bpda

Boston's Changing Domestic Migration: 1980 to 2016

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Executive Summary

After 30 years of population decline, Boston experienced slow population growth from 1980 to 2006, driven by robust international migration. Boston's population growth increased after 2007 due to increased domestic migration. This report examines selected characteristics of Boston's domestic migration from 2007 to 2016 that help explain Boston's recent population growth.

This report measures migration in two ways. Total migration is the total flow of people in and out of Boston: moving to Boston from elsewhere in the United States and from Boston to elsewhere in the United States. Net migration is the difference between domestic in- and out-migration in Boston. Because nearly half of Boston's migration occurs within the greater Boston area, the report addresses migration with other metropolitan areas separately from cities and towns in the greater Boston area. An area's size can influence the size of its migration flow, so a migration index accounts for population size and the size of overall migration flows.

After decades of negative net domestic migration, Boston's net domestic migration turned slightly positive after 2007 - approximately the same number of Boston residents were arriving in Boston as were leaving. This report looks at where these migrants came from and where they went to, analyzing characteristics of areas to look for migration trends. Among metropolitan areas with extensive migration with Boston, Boston experienced negative net migration among metropolitan areas with:

- higher median gross rent
- warmer average January temperature.

Median household income and educational attainment did not have a statistically significant association with domestic migration patterns between metropolitan areas. None of the characteristics studied was associated with migration within greater Boston.

Because of the large number of colleges and universities in Boston, college students influence Boston's migration. From 2007 to 2016, approximately 22,500 people per year moved to Boston from elsewhere in the country to attend college or university. Approximately 38,000 graduates from these colleges and universities migrated to other areas of the country each year. This migrating population helps explain why people may leave Boston for more expensive housing markets. Residents who increased their educational attainment in Boston could move to areas with more expensive housing markets to take advantage of employment opportunities.

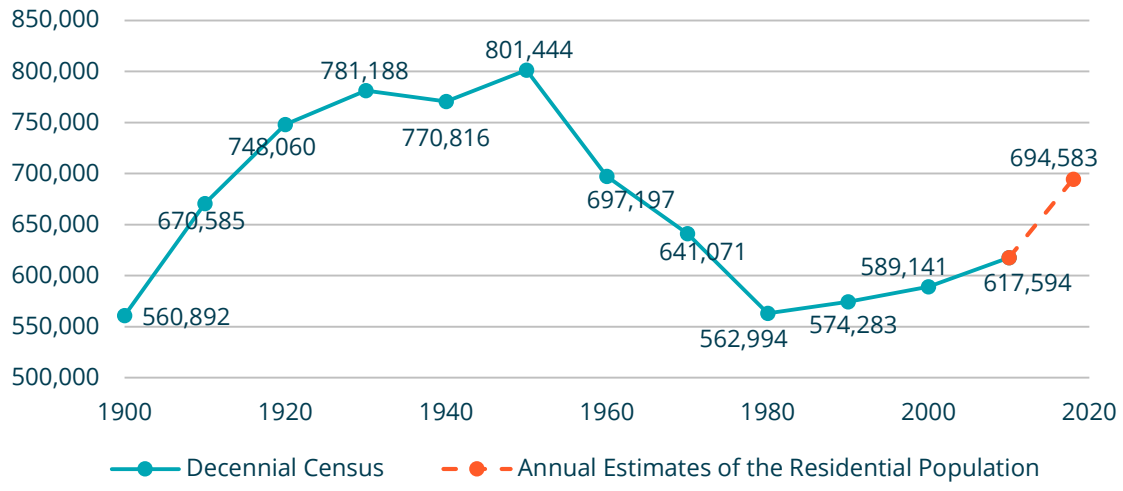
Introduction

Boston's population peaked at 801,844 in 1950 and fell to 562,994 in 1980. This decline occurred during a time of increased suburban public investment and decreased international migration due to the lingering effects of a 1924 immigration law. As a result, domestic out-migration increased from Boston to suburban cities and towns in Massachusetts and other states, while Boston's foreign-born share of the population declined from 19% in 1950 to 15% in 1980.

After this period of population decline, the city experienced slow population growth from 1980 to 2010, mainly due to international migration. Boston grew at an annual rate of 0.3% over this period due to increased international migration from Latin America, Aisa, and Africa. U.S. immigration policy that abolished restrictive quotas contributed to Boston's population growth through international migration. Since the 2010 Census, Boston's population has grown at a 1.6% annual rate. This growth is more rapid than for the entire country, which increased by 0.7% annually. The most notable change to the components of Boston's population since 2010 has been the change to net domestic migration: an increase in domestic in-migration and a decrease in out-migration. International migration continues to make a substantial contribution to Boston's population growth, but domestic net migration from 2007 to 2016 became positive for the first time in almost 60 years. These migration data from the years 2007 to 2016 were inputs to the BPDA Research Division's population projection model that projects Boston's population to increase to 759,727 by 2030.

FIGURE 1

Boston's Population 1900 to 2018



Sources: U.S. Census Bureau, 1900-2010 U.S. Decennial Census, 2018 Population Estimate Program's Annual Estimates of the Resident Population, BPDA Research Division Analysis.

Analyzing historical migration data faces limitations because the Decennial Census and the American Community Survey (ACS) used for this comparison employ different methodologies. Their most significant methodological difference is their migration interval. The ACS identifies respondents aged one year and older who lived in a different residence the previous year. The methodology does not identify migration data for those under age one because they cannot meet the migration definition. Therefore, those under age one cannot migrate in the year they were born. The decennial census identifies persons age five and older who lived in a different residence five years ago. The methodology does not identify migration data for children ages birth to four who were born during the migration interval. In addition, the decennial census identifies a person's residence as a place where he or she lives and sleeps most of the time. For the ACS, a person has to reside at the address for more than two months to be surveyed.

This difference in-migration interval limits the direct comparisons of the number of migrants over time. The ACS methodology increases migration estimates. The shorter interval in the ACS identifies more moves and includes those ages one to four. Chronic movers and those making temporary moves, such as college students, are identified every year. The longer migration interval of the decennial census cannot measure these moves and provides lower estimates. It also excludes residents ages one to four. However, the in- and out-migration trends between the decennial census and ACS should be consistent because the methodologies have somewhat similar measures of in- and out-migration. Table 1 shows Boston's migration using decennial and ACS estimates since the 1980 Decennial Census.[1] As expected, annual gross migration increases between 2007 and 2016. Domestic in- and out-migration converge, and net migration trends positive.

TABLE 1

Domestic Migration for Boston, 1975 to 2016

Average of Years	Domestic In-Migration	Domestic Out-Migration	Gross Domestic Migration	Net Domestic Migration
1975-1980*	10,312	14,852	25,164	-4,540
1985-1990*	23,606	31,128	54,734	-7,522
1995-2000*	25,760	32,432	58,192	-6,672
2007-2016**	57,124	57,082	114,206	43

** Migration assessed over a 5-year interval*
*** Migration assessed over a 1-year interval*
Sources: 1980, 1990, & 2000 Decennial U.S. Censuses and 2007-2016 American Community Surveys, BPDA Research Division Analysis.

The components of Boston's population are always changing. In addition to migration, natural change contributes to some of Boston's population growth. Since 2000, Boston averaged approximately 3,900 more births than deaths. Boston's international migration was responsible for much of the city's population growth after 1980 when domestic net migration was negative. This change in domestic net migration is associated with Boston's increasing population growth since 2010. This report examines selected characteristics of Boston's domestic migration from 2007 to 2016 that has been responsible for Boston's recent robust population growth.

