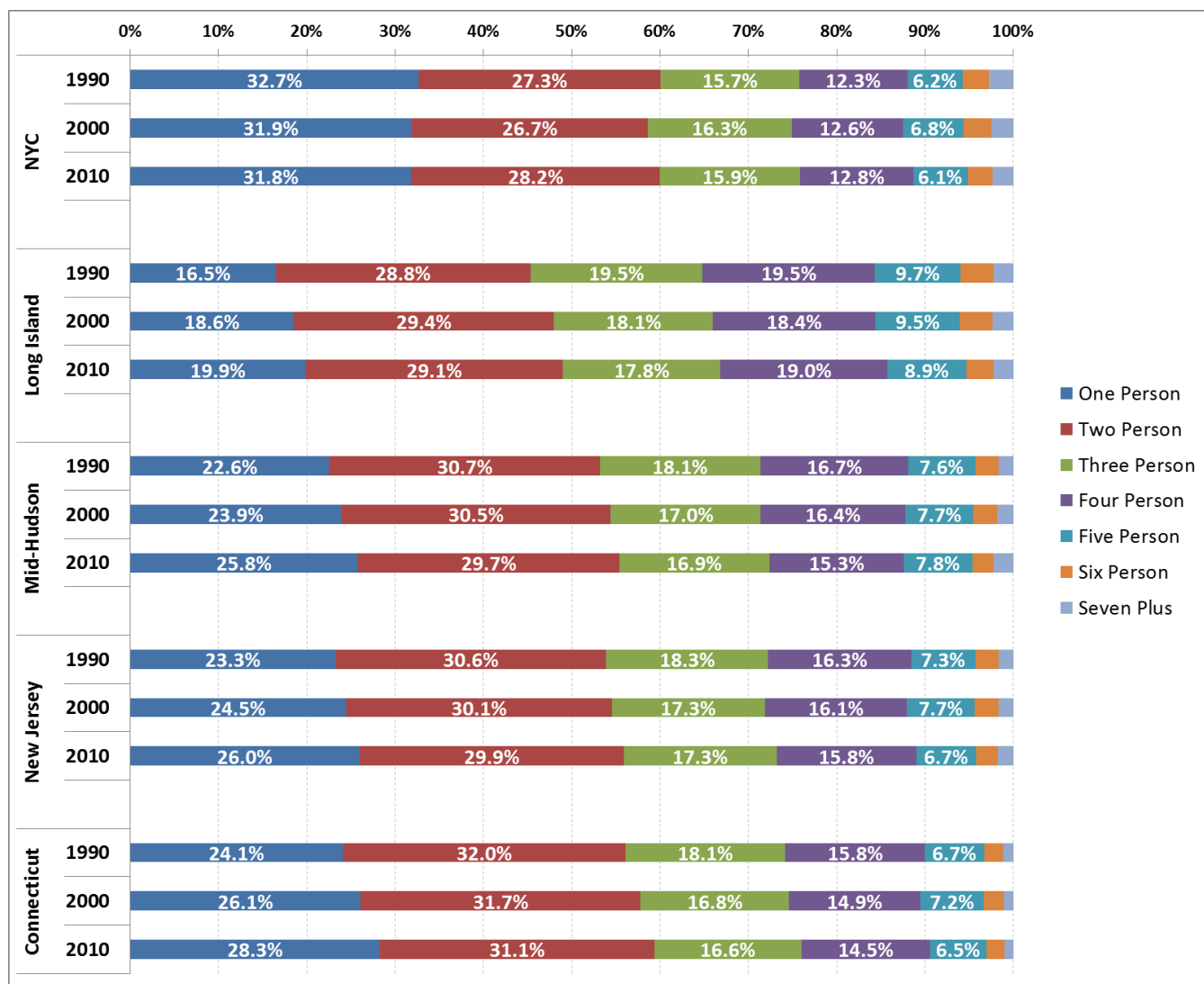
3.0 HOUSEHOLD TRENDS

The calculation of households from population is an important step in the demographic forecasting process as this variable represents a key unit of analysis in socioeconomic models and plays a crucial role in the regional model's operation. This section of the document evaluates some of the trends in household formation, attributes, and requirements.

3.1 Household Size

The distribution of household sizes across the seven categories presented in Figure 3-1 and Table 3-1 shows that the New York City subregion has generally remained constant over the last couple of decades with roughly a third of households categorized as single person households. The other non-NYC subregions have a much lower proportion of households characterized as single-person households, but this proportion has steadily increased in each of the other four subregions by roughly two to three percentage points over the last couple of decades.

FIGURE 3-1. 31-COUNTY REGION HOUSEHOLD SIZE DISTRIBUTIONS BY SUBREGION



Source: 1990, 2000, 2010 Census PUMS

There is closer similarity in the proportion of two-person households, between NYC and the four other subregions. The proportion of two-person households in all five subregions has generally held steady over the last couple of decades thereby implying that the growth of single-person households in the non-NYC regions has come largely at the expense of larger household unit sizes – particularly three and four-person households.

The data evaluated and presented in Figure 3-1 and Table 3-1 is top-coded at seven-person households with no additional information of the average household size associated with this uppermost tier – comprising less than three percent of all households observed. Two measures of average household size are presented in Table 3-1 with the second measure reflecting the impact of excluding the top-coded household size category from the calculation. The first average household size measure shows a marginal decrease over time in Long Island and slight increases in New York City, New Jersey, and Connecticut, while Mid-Hudson remains stable.

On further inspection, the Project Team detected the presence of potential outliers in the seven-plus household category figures reported in 2010, that influenced the overall findings of average household size. The Project Team estimated the average household size of the seven-plus category of the entire 31-County Region to be 7.63 and 8.34 in 1990 and 2000 respectively, but as high as 12.68 in 2010. The 2010 average household size calculated for the seven plus category in each subregion yielded some variation; NYC (12.48), Long Island (11.74), Mid-Hudson (9.81), New Jersey (13.57), Connecticut (19.42). These average values are significantly larger to those calculated from the 1990 household size data; NYC (7.53), Long Island (7.72), Mid-Hudson (7.69), New Jersey (7.83), Connecticut (7.42).

The potential 2010 outliers had the effect of edging the overall average household size estimate upwards in non-NYC subregions, despite an otherwise clear trend towards smaller household sizes. The second average household size measure in Table 3-1 therefore represents an average that does not include the potential impact of outliers in the calculation of average household size and this more centralized measure more clearly reveals a marginal decrease in average household size over time that is more consistent with the household size distribution trends presented in Figure 3-1. The estimated median household size which also represents a central measure that is more resistant to the potential influence of outliers further corroborates the findings of slight declines in average household size in all subregions except NYC.

TABLE 3-1. 31-COUNTY REGION HOUSEHOLD SIZE DISTRIBUTIONS BY SUBREGION

Region	Year	Household Size (Persons)							Average	Average (w/o 7+)	Est. Median
		One Person	Two Person	Three Person	Four Person	Five Person	Six Person	Seven Plus			
NYC	1990	32.7%	27.3%	15.7%	12.3%	6.2%	3.0%	2.8%	2.53	2.39	2.63
	2000	31.9%	26.7%	16.3%	12.6%	6.8%	3.1%	2.5%	2.59	2.44	2.68
	2010	31.8%	28.2%	15.9%	12.8%	6.1%	2.8%	2.3%	2.64	2.40	2.65
Long Island	1990	16.5%	28.8%	19.5%	19.5%	9.7%	3.7%	2.3%	2.99	2.88	3.24
	2000	18.6%	29.4%	18.1%	18.4%	9.5%	3.7%	2.3%	2.95	2.82	3.11
	2010	19.9%	29.1%	17.8%	19.0%	8.9%	3.1%	2.2%	2.97	2.77	3.06
Mid-Hudson	1990	22.6%	30.7%	18.1%	16.7%	7.6%	2.7%	1.7%	2.72	2.64	2.90
	2000	23.9%	30.5%	17.0%	16.4%	7.7%	2.7%	1.8%	2.71	2.61	2.86
	2010	25.8%	29.7%	16.9%	15.3%	7.8%	2.4%	2.2%	2.72	2.56	2.82
New Jersey	1990	23.3%	30.6%	18.3%	16.3%	7.3%	2.6%	1.6%	2.69	2.61	2.87
	2000	24.5%	30.1%	17.3%	16.1%	7.7%	2.7%	1.6%	2.69	2.60	2.85
	2010	26.0%	29.9%	17.3%	15.8%	6.7%	2.5%	1.7%	2.73	2.54	2.80
Connecticut	1990	24.1%	32.0%	18.1%	15.8%	6.7%	2.1%	1.2%	2.61	2.55	2.81
	2000	26.1%	31.7%	16.8%	14.9%	7.2%	2.2%	1.1%	2.57	2.52	2.75
	2010	28.3%	31.1%	16.6%	14.5%	6.5%	2.0%	1.0%	2.62	2.45	2.70

Source: 1990, 2000, 2010 Census PUMS

3.2 Headship Rates

An important factor in projecting household formation in the context of a changing age profile of the population is the estimated corresponding profile of headship rates by age of the population. The headship rate is the ratio of reported household heads (self-identified classification in the census) and the population in households. Table 3-2 summarizes the headship rates calculated by age cohort in 1990, 2000, and 2010. Green cells indicate the highest rates for each cohort across the five subregions for that data sample year, while red cells indicate the lowest rates. In both time periods, NYC appears to have a higher headship rate than all other subregions for the majority of age-cohort classifications, while Long Island conversely generally trends notably below all other subregions.

Also observed in Table 3-2 is the general decline in headship rates across all age cohorts in all subregions between 1990 and 2010. Figure 3-2 through Figure 3-6 chart the headship rate profile by age for both 1990 and 2010, thereby providing a clearer indication of changes in the headship rate by subregion.

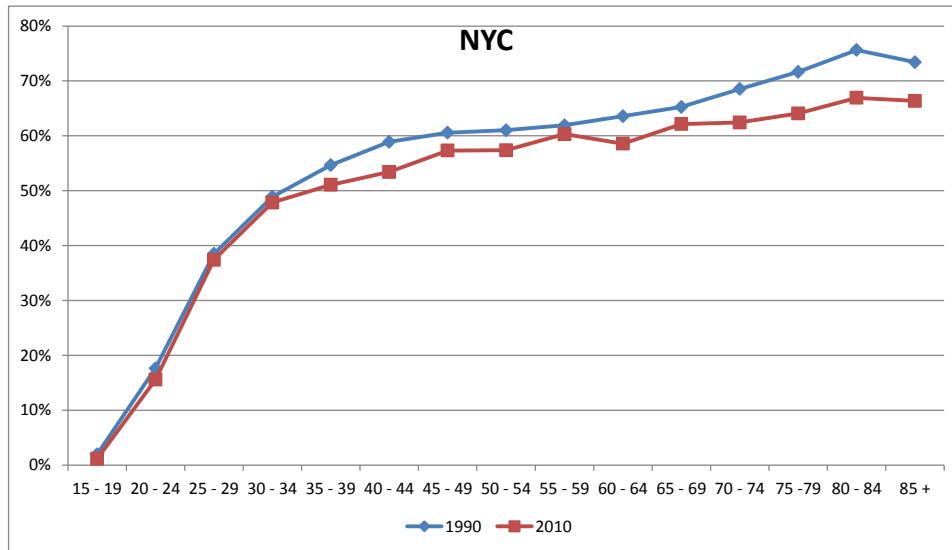
TABLE 3-2. 31-COUNTY REGION HEADSHIP RATES BY BY SUBREGION

Region	Year	Age Category														
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
NYC	1990	2.0%	17.6%	38.5%	48.9%	54.7%	58.9%	60.6%	61.0%	61.9%	63.6%	65.3%	68.5%	71.7%	75.6%	73.4%
Long Island		0.5%	7.0%	26.4%	40.5%	47.0%	51.6%	53.2%	55.0%	54.8%	57.7%	59.7%	62.2%	61.3%	64.3%	54.8%
Mid-Hudson		1.0%	14.4%	35.6%	46.9%	50.9%	53.8%	55.8%	57.1%	58.0%	59.4%	61.4%	64.7%	67.9%	68.3%	66.5%
New Jersey		1.1%	13.8%	35.4%	46.3%	50.8%	53.6%	55.8%	56.7%	57.4%	59.1%	61.8%	65.4%	68.7%	70.4%	67.2%
Connecticut		2.0%	18.5%	39.6%	47.7%	51.4%	54.9%	56.8%	56.7%	57.4%	59.8%	62.9%	65.7%	68.3%	74.6%	69.0%
NYMTC Region		1.4%	14.8%	35.9%	46.7%	51.8%	55.4%	57.2%	58.1%	58.6%	60.5%	62.8%	66.1%	68.8%	71.9%	68.5%
NYC	2000	1.9%	20.3%	40.1%	49.1%	53.5%	56.6%	58.4%	60.5%	61.0%	62.0%	64.7%	65.6%	68.5%	71.6%	74.3%
Long Island		0.7%	7.6%	25.0%	39.4%	46.0%	49.1%	52.0%	54.0%	55.1%	57.2%	59.2%	60.0%	64.1%	65.6%	62.1%
Mid-Hudson		1.7%	17.4%	35.9%	45.8%	50.0%	54.0%	54.6%	56.0%	58.7%	59.5%	61.4%	64.3%	65.6%	68.1%	70.3%
New Jersey		1.3%	16.5%	36.0%	46.3%	50.0%	53.1%	54.7%	56.1%	57.8%	58.4%	60.6%	63.4%	66.4%	70.0%	70.9%
Connecticut		1.5%	21.2%	40.9%	49.2%	51.8%	53.6%	55.9%	57.0%	59.7%	59.4%	63.4%	62.5%	67.0%	71.8%	72.8%
NYMTC Region		1.5%	17.6%	37.1%	46.8%	50.9%	53.9%	55.8%	57.4%	58.8%	59.8%	62.2%	63.7%	66.8%	70.0%	71.2%
NYC	2010	1.1%	15.6%	37.4%	47.8%	51.1%	53.4%	57.3%	57.4%	60.3%	58.6%	62.1%	62.4%	64.1%	66.9%	66.4%
Long Island		0.1%	6.1%	20.9%	37.7%	45.2%	46.9%	50.2%	52.6%	53.0%	56.0%	58.2%	53.4%	63.0%	63.1%	64.2%
Mid-Hudson		0.8%	11.7%	33.6%	43.3%	49.6%	51.8%	54.8%	58.4%	56.1%	57.5%	59.9%	61.6%	64.5%	68.4%	65.6%
New Jersey		0.6%	11.6%	31.4%	43.7%	51.1%	51.6%	54.3%	55.3%	56.6%	58.1%	57.4%	60.5%	60.9%	68.2%	68.0%
Connecticut		0.5%	15.4%	36.8%	49.8%	48.6%	52.7%	55.1%	58.2%	55.1%	57.1%	61.6%	60.7%	61.2%	70.2%	70.5%
NYMTC Region		0.7%	13.0%	33.8%	45.3%	50.0%	51.7%	54.9%	56.2%	57.2%	57.8%	59.8%	60.3%	62.7%	67.3%	67.0%
NYC	Change (2010 - 1990)	-0.8%	-2.1%	-1.1%	-1.0%	-3.6%	-5.5%	-3.3%	-3.6%	-1.6%	-5.0%	-3.1%	-6.1%	-7.6%	-8.7%	-7.1%
Long Island		-0.4%	-0.8%	-5.5%	-2.8%	-1.8%	-4.6%	-3.0%	-2.4%	-1.7%	-1.8%	-1.5%	-8.8%	1.6%	-1.2%	9.4%
Mid-Hudson		-0.2%	-2.7%	-2.1%	-3.6%	-1.3%	-2.0%	-1.0%	1.3%	-1.8%	-1.8%	-1.5%	-3.1%	-3.4%	0.1%	-1.0%
New Jersey		-0.5%	-2.2%	-3.9%	-2.6%	0.3%	-2.1%	-1.5%	-1.5%	-0.8%	-1.0%	-4.4%	-5.0%	-7.8%	-2.1%	0.9%
Connecticut		-1.5%	-3.1%	-2.8%	2.2%	-2.8%	-2.2%	-1.7%	1.5%	-2.3%	-2.7%	-1.2%	-5.0%	-7.0%	-4.3%	1.6%
NYMTC Region		-0.7%	-1.8%	-2.1%	-1.4%	-1.8%	-3.6%	-2.3%	-1.9%	-1.5%	-2.7%	-3.0%	-5.8%	-6.2%	-4.6%	-1.5%

Note: highest headship rates in each age cohort among the five subregions are shaded green, and the lowest rates are shaded red.

