3-2017

Destination Portland: Post-Great Recession Migration Trends in the Rose City Region

Jason R. Jurjevich
Portland State University, jjason@email.arizona.edu

Greg Schrock
Portland State University, gschrock@pdx.edu

Jihye Kang
Portland State University

DESTINATION PORTLAND: POST-GREAT RECESSION MIGRATION TRENDS IN THE ROSE CITY REGION

Jason R. Jurjevich, Ph.D.
Assistant Professor
Nohad A. Toulan School of Urban Studies and Planning
Assistant Director
Population Research Center
Portland State University
jjason@pdx.edu

Greg Schrock, Ph.D.
Associate Professor
Nohad A. Toulan School of Urban Studies and Planning
Portland State University
gschrock@pdx.edu

Jihye Kang
Doctoral Student
Nohad A. Toulan School of Urban Studies and Planning

Portland State University
kjihye@pdx.edu

March 2017#

Acknowledgements

Introduction

A key component of Oregon's population growth, migration has shaped and continues to shape Oregon's social and cultural history, as well as its economic fortunes. Nowhere in Oregon are the sociocultural, economic, and political effects of migration more profound than in Portland, the state's principal economic region. Here, in the wake of the Great Recession, roughly 300 people moved to the Portland metro region each day—combined with 234 people moving out each day, the Rose City region attracted and retained roughly 66 in-migrants *each day*.

Although individuals of all ages are shuffling across the U.S. urban landscape, it's young people—in particular, individuals between the ages of 25 and 39—that make up the majority of movers to Portland and other U.S. cities. Given that migration can reshuffle human capital stocks in profound ways, our interest to this point has focused on the geographic patterns of college-educated migrants. Underlying Portland's ability to attract and retain young, college-educated migrants at some of the highest rates since 1980—even during precarious economic periods[1]— are Portland "amenities" (i.e., regional transportation, access to the mountains and the coast, bicycle infrastructure, food scene), which historically have been accessible for most Portlanders given the region's low cost of owner and renter-occupied housing relative to other West Coast cities.

More recently however, robust population and economic growth[2] have contributed to a set of growing pains (e.g., traffic congestion,[3] the income's growing income inequality,[4] declining housing affordability,[5] homelessness, and displacement[6]) that threaten the region's quality of life. A recent report from the City of Portland Auditor's Office underscores this point; where 79 percent of Portlanders rated the city's livability as "good" or "very good" in 2012, the rating dropped 16 percentage points to 63 percent in 2016.[7]

In the wake of profound social and economic changes following the Great Recession, and mindful of evidence suggesting that the region's renowned livability is increasingly only available to those who can afford it, this report

---

[1] Jurjevich, J.R. and G. Schrock. 2012. "Is Portland Really the Place Where Young People Go to Retire? Migration Patterns of Portland's Young and College-Educated." September and, Schrock, G. and J.R. Jurjevich. 2012. "Is Portland Really the Place Where Young People Go To Retire? Analyzing Labor Force Outcomes for Portland's Young and College-Educated." September.

[2] According to Oregon State Employment Economist Nick Beleiciks, Oregon's job growth rate of 3.5 percent was much faster than the U.S. rate of 1.7 percent—meaning that Oregon has added jobs faster than the nation since 2013. Oregon also had one of the fastest over-the-year job growth rates of any state; since February 2015, Oregon has ranked among the top five states with the fastest job growth (https://www.qualityinfo.org/documents/10182/73818/Employment+in+Oregon?version=1.32). In terms of population growth, Risa Proehl, Director of the Oregon Population Estimates Program, reports Oregon's population increased from 4,013,845 in 2015 to 4,076,350 in 2016 or by 62,505. The 2016 increase is over 11,000 higher than added in 2015, and surpasses the peak pre-recession growth of 58,000 in 2006 and it is closer to growth experienced in the early and mid-1990s (https://www.pdx.edu/prc/sites/www.pdx.edu.prc/files/Preliminary_Estimates_2016%20_findings_web.pdf).