Data Used and Key Terms Defined

This report examines Boston's domestic migration using the 2007-2011 and 2012-2016 ACS tabular data. These years match those used in the BPDA's Boston population projection.[2] All estimates represent one year of migration during these ten years. Because the ACS is a survey of the country, it requires a large sample to ensure the accuracy of the data. Because the majority of the population does not move in any given year, analysis of migration requires a larger sample. In pooling these two ACS migration data files, this report averages the two ACS periods to provide an annual migration estimate over the ten years of migration data to project Boston's population.

Boston's colleges and universities influence the city's migration patterns. Economic Modeling Specialists International (Emsi) profile data are used to identify the residence of Boston college and university graduates across the United States and the institutions that Boston residents graduate from. The profile data are from January 2018 to March 2020 and collected from various public online sources. These Emsi data identify the 50 largest cities for both populations.

Two types of migration are defined below:

- **Domestic gross migration** is the total flow of people moving to Boston from elsewhere in the United States and from Boston to elsewhere in the United States.
- **Domestic net migration** represents the difference between domestic in- and out-migration in Boston. Negative net migration means that, within gross migration, Boston lost more residents than it gained, while positive net migration means that Boston gained more residents than it lost.

In addition to reporting on Boston's migration with cities and towns in Eastern Massachusetts, this report also identifies metropolitan statistical areas (MSA) in the country with which Boston experiences migration. An MSA consists of a collection of counties that have a high degree of economic and social integration. An MSA has a core county with a population of at least 50,000 residents. Adjacent counties are included in the MSA if they meet the following commuting requirements: (a) At least 25% of the workers living in the county work in the central county or counties, or (b) At least 25% of the employment in the county is accounted for by workers who reside in the central county or counties. There are 389 MSAs in the United States, with populations ranging from 20,031,443 in New York-Newark-Jersey City to 54,412 in Carson City's MSA.

The United States is a mobile society. Only New Zealand and South Korea have a more mobile population than the United States.[3] Migration and mobility both refer to the movement of people from one location to another. The Census Bureau identifies migration as moves that cross a boundary, such as a county or state line. People who move in the United States are more likely younger, lower-income, and renters.[4] These differences separate residents who migrate from those who do not and makes comparing migration among MSAs and cities and towns more difficult. The New York-Newark-Jersey City MSA, with its large population, can have more substantial gross migration because more people can move to Boston, and it has a higher probability of being the destination of Boston's out-migration. The same is true for Cambridge among cities and towns in the five-county Boston area.

MSAs differ significantly in size of population and size of migration flows. Therefore, we consider migration to Boston as a share of the MSA's total out-migration. For example, migration to Boston makes up 3% of out-migration from the Springfield, Massachusetts MSA, but only 0.3% of out-migration from Los Angeles-Long Beach-Anaheim, California. We then consider migration to each MSA from Boston as a share of Boston's total out-migration. We create a migration index that divides these two shares. An index of less than one indicates that Boston is a less popular destination for migrants from the MSA than the MSA is as a destination for migrants from Boston. An index of greater than one indicates that Boston is a relatively more popular destination for migrants from the MSA than the MSA is as a destination for migrants from Boston.

Many factors can explain population growth. Seven notable trends that define population growth include income, January temperature, distance from a port, population density, educational attainment, manufacturing employment, and housing costs.[5] This migration index is correlated with four characteristics of the destination of Boston's out-migration to identify if patterns to this migration exist. These characteristics are median household income, median gross rent, and share of the adult population with at least a Bachelor's degree. These estimates are from the 2012-2016 ACS. For MSAs only, the average January temperature is analyzed. These data are from the National Oceanic and Atmospheric Administration. Appendix A includes the migration data for the MSAs and cities and towns.

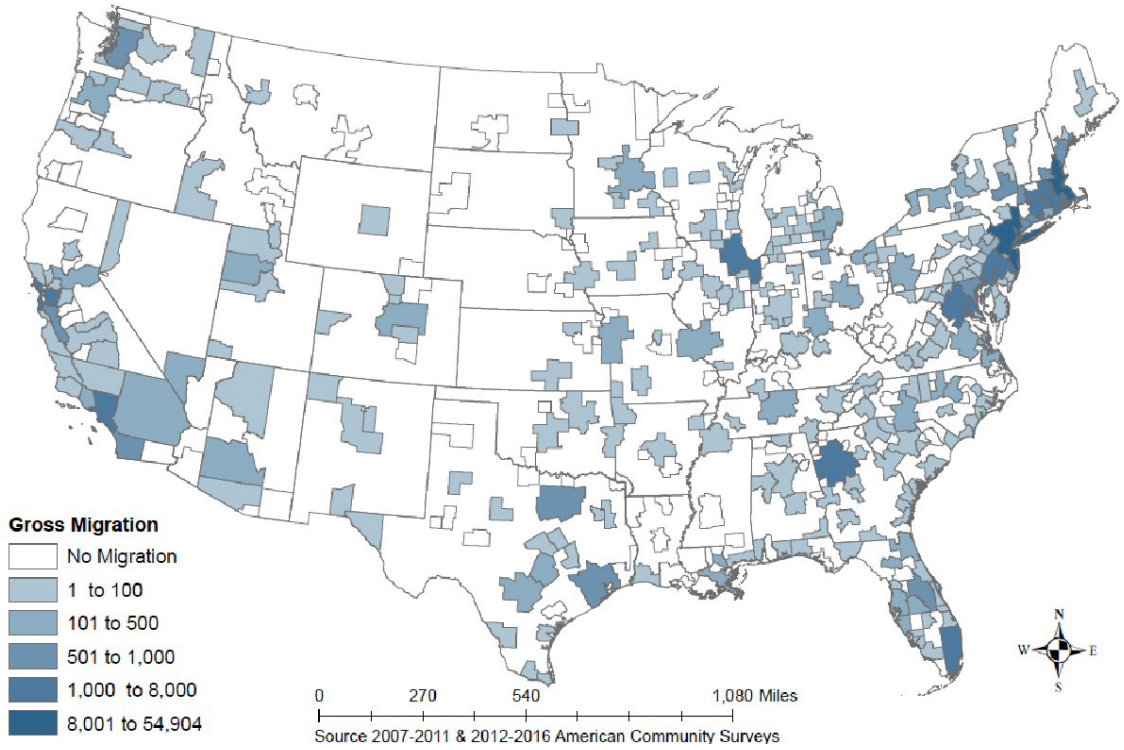
Boston's Domestic Migration

Domestic Gross Migration

The average yearly domestic gross migration for Boston was 114,206 residents from 2007 to 2016. Even though 87% of the U.S. population lives in MSAs, 97% of those who migrated to Boston came from other MSAs as opposed to micropolitan and other rural areas. Map 1 outlines all MSAs in the United States and shows gross migration: the total flow of people moving to and from Boston from MSAs. Boston had no migration with 115 of the 389 MSAs in the United States. Under 100 people moved annually between 204 MSAs and Boston. Of the remaining MSAs, 42 MSAs had an annual flow between 101 and 500; 15 MSAs had an annual flow between 501 and 1,000; and 11 MSAs had a flow between 1,001 and 8,000. Only New York-Newark-Jersey City MSA and the remainder of the Boston-Cambridge-Newton MSA had annual migration flows over 8,000. Notably, the most significant migration flow is within the greater Boston area, and these individuals remain closely associated with Boston's labor market.