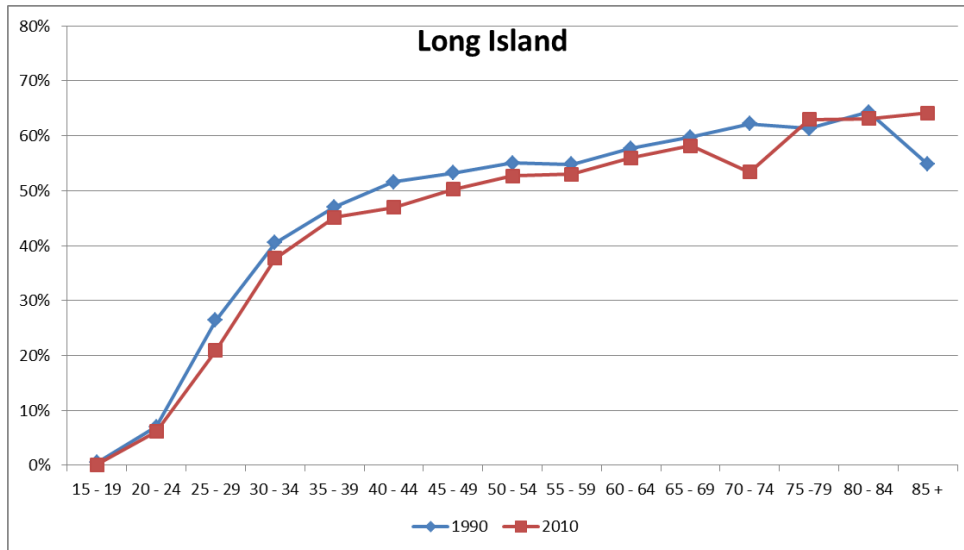
Source: 1990, 2000, 2010 Census PUMS

FIGURE 3-2. NYC HEADSHIP RATES BY AGE COHORT



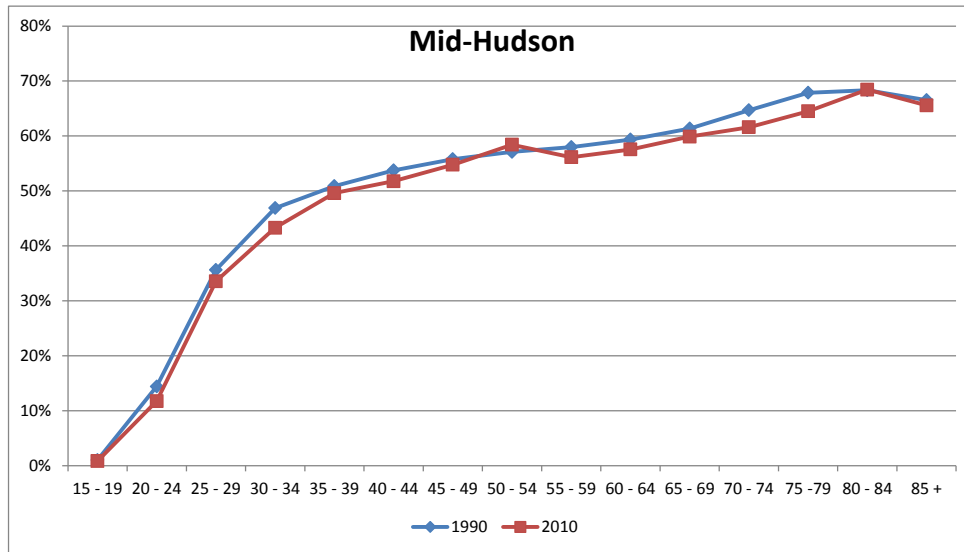
Source: 1990, 2010 Census PUMS

FIGURE 3-3. LONG ISLAND HEADSHIP RATES BY AGE COHORT



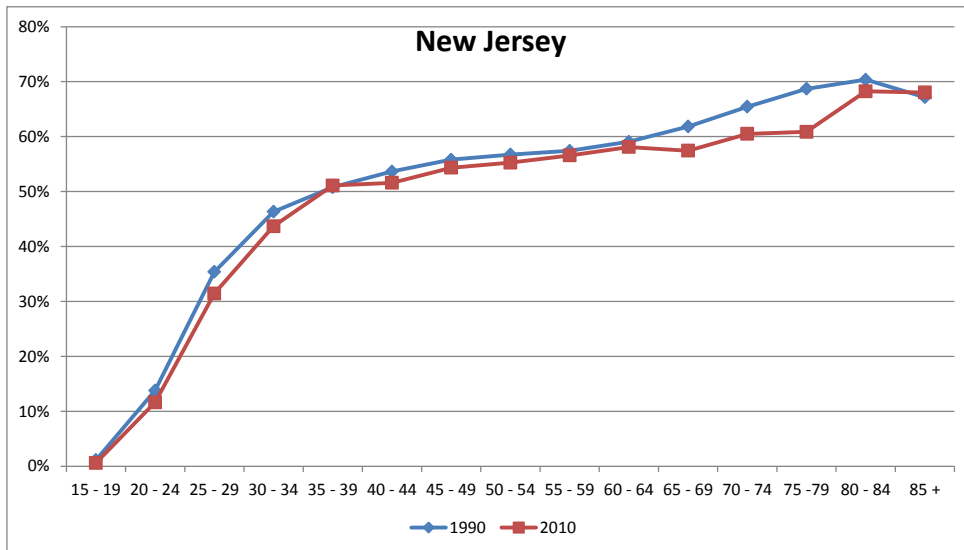
Source: 1990, 2010 Census PUMS

FIGURE 3-4. MID-HUDSON HEADSHIP RATES BY AGE COHORT



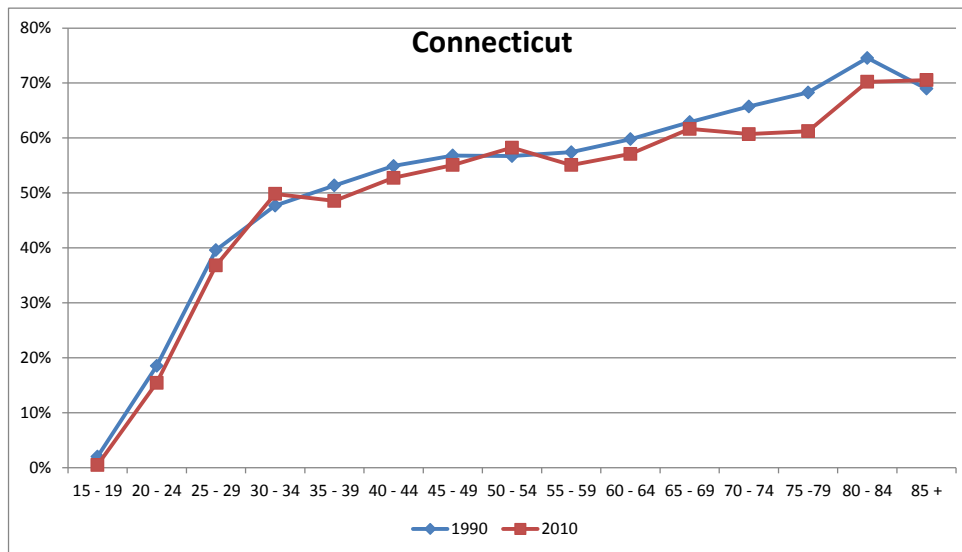
Source: 1990, 2010 Census PUMS

FIGURE 3-5. NEW JERSEY HEADSHIP RATES BY AGE COHORT



Source: 1990, 2010 Census PUMS

FIGURE 3-6. CONNECTICUT HEADSHIP RATES BY AGE COHORT



Source: 1990, 2010 Census PUMS

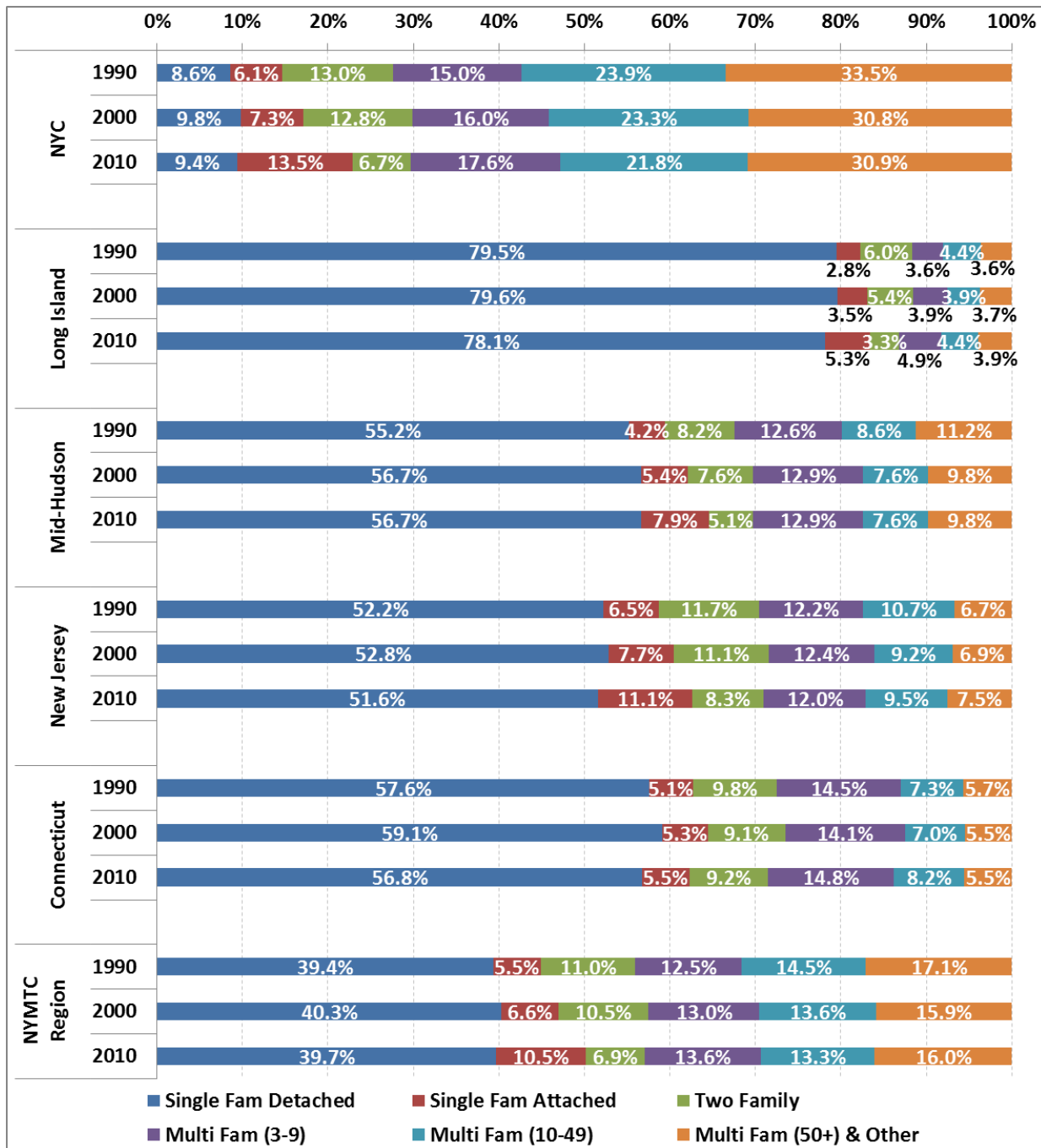
Whereas Table 3-2 shows that there is a general decline in headship rates across all age cohorts, Figure 3-2 through Figure 3-6 all show that the more senior age cohorts (55 and older) show the greatest decline, particularly in the NYC subregion. The NYC subregion displays a noticeable divergence between 1990 and 2010 headship rates for all age groups 35 and older, while notable declines in the Mid-Hudson, New Jersey and Connecticut subregions show notable divergences only in the more senior age groups.

3.3 Housing Unit Types and Tenure

The projections derived from the cohort component are to be verified against available capacity to house future population levels in the region. Demand for housing and corresponding housing unit types therefore comprises an important element of the trend analysis as it provides some insights into the types of future housing developments that may be required to accommodate projected population growth in the region.

Figure 3-7 presents the historical distribution of housing unit types by subregion. NYC displays the lowest propensity for single family detached housing while conversely dominated by multiple family housing units. Across the region, while the share of single family detached homes has remained relatively stable between 1990 and 2010, the share of attached single family homes has risen, most notably in New York City. Additionally, the share of two family units has declined across the region, with New York City experiencing the largest drop, over six percentage points between 1990 and 2010.

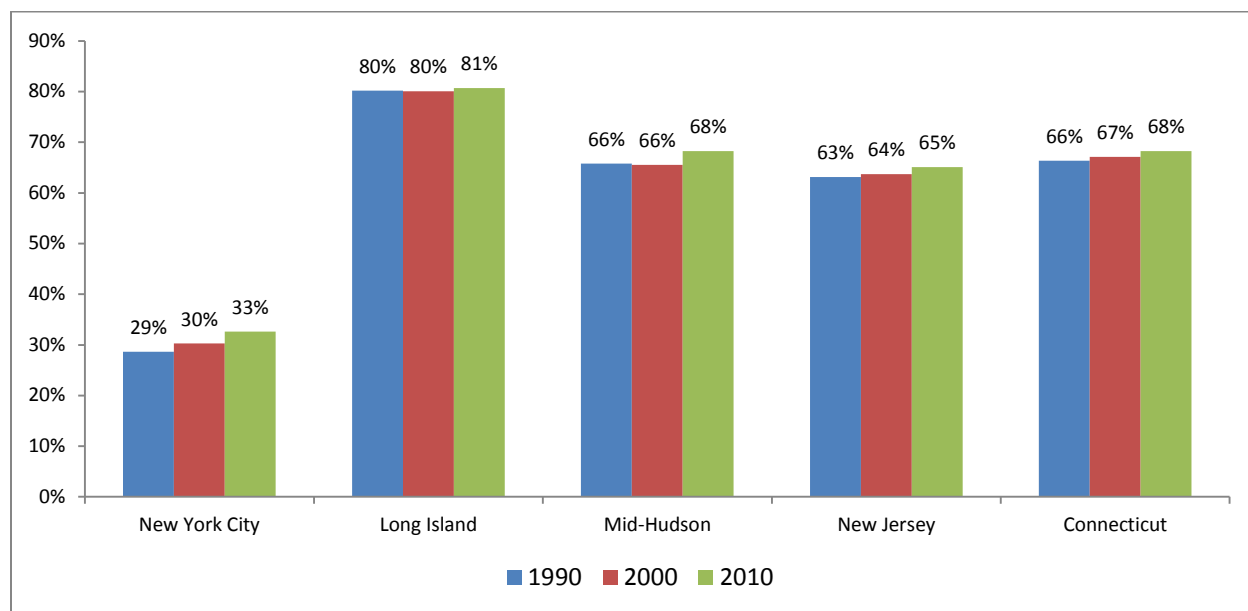
FIGURE 3-7. 31-COUNTY REGION HOUSING UNIT TYPES BY SUBREGION



Source: 1990, 2000, 2010 Census PUMS

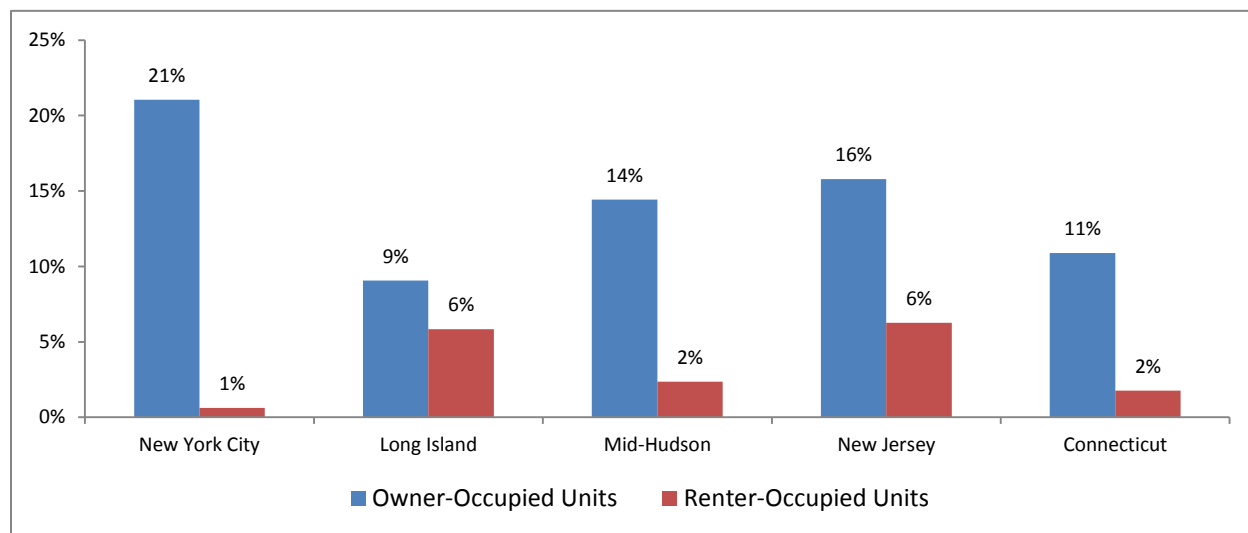
Housing tenure has displayed stability over the last two decades. The split between owner-occupied and renter-occupied units has remained relatively unchanged since 1990 (Figure 3-8), although New York City's share of owner-occupied units has risen slightly. There has been a distinct difference between NYC and the rest of the 31-County region in this regard. While roughly a third of all units are owner-occupied in NYC, nearly three-quarters are owner-occupied across the remaining subregions. This is likely driven by a predominantly rental market in NYC, with more transient residents.

FIGURE 3-8. OWNER-OCCUPIED HOUSING UNITS BY SUBREGION, 1990-2010



Source: 1990, 2000, 2010 Census PUMS

FIGURE 3-9. PERCENTAGE CHANGE IN HOUSING UNITS BY SUBREGION, 1990-2010



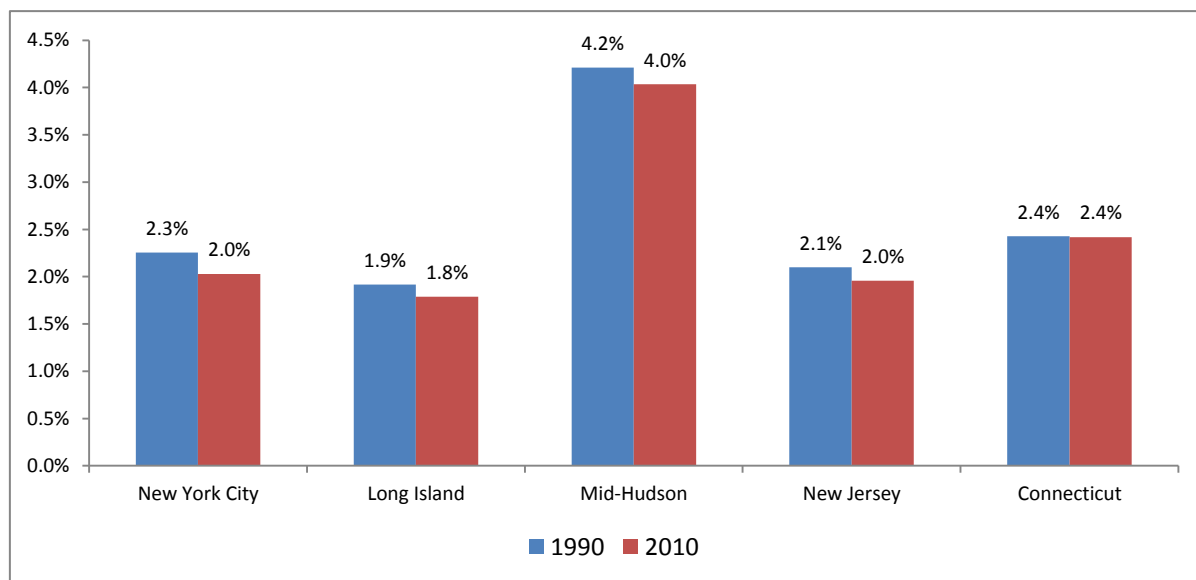
Source: 1990, 2000, 2010 Census PUMS

3.4 Group Quarters Trends

Group Quarters population consists of persons who do not live in housing units, but in facilities, such as prisons, nursing homes, dormitories, group homes and other similar arrangements. The population is classified as institutionalized (e.g., correctional institutions, nursing homes) or non-institutionalized (e.g., college dormitories, military quarters). Since 1990, the group quarters population has risen across the region. However, the share of the population in group quarters has remained relatively consistent over time (Figure 3-10). In Long Island and New Jersey, the group quarters population has held steady

at approximately two percent, with that figure slightly higher in New York City and Connecticut. The Mid-Hudson region's share fell from 4.2 percent to 4.0 percent over the past twenty years.

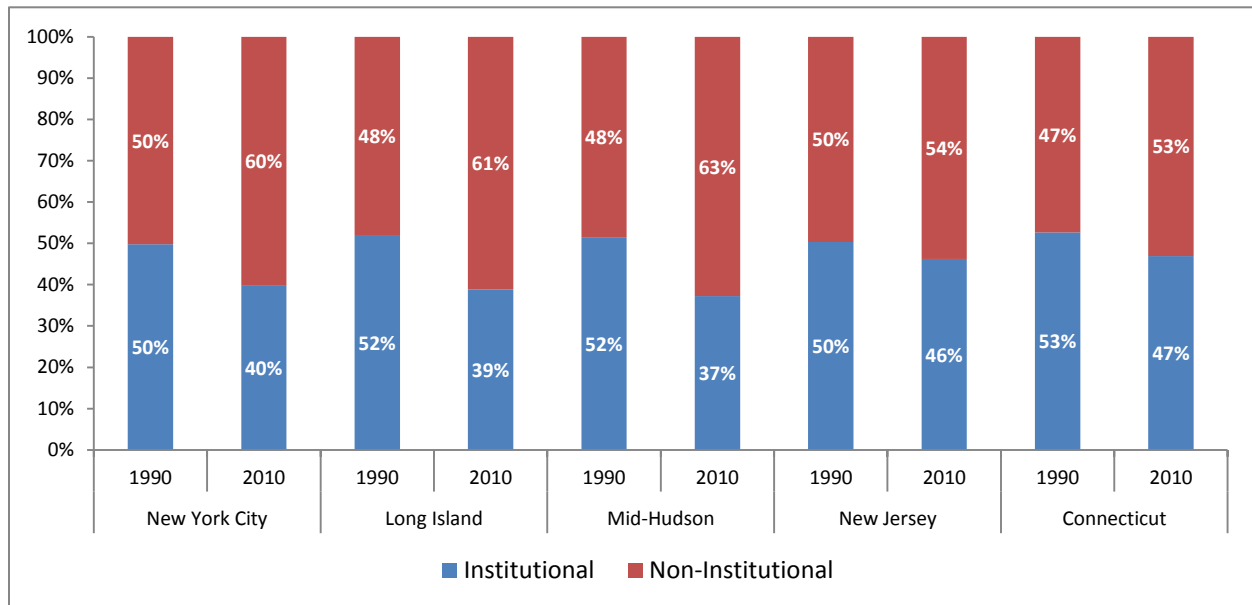
FIGURE 3-10. GROUP QUARTERS SHARE OF POPULATION, 1990-2011



Source: 1990, 2000, 2010 Census PUMS

The split between the share of institutional and non-institutional populations has shifted over time, with the share of the institutional population declining (Figure 3-11). Across the region, the non-institutionalized share of the group quarters population became the majority in 2010, whereas each region was either equal or had a majority institutionalized population in 1990. The most marked change took place in Mid-Hudson, where just over half the group quarters population was institutionalized in 1990, compared to 37 percent in 2010. Long Island also experienced a large shift, with the institutionalized share dropping from 52 to 39 percent.

FIGURE 3–11. INSTITUTIONAL VS. NON-INSTITUTIONAL POPULATION IN GROUP QUARTERS, 1990–2010



Source: 1990, 2000, 2010 Census PUMS

4.0 LABOR FORCE TRENDS

4.1 Labor Force Participation

Once industry employment is projected for the 31-County Region, employment totals will undergo a reconciliation process with the population estimates. To perform that reconciliation, the regional labor force will be estimated by applying age-specific labor force participation rates to population projections.

The left portion of Figure 4-1 compares both male and female labor force participation rates by age cohort in 2010. As indicated by all the charts on the left, 2010 male labor force participation is consistently higher than the female rate in all subregions and for all age cohorts except 16-19. The charts on the right trace the changes to both the male and female labor force participation profiles between 1990 and 2010 – these set of graphs depict a narrowing of the labor force participation rates between men and women in the region.