[3] http://www.oregon.gov/ODOT/TD/TDATA/Pages/tsm/vmtpage.aspx

[4] See Christian Kaylor, Economist, State of Oregon (at roughly the 7:00 mark): https://www.youtube.com/watch?v=QjU8Awt5KEQ

[5] In September 2012 for example, the median home price in the City of Portland was $242,000 and increased to $407,000 by November 2016 (68 percent growth in 4.25 years).

[6] Bates, Lisa K. 2013. "Gentrification and Displacement Study: Implementing An Equitable and Inclusive Development Strategy in the Context of Gentrification. https://www.portlandoregon.gov/bps/article/454027

[7] See: http://www.oregonlive.com/portland/index.ssf/2016/11/survey_portland_livability_fal.html#incart_river_home

provides an update to previous research by comparing migration trends in Portland to the largest 50 U.S. metros during the Great Recession (2008-2010) and post-Great Recession (2012-2014) periods. To more thoroughly understand how the region's growth challenges threaten the region's historically low barriers to entry, and how these costs might disproportionately burden individuals of color and young people of lower socioeconomic status, we examine migration trends by race/ethnicity and compare Portland trends to peer metro areas. The main takeaways from this report include:

- **Migration is a profound component of population change in the Portland metro**. During 2012-2014, roughly 300 people moved to Portland each day and 234 people moved out, with Portland netting 66 migrants each day.
- Among *young, college-educated* (YCE) migrants:
  - **The Portland metro continues to be a leading migration destination.** In 2012-2014, Portland's quotient of attracting and retaining young, college-educated (YCE) migrants ranked 6th highest among the 50 largest U.S. metros (Table 1 and Figure 1).
  - **YCEs are a major component of the Portland metro's overall net in-migration.** In 2012-2014, almost two-thirds (62 percent) of Portland's annual net exchange of college-educated migrants were young—up from 49 percent in 2008-2010 (Figure 2).
  - **Almost 1 in 4 YCE in-migrants to the Portland metro are immigrants.** In 2012-2014, 22 percent of YCE in-migrants to the Portland metro were immigrants, compared to 35 percent of in-migrants to the 50 largest U.S. metros. In 2008-2010, the percentage to the Portland metro and the 50 largest U.S. metros was 14 and 22 percent, respectively (Figure 4).

- Among *all* migrants:
  - **Two-thirds of domestic migrants to the Portland metro in 2012-2014 hail from these 5 states:** 1) Oregon (26 percent), 2) California (18 percent), 3) Washington (13 percent), 4) Arizona (6 percent) and 5) Texas (3 percent) (Figure 5).
  - **The Portland region's net annual in-migration flows are *more* diverse, in terms of race/ethnicity, compared to the region as a whole.** In 2012-2014, 25 percent of Portland metro residents are individuals of color, compared to 38 percent of all Portland metro net annual in-migrants, which were individuals of color (Figure 6).
  - **At the same time, the Portland region's migration flows are *less diverse* when compared to peer metro regions, particularly among African-American migrants**. During 2012-2014, the Portland metro recorded -800 (+/- 1,700) net annual in-migration of African Americans, compared to net annual in-migration of 2,900 (+/- 2,300) in Austin, TX, 3,200 (+/- 3,600) in Minneapolis/St. Paul, MN, and 5,000 (+/- 3,600) in Pittsburgh, PA.

Census Analysis
Overview

During the 2000s, the population of the Portland metro grew from 1.9 to 2.2 million (300,000 or 15 percent growth) with almost two-thirds of the region's growth resulting from net in-migration.   More recently, the metro region continues to be a magnet for young and footloose Americans. During the Great Recession period (2008-2010), 281 people moved to Portland each day and 206 people moved out—meaning that Portland gained 75 net in-migrants each day. And in the most recent period, 2012-2014, roughly 300 people moved to Portland each day and 234 people moved out, with Portland netting 66 migrants each day. These data call attention to and underscore the importance of the region's quality of life, public transportation, access to nature, and other amenities as pull factors for migrants to the Rose City region.

Measuring Migration Flows
Given that the total volume of migration often varies considerably across time periods (e.g., impact of the Great Recession), comparing *the number* of net in-migrants is difficult. Consequently in this report we highlight the directionality and percentage of net migration (relative to total in and out flows) that redistributes population using the Net Migration Quotient (NMQ).[8] NMQ ranges from 100 to -100 percent (see the equation in Appendix A). The upper limit of NMQ, 100 percent, is reached when all migrants move to a given place and there are no out-migrants and the lower limit of NMQ, -100 percent, is reached when all migrants move from a given place and there are no in-migrants.