MAP 1

Boston's Gross Migration with Metropolitan Areas



Domestic Net Migration

The average yearly net migration for Boston with the entire country was 43 residents but was -839 residents in all MSAs. Boston experienced negative net migration, with 33% of MSAs (130) in the United States. Boston experienced its most massive negative net migration with the Boston-Cambridge-Newton MSA. Larger levels of negative net migration occurred with the Los Angeles-Long Beach-Anaheim, and San Francisco-Oakland-Hayward MSAs. Boston experienced zero net migration (equal in- and out-migration) with six MSAs. Boston experienced positive net migration, with 36% of MSAs (138) in the United States. Geography appears to influence these net migration patterns. Boston experienced the largest positive net migration with New York-Newark-Jersey City, Providence-Warwick, and Philadelphia-Camden-Wilmington MSAs.

MAP 2

Boston's Net Migration with Metropolitan Areas

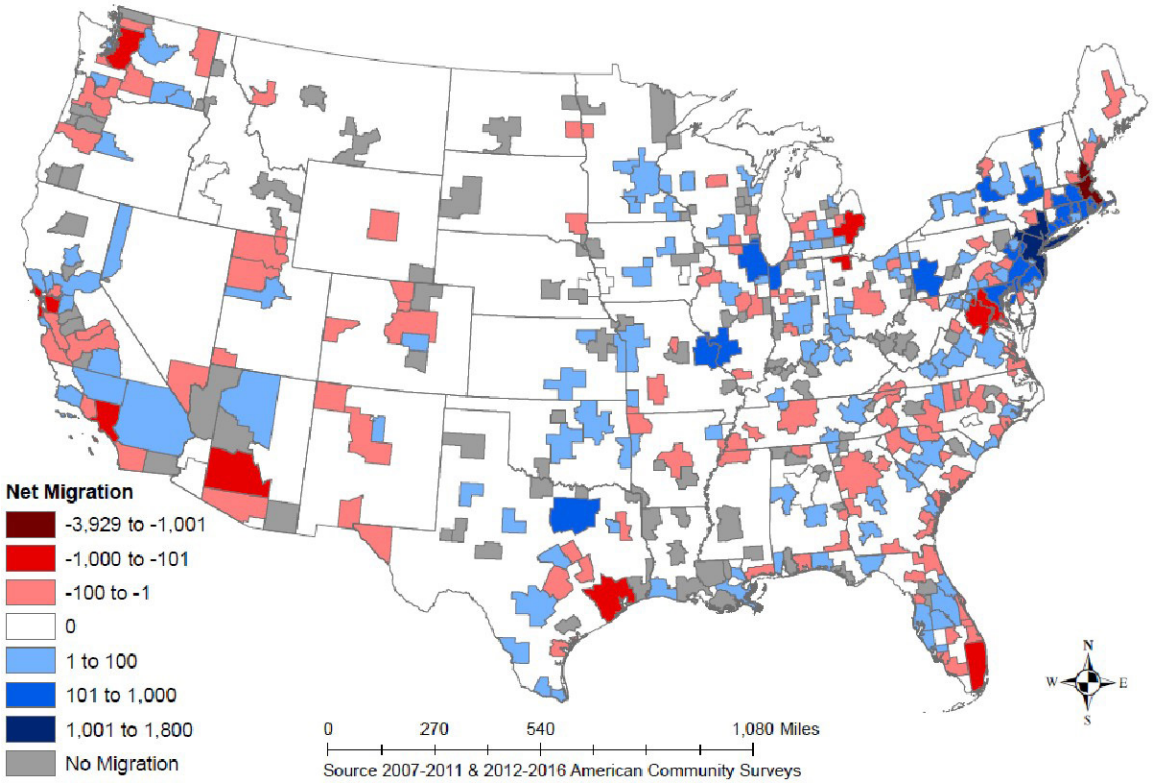
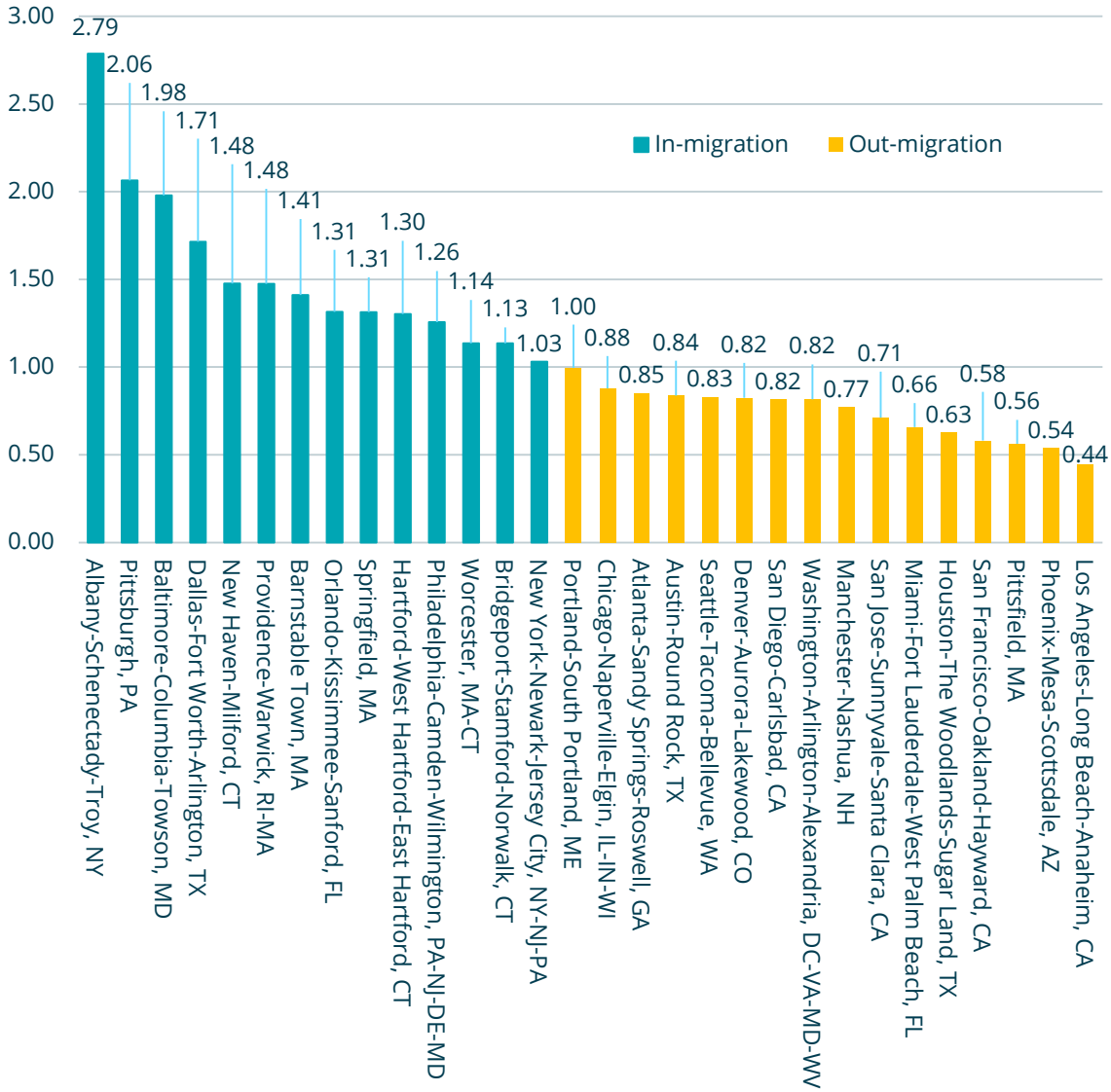


Figure 2 shows the 30 MSAs with extensive gross migration with Boston. With the MSAs in blue, Boston's migration index was greater than or equal to one: Boston's in-migration share of the MSAs out-migration is greater than the MSA's in-migration share of Boston's out-migration. Geographic distance may contribute to this migration. More MSAs with a migration index greater than or equal to one are closer to Boston, and more MSAs with a migration index less than one are more distant to Boston. Boston had nearly three times more in-migration than out-migration with Albany-Schenectady-Troy MSA, which had a migration index of 2.79. Portland-South Portland MSA, with a net migration of -4 with Boston, had a migration index of one. Boston had its most substantial out-migration with the Los Angeles-Long Beach-Anaheim MSA, an annual net migration of -622, and Boston's migration index was 0.44.