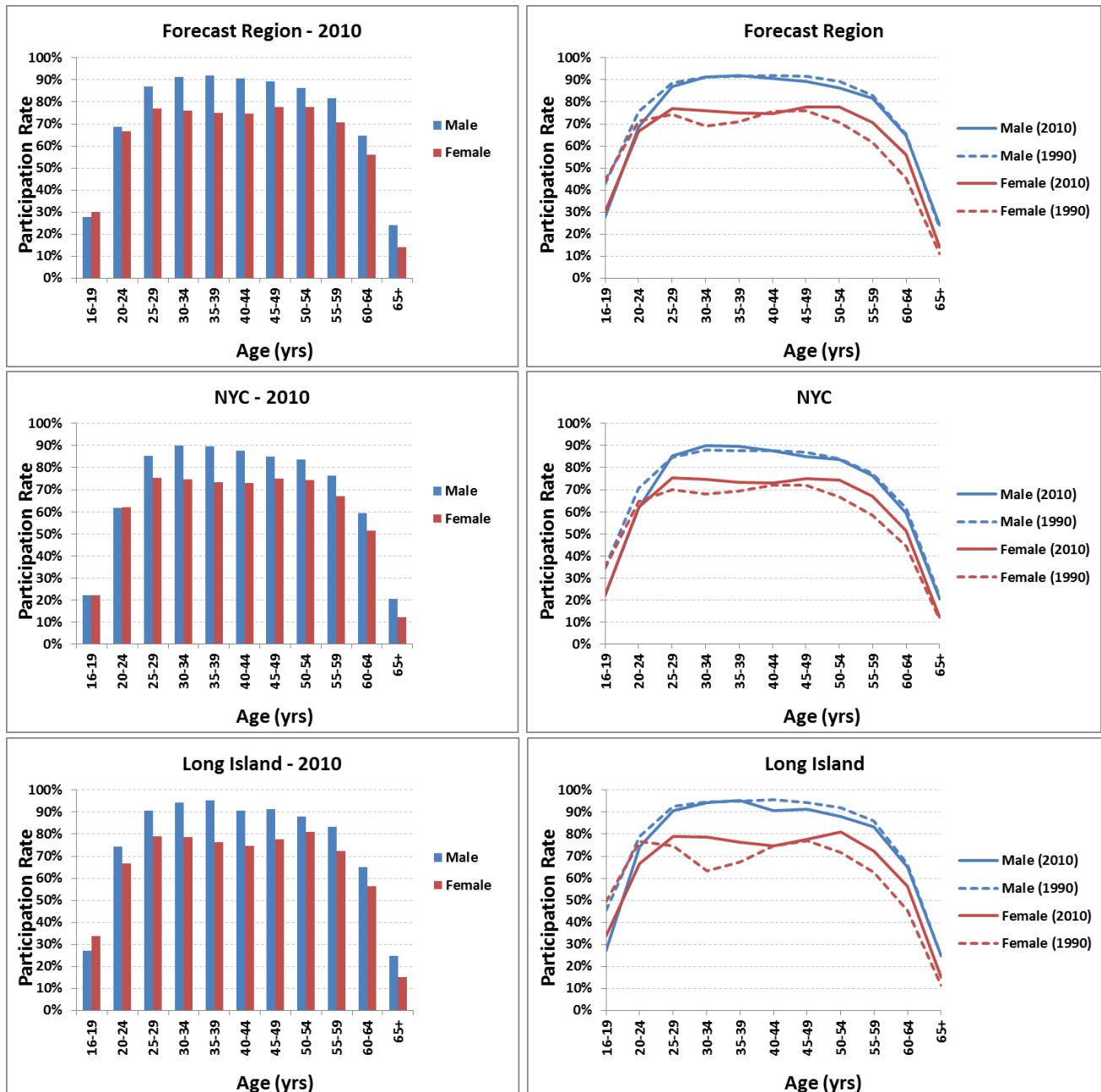
Labor force participation rates have marginally decreased almost uniformly across the board in all age cohorts for males. This reduction most likely includes the impacts of the recent Great Recession (December 2007-June 2009) that saw labor force participation rates decline notably at the height of the crisis and, that may only have begun to rebound at the time of the Census PUMS data collection. The biggest reduction in the male labor force participation rates is in the early age cohorts (16-19 and 20-24) where participation rates have reduced by 15 and 7 percent respectively, at the regional level. The graphs on the right also appear to show notable participation reduction rates for males 40 to 60.

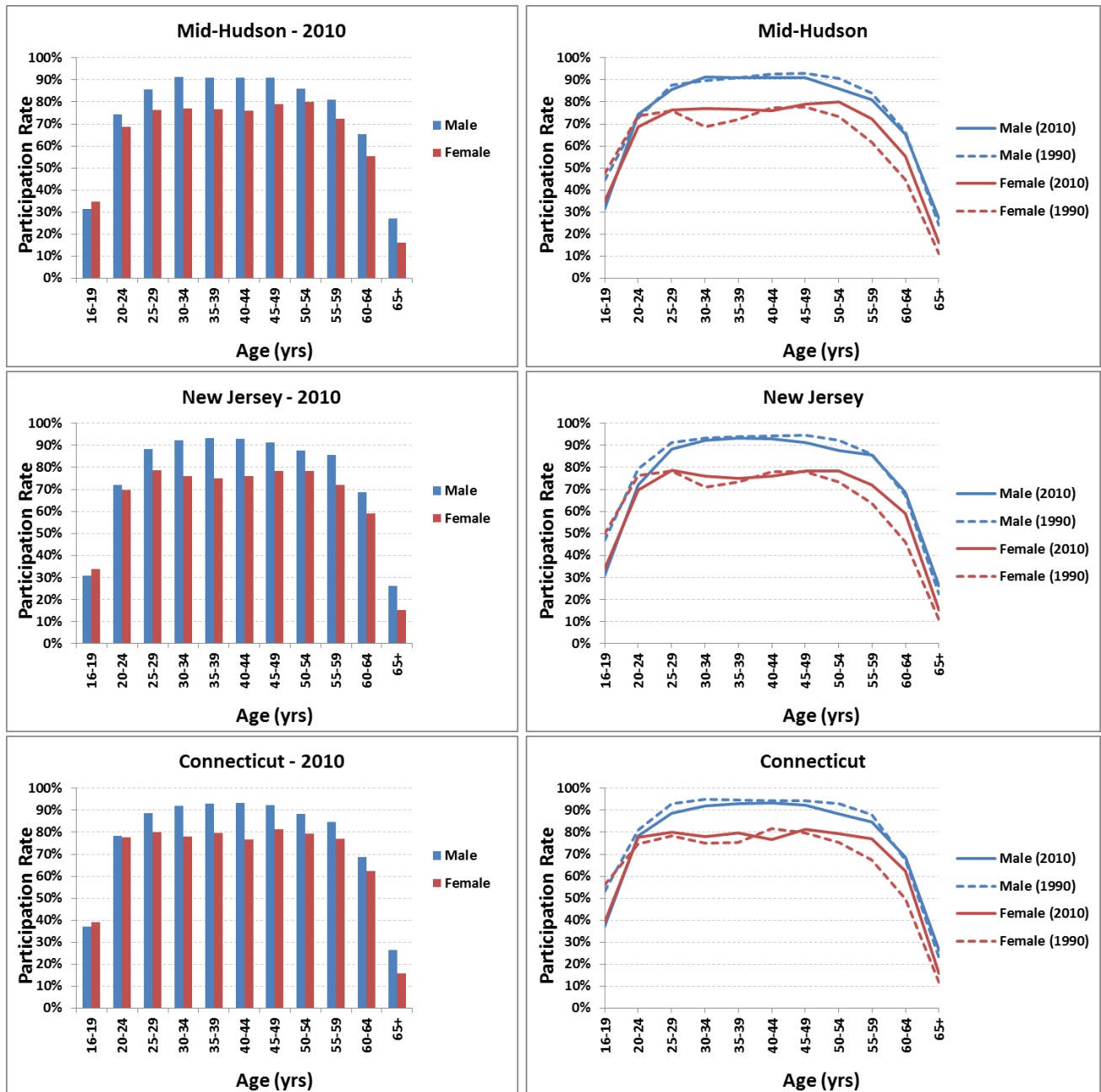
Despite the effects of the recent economic downturn, labor force participation rates for females show notable gains across all age cohorts except 16-19 and 20-24. Whereas the 1990 participation profile for females shows a noticeable dip in the 30-34 cohort that is most likely attributable to interruptions due to child birth (see Figure 2-23 and Figure 2-24 - Section 2.5), this dip is almost entirely erased in the

2010 profile for all subregions, and may reflect both, changes in social attitudes as well as changes in most working environments to accommodate the demands of child care. However, the largest gains in female labor force participation are observed in the age cohorts spanning ages 50-64, where the regional labor participation rate for women has increased by an average of approximately nine percentage points.

The increases in female labor participation rates are likely to continue into the future particularly as college enrollment for women has recently surpassed that of men and thereby adding to structural factors driving the narrowing of the gap; e.g the transition from manufacturing/industrial base to a service economy.

FIGURE 4-1. 31-COUNTY REGION LABOR FORCE PARTICIPATION RATES BY AGE GROUP, 1990-2010





Source: 1990, 2000, 2010 Census PUMS

5.0 EMPLOYMENT TRENDS

Payroll employment growth in the 31-county region is driven by a combination of national and regional trends. Nationally, employment growth is projected to be strongest in industries with stable or growing national demand and low to moderate labor productivity growth. In other words, payroll employment is likely to be most robust in sectors¹⁸ driven by stable consumer demand and where it is also difficult to outsource or automate work. Regionally, employment growth will be strongest in sectors with strong national growth and where New York City can maintain or increase its competitive advantage relative to the rest of the country. The first section briefly describes the employment methodology, in order to provide context to the trends, while the subsequent sections elaborate on key trends in national GDP and national labor productivity by industry, as well as 31-County share of national employment by industry.

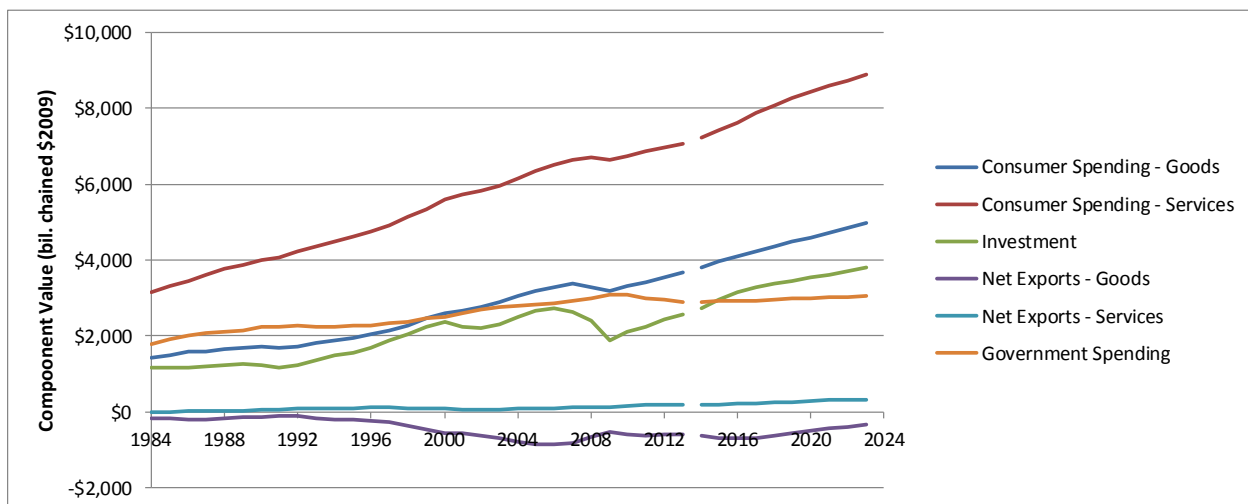
5.1 Employment Forecast Methodology Summary

Employment forecasts are generated from a set of national and regional employment forecasts obtained from different third party sources, including Global Insight and Moody's. A range of alternative county level employment forecasts (by industry) are developed by applying different shift-share ratios implied by various combinations of national and regional employment scenarios described by the third party sources. Final employment estimates are ultimately derived by applying a forecast averaging approach to the resulting spread of outcomes.

5.2 National GDP Trends

The mix of employment growth across industries is ultimately driven by trends in demand, which can be measured by looking at components of Gross Domestic Product (GDP) growth. Figure 5-1 shows a 30-year history of U.S. GDP by primary component (measured in chained \$2009), as well as a 10-year forecast from IHS Global Insight.

FIGURE 5-1. U. S. GDP HISTORY AND PROJECTION BY PRIMARY COMPONENT, 1984-2023



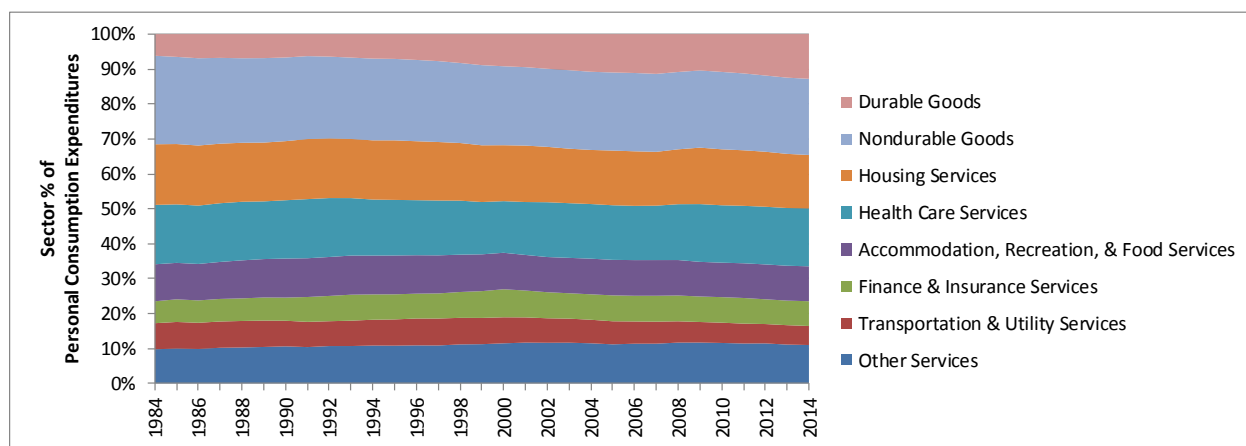
Source: BEA NIPA Table 1.1.6, IHS Global Insight 10-year baseline forecast released Q1 2014

¹⁸ Refers to North American Industry Classification System (NAICS) sectors. Please see appendix for a complete list and explanation of NAICS sectors.

5.2.1 Balance of Goods and Services

Measured in chained dollars, the balance of goods and services in the U.S. national economy has remained relatively stable since the 1980s. Figure 5-2 provides a further breakdown of personal consumption expenditures, which account for roughly two-thirds of GDP. Here, the use of a chained dollar-denomination is important, because it provides the most accurate picture of changes over time within each GDP component, normalized for price changes¹⁹. While in nominal terms, services have been growing as a portion of GDP, and goods have been shrinking, much of these changes have been the result of falling prices for goods (particularly durable goods) and increasing prices for services (particularly in health care, housing, and educational services). When controlling for price changes, goods and services have maintained fairly consistent roles in GDP since 1984 – even through recessionary periods.

FIGURE 5-2. COMPOSITION OF PERSONAL CONSUMPTION EXPENDITURES, 1984–2014 (CHAINED \$2009)



Source: BEA NIPA Table 1.5.6

Looking forward, one sector that may reasonably be expected to break from the steady patterns shown in Figure 5-2 is health care services. Since 1984, health care has averaged 10.7 percent of GDP (in chained \$2009). Since the end of the Great Recession, however, this proportion has climbed to a 30-year high of 11.3 percent. This trend is being driven by demographics. Since the mid-2000s, boomers have been coming out of middle-age and heading into retirement age, thereby increasing demand for health care. As a reflection of this, IHS Global Insight projects this sector to grow to 11.8 percent of real GDP by 2023. Looking towards 2050, this trend is likely to accelerate through the 2030s as boomers advance in age and die, but then attenuate in the 2040s.

5.2.2 Import/Export Trends

Another trend from Figure 5-3 is the development – since the mid-1990s – of a structural trade deficit. Although this diminished somewhat in 2009 with recession, it remains large by historical

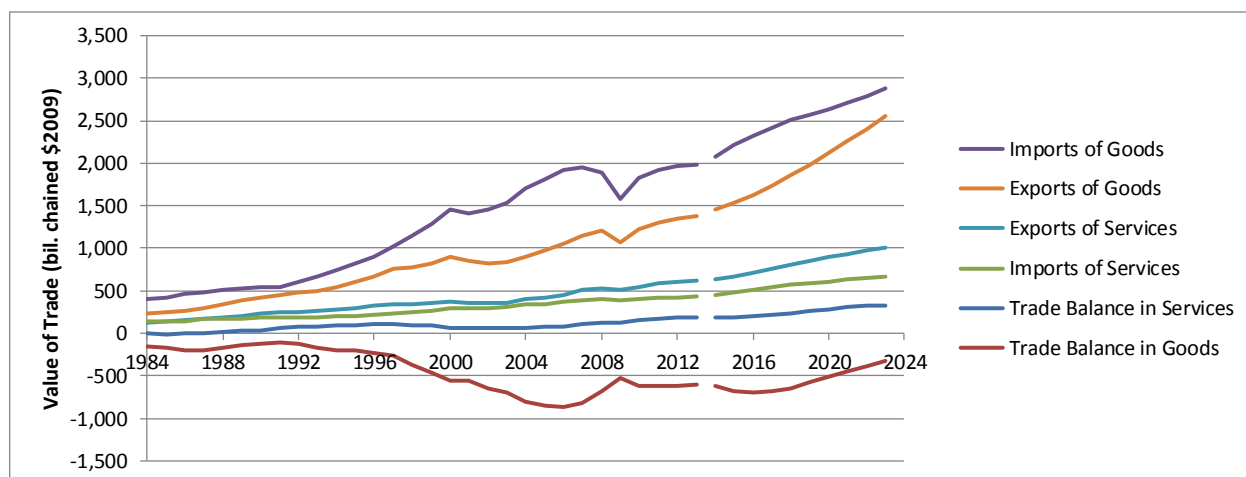
¹⁹ For more information on chain-weighting, see http://www.bea.gov/scb/account_articles/national/1198gpo/box4.htm

standards, and may be unsustainable at present levels. According to the Congressional Research Service²⁰:

At the macroeconomic level, trade deficits are a concern because they affect U.S. economic growth, interest rates, labor, and the debt load of the economy. As the trade deficit rises relative to the total economy, the risk increases that the dollar will weaken, prices will rise, financial markets will be disrupted, and the economic well-being of the population will be reduced. (p. 4)

Looking forward, there will likely be domestic pressure to reduce the trade deficit. Such a reversion would likely increase in the U.S. trade surplus in services, as well as a decrease the trade deficit in goods. This expected reversion is incorporated into the IHS Global Insight 10-year projections, shown in Figure 5-3.

FIGURE 5-3. U. S. IMPORT/EXPORT HISTORY AND PROJECTIONS, 1984-2023 (CHAINED \$2009)



Source: BEA NIPA Table 1.5.6, IHS Global Insight 10-year baseline forecast released Q1 2014

5.2.3 Government Consumption

Due to the effects of the Great Recession, U.S. government debt grew from 36 percent of GDP to over 70 percent of GDP from 2007 to 2013. Although near-term deficits are expected to shrink back to pre-recession levels, the recent accumulation of debt and a number of demographic forces are expected to keep U.S. debt at historic highs. According to the Congressional Budget Office²¹:

Budget shortfalls are projected to increase later in the coming decade, reaching 3.5 percent of GDP in 2023, because of the pressures of an aging population, rising health care costs, an expansion of federal subsidies for health insurance, and growing interest payments on federal debt." [...] Under current law, the debt is projected to decline from about 76 percent of GDP in 2014 to slightly below 71 percent in 2018

²⁰ Nanto, D. and Donnelly, J. (2011) *U.S. International Trade: Trends and Forecasts*, Congressional Research Service. (http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1864&context=key_workplace)

²¹ *Updated Budget Projections: Fiscal years 2013 to 2023*. Congressional Budget Office (<http://www.cbo.gov/sites/default/files/cbofiles/attachments/44172-Baseline2.pdf>)

but then to start rising again; by 2023, if current laws remain in place, debt will equal 74 percent of GDP and continue to be on an upward path. (p. 1)

At the national level, increasing interest payments and political pressure to reduce the debt will likely lead to lower levels of government consumption – thereby marginally reducing demand for health care, social services, education, defense, and construction sectors, as well as direct government employment.

5.2.4 Business Cycles

One of the most visible features of Figure 5-1 is the effect of the Great Recession on most facets of GDP. This most recent economic cycle is evident beginning in 2004 with historically large increases in investment (mostly from housing construction) and net imports (fueled largely by consumers' mortgage equity withdrawal). According to the National Bureau of Economic Research²², the Great Recession officially began in December 2007 and continued until June 2009, when GDP growth resumed. From peak to trough, real GDP fell 4.3 percent, and it was not until mid-2011 that it returned to pre-recession levels. In the context of national and regional employment projections, there are two relevant trends from this protracted and historically deep cycle.