Migration by Educational Attainment
The Portland region has demonstrated a remarkable ability to attract and retain young, mobile talent at a consistently high rate compared to its largest 50 metro peers. In the most recent period, 2012-2014 (Table 1), Portland attracted and retained more than 8,000 YCE net in-migrants annually, which is an increase of 700 (9 percent) individuals over the Great Recession period (Table 1). When benchmarking migration with NMQ values, Portland ranks 6th highest among the largest 50 U.S. metro regions in the most recent 2012-2014 period (Figure 1).[9] By achieving this mark, Portland, along with Seattle, continue an impressive distinction of being the only two metro areas in the top 15 metros for attracting and retaining YCE migrants for each period analyzed, 1980 to 2012-2014.

Table 1. Overview of Portland, OR Migration by Age and Educational Attainment, 1980 to 2012-2014

	1980	1990	2000	2005-2007	2008-2010	2012-2014
Net Migration Quotient (NMQ), Migrants 25-39 w/ a Bachelor's degree or higher (*)	33.2	25.4	27.3	25.7	29.2	26.3
Total Average Annual Net Migrants, 25-39 w/ a Bachelor's degree or higher	3,220	12,209	17,399	6,376	7,530	8,236
Overall Rank	**4**	**8**	**4**	**6**	**2**	**6**

Note: Total average annual net migration figures **are not** comparable across decennial census and ACS periods because of a change in the migration question (i.e., a 5-year versus 1-year time period). For more information, see: http://www.census.gov/programs-surveys/acs/guidance/comparing-acs-data/2014.html
Sources: Integrated PUMS (Ruggles et al. 2012).[10] Decennial U.S. Census (1980-2000), American Community Survey (ACS) 2005-2007 and 2008-2010 (3-year estimates), and 2012-2014 (combined 1-year estimates). Calculated by authors.

The NMQ of Portland's YCE migration flows actually declined from the 2008-2010 period—when it was 2nd highest among the largest 50 U.S. metros—settling close to levels recorded in 2005-2007 (Table 1). To more clearly understand this decline, we present the gross annual in and out-migration flows from 1980 to 2012-2014 (Table 2). The Portland metro attracted roughly 700 more *net* YCE in-migrants annually between the 2008-2010 and 2012-2014 periods (9 percent growth), but the gains in the underlying components of migration—gross in and out-migration—differ considerably. Here, the number of people leaving the Portland metro region grew by 27 percent while the number moving to the Portland metro grew by 19 percent. While it's difficult to infer what, if anything, these trends portend for future human capital flows, the increase in gross annual out migration among YCE migrants is somewhat counterintuitive given the robust economic growth in Oregon since 2013. We suspect that

---

[8] Net Migration Quotient (NMQ) is a measure of Demographic Effectiveness (DE), which contextualizes how "effective" net migration is as redistributing population between places. For more information, see our earlier research reports cited in Footnote 1 and, Plane, D.A. and P. Rogerson. 1994. *The Geographical Analysis of Population With Applications to Planning and Business.* New York, NY: John Wiley and Sons, Inc.
[9] See Appendix B for NMQ rankings from earlier time periods.
[10] In this brief we rely on the U.S. Census Bureau's Public Use Microdata Sample (PUMS) from the American Community Survey (ACS), accessed through the Minnesota Population Center's Integrated Public Use Microdata Series. Citation: Ruggles, S., Sobek, M., Alexander, T., Fitch, C., Goeken, R., Hall, P., King, M., and Ronnander, C. 2012. Integrated Public Use Microdata Series (IPUMS). Minneapolis, MN: Minnesota Population Center [producer and distributor]. Available at: http://usa.ipums.org/usa/

much of the increase in gross annual out-migration is "pent up mobility demand" attributable to individuals being rooted in place by limited opportunities during the Great Recession period.