FIGURE 2

Boston's Migration Index



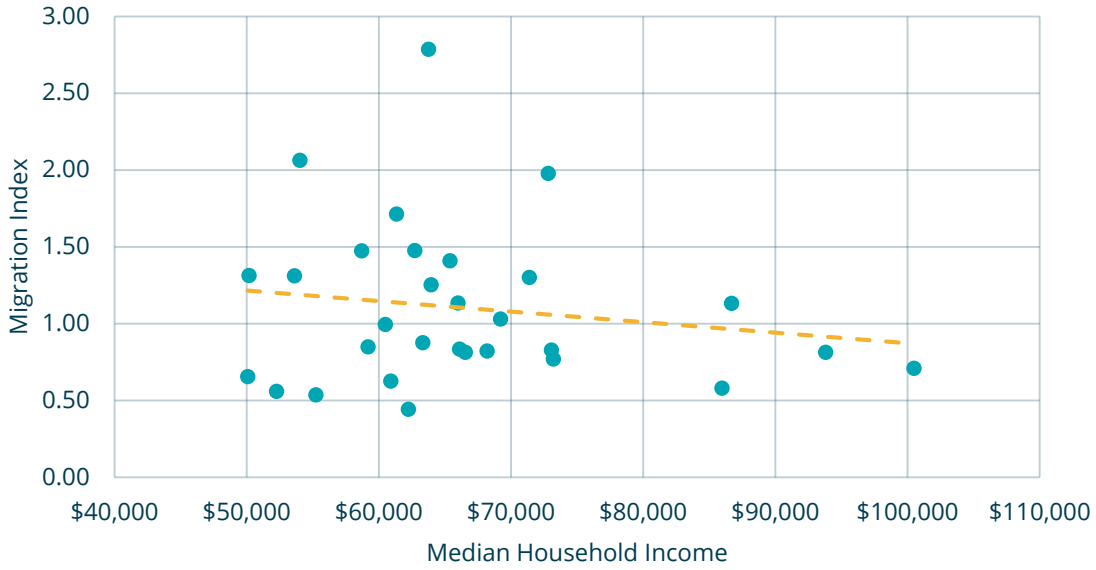
Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

Median Household Income

Boston's median household income was $58,516 in 2016 dollars. The average median household income of the 15 MSAs with a migration index of one or above was $64,001. Pittsburgh, Springfield, and Orlando-Kissimmee-Sanford MSAs had lower median household incomes than in Boston. The average median household income of the MSAs with a migration index below one was $68,695. Miami-Fort Lauderdale-West Palm Beach, Pittsfield, and Phoenix-Mesa-Scottsdale MSAs had a lower median household income than in Boston.

FIGURE 3

Metropolitan Area Median Household Income Correlated with Boston's Migration Index



Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

Figure 3 shows the correlation between Boston's migration index and the household income in MSAs. The y-axis shows the migration index ranging from zero to three. The x-axis shows the median household income ranging from $40,000 to $110,000. Boston's migration index had a negative relationship with the median household income of the 30 MSAs. In other words, Boston was more likely to have negative net migration with higher-income MSAs. However, a statistical test suggests that there is not sufficient evidence to determine that the median household income is associated with Boston's migration with these MSAs.

Median Gross Rent

Boston has one of the nation's most expensive housing markets in the country, with a median gross rent of $1,369 in 2016 dollars. The average median gross rent of the 15 MSAs with an index of one or above was $1,034. Only the Bridgeport-Stamford-Norwalk MSA had higher median gross monthly rent than in Boston. The average median gross rent of the 15 MSAs with an index below one was $1,205. San Jose-Sunnyvale-Santa Clara, San Francisco-Oakland-Hayward, and San Diego-Carlsbad MSAs had higher monthly gross rents than in Boston.

FIGURE 4

Metropolitan Area Median Gross Rent Correlated with Boston's Migration Index

Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

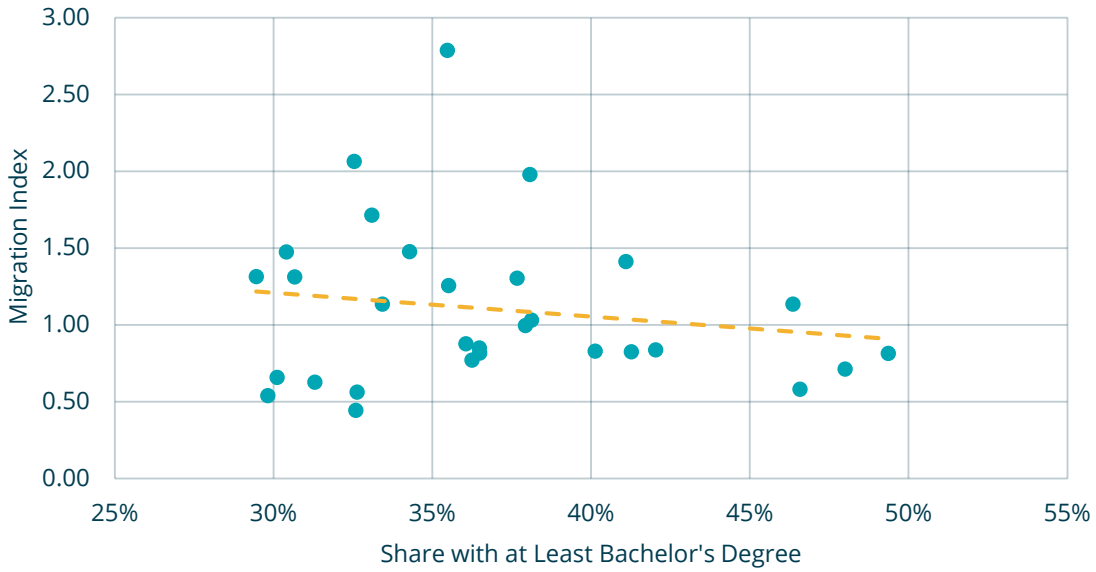
Figure 4 shows the correlation between Boston's migration index and gross rent in MSAs. This x-axis shows median gross rent ranging from $500 to $1,900. Boston's migration index had a negative relationship with the median gross rent in the 30 MSAs. Boston was more likely to have negative net migration with MSAs with higher gross monthly rent. The statistical analysis for this relationship suggests that there is sufficient evidence to determine that median gross rent is associated with Boston's migration with these MSAs. We would expect an MSA with a higher price housing market would have a labor market that offers higher wages. Individuals leaving Boston for more expensive housing markets could be doing so with the expectation of higher wages for their specific types of employment.

Educational Attainment

Boston has a highly educated population, with 46% of its adults having a Bachelor's degree or higher. With its 35 colleges and universities, Boston attracts college students each year from around the country and produces graduates who might return home or seek employment in other MSAs. The average share of adults with a Bachelor's degree in the 15 MSAs with a migration index of 1 or above was 36%. Only the Bridgeport-Stamford-Norwalk MSA had a similarly high share. The average share of adults with Bachelor's degrees or higher of the 15 MSAs with an index below 1 was 38%. Washington-Arlington-Alexandria, San Jose-Sunnyvale-Santa Clara, and San Francisco-Oakland-Hayward MSAs had a higher share of adults with a Bachelor's degree than in Boston.