First, personal consumption expenditure – which makes up roughly two thirds of the economy – has largely resumed trend growth, but investment and government spending are still recovering. These trends are visible in the IHS Global Insight 2014-2023 projections, shown in Figure 5-1. In the case of investment, the oversupply of housing built in the run-up to the recession continues to suppress construction demand. In this sector, continued national population growth is needed to absorb the housing oversupply before investment reverts back to long-term trends. In the case of government, the Great Recession triggered an increase in spending due to stimulus programs and elevated enrollment in social safety-net programs. Although stimulus spending has largely subsided, spending on safety-net programs will continue to decline with national unemployment rates.

The second important trend made visible by the Great Recession is that some components of GDP growth are inherently more robust to economic cycles than others. Intuitively, investment and demand for durable goods are the most sensitive because they can typically be delayed for some time with minimal consequences. Similarly, demand for nondurable goods and services are relatively robust because it is more difficult for consumers to delay purchases of food, energy, rent, and health care.

5.3 Labor Productivity

Trends in national employment by industry are driven by two main factors. The first, discussed in the previous section, is changes in final demand and the second is labor productivity. At the most basic level, firms use a mixture of labor and capital – buildings and equipment – to produce and sell goods and services. Productivity is defined as the number of employees needed to achieve observed levels of production, and it depends greatly on the product sold and technology employed to produce it²³.

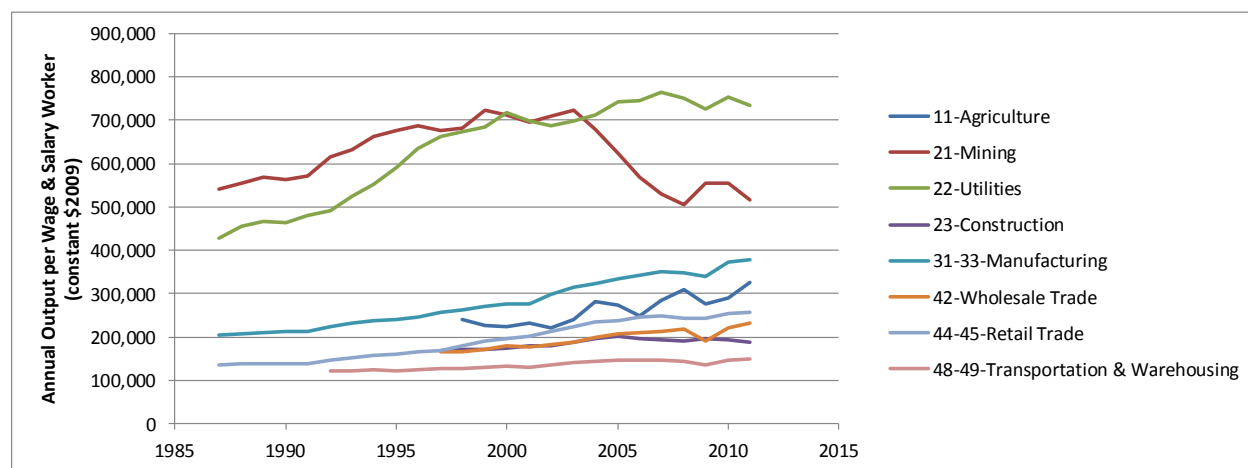
²² <http://www.nber.org/cycles.html>

²³ Although there are a number of ways to define productivity, the focus here is labor productivity, since this is what determines industry employment levels, regardless of the number of hours worked. For more information, see <http://www.bls.gov/lpc/ipread1.htm>. In this section, all discussion of employment is wage & salary (i.e., excludes self-employment). See next section for further discussion of different categories of employment.

Generally speaking, *capital intensive* industries (such as utilities and manufacturing) have higher productivity levels than *labor intensive* industries such as health care and education services.

Labor productivity *growth* occurs when new methods are employed to reduce the labor input for existing production, or when new products are developed that have greater value to consumers given existing labor levels. Although productivity growth has historically led to employment reductions within sectors (as has been evident in manufacturing for decades), it has also been shown to increase national income, which increases demand broadly across most sectors. Thus, employment reductions in one sector are typically met by increases in others²⁴. Looking forward, national employment projections within any single sector depend critically on how quickly technology can lead to productivity growth.

FIGURE 5-4. LABOR PRODUCTIVITY TRENDS FOR GOODS-PRODUCING (AND HANDLING) SECTORS



Source: BLS Labor Productivity and Costs Series, BEA Input-Output Make Tables, BLS Current Employment Statistics

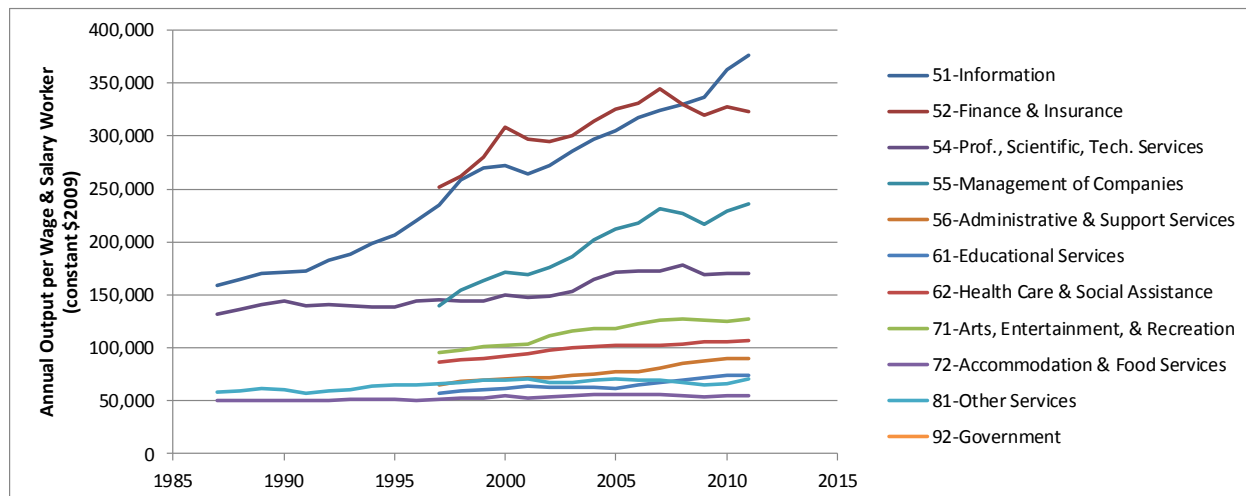
Figure 5-4 shows labor productivity trends for goods-producing sectors, as well as sectors that handle or distribute physical goods. Although the 31-County Region has lower levels of employment for these sectors (relative to U.S. average), there are a few trends that could influence regional employment. The first is the continued increase in manufacturing productivity, which has doubled (in real terms) since the mid-1980s. This growth, driven by technological advancement, is likely to continue. This will likely result in declining national and regional manufacturing employment, even though demand for goods remains stable. Second, the labor productivity of wholesale and retail trade has grown steadily since the mid-1980s, driven by the rise of “big-box” and “online” retail methods. This productivity growth has not been as significant as manufacturing, and has also attenuated to a greater degree since the mid-2000s. Finally, labor productivity for construction and transportation & warehousing – two relatively large employment sectors in the 31-County Region – has been highly stable through the period.

As will be discussed, the sectors shown in Figure 5-4 currently account for only about one-fourth of employment in the 31-county region. Therefore, of more concern to projecting employment in the region are labor productivity trends for service sectors (shown in Figure 5-5). Historically, labor productivity in service sectors has been lower, and grown more slowly, than manufacturing sectors.

²⁴ For further discussion, see Brill and Rowe (2013), “Industry Labor Productivity Trends from 2000 to 2010” (<http://www.bls.gov/Spotlight/2013/productivity/>)

This is particularly true for sectors 56 through 81 (which account for over half of national and regional employment). Job tasks in these sectors frequently involve creativity, social interaction, and deep knowledge in specialty fields.

FIGURE 5-5. NATIONAL LABOR PRODUCTIVITY TRENDS FOR SERVICE SECTORS



Source: BLS Labor Productivity and Costs Series, BEA Input-Output Make Tables, BLS Current Employment Statistics

5.4 National Employment

As discussed above, national employment is primarily driven by final demand across GDP components, and industry-specific productivity levels. Through changes in these two forces, demand for labor is constantly shifting across industry sectors – at times more drastically than others. Responding to this, the labor force must also consistently adjust its skills to remain employed. Observed employment levels reflect these ongoing forces at the national and regional level.

5.4.1 Defining Employment

Before proceeding, it is important to clarify how “employment” can be defined and measured, and which definitions and sources are used in the current forecasting effort. At the most basic level, employment can be measured from the household perspective or the employer perspective. Reflecting these two perspectives, two of the best sources for measuring employment are the Current Population Survey (CPS) – commonly referred to as the “household survey” – and the Current Employment Statistics (CES) – also known as the “payroll survey”. Both surveys are conducted by the Bureau of Labor Statistics. The following bullets summarize the relevant differences between them²⁵.

- **Coverage** – the CES surveys nonfarm business establishments. As such, it does not capture farm employment, self-employment, unpaid family workers, or workers on unpaid leave. In contrast, the household survey has broader coverage, capturing all of these employment categories, as well as those not employed and looking for work (unemployed), and those not employed and not looking for work (not in labor force).

²⁵ For further description of the differences between the two surveys, see <http://www.bls.gov/lau/lauhvse.htm#hvse>.

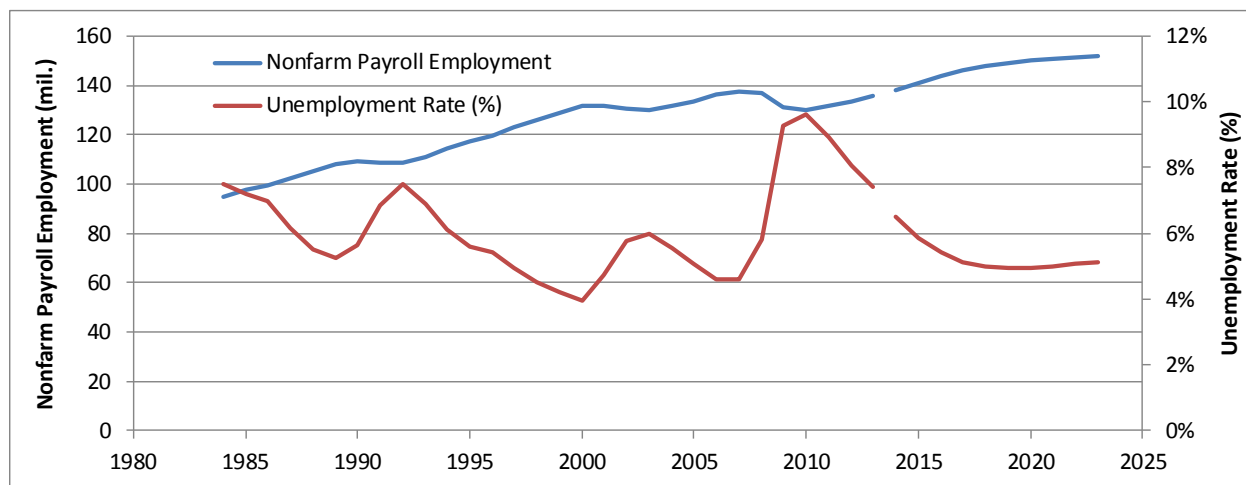
- "Job" vs. "Employed Person" – because the CES surveys business establishments, it measures filled positions rather than employed persons. Because one person can hold multiple jobs, CES counts multiple job-holders twice, whereas CPS counts them once.
- Location – the CES measures employment at the place of work, whereas the CPS measures employment at the place of residence.
- Because of their definitional coverage, these two surveys are together held to be a fairly complete accounting of the national labor market. Further, although they measure different aspects of employment, they have been shown to be highly consistent with each other at the national level.²⁶

In the present work, we adopt two mutually-exclusive categories of employment. The first is payroll employment, which follows the CES scope and definition, except that payroll farm employment is added (from CPS). The second is self-employment, which includes unincorporated self-employed workers and unpaid family workers. These categories are chosen because they are consistent with the third-party forecasts used in the present effort. That is, Bureau of Labor Statistics, IHS-Global Insight and Moody's all adopt CES "Wage and Salary" definitions for their employment projections²⁷. None of these sources incorporates self-employment into their national projections.

5.4.2 Payroll Employment

Figure 5-6 shows 30 years' history of national payroll employment, along with the unemployment rate. This shows that in the current recovery from the Great Recession, although most components of GDP have resumed trend growth, the labor force is still in a process of adjusting back to "full employment" – generally thought to be around 5.5 percent. According to IHS Global Insight forecasts, the national unemployment rate – 5.8 percent as of October 2014²⁸ – will continue to decline through 2016 and then level off.

FIGURE 5-6. AGGREGATE NATIONAL EMPLOYMENT TRENDS AND PROJECTION, 1984-2023



Source: BLS Current Population Survey, Current Employment Statistics, IHS Global Insight 10-year baseline forecast released Q1 2014

²⁶ See http://www.bls.gov/web/empsit/ces_cps_trends.pdf.

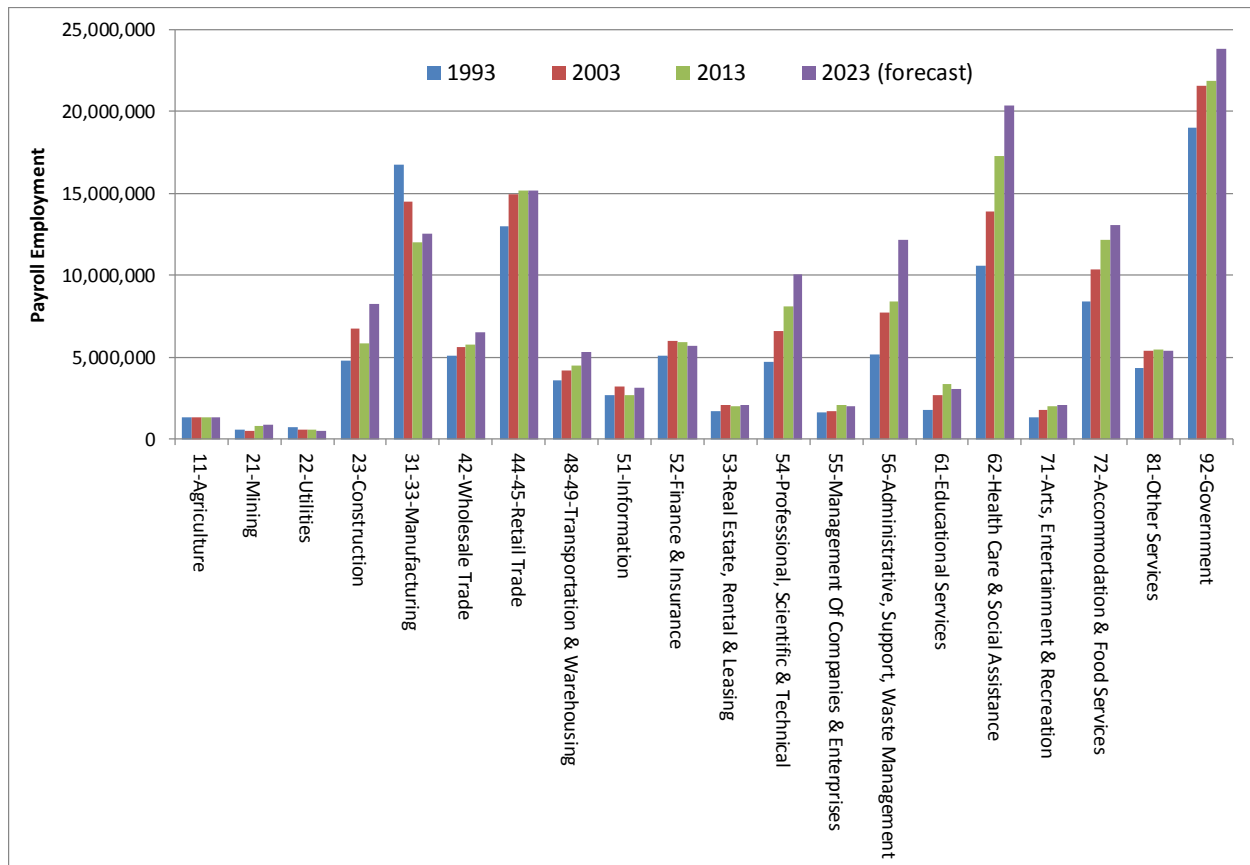
²⁷ BLS and Moody's include estimates of farm payroll employment, whereas IHS-Global Insight does not.

²⁸ Source: Bureau of Labor Statistics

Figure 5-7 provides a more detailed look at the industry composition of national employment over the last 20 years, and projected to 2023. This shows very clearly that employment growth is strongest in industries with rising demand yet stable productivity rates. It also shows that the majority of national payroll job growth over the next ten years is likely to be generated in three sectors:

- *Professional, Scientific, Technical Services (54)* – this sector is supportive of a wide range of industries responding to final demand – particularly manufacturing, health care, and finance, insurance, and real estate (FIRE), which have rebounded strongly from the recession. Further, productivity growth has been relatively muted, growing just 1.2 percent per year since 2000.
- *Administrative, Support, Waste Management Services (56)* – this sector is also supportive of many industries that have rebounded strongly, but will also benefit from the cyclical rebound in construction. As with professional services, productivity growth in this sector has been relatively slow at 1.7 percent per year since 2000.
- *Health Care & Social Services (62)* – over the last decade, this sector has provided the best combination of strong growth and stable productivity, generating the largest single-sector gain in employment. Further, pushed by demographic forces, this trend is likely to continue through 2040.

FIGURE 5-7. AGGREGATE NATIONAL EMPLOYMENT TRENDS AND FORECAST, 1984-2023



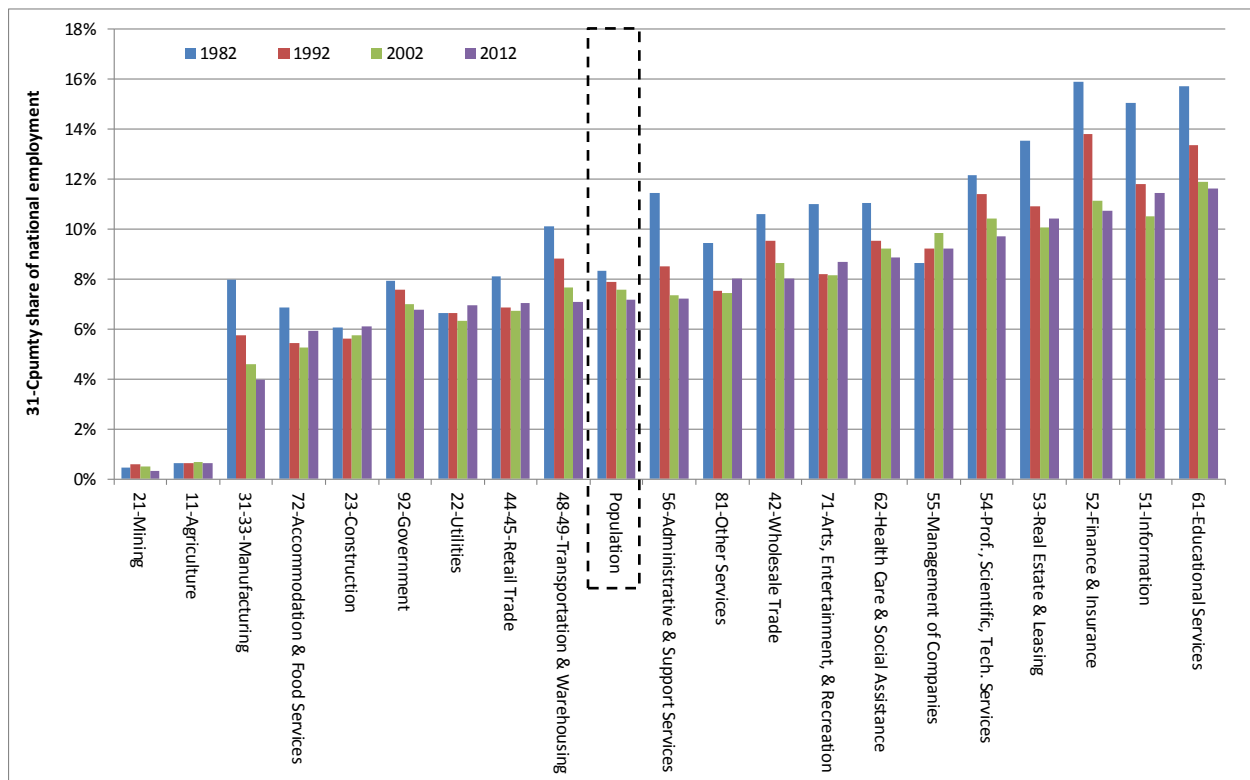
Source: BLS Current Employment Statistics, IHS Global Insight 10-year baseline forecast released Q1 2014

5.5 31-County Region Employment

Looking at the 31-County Region, employment growth is expected to be strongest in sectors with strong national growth (as described above) and where the region can maintain or increase its competitive advantage relative to the rest of the country.