Table 2. Portland, OR Migration by Age, Migrants *with* a Bachelor's Degree or Higher, 1980 to 2012-2014

Bachelor's Degree or Higher	1980	1990	2000	2005-2007	2008-2010	2012-2014
Gross Annual In-Migration, 25-39	6,460	30,156	40,534	15,603	16,650	19,791
Gross Annual Out-Migration, 25-39	3,240	17,947	23,135	9,227	9,120	11,555
Net Annual In-Migration, 25-39	3,220	12,209	17,399	6,376	7,530	8,236

Note: Total net migration figures **are not** comparable across decennial census and ACS periods because of a change in the migration question (i.e., a 5-year versus 1-year time period). For more information, see: http://www.census.gov/programs-surveys/acs/guidance/comparing-acs-data/2014.html
Source: Integrated PUMS (Ruggles et al. 2012). Decennial U.S. Census (1980-2000), American Community Survey (ACS) 2005-2007 and 2008-2010 (3-year estimates), and 2012-2014 (combined 1-year estimates). Calculated by authors.

Figure 1. Net Migration Quotient (NMQ), Largest 50 U.S. Metro Areas, 2012-2014
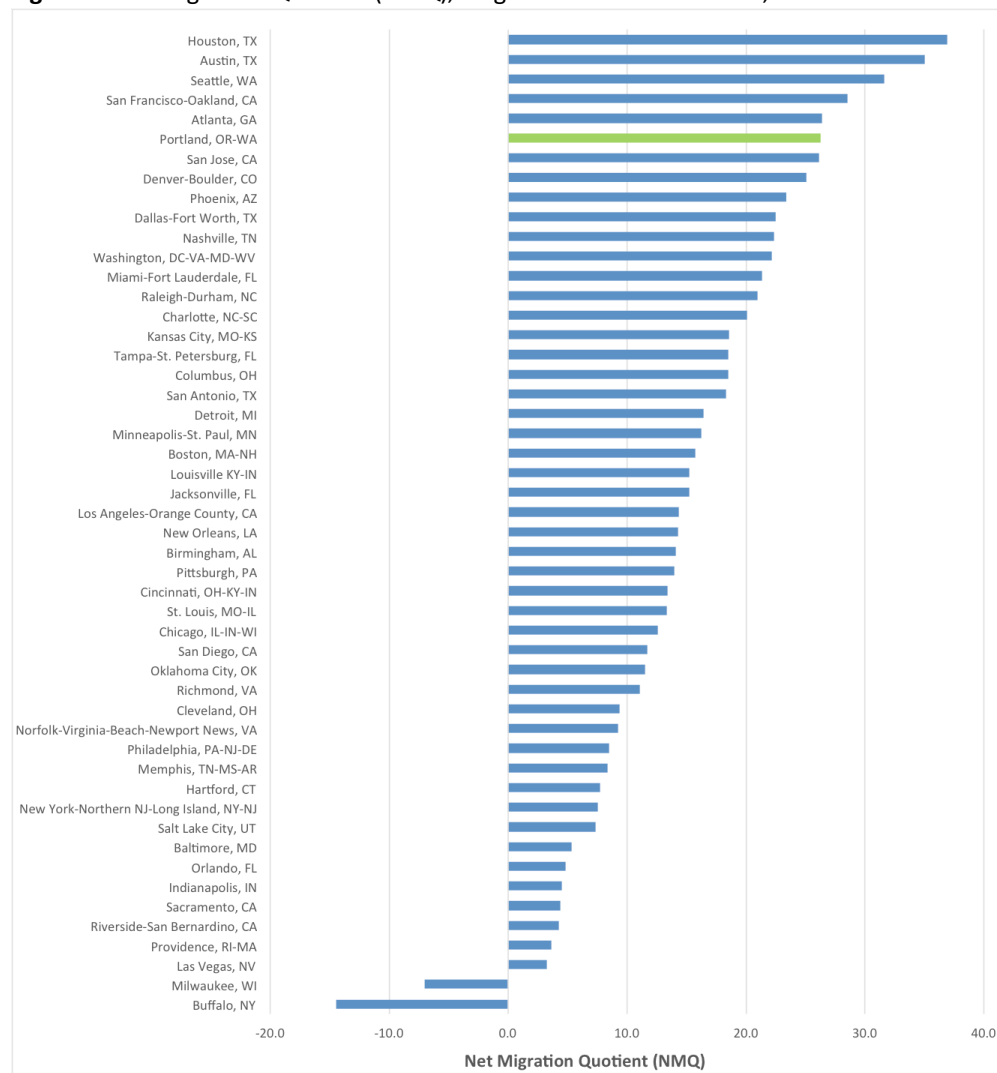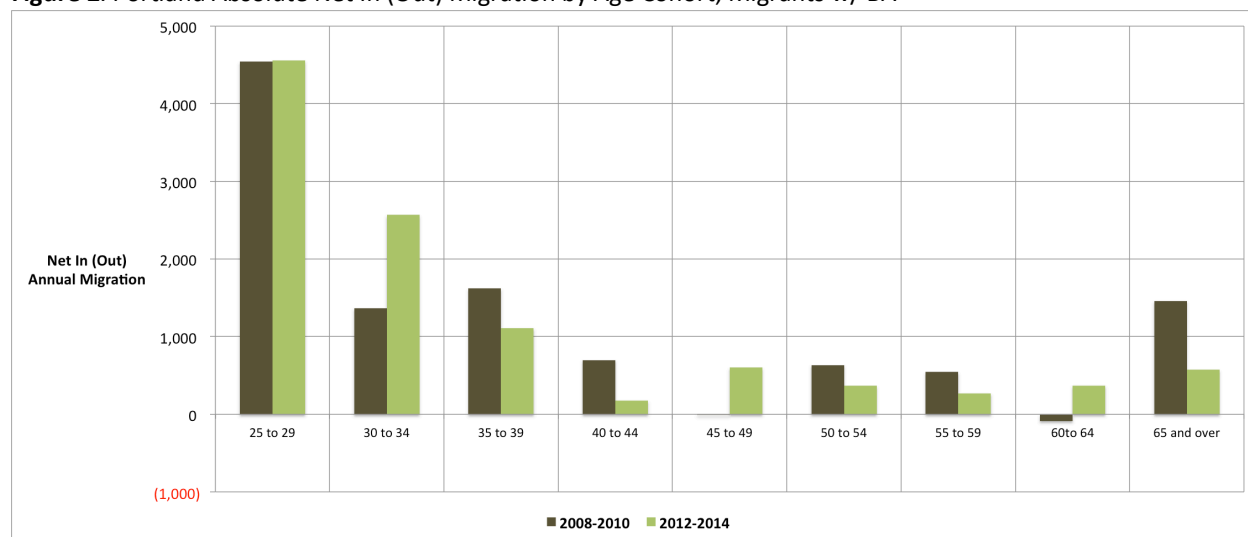

Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2012-2014 (combined 1-year estimates). Calculated by a

Migration by Age

The propensity to migrate is strongly linked to age—highest in the early-to-mid 20s and declining thereafter[11]—making it important to examine the age articulated patterns of Portland's migrants. In 2012-2014, almost two-thirds (62 percent) of Portland's annual net exchange of college-educated[12] migrants were young (i.e., ages 25 to 39) (up from 49 percent in 2008-2010) (Figure 2). Empty nesters and retirees, on the other hand, only made up roughly 8 percent of the annual net exchange in both periods. While including 35-39 year-old migrants in YCE flows admittedly expands the definition of "young", especially compared with other analyses,[13] we argue for a more exhaustive age definition for two primary reasons: 1) historically a sizable share of Portland's net gain in human capital has come from the 35-39 cohort and, 2) more recent trends among Millennials (e.g., postponing family formation, delaying first-time home purchases) suggests an extended period of peak mobility.

Figure 2. Portland Absolute Net In (Out) Migration by Age Cohort, Migrants w/ BA+

Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2010-2012, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors. Margin of error (MOE) values that accompany ACS estimates are not reported here.
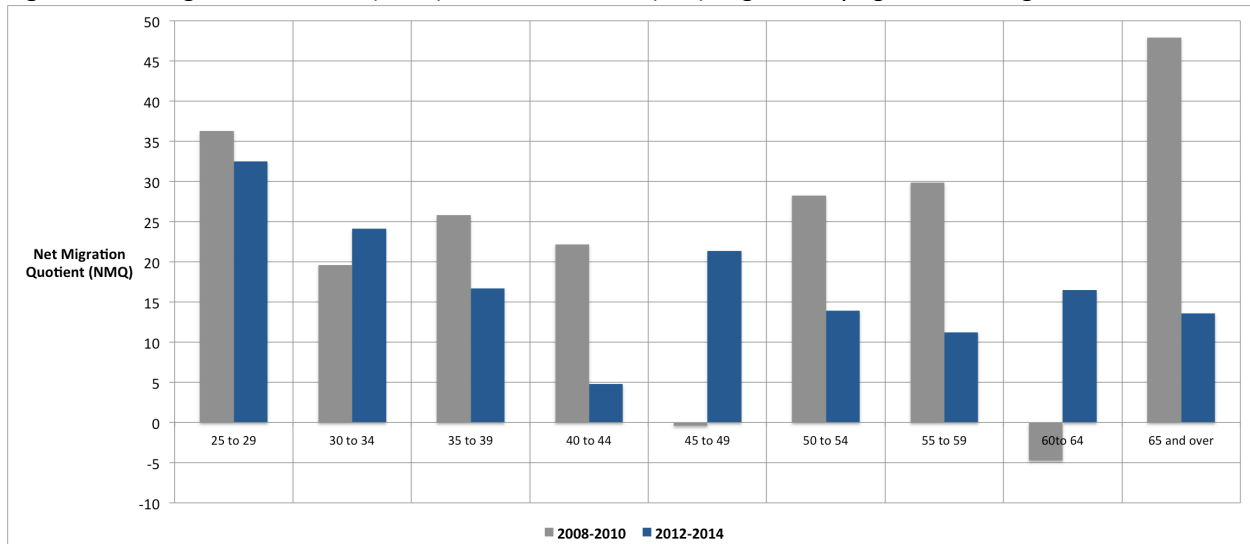
Although the volume of net in (out) migration of individuals with a Bachelor's degree or higher by age cohort varied considerably in some age cohorts during (2008-2010) and following (2012-2014) the Great Recession period, NMQ values illustrate that the largest differences were among empty nester and retirement migrants (Figure 3). Here the data show that the largest decline in NMQ was among individuals 65 years and over, followed by significant, but less pronounced declines in NMQ for migrants in their 50s. At the same time, the data also show that migration of 60-64 year olds—retiring Baby Boomers—actually increased substantially between the two periods (see Appendix D for data presented in Figures 2 and 3 for *all* migrants).

---

[11] See page 3 of Benetsky et al. (2015) for the migration age schedule during the 2007-2009 and 2010-2012 periods, which is available here: http://www.census.gov/content/dam/Census/library/publications/2015/acs/acs-31.pdf

[12] Given that most individuals typically achieve their highest level of educational attainment by 25 years of age, the percentage of net in-migration is calculated for migrants 25 years of age and older.

[13] See, for example: http://cityobservatory.org/ynr/ and https://www.census.gov/content/dam/Census/library/publications/2015/acs/acs-31.pdf

Figure 3. Net Migration Quotient (NMQ) of Portland Net In (Out) Migration by Age Cohort, Migrants w/ BA+

Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2010-2012, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors. Margin of error (MOE) values that accompany ACS estimates are not reported here.

Immigration

According to 2014-2015 population estimates from the U.S. Census Bureau,[14] immigrants comprised roughly 27 percent of the total *net in-migration* to the three-county Portland metro region (Clackamas, Multnomah, and Washington). While this statistic is roughly comparable to U.S. Census Bureau population estimates during the Great Recession period,[15] the share of immigrants as a percentage of annual *YCE* in-flows increased dramatically in the Portland region, as well as among the 50 largest U.S. metros, between the two periods. In 2008-2010 for example, foreign born talent represented 14 and 22 percent of young, college-educated annual in migration to the Portland metro and the 50 largest U.S. metros, respectively (Figure 4). In 2012-2014, the shares increased to 22 and 35 percent, respectively. This means that in 2012-2014, almost 1 in 4 YCE in-migrants to the Portland metro region were immigrants (and more than 1 in 3 in the nation's 50 largest metros). Although immigrant characteristics often vary widely (e.g., educational attainment, age, country of origin, and socioeconomic status) by citizenship status and geography, given that 1 in 3 YCE in-migrants to the nation's 50 largest metro regions are foreign-born, attracting and retaining educated immigrants is, without question, crucial for economic competitiveness in the global knowledge and information economy.