FIGURE 5

Metropolitan Area Share of Adults with at least a Bachelor's Degree Correlated with Boston's Migration Index, Age 25 and Older



Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

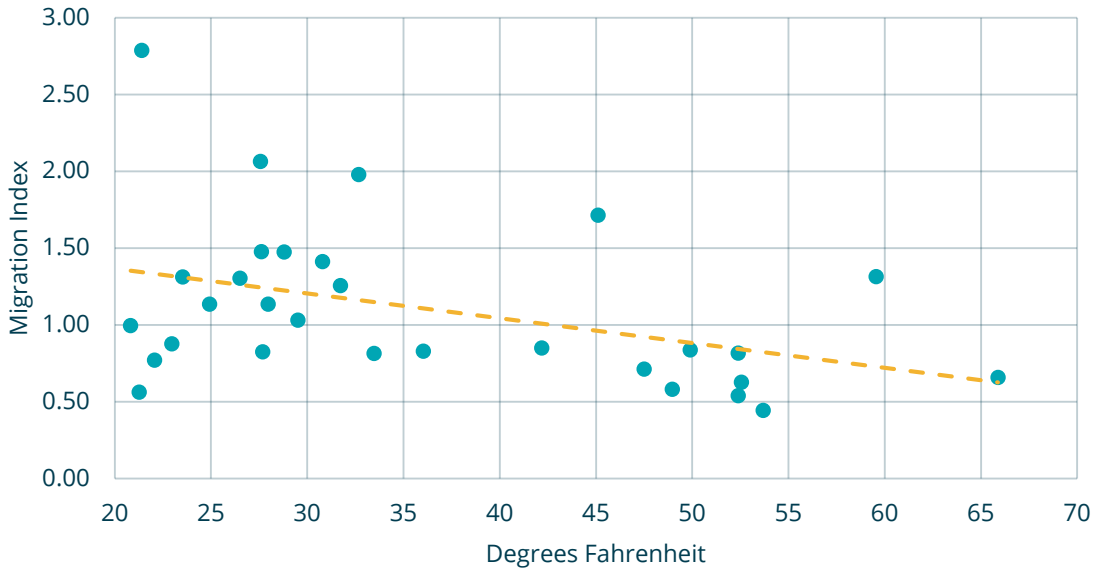
Figure 5 shows the correlation between Boston's migration index and educational attainment in MSAs. This x-axis shows the share of adults with at least a Bachelor's degree ranging from 25% to 55%. There was a negative relationship between the share of adults with at least a Bachelor's degree in the 30 MSAs and Boston's migration index. Boston was more likely to have negative net migration with MSAs with increased levels of educational attainment. However, the statistical analysis for this relationship suggests that there is not sufficient evidence to determine that educational attainment is associated with the decision to migrate to or from Boston.

Average January Temperature

The South and West are the fastest growing regions of the country. One explanation of this pattern of migration is that people prefer living in a warmer climate. For a city like Boston with colder weather, this could explain why people are more likely to move from and are less likely to relocate to Boston, whose average January temperature is 27.7 degrees Fahrenheit. The average January temperature in the 15 MSAs with an index of one or above was 30.6 degrees Fahrenheit. Only the Portland-South Portland and Springfield MSAs had colder January temperatures. The average January temperature of the 15 MSAs with an index below one was 41.9 degrees Fahrenheit. Only Chicago-Naperville-Elgin and Pittsfield MSAs had colder January temperatures than in Boston.

FIGURE 6

Metropolitan Area Average January Temperature Correlated with Boston's Migration Index



Source: 2007-2011 & 2012-2016 American Community Survey, National Atmospheric and Oceanic Administration data, BPDA Research Division Analysis.

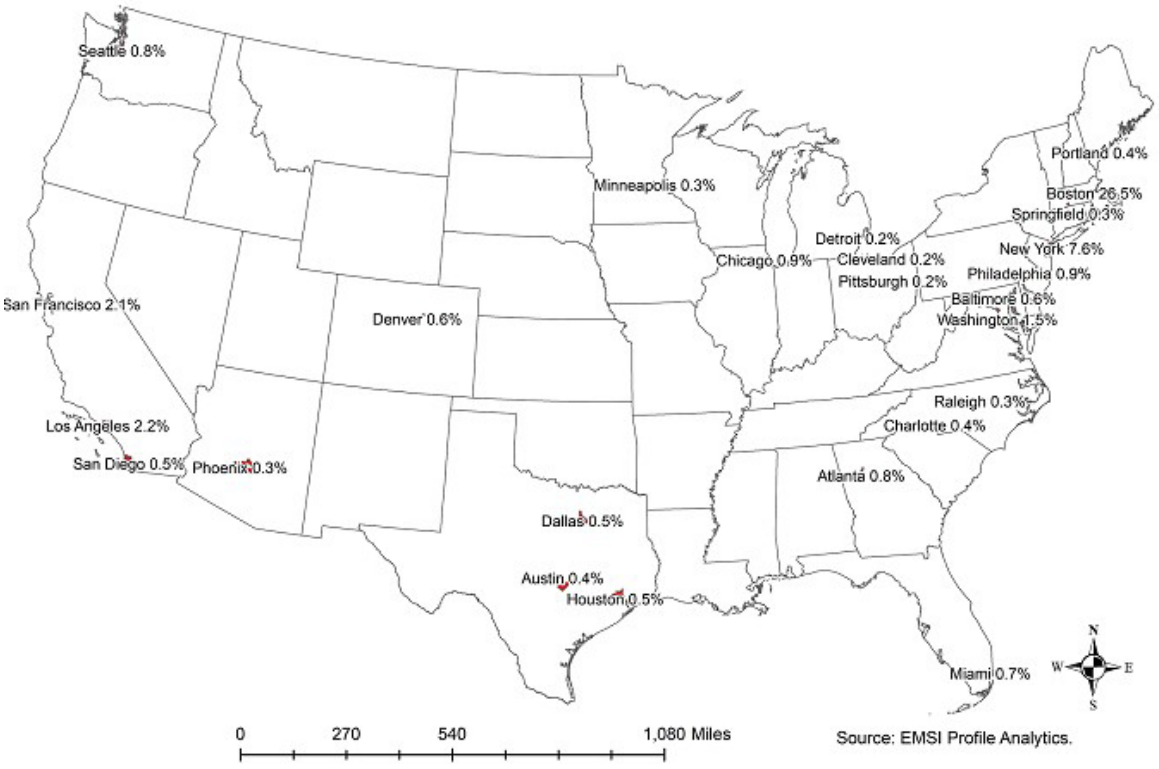
Figure 6 shows the correlation between Boston's migration index and climate. This x-axis shows average January temperatures ranging from 20 and 70 degrees Fahrenheit. There was a negative relationship between the MSAs average January temperature and the migration index of the 30 MSAs. Boston was more likely to have negative net migration with MSAs with warmer weather. The statistical analysis for this relationship suggests that there is sufficient evidence to determine that the average January temperature is associated with the decision to migrate to and from Boston.

College Graduates

Boston is home to 29 colleges and universities, and their enrollment shapes Boston's migration patterns. According to the 2012-2016 ACS, approximately 107,000 domestic and international college students resided in Boston, and 22,500 moved to Boston the previous year. On average, Boston colleges and universities graduate 38,000 students each year. Map 3 shows the distribution of graduates from Boston's colleges and universities since 2000. Many of Boston's college and university graduates move to other parts of the country sometime after graduating.[6] New York, Los Angeles, San Francisco, Washington D.C., Chicago, Philadelphia, Seattle, Atlanta, Miami, and Providence are the ten most frequent cities outside of Massachusetts where Boston's college graduates reside.