This competitive advantage can be roughly measured by looking at the 31-County region's share of national payroll employment by industry. Figure 5-8 shows these shares of national payroll employment, ranked by their 2012 value. Also shown in the Figure 5-8 is the region's share of U.S. population, which helps illustrate which industries have high and low shares of U.S. employment.

FIGURE 5-8. 31-COUNTY REGION SHARE OF NATIONAL PAYROLL EMPLOYMENT BY SECTOR, 1982-2012



Source: Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW)

Industries far to the left of population in Figure 5-8 have a very low share of U.S. employment. In particular, regional agriculture and mining employment is a negligible share of national, and manufacturing's share is both low and rapidly shrinking.

Industries on the far right of Figure 5-8 have a high share of national employment. These industries – including education, information, finance and insurance, and professional and technical services – are those where the region currently maintains a competitive advantage. They serve as New York's export base (to the rest of the country and world), and are therefore the region's economic "engine". Since these industries are dependent on demand from the rest of the U.S., future regional employment depends on the national trends discussed above.

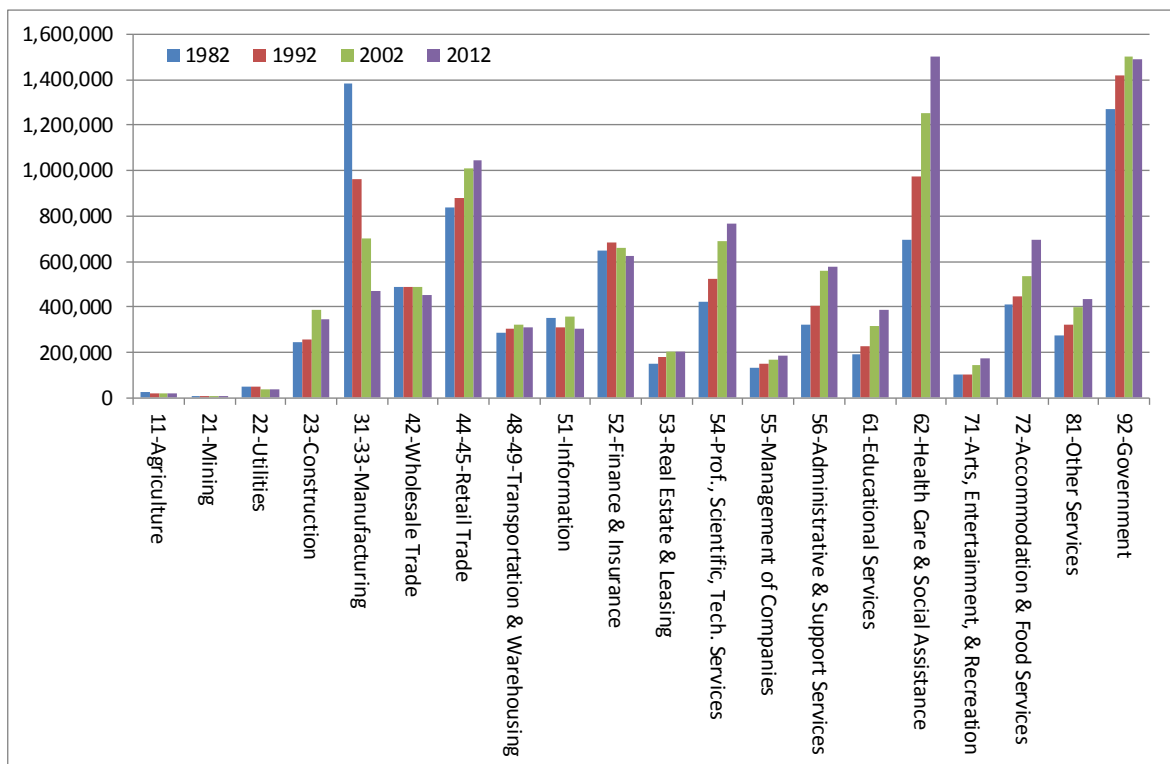
Finally, industries near the middle of Figure 5-8 are those where the region's 2012 share of national employment is similar to its share of population. This includes transportation, wholesale, and administrative support services – industries where the region used to have a competitive advantage,

but where employment levels have declined to be roughly proportional to population. Also near the middle are sectors that tend to be population-serving, such as government, utilities, retail, and other services. For these sectors, regional employment has maintained a relatively stable relationship with regional population.

Figure 5-9 shows regional payroll employment trends by sector. Regional employment growth generally resembles national employment growth, with adjustments for growing or declining regional shares. As with the national picture, the region has made the largest employment gains in health care, professional, and administrative services since 1982. Accommodation and food services have also generated noticeable employment growth, spurred by gains in both national employment levels and the region's share. In contrast, the rapid decline in regional manufacturing employment can be seen as the product of declining national jobs compounded by a declining regional share.

Looking forward, regional payroll employment growth will be most strongly influenced by just a handful of sectors that (a) are projected to generate large national employment gains, or (b) form a disproportionate share of the regional economy. Seventy percent of national employment growth between 2014 and 2023 is expected to come from just four sectors (NAICS sectors shown in parentheses): construction (23); professional services (54); administrative services (56); and health care and social services (62). To these, we can add four sectors with large current employment levels: retail (44-45); finance and insurance (52); accommodations and food services (72); and government (92). Together, these eight sectors account for more than 70 percent of 2012 regional payroll employment. Because of their importance, Figure 5-10 examines recent trends in regional employment share more closely.

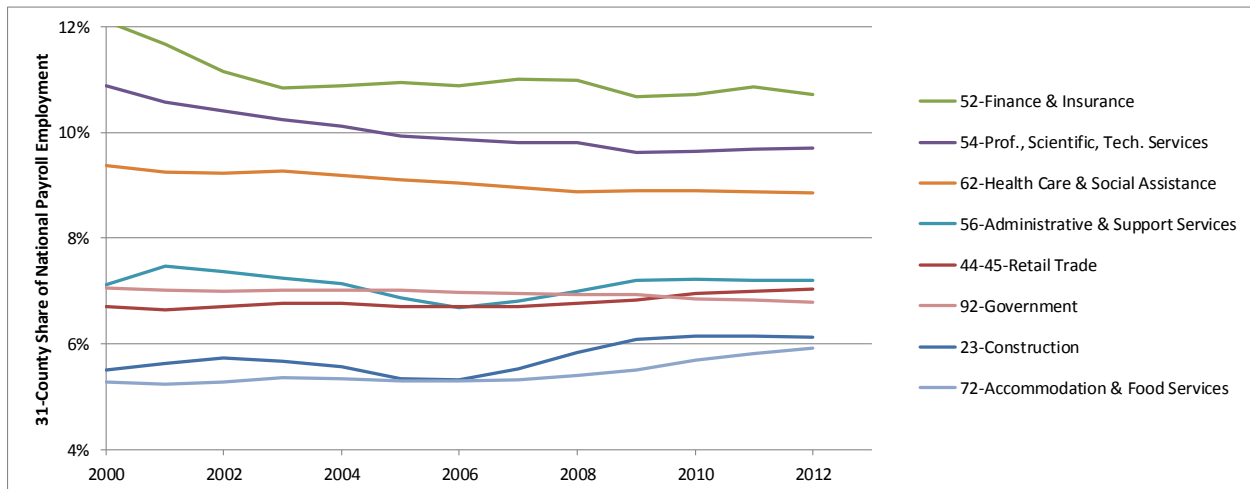
FIGURE 5-9. 31-COUNTY REGION PAYROLL EMPLOYMENT TRENDS, 1982-2012



Sources: Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW)

The eight sectors profiled in Figure 5-10 generally fall into three categories. Starting from the bottom, construction and accommodations each have a slightly growing share of national employment. In the middle, retail, government, and administrative support services have had a remarkably constant share. At the top, financial services, professional services, and health care services each show a slightly declining share.

FIGURE 5-10. 31-COUNTY REGION SHARE OF NATIONAL PAYROLL EMPLOYMENT IN KEY SECTORS

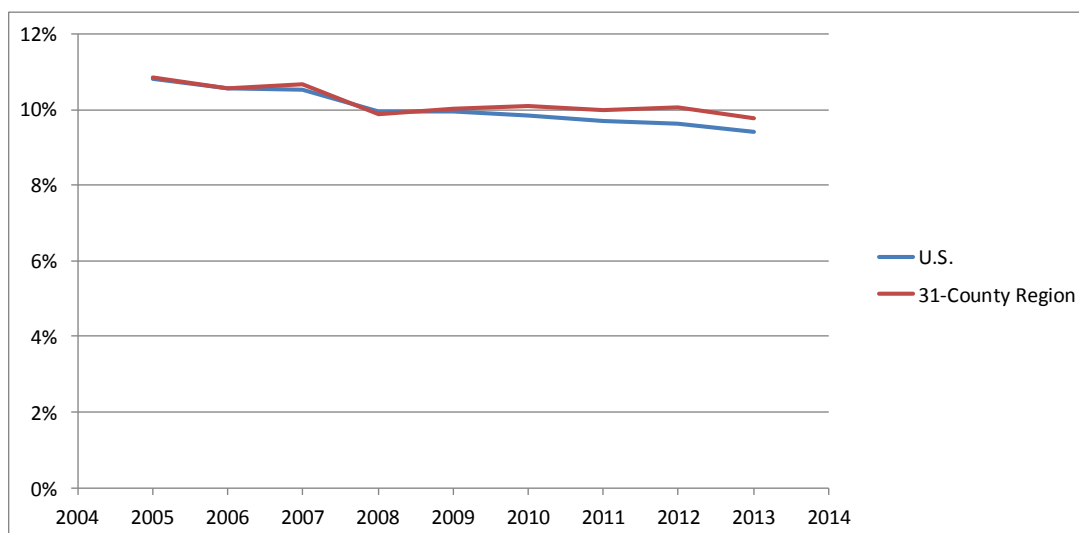


Sources: Bureau of Labor Statistics (BLS) Current Employment Statistics (CES), Current Population Survey (CPS), and Quarterly Census of Employment and Wages (QCEW)

5.5.1 Self-Employment

Figure 5-11 shows an eight-year history of self-employment rates in the U.S. and 31-County Region, as measured by the American Community Survey (the most accurate source on this topic at the sub-state level). Self-employment is defined to include incorporated and unincorporated self-employed, as well as unpaid family workers. The self-employment rate is defined as self-employment divided by total employment (payroll plus self-employed). Figure 5-11 reveals two main trends. First, the self-employment rate in the region is currently only slightly above the nation (9.8 percent versus 9.4 percent), but has mirrored national trends very closely since 2005. Second, although regional self-employment rates declined slightly from 2005 to 2008, they have since been highly stable, averaging just above or below 10 percent. Taken together, these trends do not suggest a clear upward or downward trend; thus, as will be discussed further below, self-employment forecasts are made based on application of current self-employment rates (by industry) to forecasted payroll employment (by industry).

FIGURE 5-11. SELF-EMPLOYMENT TRENDS IN THE U. S. AND 31-COUNTY REGION, 2005-2013



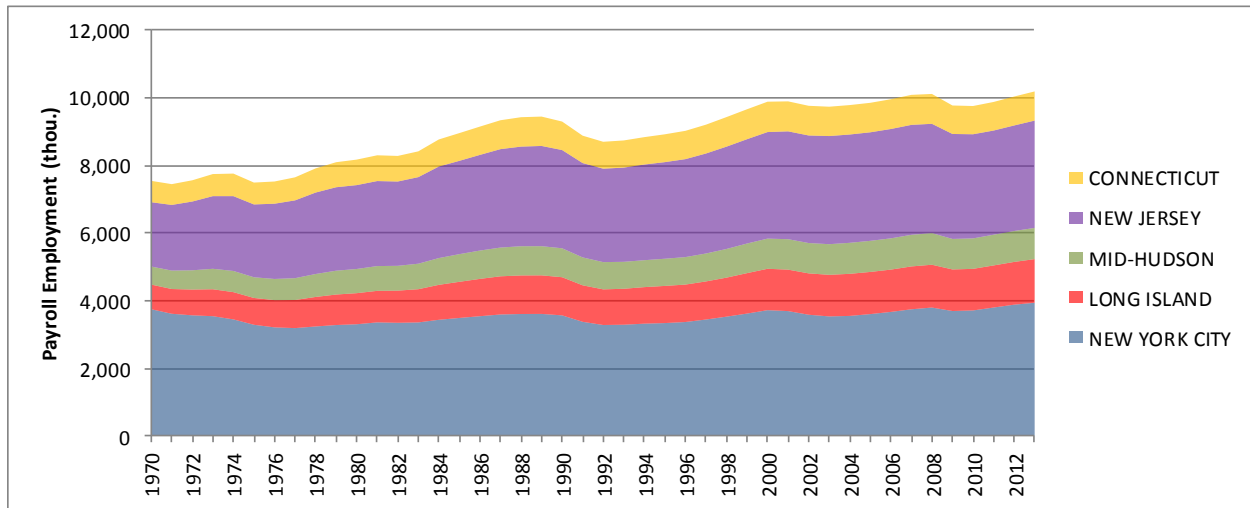
Source: American Community Survey Public Use Microdata Sample (PUMS)

5.6 Subregional Trends

5.6.1 Employment Levels

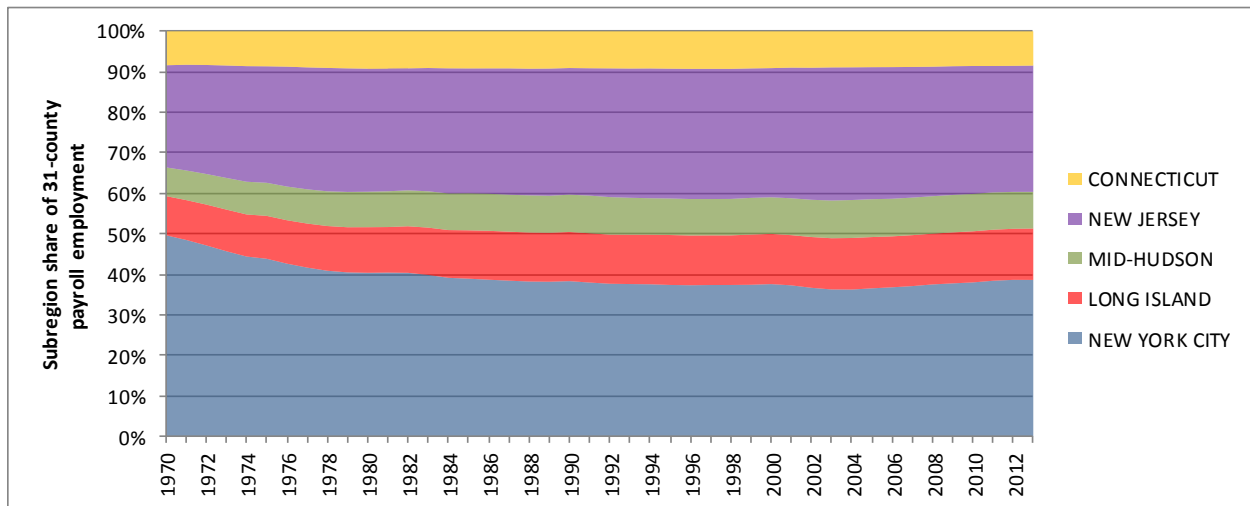
Figure 5-12 and Figure 5-13 show annual workplace payroll employment by subregion for the years 1970 to 2013. The first of these shows employment in absolute numbers, with payroll employment change made up of change in each of the five subregions. The latter shows subregional employment converted into percentages of total regional employment. According to these figures, New York City's share of total regional payroll employment declined through the 1970s and the 1980s, leveling off around the early 1990s. Since that time, the trend has reversed somewhat, with New York City's five boroughs increasing its share of regional payroll employment. Note that this trend continued through the most recent business cycle. Although total employment levels changed dramatically over the period 2007-2013, the inner core has continued to increase its share of regional employment.

FIGURE 5-12. SUBREGIONAL DISTRIBUTION OF TOTAL REGIONAL EMPLOYMENT, 1970-2013



Source: Bureau of Labor Statistics (BLS) Quarterly Census of Employment & Wages (QCEW)

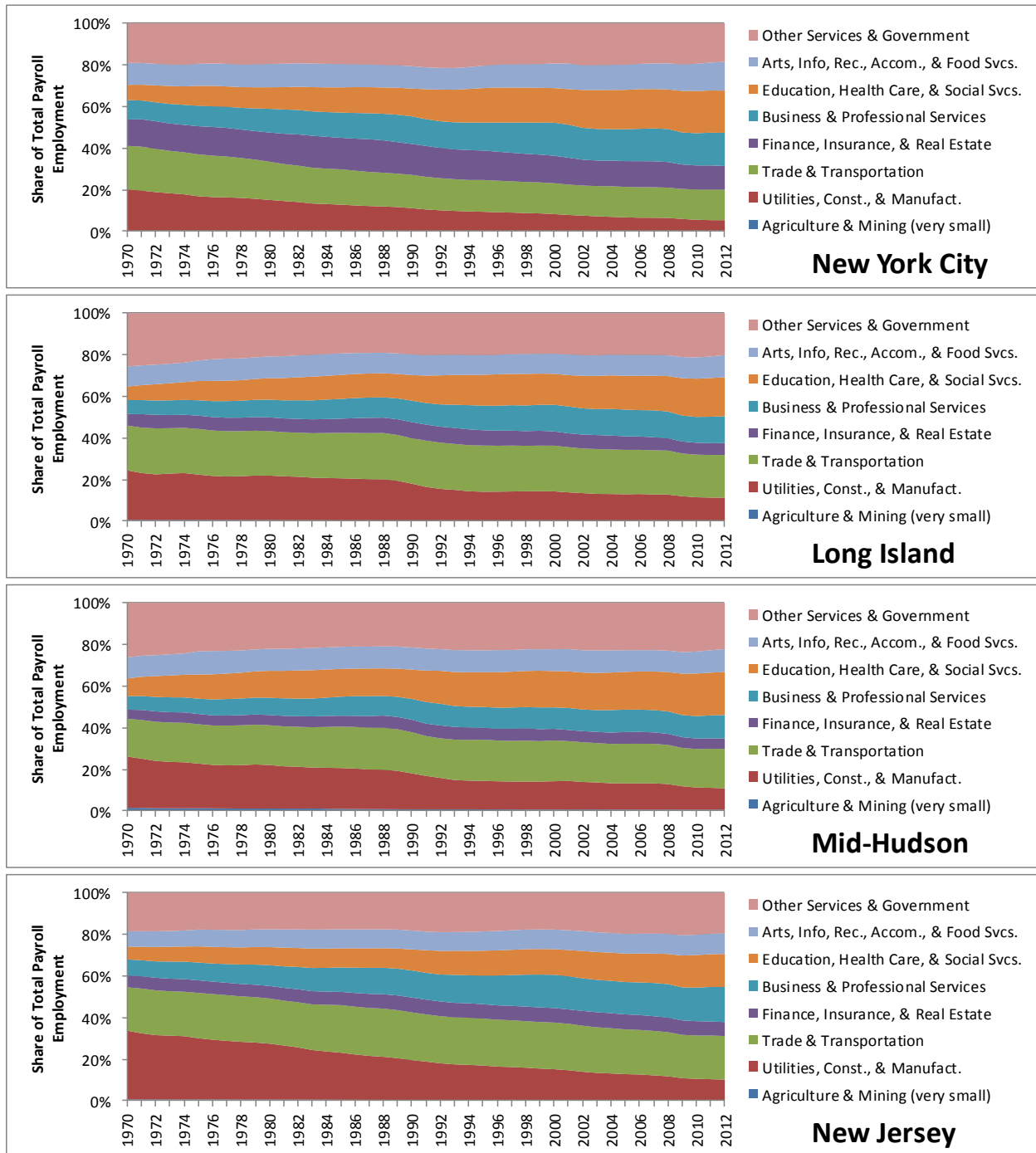
FIGURE 5-13: SUBREGIONAL PERCENTAGE OF REGIONAL PAYROLL EMPLOYMENT, 1970-2013

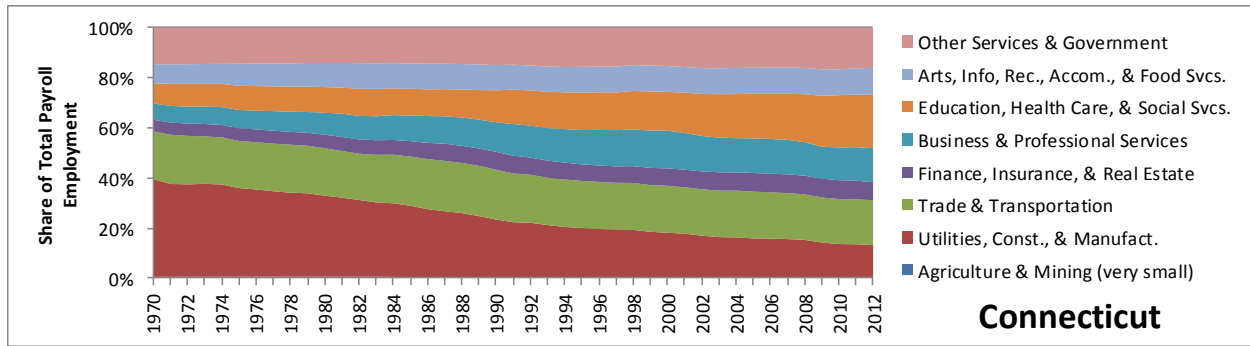


Source: Bureau of Labor Statistics (BLS) Quarterly Census of Employment & Wages (QCEW)

Looking more closely, Figure 5-14 shows how the region's changing employment mix has played out across each of the five subregions. Although all subregions have displayed a noticeable decline in heavy industry (utilities, construction, and manufacturing), offset by gains in education, health care, and social services, this figure also reveals some of the stable industry concentrations by subregion. These include New York City's large relative concentration of finance, insurance, and real estate, Long Island's large share of the region's transportation jobs, and New Jersey's large and growing share of business services.