MAP 3

Location of Graduates of Boston's Colleges and Universities



Some Boston residents graduated from colleges and universities outside of Boston. Map 4 identifies the shares of Boston residents who graduated from colleges and universities in the top 50 cities where Boston residents graduated. The majority of Boston residents with a Bachelor's degree or higher graduated from Massachusetts schools. Most of Boston's college educated workers came from Boston, Cambridge, Amherst, Worcester, and Waltham. Outside of Massachusetts, Durham, NC, Manchester, NH, Providence, RI, New York, NY, Philadelphia, PA, and Washington, D.C. are locations of colleges from which many Boston college-educated residents graduated.

MAP 4

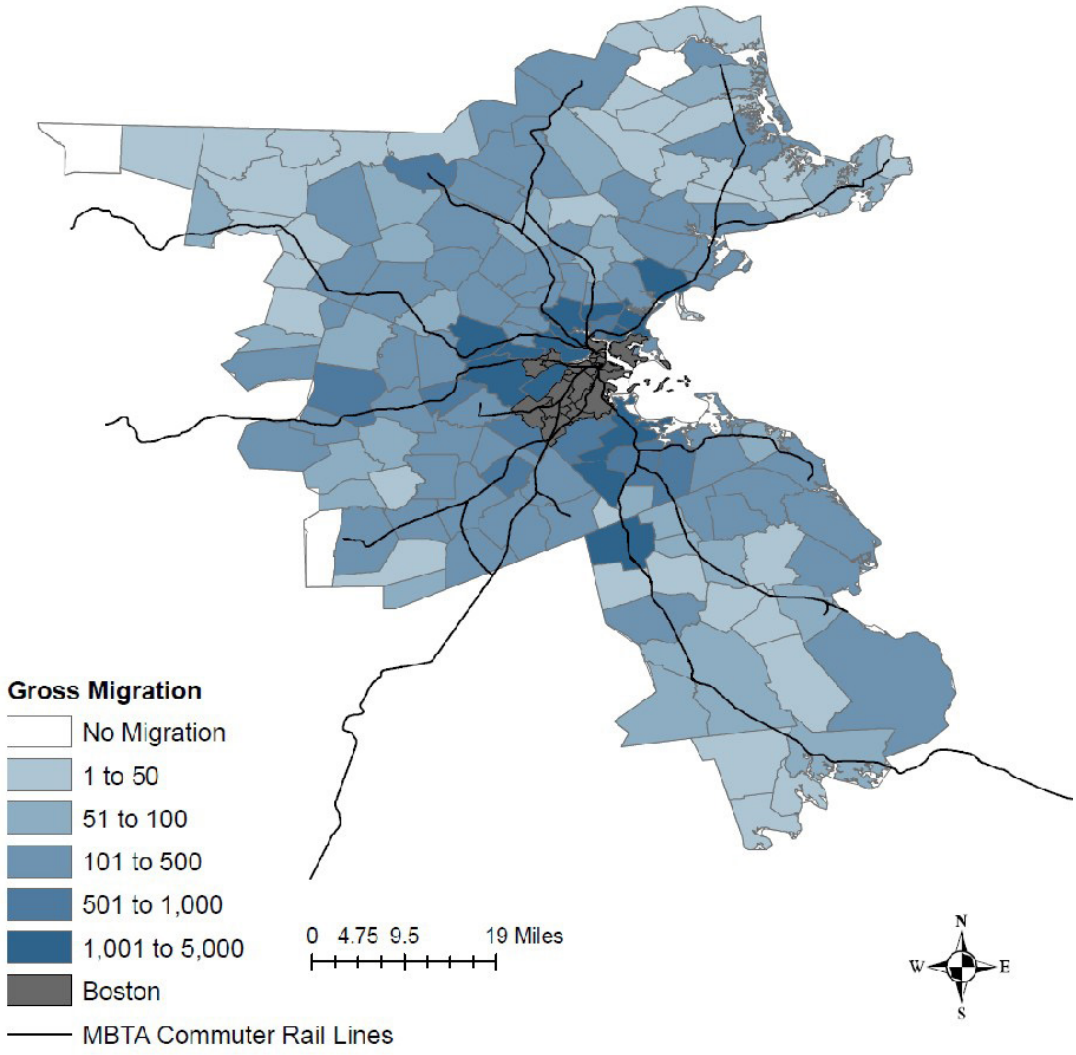
Cities of Colleges and Universities from which Boston's Residents Graduated

Migration within Greater Boston

The five-county region of Metropolitan Boston (Essex, Middlesex, Norfolk, Plymouth, and the remainder of Suffolk County) accounts for 47% of Boston's annual gross migration. Map 5 shows the gross migration of 144 cities and towns with Boston. Cambridge, Brookline, Newton, Quincy, and Somerville had gross migration of over 3,000 residents with Boston.

MAP 5

Boston's Gross Migration with Cities and Towns in Eastern Massachusetts

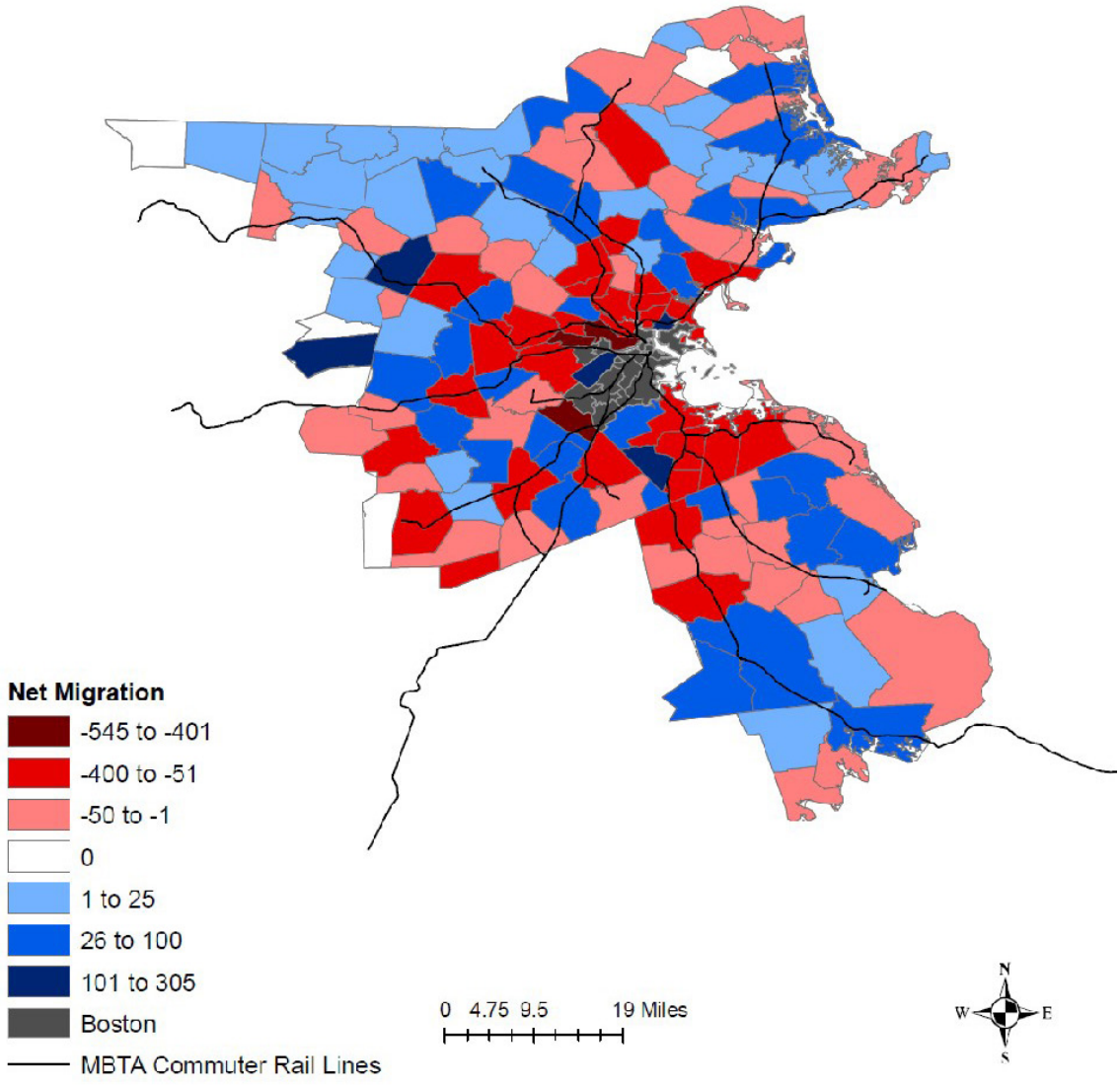


Source: 2007-2011 & 2012-2016 American Community Surveys

Overall Boston has negative net migration of 4,139 with the other cities and towns in Greater Boston. Approximately half of Boston's domestic out-migration is to the rest of the 5-county region. Map 6 shows Boston's net migration with these cities and towns. Boston had negative net migration with 79 cities and towns, positive net migration with 65 cities and towns, and zero net migration with three towns. Brookline, Marlboro, and Randolph had the largest (positive) net migration with Boston. Cambridge, Watertown, and Dedham smallest (negative) net migration with Boston.

MAP 6

Boston's Net Migration with Cities and Towns in Eastern Massachusetts



Source: 2007-2011 & 2012-2016 American Community Surveys

The following analysis shows the correlation among 54 cities and towns in the area with a gross migration of greater than 160 residents. Boston's migration index was greater than one for 12 of these cities and was less than one for 42 cities and towns.[7]

Median Household Income

Boston's median household income was $58,516 in 2016 dollars, according to the 2012-2016 ACS. The average median household income of the 12 cities and towns with a migration index of one or above was $94,441. New Bedford and Chelsea, with a migration index above one, had lower median household incomes than in Boston. The average median household income of the cities and towns with a migration index below one was $92,452. Everett, Lynn, Brockton, Lawrence, and Revere had lower median household incomes than in Boston.

FIGURE 7

Median Household Income in Cities and Towns Correlated with Boston's Migration Index

Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

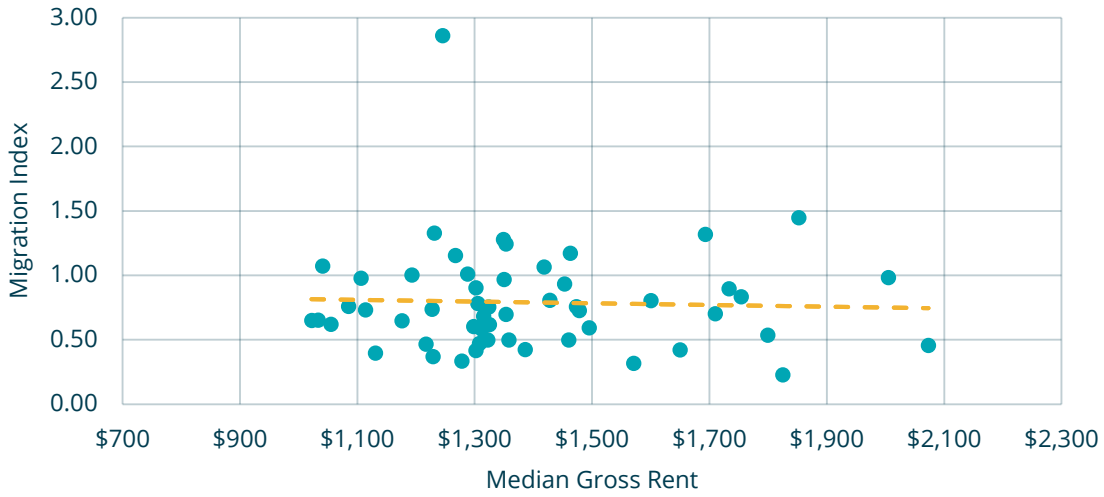
Figure 7 shows the correlation between Boston's migration index and household income in cities and towns. The x-axis shows the median household income. There is a slightly negative or almost flat relationship between the median household income of these 54 cities and towns and Boston's migration index. A statistical test fails to show that the median household income is associated with Boston's migration within the five-county region.

Median Gross Rent

Boston's median gross rent was $1,369 in 2016 dollars. The average median gross rent of the 12 cities and towns with a migration index of one or above was $1,366. Westwood, Arlington, Burlington, and Wellesley, with a migration index below one, had a higher median gross rent than in Boston. The average median gross of the cities and towns with a migration index below one was $1,398. Everett, Lynn, Brockton, Lawrence, and Revere, with a migration index above one, had lower median gross rents than in Boston.

FIGURE 8

Median Gross Rent of Cities and Towns Correlated with Boston's Migration Index



Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

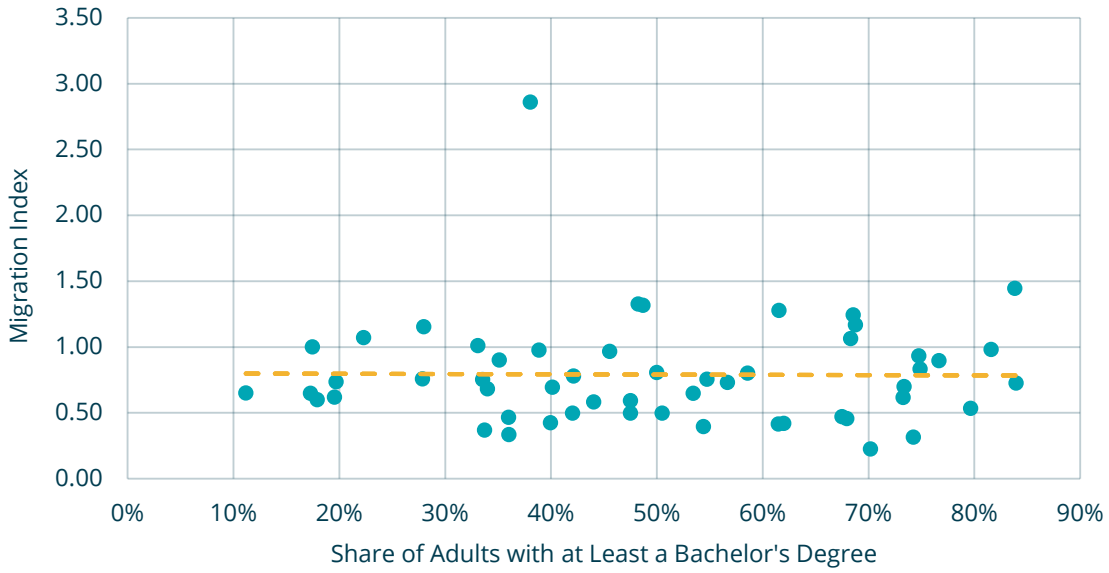
Figure 8 shows the correlation between Boston's migration index and rent in cities and towns. The x-axis shows the median gross rent. There is a slightly negative or almost flat relationship between the median gross rent of these 54 cities and towns and Boston's migration index. A statistical test fails to show that median gross rent is associated with Boston's migration within the five-county region. A correlation with median house value for homeowners was also tested and found to be not related to Boston's migration index.