FIGURE 5-14. EMPLOYMENT MIX FOR EACH SUBREGION, 1970-2012





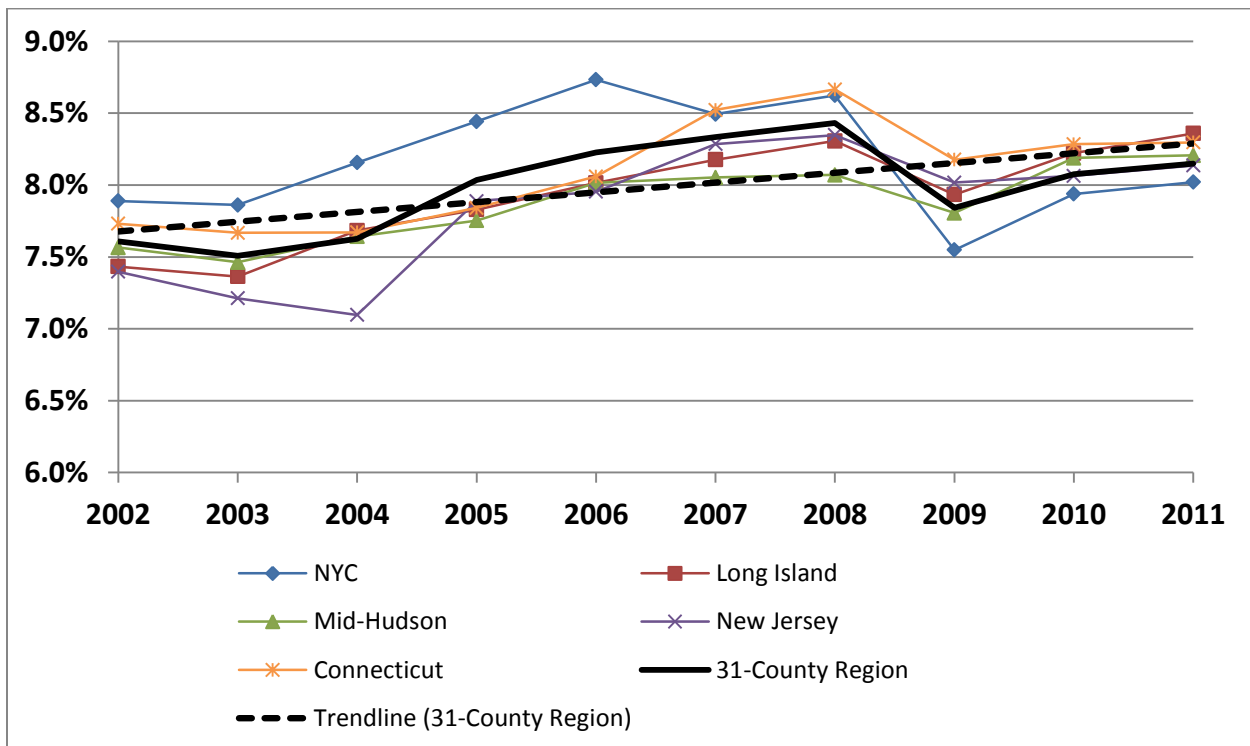
Source: Bureau of Labor Statistics (BLS) Quarterly Census of Employment & Wages (QCEW)

5.7 Multiple Job Holding

The Project Team estimated the percentage of employed workers holding multiple jobs using data obtained from the Census Longitudinal Employer-Household Dynamics (LEHD) program, and that is also presented in Figure 5-15. The relatively short time horizon presented in the figure shows some minor volatility in individual subregional estimates but the overall trend shows a slow but steady growth rate even despite the effects of the recent economic downturn.

Extrapolation of the best fit line through the 31-County Region data points in Figure 5-15 to the year 2050 results in an estimated multiple job holding rate of approximately 11 percent for the region. This value most likely represents the upper limits of future multiple job holder percentages.

FIGURE 5-15. MULTIPLE JOB HOLDING RATES, 2002-2011

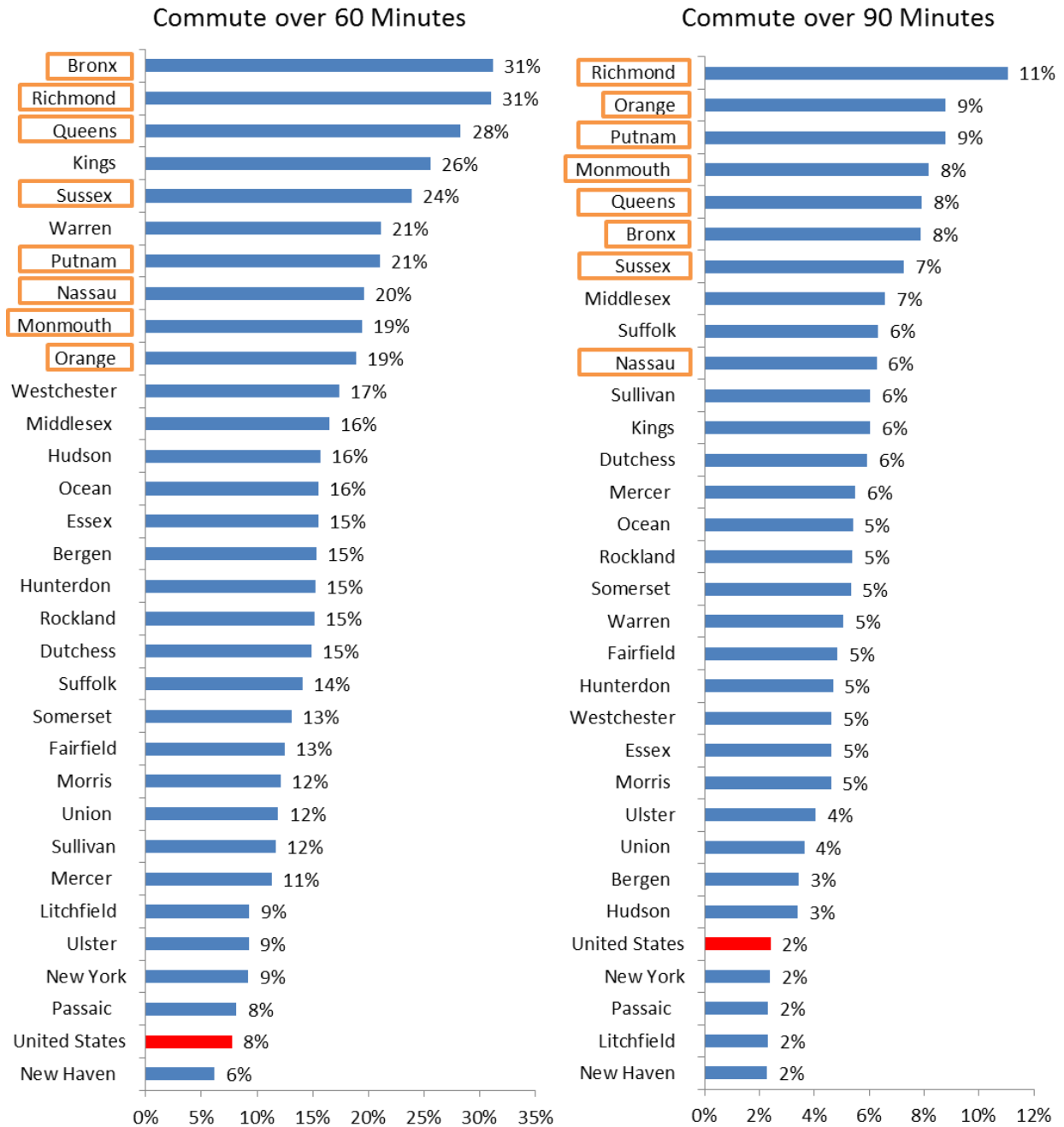


Source: LEHD

5.8 Commutation Trends

The 31-County Region is unique as it boasts the top three county-to-county commuting flows in the nation, as of 2010: Brooklyn to Manhattan (391,010), Queens to Manhattan (370,245) and Bronx to Manhattan (191,620). The importance of commutation to the region is further illustrated as eight additional inter-county commutes from the top fifty are in the region: Nassau, Westchester and Hudson to Manhattan; Suffolk and Queens to Nassau; Nassau and Brooklyn to Queens; and Queens to Brooklyn. The region further includes numerous counties where a significant proportion of workers endure commutes over 60 and 90 minutes. Roughly one in three commuters in Bronx, Richmond and Queens commute for over an hour, with one out of every ten workers in Richmond spending over 90 minutes getting to work (Figure 5-16). Most notably, the vast majority of counties in the region have a greater share of workers spending a long time getting to work compared to the U.S. as a whole.

FIGURE 5-16. LONG AND EXTREME COMMUTES, 2010



Source: ACS 2006-2010

Commuting patterns within the region have been consistent over time (Figure 5-17). Over 90 percent of workers who live in New York City, New Jersey or Connecticut also work in their subregion; that proportion is still over three-quarters for Long Island and Mid-Hudson. In New Jersey, the share of residents commuting within the subregion has dropped slightly, while the portion of those commuting to New York City is on the rise. Despite the noteworthy consistency of commuting patterns in the 31-County Region over time, there are several nuanced changes that are revealed through an examination of the county-to-county commuting patterns between 1990 and 2010.

FIGURE 5-17. SUBREGION-TO-SUBREGION COMMUTER FLOWS, 1990 TO 2006-2010



The following tables show the shares of commuters travelling from one subregion to the others, as well as the raw numbers. The light red shading indicates intra-county commuting for the subregion under analysis, as well as any noticeable trends.

Overall, New York City residents have remained consistent in their commuting patterns over the last 20 years, with slight increases in intra-county commuting (Table 5-1). While most residents work within one of the five boroughs, the share and number of Bronx residents commuting to Westchester has also slightly increased, as well as those commuting from Manhattan to Fairfield indicating the growth of opportunities outside New York and rise in reverse commuting. Additionally, while the share of Queens residents commuting to the Mid-Hudson region hasn't dropped substantially, there has been an 18 percent decline in the number of commuters travelling from Queens to the region.

TABLE 5-1. NYC-TO-SUBREGION COMMUTER FLOWS, SHARES & TOTALS, 1990 TO 2006-2010

Residence County							Work County																											Connecticut							
NYC							Long Island			Mid-Hudson							New Jersey														Connecticut										
				Bronx	Kings	New York	Queens	Richmond	NYC TOTAL	Nassau	Suffolk	LI TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NI TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL		
Count Year																																									
NYC	Richmond	1990	41.7%	3.8%	39.8%	4.3%	0.2%	89.9%	0.7%	0.2%	0.9%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	6.2%	6.5%	1.4%	0.2%	0.4%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	2.4%	0.3%	0.0%	0.0%	0.3%
		2000	40.9%	4.2%	38.7%	4.3%	0.5%	88.5%	0.8%	0.2%	1.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	7.0%	7.4%	1.1%	0.3%	0.6%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	2.5%	0.5%	0.0%	0.0%	0.5%	
		2010	43.8%	3.9%	37.1%	4.2%	0.1%	89.1%	0.5%	0.2%	0.7%	0.0%	0.1%	0.1%	0.3%	0.0%	0.0%	7.3%	7.8%	0.7%	0.3%	0.5%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	2.0%	0.5%	0.0%	0.0%	0.5%
	Kings	1990	1.2%	49.9%	38.1%	6.0%	0.6%	95.8%	1.1%	0.2%	1.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.6%	0.8%	0.7%	0.2%	0.5%	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	2.0%	0.0%	0.0%	0.0%	0.1%	
		2000	1.3%	48.2%	38.1%	7.0%	1.0%	95.6%	1.4%	0.4%	1.8%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.4%	0.5%	0.4%	0.3%	0.7%	0.0%	0.0%	0.2%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.2%	0.0%	2.0%	0.1%	0.0%	0.0%	0.1%			
		2010	1.3%	50.7%	37.1%	6.6%	0.6%	96.4%	1.0%	0.3%	1.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.3%	0.4%	0.2%	0.3%	0.7%	0.0%	0.0%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	1.8%	0.1%	0.0%	0.0%	0.1%			
	New York	1990	2.8%	3.6%	85.2%	2.7%	0.3%	94.6%	0.8%	0.2%	1.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	1.2%	1.4%	1.3%	0.3%	0.5%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	2.7%	0.2%	0.0%	0.0%	0.2%	
		2000	2.8%	3.4%	85.0%	2.7%	0.4%	94.3%	0.8%	0.2%	1.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	1.0%	1.2%	1.0%	0.4%	0.7%	0.0%	0.1%	0.2%	0.0%	0.2%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	3.0%	0.4%	0.0%	0.0%	0.4%			
		2010	3.3%	2.9%	85.3%	2.5%	0.2%	94.1%	0.5%	0.3%	0.8%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	1.2%	1.4%	0.8%	0.5%	0.8%	0.0%	0.0%	0.2%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.2%	0.0%	3.0%	0.6%	0.0%	0.0%	0.6%			
	Queens	1990	2.3%	9.2%	37.7%	40.0%	0.4%	89.5%	6.4%	0.8%	7.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	1.1%	1.3%	0.9%	0.1%	0.4%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	1.7%	0.1%	0.0%	0.0%	0.1%	
		2000	2.0%	9.4%	37.4%	39.8%	0.6%	89.2%	7.0%	1.2%	8.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.7%	0.8%	0.5%	0.2%	0.5%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	1.6%	0.2%	0.0%	0.0%	0.2%		
		2010	2.1%	8.3%	36.1%	42.0%	0.2%	88.6%	7.3%	1.3%	8.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	1.0%	0.3%	0.2%	0.6%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	1.5%	0.2%	0.0%	0.0%	0.3%			
	Richmond	1990	0.6%	14.6%	31.4%	2.2%	43.6%	92.4%	0.6%	0.1%	0.7%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.5%	0.6%	0.9%	0.7%	1.4%	0.0%	0.1%	1.3%	0.2%	0.2%	0.0%	0.2%	0.2%	0.0%	1.0%	0.0%	6.3%	0.0%	0.0%	0.0%	0.0%			
		2000	0.6%	15.5%	28.0%	3.0%	45.3%	92.3%	0.6%	0.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.6%	0.9%	1.6%	0.0%	0.1%	1.5%	0.3%	0.3%	0.0%	0.2%	0.3%	0.0%	0.8%	0.0%	6.7%	0.0%	0.0%	0.0%	0.0%			
		2010	0.8%	14.8%	26.1%	2.8%	47.2%	91.6%	0.6%	0.2%	0.7%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	0.4%	0.5%	1.0%	2.1%	0.0%	0.0%	1.6%	0.4%	0.3%	0.1%	0.1%	0.3%	0.0%	0.9%	0.0%	7.3%	0.1%	0.0%	0.0%	0.1%			

Residence County							Work County																											Connecticut					
NYC							Long Island			Mid-Hudson							New Jersey														Connecticut								
				Bronx	Kings	New York	Queens	Richmond	NYC TOTAL	Nassau	Suffolk	LI TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NI TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL
Count Year																																							
NYC	Richmond	1990	178,593	16,283	170,318	18,450	944	384,588	3,035	690	3,725	157	140	122	1,072	50	23	26,390	27,954	6,132	652	1,725	-	43	332	49	242	-	406	149	367	9	10,106	1,432	-	22	1,454		
		2000	168,903	17,204	159,664	17,643	2,108	365,522	3,448	707	4,155	176	204	111	1,057	29	45	28,906	30,528	4,366	1,141	2,515	23	55	518	69	328	147	569	146	30	586	18	10,511	2,175	-	56	2,231	
		2010	226,315	19,959	191,620	21,564	617	460,075	2,589	871	3,460	217	376	283	1,516	43	40	37,586	40,061	3,588	1,373	2,586	16	-	547	102	709	96	521	67	10	593	-	10,208	2,494	-	56	2,550	
	Kings	1990	10,641	450,732	343,762	53,832	5,824	864,791	10,080	2,253	12,333	120	132	39	942	113	135	5,296	6,777	6,387	1,690	4,843	95	214	1,715	262	578	12	600	260	42	1,477	-	18,175	438	-	68	506	
		2000	11,316	431,559	341,155	62,255	9,381	855,666	12,742	3,434	16,176	118	205	25	630	30	64	3,215	4,287	3,345	2,341	5,927	76	209	1,759	579	812	183	579	515	37	1,567	20	17,949	985	8	112	1,105	
		2010	13,534	533,683	391,008	69,681	6,696	1,014,602	11,000	2,722	13,722	288	286	59	537	101	64	3,137	4,272	2,201	2,967	7,245	41	302	2,252	349	817	251	470	358	106	1,477	41	18,877	1,021	-	97	1,118	
	New York	1990	21,043	26,955	635,761	20,160	1,934	705,853	6,118	1,739	7,857	212	133	106	1,198	24	92	8,677	10,442	9,421	2,221	3,644	13	213	1,083	178	1,014	78	917	237	27	921	33	20,000	1,582	23	121	1,726	
		2000	20,775	25,568	631,132	20,121	2,765	700,361	6,086	1,582	7,668	302	115	58	932	18	88	7,518	9,031	7,258	2,876	5,541	106	449	1,847	291	1,413	175	940	442	219	967	51	22,575	3,111	17	178	3,306	
		2010	27,179	23,906	696,081	20,087	1,421	768,674	4,341	2,346	6,687	192	174	51	1,175	87	147	9,415	11,241	6,762	4,039	6,821	81	394	1,652	520	1,128	186	1,188	639	51	1,411	27	24,899	4,569	60	340	4,969	
	Queens	1990	20,677	84,350	344,001	365,098	4,036	818,162	58,565	7,710	66,275	329	102	58	1,170	71	94	10,339	12,163	8,078	1,249	3,541	43	98	667	279	478	5	616	217	40	546	-	15,857	1,109	11	85	1,205	
		2000	18,373	87,350	346,268	367,823	5,249	825,063	65,125	11,035	76,160	208	224	124	624	31	123	6,253	7,587	4,275	1,944	4,215	10	175	1,182	253	613	48	677	253	10	780	34	14,469	1,905	12	138	2,055	
		2010	21,038	84,984	370,243	430,249	2,078	908,592	75,026	13,817	88,843	458	426	38	274	82	28	8,670	9,976	3,263	2,076	5,666	65	184	790	258	699	46	892	415	26	852	24	15,256	2,300	279	281	2,860	
	Richmond	1990	1,116	25,256	54,292	3,894	75,428	159,986	962	205	1,167	19	26	9	103	4	-	809	970	1,554	1,272	2,471	54	100	2,334	313	421	57	276	316	-	1,769	-	10,937	25	-	-	25	
		2000	1,095	29,425	53,249	5,628	86,197	175,594	1,142	177	1,319	72	36	17	84	-	24	321	554	1,081	1,621	3,017	73	251	2,929	586	589	57	343	582	48	1,486	42	12,705	80	-	11	91	
		2010	1,580	29,969	52,940	5,698	95,778	185,965	1,138	312	1,450	8	89	-	157	5	12	461	732	973	2,023	4,244	30	38	3,179	911	522	110	301	598	63	1,855	-	14,847	104	-	19	121	

On Long Island (Table 5-2), intra-county commuting in Nassau County has seen a slight drop, while commuting within Suffolk has increased. This offset helps explain the consistent picture of the region as a whole, as presented in Figure 5-17. An additional factor driving the consistency is that for Long Island residents working in New York City, the share of Suffolk residents working in Queens has dropped, while the share of Nassau residents working there is on the rise.