Educational Attainment

According to the 2012-2016 ACS, 46% of Boston's adult population had at least a Bachelor's degree. The average share of adults with a Bachelor's degree or higher in the 12 cities and towns with a migration index of one or above was 49%. Chelsea, Billerica, Lowell, Randolph, and Marlborough had lower shares of adults with at least a Bachelor's degree than of adults living in Boston. The average share of adults with at least a Bachelor's degree among cities and towns with a migration index below one was 50%. These cities and towns range from a low of 11% in Lawrence to 84% in Westwood.

FIGURE 9

Share of the Adult Population with at Least a Bachelor's Degree of Cities and Towns Correlated with Boston's Migration Index, Age 25 and Older



Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

Figure 9 shows the correlation between Boston's migration index with educational attainment in cities and towns. The x-axis shows the share of adults with at least a Bachelor's degree. There is no relationship between the median gross rent of these 54 cities and towns and Boston's migration index. A statistical test fails to show that the share of adults with a Bachelor's degree or higher is associated with Boston's migration within the five-county region.

Conclusion

Boston's population has grown more rapidly since 2010 than it had in the previous three decades. An increase in domestic net migration is responsible for much of this change. Boston has larger flows of domestic migration with Northeastern states. Excluding the remainder of the metropolitan Boston area, Boston has positive net migration from much of this region. Boston's role in higher education also influences its migration patterns. Boston graduates more students than its labor market needs, and many students return home upon graduating or move to a more specialized labor market that better fit their career paths.

Several other factors help explain Boston's migration patterns. Boston loses residents to areas with warmer weather. San Diego, with an average January temperature of 52 degrees Fahrenheit, attracts more Boston residents than Boston, with a January temperature of 28 degrees Fahrenheit, attracts San Diego residents. Even though some people may leave Boston seeking lower housing costs, the trend among MSAs with considerable gross migration is for people to move from Boston to MSAs with higher gross monthly rent. Some people move from Boston to San Francisco and Washington D.C. MSAs, which had nearly $200 higher gross monthly rents than Boston. Some Boston residents may be moving to places with higher rents because of specialized job opportunities. Nearly two-thirds of out-migrants from Boston aged 25 and older have at least a Bachelor's degree so they may be able to find good paying jobs and afford higher housing costs.

When examining the cities and towns around Boston with significant migration flows, proximity plays a factor. Boston's net migration with greater Boston as a whole is clearly negative, but that with individual cities and towns could be positive or negative without any clearly identified factor. Boston has significant gross migration with cities and towns like Brookline or Cambridge that it borders. However, there is no clear trend in the direction of this migration. Boston's highest net migration (positive) is with Brookline, and its lowest net migration (negative) is with Cambridge. Both have higher gross monthly rents and median household incomes than Boston does.

Because Boston's overall domestic in- and out-migration is nearly equal, no clear trend explains its migration pattern on the local level. Within the five-county Boston region, residents participate in Boston's labor market. People choose to reside in or leave the city for a variety of reasons, such as transportation or housing costs. These factors can play into a household's decision where to live. However, on the national level, the climate and opportunities in labor markets with more expensive housing appear to influence migration patterns.

Appendix

APPENDIX A

Migration Data to Calculate Migration Index

	MSA's Total Migration				Boston's Migration with MSA				
MSA	In	Out	Net	Gross	In	Out	Net	Gross	Index
Albany-Schenectady-Troy, NY	41,395	39,428	1,967	80,823	432	163	269	594	2.79
Pittsburgh, PA	74,973	78,192	-3,220	153,165	289	134	155	423	2.06
Baltimore-Columbia-Towson, MD	118,976	128,680	-9,704	247,656	417	195	222	611	1.98
Dallas-Fort Worth-Arlington, TX	307,910	292,804	15,106	600,714	326	200	126	526	1.71
New Haven-Milford, CT	29,903	36,252	-6,350	66,155	367	205	162	572	1.48
Providence-Warwick, RI-MA	56,843	56,090	753	112,933	2,262	1,554	708	3,816	1.48
Barnstable Town, MA	8,007	9,621	-1,615	17,628	606	357	249	963	1.41
Orlando-Kissimmee-Sanford, FL	130,219	124,244	5,975	254,462	319	254	65	573	1.31
Springfield, MA	27,415	23,860	3,555	51,275	814	712	102	1,526	1.31
Hartford-West Hartford-East Hartford, CT	48,057	48,319	-262	96,376	703	537	167	1,240	1.30
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	195,598	219,510	-23,912	415,108	989	702	287	1,690	1.26
Worcester, MA-CT	33,577	34,333	-756	67,910	1,508	1,298	210	2,806	1.14
Bridgeport-Stamford-Norwalk, CT	32,022	39,172	-7,150	71,194	488	352	137	840	1.13

	MSA's Total Migration				Boston's Migration with MSA				
MSA	In	Out	Net	Gross	In	Out	Net	Gross	Index
New York-New-ark-Jersey City, NY-NJ-PA	441,640	642,907	-201,267	1,084,547	5,225	3,481	1,744	8,705	1.03
Portland-South Port-land, ME	27,378	27,158	220	54,536	317	321	-4	638	1.00
Chicago-Naper-ville-Elgin, IL-IN-WI	196,094	257,560	-55,231	459,888	828	718	110	1,545	0.88
Atlanta-Sandy Springs-Roswell, GA	316,877	310,528	6,349	627,405	479	575	-96	1,054	0.85
Austin-Round Rock, TX	133,047	99,889	33,159	232,936	141	225	-84	366	0.84
Seattle-Tacoma-Bel-levue, WA	172,736	160,984	11,752	333,720	363	469	-106	831	0.83
Denver-Aurora-Lake-wood, CO	178,594	168,987	9,608	347,581	190	244	-54	434	0.82
San Diego-Carlsbad, CA	125,938	145,874	-19,936	169,472	362	383	-21	744	0.82
Washington-Ar-lington-Alexandria, DC-VA-MD-WV	300,320	326,426	-26,107	626,746	1,140	1,286	-147	2,426	0.82
Manchester-Nashua, NH	19,372	19,916	-545	39,288	358	451	-93	808	0.77
San Jose-Sunny-vale-Santa Clara, CA	73,262	86,578	-13,317	159,840	239	284	-45	523	0.71
Miami-Fort Lau-derdale-West Palm Beach, FL	170,217	201,456	-31,239	371,673	767	985	-218	1,752	0.66
Houston-The Wood-lands-Sugar Land, TX	246,152	224,669	21,484	470,821	210	367	-157	577	0.63
San Francisco-Oak-land-Hayward, CA	195,862	209,178	-13,316	405,040	825	1,328	-503	2,152	0.58
Pittsfield, MA	4,496	5,469	-973	9,964	208	304	-96	511	0.56
Phoenix-Mesa-Scott-sdale, AZ	201,183	170,425	30,759	371,608	128	281	-153	409	0.54
Los Angeles-Long Beach-Anaheim, CA	291,582	412,503	-120,921	704,085	1,055	1,677	-622	2732	0.44

Source: 2007-2011 & 2012-2016 American Community Survey, BPDA Research Division Analysis.

Endnotes

1 Domestic migration for Boston is not available from the 1950-1970 Decennial Censuses.

2 Boston Planning & Development Agency, Research Division. Boston's Population Projections: 2010-2030. July 2019. http://www.bostonplans.org/getattachment/46ec6863-e3ae-463a-9de0-c2b44d62e175.

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4 Mateyka, Peter J., "Desire to Move and Residential Mobility: 2010– 2011," Current Population Reports, P70-140, U.S. Census Bureau, Washington, DC, 2015.

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6 Emsi Profile Analytics 2019.

7 Because there is little variation in the average January temperature for the cities and towns in the five-county Boston region, this correlation is excluded for this section.


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