TABLE 5-2. LONG ISLAND-TO-SUBREGION COMMUTER FLOWS, SHARES AND TOTALS, 1990 TO 2006-2010

Residence County										Work County																				Connecticut													
NYC										Long Island				Mid-Hudson						New Jersey										Connecticut													
Count Year		Count Year	Count Year	Count Year	Count Year	Count Year	Count Year	Count Year	Count Year	NYC TOTAL	Nassau	Suffolk	LI TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NI TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL			
Long Island	Suffolk	Nassau	1990	1.0%	4.4%	15.0%	10.5%	0.2%	31.1%	59.8%	7.4%	67.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.7%	0.4%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.1%	0.0%	0.0%	0.1%	
	Suffolk	Nassau	2000	1.0%	4.8%	15.3%	10.7%	0.2%	32.1%	58.4%	8.1%	66.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.6%	0.2%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.1%	0.0%	0.0%	0.2%	
	Suffolk	Nassau	2010	1.0%	4.0%	15.1%	11.2%	0.1%	31.5%	58.6%	8.4%	67.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.6%	0.2%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.2%	0.0%	0.0%	0.2%	
	Suffolk	Nassau	1990	0.5%	1.5%	5.9%	4.1%	0.1%	12.1%	15.2%	72.0%	87.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.1%	
	Suffolk	Nassau	2000	0.4%	1.6%	6.2%	3.8%	0.1%	12.0%	13.6%	73.7%	87.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.1%
Suffolk	Nassau	2010	0.5%	1.5%	5.7%	3.6%	0.1%	11.3%	12.4%	75.6%	88.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.1%

Residence County										Work County																				Connecticut										
NYC										Long Island				Mid-Hudson						New Jersey										Connecticut										
Count Year		Count Year	Count Year	Count Year	Count Year	Count Year	Count Year	Count Year	Count Year	NYC TOTAL	Nassau	Suffolk	LI TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NI TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL
Long Island	Suffolk	Nassau	1990	6,216	28,430	97,205	68,213	1,066	201,130	387,362	48,205	435,567	125	192	20	240	11	40	3,983	4,611	2,330	590	1,247	-	51	306	44	150	-	217	31	7	292	-	5,265	675	-	77	752	
	Suffolk	Nassau	2000	6,274	29,681	94,485	66,085	1,339	197,864	359,698	49,763	409,461	62	70	61	218	45	67	2,957	3,480	1,337	426	1,653	5	80	345	88	235	-	207	76	4	187	16	4,659	822	22	90	934	
	Suffolk	Nassau	2010	6,324	25,255	95,332	70,433	909	198,256	369,694	52,636	422,330	54	30	35	210	22	13	3,190	3,554	1,140	400	2,053	-	74	304	66	312	28	233	114	7	128	30	4,989	1,174	13	41	1,228	
	Suffolk	Nassau	1990	3,072	9,730	38,505	26,605	379	78,291	98,515	467,796	566,311	95	244	65	67	5	121	1,389	1,986	1,014	228	411	2	52	129	35	88	43	95	73	7	129	-	2,306	338	19	80	437	
	Suffolk	Nassau	2000	2,614	10,586	41,121	25,159	523	80,003	90,930	491,836	582,766	56	78	22	59	-	54	1,245	1,514	564	338	624	7	22	157	87	146	23	102	69	33	180	-	2,352	375	11	113	499	
Suffolk	Nassau	2010	3,364	10,248	40,320	25,052	691	79,715	87,213	533,567	620,780	72	103	66	58	26	102	1,331	1,758	561	385	940	10	-	65	71	164	53	190	115	17	76	-	2,647	389	4	118	511		

Source: Census; ACS; 1990, 2000, 2006-2010

Commuting within the Mid-Hudson region has varied over the past 20 years (Table 5-3). Dutchess, Orange, Sullivan, Ulster, and Westchester Counties have seen their share of intra-commuting drop, while the share of commuters who live and work in Putnam and Rockland has risen. This pattern can be seen through the increase in the share and raw number of commuters from Dutchess, Orange, Sullivan and Ulster who work in Manhattan. The remaining Mid-Hudson counties have also increased (with the exception of Rockland), but not on the same scale as the outer counties.

TABLE 5-3. MID-HUDSON-TO-SUBREGION COMMUTER FLOWS, SHARES AND TOTALS, 1990 TO 2006-2010

Residence County										Work County																																		
NYC										Long Island					Mid-Hudson					New Jersey										Connecticut														
										NYC TOTAL					LI TOTAL					MH TOTAL															NJ TOTAL									
										Bronx	Kings	New York	Queens	Richmond	Nassau	Suffolk	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	Fairfield	Litchfield	New Haven	CT TOTAL			
Count	Year																																											
Mid-Hudson	Dutchess	1990	0.5%	0.2%	2.3%	0.2%	0.0%	3.2%	0.1%	0.0%	0.2%	77.4%	1.8%	2.5%	0.3%	0.1%	3.1%	9.1%	94.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	1.1%	0.8%	0.1%	2.0%			
	Dutchess	2000	0.9%	0.2%	3.1%	0.4%	0.0%	4.6%	0.1%	0.1%	0.2%	70.3%	3.0%	3.6%	0.5%	0.0%	2.7%	11.8%	91.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.9%	0.9%	0.2%	3.0%				
	Dutchess	2010	1.0%	0.3%	4.0%	0.4%	0.0%	5.8%	0.1%	0.1%	0.2%	68.6%	3.3%	4.0%	0.6%	0.0%	3.0%	11.4%	91.0%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	1.7%	0.7%	0.1%	2.5%				
	Orange	1990	1.4%	0.6%	5.0%	0.5%	0.1%	7.5%	0.2%	0.0%	0.2%	4.0%	67.8%	0.2%	6.2%	0.9%	1.2%	3.2%	83.6%	5.8%	0.2%	0.3%	0.0%	0.0%	0.1%	0.0%	0.3%	0.0%	0.6%	0.0%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%				
	Orange	2000	1.6%	0.7%	6.4%	0.6%	0.1%	9.5%	0.1%	0.0%	0.2%	3.4%	66.5%	0.3%	6.5%	0.6%	1.3%	3.7%	82.4%	4.9%	0.4%	0.3%	0.0%	0.0%	0.1%	0.0%	0.4%	0.0%	0.6%	0.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%				
	Orange	2010	2.4%	0.9%	6.5%	0.7%	0.1%	10.5%	0.1%	0.1%	0.2%	3.3%	65.2%	0.3%	5.9%	0.8%	1.6%	4.2%	81.3%	4.9%	0.3%	0.4%	0.0%	0.0%	0.1%	0.0%	0.6%	0.0%	0.6%	0.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%				
	Putnam	1990	3.8%	0.7%	7.8%	0.9%	0.1%	13.4%	0.3%	0.1%	0.4%	3.4%	0.8%	29.4%	0.6%	0.1%	0.1%	44.7%	79.2%	0.7%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%					
	Putnam	2000	4.2%	0.8%	9.2%	1.2%	0.0%	15.4%	0.3%	0.1%	0.4%	3.1%	0.8%	28.7%	0.9%	0.0%	0.1%	41.8%	75.5%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.9%					
	Putnam	2010	3.8%	0.6%	8.9%	0.7%	0.0%	14.1%	0.2%	0.1%	0.3%	3.1%	0.8%	32.8%	0.6%	0.0%	0.1%	41.7%	79.1%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%					
	Rockland	1990	5.1%	1.2%	13.1%	1.0%	0.2%	20.5%	0.4%	0.1%	0.4%	0.2%	1.0%	0.1%	55.8%	0.0%	0.0%	7.6%	64.6%	11.2%	0.6%	0.6%	0.0%	0.0%	0.1%	0.0%	0.3%	0.0%	0.6%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%				
	Rockland	2000	4.8%	1.4%	13.0%	1.1%	0.1%	20.3%	0.4%	0.1%	0.5%	0.2%	1.3%	0.1%	54.8%	0.1%	0.1%	8.4%	65.0%	9.7%	0.7%	0.8%	0.0%	0.0%	0.2%	0.0%	0.7%	0.0%	0.9%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%					
	Rockland	2010	4.2%	1.1%	10.9%	1.1%	0.1%	17.4%	0.4%	0.1%	0.4%	0.3%	1.5%	0.0%	59.6%	0.2%	0.0%	7.2%	68.9%	9.0%	0.6%	0.7%	0.0%	0.0%	0.2%	0.1%	0.8%	0.1%	0.7%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%					
Sullivan	1990	0.2%	0.5%	1.6%	0.4%	0.1%	2.7%	0.2%	0.2%	0.4%	0.6%	14.3%	0.0%	0.6%	77.0%	2.9%	0.4%	95.8%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
Sullivan	2000	0.4%	0.5%	2.9%	0.7%	0.2%	4.7%	0.2%	0.2%	0.3%	0.9%	17.0%	0.0%	1.3%	69.0%	3.8%	0.9%	92.9%	0.9%	0.1%	0.2%	0.0%	0.0%	0.1%	0.0%	0.2%	0.0%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
Sullivan	2010	0.5%	0.2%	2.3%	0.5%	0.0%	3.5%	0.2%	0.0%	0.2%	0.4%	16.7%	0.2%	1.0%	73.3%	2.7%	0.8%	95.0%	0.6%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
Ulster	1990	0.2%	0.2%	1.2%	0.2%	0.0%	1.8%	0.1%	0.0%	0.1%	13.0%	8.5%	0.1%	0.5%	1.1%	73.6%	0.8%	97.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%						
Ulster	2000	0.2%	0.3%	2.0%	0.2%	0.0%	2.7%	0.0%	0.1%	0.1%	13.5%	10.9%	0.3%	0.7%	0.9%	68.5%	1.5%	96.3%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%						
Ulster	2010	0.2%	0.3%	2.5%	0.3%	0.0%	3.2%	0.1%	0.2%	0.3%	11.7%	11.4%	0.3%	0.6%	1.0%	68.9%	1.7%	95.7%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%						
Westches	1990	6.3%	1.0%	18.6%	1.5%	0.2%	27.5%	0.5%	0.1%	0.6%	0.3%	0.1%	0.4%	0.8%	0.0%	0.0%	65.0%	66.6%	1.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%						
Westches	2000	6.4%	1.1%	18.9%	1.4%	0.1%	27.9%	0.5%	0.1%	0.6%	0.3%	0.3%	0.6%	0.9%	0.0%	0.1%	63.3%	65.5%	0.8%	0.1%	0.3%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.4%						
Westches	2010	6.8%	0.9%	19.0%	1.2%	0.0%	28.0%	0.5%	0.2%	0.7%	0.3%	0.2%	0.7%	0.9%	0.0%	0.0%	63.8%	65.8%	0.6%	0.1%	0.3%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.1%						

Residence County										Work County																																		
NYC										Long Island					Mid-Hudson					New Jersey										Connecticut														
										NYC TOTAL					LI TOTAL					MH TOTAL															NJ TOTAL									
										Bronx	Kings	New York	Queens	Richmond	Nassau	Suffolk	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	Fairfield	Litchfield	New Haven	CT TOTAL			
Count	Year																																											
Mid-Hudson	Dutchess	1990	633	270	2,814	244	14	3,975	147	50	197	96,070	2,287	3,135	365	95	3,821	11,270	117,043	248	40	56	-	10	46	7	22	-	49	10	-	23	-	434	1,345	982	177	2,498						
	Dutchess	2000	1,085	223	3,963	497	30	5,798	190	132	241	88,963	3,828	4,494	602	63	3,430	14,903	116,283	205	-	52	-	28	41	#	15	-	18	-	13	22	-	471	2,414	1,131	199	3,744						
	Dutchess	2010	1,402	401	5,484	551	26	7,864	170	97	267	93,349	4,556	5,504	762	13	4,099	15,560	123,883	392	72	76	9	9	-	#	108	18	65	8	-	48	-	805	2,488	922	129	3,339						
	Orange	1990	1,976	794	7,032	648	85	10,535	291	48	339	5,364	94,853	276	8,710	1,214	1,745	4,421	116,853	8,175	329	446	17	2	129	15	2	888	51	959	119	13	-	11,590	463	6	32	501						
	Orange	2000	2,414	1,117	9,610	901	161	14,203	187	57	244	5,160	99,901	499	9,746	865	1,995	5,569	123,735	7,310	598	524	7	16	20	181	48	626	36	952	106	788	147	48	11,387	585	7	29	621					
	Orange	2010	3,979	1,441	10,971	1,230	123	17,744	237	162	399	5,545	109,987	455	9,888	1,416	2,706	7,068	137,065	8,276	546	663	15	-	200	43	1,010	19	950	148	694	271	25	12,861	463	-	63	526						
	Putnam	1990	1,647	326	3,418	391	58	5,840	129	43	172	1,466	364	12,874	278	22	57	19,564	34,625	305	38	51	-	-	28	#	-	-	28	8	13	-	-	481	2,476	91	50	2,617						
	Putnam	2000	2,021	371	4,416	560	20	7,388	158	46	204	1,508	393	13,721	418	9	71	20,026	36,146	157	53	23	-	-	22	5	63	-	5	-	30	-	358	3,518	84	181	3,783							
	Putnam	2010	1,792	297	4,186	315	21	6,611	88	42	130	1,438	370	15,391	282	10	66	19,600	37,157	202	-	87	14	-	19	#	45	-	28	-	10	-	405	2,538	64	70	2,672							
	Rockland	1990	6,704	1,586	17,369	1,343	246	27,248	467	126	593	238	1,287	74	74,019	28	58	10,074	85,778	14,808	831	834	16	10	103	2	378	9	834	116	27	265	-	18,233	827	14	20	1,861						
	Rockland	2000	6,249	1,848	17,029	1,437	110	26,673	515	98	613	275	1,739	144	72,022	182	89	11,008	85,459	12,687	866	1,007	17	48	300	38	867	16	1,141	118	14	350	23	17,492	1,110	6	56	1,712						
	Rockland	2010	5,681	1,501	14,894	1,525	171	23,772	499	93	592	360	2,093	64	81,337	223	55	9,882	94,014	12,309	754	977	43	48	233	69	1,052	95	971	184	-	307	-	17,042	1,085	-	43	1,128						
Sullivan	1990	55	130	465	115	20	785	57	47	104	167	4,110	-	173	22,115	823	128	27,516	156	9	31	-	-	4	6	6	-	65	-	30	2	-	309	2	-	-	2							
Sullivan	2000	110	156	829	201	52	1,348	54	46	100	267	4,900	4	379	19,922	1,108	258	26,838	273	26	62	-	-	25	8	70	14	46	22	39	6	-	591	12	-	-	12							
Sullivan	2010	147	73	730	174	-	1,124	51	11																																			

Residence County										Work County																																	
NYC										Long Island					Mid-Hudson					New Jersey															Connecticut								
										Nassau	Suffolk	LI TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NJ TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL				
Count	Year	Bronx	Kings	New York	Queens	Richmond	NYC TOTAL																																				
Mid-Hudson	Dutchess	1990	633	270	2,814	244	14	3,975	147	50	197	96,070	2,287	3,135	365	95	3,821	11,270	117,043	208	40	56	-	10	46	7	22	-	49	10	-	23	-	471	1,345	982	171	2,498					
		2000	1,085	223	3,963	497	30	5,798	109	132	241	88,963	3,828	4,494	602	63	3,430	14,903	116,283	245	-	52	-	28	41	#	15	-	18	-	13	22	-	434	2,414	1,131	199	3,744					
		2010	1,402	401	5,484	551	26	7,864	170	97	267	93,389	4,556	5,504	762	13	4,099	15,560	123,883	392	72	76	9	9	-	#	108	18	65	8	-	48	-	805	2,288	922	129	3,339					
	Orange	1990	1,976	794	7,032	648	85	10,535	291	48	339	5,634	94,853	276	8,710	1,214	1,745	4,421	116,853	8,175	329	446	17	2	129	15	2	888	51	959	119	13	11,590	4,663	6	32	501						
		2000	2,414	1,117	9,610	901	161	14,203	187	57	244	5,160	99,901	499	9,746	865	1,995	5,569	123,735	7,310	598	524	7	16	181	48	626	36	952	106	788	147	48	11,387	585	7	29	621					
		2010	3,979	1,441	10,971	1,430	123	17,744	237	162	399	5,545	109,987	455	9,888	1,416	2,706	7,068	137,065	8,276	546	663	15	-	200	43	1,010	19	950	148	694	271	25	12,860	463	-	63	526					
	Putnam	1990	1,647	326	3,418	391	58	5,840	129	43	172	1,466	364	12,874	278	22	57	19,564	34,625	305	38	51	-	-	38	#	-	28	8	13	-	-	481	2,476	91	50	2,617						
		2000	2,021	371	4,416	560	20	7,388	158	46	204	1,508	393	13,721	418	9	71	20,026	36,146	157	53	23	-	-	22	5	63	-	5	-	30	-	358	3,518	84	181	3,783						
		2010	1,792	297	4,186	315	21	6,611	88	42	130	1,438	370	15,391	282	10	66	19,600	37,157	202	-	87	14	-	19	#	45	-	28	-	10	-	405	2,538	64	70	2,672						
	Rockland	1990	6,704	1,586	17,369	1,343	246	27,248	467	126	593	238	1,287	74	74,019	28	58	10,074	85,778	14,808	831	834	16	10	103	2	378	9	834	116	27	265	-	18,233	827	14	20	861					
		2000	6,249	1,848	17,029	1,437	110	26,673	515	98	613	275	1,739	144	72,022	182	89	11,008	85,459	12,687	866	1,007	17	48	300	38	867	16	1,141	118	14	350	23	17,492	1,110	6	56	1,172					
		2010	5,681	1,501	14,894	1,525	171	23,772	499	93	592	360	2,093	64	81,337	223	55	9,882	94,014	12,309	754	977	43	48	233	69	1,052	95	971	184	-	307	-	17,042	1,085	-	43	1,128					
Sullivan	1990	55	130	465	115	20	785	57	47	104	167	4,110	-	173	22,115	823	128	27,516	156	9	31	-	-	4	6	6	-	65	-	30	2	-	309	2	-	-	2						
	2000	110	156	829	201	52	1,348	54	46	100	267	4,900	-	379	19,922	1,108	258	26,838	273	26	62	-	-	25	8	70	14	46	22	39	6	-	591	12	-	-	12						
	2010	147	73	730	174	-	1,124	51	11	62	144	5,390	55	332	23,713	883	244	30,761	209	-	137	-	-	-	4	5	-	8	-	22	15	-	400	23	-	-	23						
Ulster	1990	136	116	925	140	31	1,348	58	23	81	9,971	6,559	58	365	867	56,617	614	75,051	202	36	20	-	-	-	#	15	-	-	9	18	15	-	315	75	9	51	135						
	2000	144	201	1,565	171	35	2,116	33	44	77	10,685	8,676	213	579	729	54,373	1,157	76,412	270	89	93	6	-	15	20	39	-	19	7	12	-	570	175	16	11	202							
	2010	176	229	2,078	240	26	2,749	92	156	248	9,935	9,630	264	543	871	58,340	1,452	81,035	241	25	95	-	-	-	21	56	-	34	10	-	43	-	525	154	-	-	154						
Westchester	1990	27,227	4,179	80,628	6,418	836	119,288	2,149	434	2,583	1,125	549	1,678	3,274	93	114	282,571	289,404	5,253	685	731	16	45	147	39	281	-	311	20	-	223	-	7,751	14,892	56	433	15,381						
	2000	27,053	4,676	79,643	6,037	430	117,839	2,128	509	2,637	1,288	1,233	2,486	3,651	47	237	267,180	276,122	3,221	614	1,131	11	44	236	52	362	-	400	93	12	327	8	6,511	18,191	131	343	18,665						
	2010	29,908	3,818	80,796	5,452	115	122,089	2,200	775	2,975	1,128	1,024	2,880	3,896	15	187	278,400	276,723	2,713	614	1,247	-	65	226	36	462	-	291	325	-	113	13	6,105	17,654	35	356	18,040						

New Jersey commuters (Table 5-4) are travelling further as well. The shares of intra-county commuting are down virtually across the board (with the exceptions of Ocean and Sussex) with the sharpest drops observed in Bergen, Essex, Hudson, Mercer, Middlesex and Passaic. The decline in intra-county commuting in these New Jersey counties is accompanied by increases in both commuting to neighboring counties in New Jersey as well as slight increases in commutes to Manhattan. Outer counties, including Hunterdon and Somerset, have seen a significant rise in the number of commuters travelling into Manhattan.

TABLE 5-4. NEW JERSEY-TO-SUBREGION COMMUTER FLOWS, SHARES AND TOTALS, 1990 TO 2006-2010

Residence County		Work County																												Connecticut								
		NYC					Long Island			Mid-Hudson					New Jersey																							
Count	Year	Bronx	Kings	New York	Queens	Richmond	NYC TOTAL	Nassau	Suffolk	LI TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NJ TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL	
New Jersey	Bergen	1990	1.4%	0.9%	14.1%	0.9%	0.3%	17.6%	0.3%	0.1%	0.4%	0.0%	0.1%	0.0%	1.3%	0.0%	1.2%	2.6%	60.2%	4.0%	5.7%	0.0%	0.1%	0.7%	0.1%	1.4%	0.0%	5.8%	0.2%	0.1%	0.9%	0.0%	79.3%	0.2%	0.0%	0.0%	0.2%	
	2000	1.3%	0.9%	14.4%	0.9%	0.1%	17.7%	0.3%	0.1%	0.4%	0.0%	0.1%	0.0%	1.4%	0.0%	0.0%	0.9%	2.4%	58.0%	4.2%	6.0%	0.0%	0.2%	1.0%	0.2%	2.3%	0.1%	5.7%	0.4%	0.1%	1.2%	0.0%	79.2%	0.3%	0.0%	0.0%	0.3%	
	2010	1.5%	0.6%	15.3%	1.0%	0.1%	18.5%	0.2%	0.1%	0.2%	0.0%	0.1%	0.0%	1.5%	0.0%	0.0%	1.0%	2.6%	55.9%	4.3%	6.2%	0.1%	0.2%	1.0%	0.3%	2.7%	0.1%	5.8%	0.5%	0.1%	1.3%	0.0%	78.4%	0.2%	0.0%	0.0%	0.2%	
	Essex	1990	0.2%	0.5%	7.3%	0.4%	0.2%	8.6%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.3%	4.1%	59.1%	4.8%	0.2%	0.2%	2.5%	0.3%	6.6%	0.0%	4.4%	1.2%	0.1%	7.4%	0.0%	90.9%	0.0%	0.0%	0.0%	0.0%
	2000	0.2%	0.7%	8.6%	0.3%	0.2%	10.1%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	0.4%	5.6%	53.8%	5.0%	0.2%	0.3%	3.0%	0.4%	7.4%	0.1%	4.6%	1.3%	0.1%	7.4%	0.1%	89.2%	0.1%	0.0%	0.0%	0.1%	
	2010	0.4%	0.7%	9.9%	0.5%	0.2%	11.7%	0.4%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	0.3%	5.4%	53.6%	5.2%	0.3%	0.3%	2.5%	0.4%	7.3%	0.1%	4.1%	1.3%	0.2%	7.0%	0.1%	87.8%	0.1%	0.0%	0.0%	0.1%	
	Hudson	1990	0.6%	1.2%	20.0%	0.7%	0.4%	22.9%	0.4%	0.1%	0.5%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.3%	0.5%	8.5%	6.6%	54.0%	0.1%	0.1%	1.4%	0.2%	1.2%	0.1%	1.6%	0.4%	0.0%	2.0%	0.0%	76.2%	0.0%	0.0%	0.0%	0.0%
	2000	0.5%	1.4%	22.2%	0.9%	0.4%	25.3%	0.7%	0.0%	0.7%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%	0.4%	10.1%	7.3%	46.2%	0.1%	0.3%	2.1%	0.4%	1.9%	0.1%	1.9%	0.6%	0.1%	2.6%	0.0%	73.5%	0.1%	0.0%	0.0%	0.1%	
	2010	0.5%	1.1%	24.3%	0.7%	0.2%	26.9%	0.2%	0.1%	0.3%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.3%	0.5%	9.4%	7.3%	45.7%	0.1%	0.3%	2.1%	0.3%	1.7%	0.2%	2.0%	0.7%	0.0%	2.4%	0.0%	72.2%	0.1%	0.0%	0.0%	0.1%	
	Hunterdon	1990	0.1%	0.1%	1.7%	0.1%	0.3%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	2.6%	0.5%	46.0%	6.3%	7.2%	0.3%	6.1%	0.0%	0.5%	19.5%	0.1%	5.6%	2.0%	97.6%	0.0%	0.0%	0.0%	0.0%
	2000	0.0%	0.1%	2.0%	0.2%	0.3%	2.5%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	3.2%	1.0%	43.2%	5.9%	6.9%	0.6%	6.1%	0.1%	0.4%	21.8%	0.1%	5.1%	1.9%	97.3%	0.0%	0.0%	0.0%	0.0%	
	2010	0.0%	0.1%	2.9%	0.1%	0.1%	3.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	1.2%	2.5%	1.1%	45.4%	6.5%	6.8%	0.8%	5.3%	0.2%	0.3%	19.6%	0.2%	4.3%	2.2%	96.6%	0.0%	0.0%	0.0%	0.0%	
	Mercer	1990	0.1%	0.2%	3.2%	0.1%	0.1%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.8%	0.3%	0.7%	81.4%	7.9%	1.2%	0.4%	0.4%	0.1%	2.1%	0.0%	0.6%	0.0%	96.2%	0.0%	0.0%	0.0%	0.0%
	2000	0.1%	0.3%	3.7%	0.2%	0.0%	4.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1.0%	0.5%	0.8%	74.5%	11.0%	1.6%	0.5%	0.4%	0.1%	3.6%	0.1%	0.9%	0.0%	95.5%	0.0%	0.0%	0.0%	0.0%	
	2010	0.0%	0.3%	4.1%	0.1%	0.0%	4.6%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	1.0%	0.9%	0.9%	74.7%	10.2%	1.9%	0.5%	0.7%	0.2%	3.1%	0.0%	0.8%	0.1%	95.3%	0.0%	0.0%	0.0%	0.0%	
	Middlesex	1990	0.2%	0.8%	6.9%	0.3%	0.6%	8.7%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.3%	4.4%	2.3%	0.3%	2.9%	60.7%	2.8%	1.4%	0.2%	0.5%	6.4%	0.1%	7.7%	0.0%	91.0%	0.0%	0.0%	0.0%	0.0%
	2000	0.1%	1.0%	7.2%	0.4%	0.7%	9.4%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.6%	4.5%	2.4%	0.4%	3.6%	56.2%	3.5%	1.9%	0.3%	0.6%	7.6%	0.1%	7.4%	0.1%	90.2%	0.0%	0.0%	0.0%	0.1%	
	2010	0.1%	0.8%	7.8%	0.4%	0.8%	10.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.2%	1.4%	4.1%	3.0%	0.5%	4.2%	55.6%	4.3%	1.5%	0.5%	0.5%	7.0%	0.1%	6.7%	0.1%	89.7%	0.0%	0.0%	0.0%	0.1%	
	Monmouth	1990	0.1%	1.0%	7.0%	0.4%	0.9%	9.3%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.0%	2.7%	1.7%	0.1%	1.9%	9.4%	65.5%	0.5%	3.7%	0.3%	1.0%	0.0%	2.6%	0.0%	90.3%	0.0%	0.0%	0.0%	0.0%
	2000	0.1%	1.3%	7.8%	0.4%	1.1%	10.6%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.2%	3.0%	2.1%	0.2%	2.2%	10.5%	60.8%	0.7%	3.6%	0.3%	1.3%	0.0%	2.9%	0.1%	89.0%	0.0%	0.0%	0.0%	0.0%	
	2010	0.1%	1.2%	8.0%	0.3%	1.2%	10.8%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.2%	1.1%	2.6%	2.3%	0.2%	2.6%	8.8%	62.1%	1.0%	3.9%	0.4%	1.4%	0.1%	2.4%	0.0%	88.8%	0.0%	0.0%	0.0%	0.1%	
	Morris	1990	0.2%	0.3%	4.1%	0.2%	0.1%	4.8%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.2%	4.2%	11.6%	1.5%	0.4%	0.2%	1.6%	0.1%	60.6%	0.0%	5.5%	3.8%	0.8%	3.8%	0.7%	94.8%	0.1%	0.0%	0.0%	0.1%	
	2000	0.1%	0.4%	4.8%	0.2%	0.1%	5.5%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%	0.0%	0.2%	0.5%	5.1%	10.7%	2.0%	0.5%	0.3%	1.8%	0.3%	58.4%	0.1%	5.3%	3.8%	1.1%	3.7%	0.7%	93.7%	0.1%	0.0%	0.0%	0.1%	
	2010	0.1%	0.2%	5.2%	0.2%	0.1%	5.8%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.3%	0.0%	0.0%	0.2%	0.5%	5.2%	10.2%	2.1%	0.5%	0.5%	1.6%	0.3%	57.6%	0.2%	5.0%	4.4%	1.1%	4.0%	0.9%	93.5%	0.1%	0.0%	0.0%	0.1%	
	Ocean	1990	0.1%	0.3%	1.7%	0.1%	0.3%	2.4%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.8%	1.8%	1.1%	0.1%	2.3%	5.7%	19.6%	0.3%	62.6%	0.3%	0.6%	0.0%	2.1%	0.0%	97.4%	0.0%	0.0%	0.0%	0.0%
	2000	0.1%	0.3%	1.5%	0.1%	0.3%	2.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	1.8%	1.2%	0.1%	3.0%	6.1%	18.9%	0.8%	61.2%	0.4%	0.8%	0.1%	2.3%	0.1%	97.5%	0.0%	0.0%	0.0%	0.0%	
	2010	0.1%	0.4%	1.8%	0.1%	0.4%	2.7%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	1.1%	1.9%	1.1%	0.1%	3.0%	4.6%	19.1%	0.6%	62.7%	0.5%	0.6%	0.0%	1.8%	0.1%	97.1%	0.0%	0.0%	0.0%	0.0%	
	Passaic	1990	0.3%	0.4%	3.6%	0.2%	0.1%	4.5%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.5%	0.0%	0.0%	0.3%	1.0%	21.8%	8.5%	2.8%	0.1%	0.1%	0.6%	0.2%	6.1%	0.1%	52.5%	0.3%	0.3%	1.0%	0.1%	94.3%	0.1%	0.0%	0.0%	0.1%
	2000	0.2%	0.3%	4.0%	0.3%	0.1%	4.9%	0.1%	0.0%	0.2%	0.0%	0.5%	0.0%	0.0%	0.0%	0.2%	0.8%	0.8%	25.4%	8.3%	3.1%	0.1%	0.2%	1.1%	0.3%	7.4%	0.1%	45.8%	0.5%	0.3%	1.4%	0.1%	94.0%	0.1%	0.0%	0.0%	0.1%	
	2010	0.2%	0.4%	4.5%	0.3%	0.0%	5.5%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.7%	0.0%	0.0%	0.2%	1.2%	23.1%	8.7%	3.3%	0.1%	0.2%	1.1%	0.4%	8.0%	0.2%	45.6%	0.6%	0.4%	1.4%	0.0%	93.2%	0.1%	0.0%	0.0%	0.1%	
	Somerset	1990	0.0%	0.3%	3.8%	0.1%	0.3%	4.5%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1.2%	4.9%	1.2%	1.9%	3.3%	18.5%	0.8%	7.4%	0.1%	0.6%	46.3%	0.1%	8.9%	0.1%	95.3%	0.0%	0.0%	0.0%	0.0%
	2000	0.1%	0.4%	4.2%	0.2%	0.3%	5.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.6%	4.9%	1.5%	2.5%	3.7%	18.0%	0.9%	7.9%	0.1%	0.7%	44.5%	0.2%	7.9%	0.2%	94.6%	0.0%	0.0%	0.0%	0.0%	
	2010	0.1%	0.4%	5.3%	0.2%	0.4%	6.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	1.4%	4.7%	2.0%	2.8%	4.3%	15.7%	1.0%	7.5%	0.2%	0.5%	45.2%	0.1%	7.9%	0.2%	93.4%	0.0%	0.0%	0.0%	0.0%	
	Sussex	1990	0.1%	0.3%	2.3%	0.3%	0.1%	3.0%	0.0%	0.0%	0.1%	0.0%	1.2%	0.0%	0.1%	0.0%	0.0%	0.1%	1.5%	6.0%	6.3%	1.2%	0.2%	0.1%	0.8%	0.1%	28.4%	0.0%	6.4%	1.2%	42.2%	1.0%	1.3%	95.4%	0.0%	0.0%	0.0%	0.0%
	2000	0.1%	0.2%	2.0%	0.2%	0.1%	2.7%	0.1%	0.0%	0.1%	0.0%	0.9%	0.0%	0.2%	0.0%	0.0%	0.2%	1.4%	6.7%	5.5%	1.6%	0.3%	0.2%	1.0%	0.3%	28.4%	0.1%	5.9%	1.3%	41.3%	1.3%	2.0%	95.8%	0.0%	0.0%	0.0%	0.0%	
	2010	0.2%	0.2%	2.4%	0.2%	0.1%	3.1%	0.1%	0.0%	0.2%	0.0%	1.2%	0.0%	0.2%	0.0%	0.1%	0.2%	1.7%	5.5%	5.2%	1.5%	0.2%	0.2%	0.8%	0.2%	26.9%	0.1%	5.5%	1.4%	43.8%	2.0%	1.8%	95.0%	0.0%	0.0%	0.0%	0.0%	
	Union	1990	0.1%	0.5%	5.9%	0.2%	0.3%	7.0%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%																						

Residence County		Work County																														Connecticut	
		NYC					Long Island					Mid-Hudson					New Jersey																

TABLE 5-5. CONNECTICUT-TO-SUBREGION COMMUTER FLOWS, SHARES AND TOTAL, 1990 TO 2006-2010

Residence County										Work County																			Connecticut									
NYC										Long Island				Mid-Hudson					New Jersey										Connecticut									
Count	Year	Bronx	Kings	New York	Queens	Richmond	NYC TOTAL	Nassau	Suffolk	U TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NJ TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL	
Connecticut	1990	0.3%	0.1%	5.8%	0.4%	0.0%	6.6%	0.2%	0.0%	0.2%	0.2%	0.0%	0.3%	0.1%	0.0%	0.0%	3.8%	4.3%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	83.2%	0.7%	4.5%	88.3%
	2000	0.3%	0.3%	6.0%	0.3%	0.0%	7.0%	0.2%	0.0%	0.2%	0.2%	0.1%	0.3%	0.1%	0.0%	0.0%	4.5%	5.1%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	81.2%	0.7%	5.3%	87.2%	
	2010	0.4%	0.2%	6.5%	0.3%	0.0%	7.4%	0.2%	0.0%	0.2%	0.2%	0.1%	0.5%	0.1%	0.0%	0.0%	5.1%	5.9%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	79.8%	0.7%	5.5%	86.1%	
	1990	0.1%	0.0%	1.3%	0.2%	0.0%	1.6%	0.0%	0.0%	0.1%	0.7%	0.0%	0.3%	0.0%	0.0%	0.0%	0.8%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	11.3%	69.1%	15.8%	96.2%	
	2000	0.0%	0.0%	1.3%	0.1%	0.0%	1.6%	0.1%	0.0%	0.1%	0.7%	0.1%	0.3%	0.0%	0.0%	0.0%	1.0%	2.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	14.6%	65.4%	16.1%	96.1%	
	2010	0.1%	0.0%	1.5%	0.1%	0.0%	1.8%	0.0%	0.1%	0.1%	0.6%	0.1%	0.4%	0.0%	0.0%	0.0%	0.9%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	15.3%	63.0%	17.9%	96.1%	
	1990	0.0%	0.0%	0.4%	0.1%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	12.9%	2.1%	84.1%	99.1%	
	2000	0.1%	0.0%	0.4%	0.1%	0.0%	0.6%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	14.4%	2.5%	82.0%	98.9%	
	2010	0.1%	0.1%	0.8%	0.1%	0.0%	1.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	15.5%	2.2%	80.6%	98.3%	

Residence County										Work County																			Connecticut									
NYC										Long Island				Mid-Hudson					New Jersey										Connecticut									
Count	Year	Bronx	Kings	New York	Queens	Richmond	NYC TOTAL	Nassau	Suffolk	U TOTAL	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	MH TOTAL	Bergen	Essex	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Somerset	Sussex	Union	Warren	NJ TOTAL	Fairfield	Litchfield	New Haven	CT TOTAL	
Connecticut	1990	1,235	517	24,285	1,481	51	27,569	667	163	830	742	110	1,118	320	15	32	15,654	17,991	1,252	161	306	23	54	68	13	187	-	158	28	7	110	8	2,375	346,797	2,742	18,650	368,189	
	2000	1,258	1,244	24,831	1,313	97	28,743	767	172	939	667	311	1,439	358	-	14	18,436	21,225	716	149	344	-	82	71	8	198	-	134	130	6	56	-	1,894	335,378	3,026	21,900	360,304	
	2010	1,862	764	27,264	1,102	20	31,012	691	205	896	650	230	2,014	364	-	37	21,342	24,637	628	172	401	9	95	211	62	208	5	140	73	-	141	-	2,145	335,872	2,976	23,357	362,205	
	1990	71	26	984	163	3	1,247	29	36	65	514	10	192	20	-	24	636	1,396	44	11	3	-	8	33	-	17	-	-	9	-	26	-	151	8,552	52,340	11,982	72,874	
	2000	28	37	1,055	107	#	1,227	54	6	60	540	46	239	12	-	2	814	1,653	32	43	18	-	-	6	8	25	-	12	-	-	7	9	160	11,467	51,501	12,719	75,687	
	2010	57	25	1,243	105	20	1,450	13	50	63	487	42	286	15	-	11	715	1,556	18	21	26	-	-	-	-	20	-	-	3	-	-	-	88	12,458	51,410	14,609	78,477	
	1990	80	141	1,307	252	17	1,797	83	7	90	87	27	69	20	20	19	757	999	152	69	46	-	-	7	-	33	7	42	31	-	27	7	421	46,961	7,772	306,752	361,485	
	2000	183	154	1,584	281	41	2,243	195	52	247	23	34	85	37	7	33	739	958	65	32	11	10	19	40	11	73	-	-	22	24	23	-	330	50,977	8,976	290,098	350,051	
	2010	318	350	2,929	354	39	3,990	158	115	273	62	35	45	137	10	#	1,409	1,698	63	77	43	16	-	53	32	147	-	31	19	-	22	-	503	58,319	8,144	302,471	368,934	

Source: Census; ACS; 1990, 2000, 2006-2010

6.0 APPENDIX

North American Industry Classification System (NAICS) Listing

- **Agriculture (NAICS Code 11):** establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.
- **Mining (NAICS Code 21):** establishments that extract naturally occurring mineral materials such as coal and ores, crude petroleum, and natural gas.
- **Utilities (NAICS Code 22):** public or private establishments engaged in the provision of electric power, natural gas, steam supply, water supply, and sewage removal.
- **Construction (NAICS Code 23):** establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems)
- **Manufacturing (NAICS Code 31-33):** establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products or components.
- **Wholesale Trade (NAICS Code 42):** establishments engaged in the intermediate distribution of merchandise, typically being organized to sell to other businesses, operating from a warehouse, and having little or no display of merchandise.
- **Retail Trade (NAICS Code 44-45):** establishments engaged in retailing – the final step in the distribution of merchandise; retailers are typically organized to sell merchandise in small quantities to the general public.
- **Transportation & Warehousing (NAICS Code 48-49):** private establishments providing air, rail, water, road, or pipeline transportation services of passengers and cargo; warehousing and storage of goods (not engaged in wholesale or retail activity)
- **Information (NAICS Code 51):** establishments engaged in publishing (including software publishing), motion picture and sound recording, broadcasting (including internet broadcasting), telecommunications, and web hosting.
- **Finance & Insurance (NAICS Code 52):** establishments engaged in transactions involving the creation, liquidation, or change in ownership of financial assets, or in facilitating of such transactions.
- **Real Estate, Rental & Leasing (NAICS Code 53):** establishments primarily engaged in the renting or leasing of tangible or intangible assets, including real estate.
- **Professional, Scientific & Technical (NAICS Code 54):** establishments engaged in legal, advice, accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; photographic services; translation and interpretation services; and veterinary services.

- **Management of Companies & Enterprises (NAICS Code 55):** establishments owning a controlling interest or influencing management decisions, or that administer, oversee, and manage other establishments.
- **Administrative, Support, Waste Management (NAICS Code 56):** establishments performing office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal.
- **Educational Services (NAICS Code 61):** private or nonprofit establishments that provide instruction and training in a wide variety of subjects in facilities such as schools, colleges, universities, and training centers.
- **Health Care & Social Assistance (NAICS Code 62):** private or nonprofit establishments providing health care and/or social assistance for individuals.
- **Arts, Entertainment & Recreation (NAICS Code 71):** establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons.
- **Accommodation & Food Services (NAICS Code 72):** establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.
- **Other Services (NAICS Code 81):** establishments engaged in equipment and machinery repairing, promoting or administering religious activities, grant-making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.
- **Government (NAICS Code 92):** establishments of federal, state, and local government agencies that administer, oversee, and manage public programs. This sector includes government-operated establishments in other sectors such as schools and universities (61), hospitals (62) postal services (48-49), and utilities (22).