---

[14] Available at: http://www.census.gov/data/tables/2015/demo/popest/counties-total.html
[15] The 2008-2009 population estimate from the U.S. Census Bureau shows that immigration flows represented almost 30 percent of total net in-migration to the three-county Portland metro region.

Figure 4. Immigrants as a Percentage of Total Annual In-Migrants w/ a Bachelor's Degree or higher, Ages 25-39
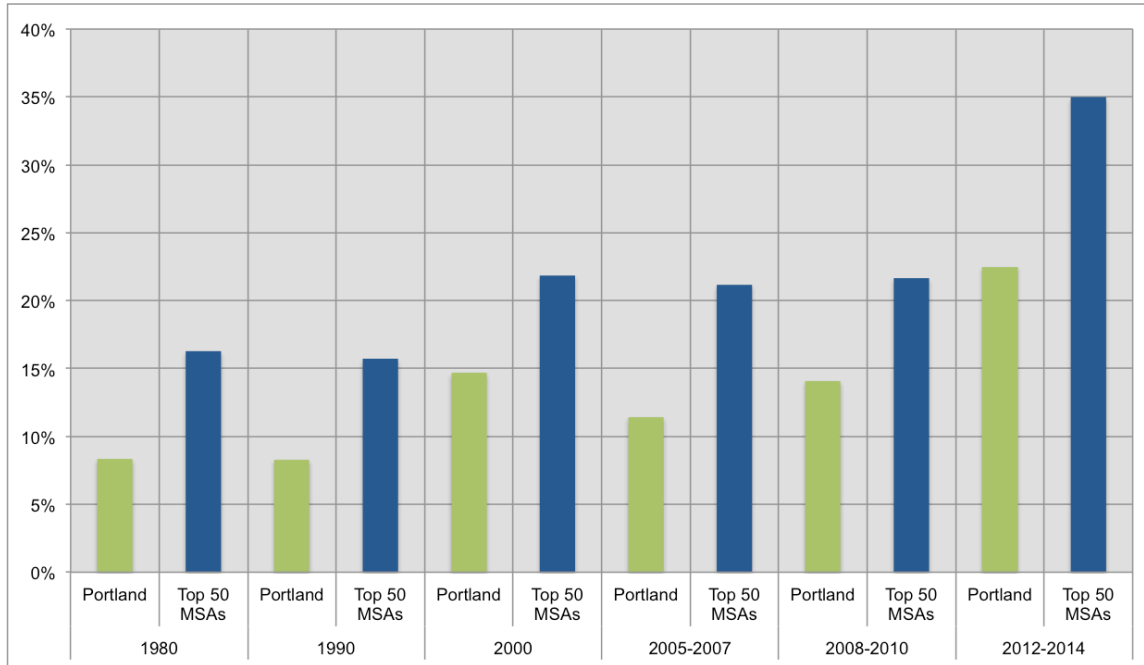
Limitations of Migration Data

The U.S. Census Bureau's Public Use Microdata Sample (PUMS) from the American Community Survey (ACS)[16] is a powerful dataset with many advantages, and a few disadvantages. One of the chief disadvantages is that PUMS data are drawn from a survey (i.e., the ACS) so there are limits to how finely one can "slice and dice" the data due to sampling error. Therefore, in the next two sections where we identify where migrant origins and the race/ethnicity of Portland metro migrants, our analysis focuses on migrants of *all ages*, and not just YCEs, as a way to reduce sampling error.

Migration Origins

The Portland metro attracts individuals from all 50 states and countries around the world. During the most recent 2012-2014 period however, two-thirds of domestic migrants to the Portland metro come from just 5 states: 1) Oregon (26 percent), 2) California (18 percent), 3) Washington (13 percent), 4) Arizona (6 percent) and, 5) Texas (3 percent) (Figure 5). Rounding out the top 10 states are Idaho, Colorado, Utah, Florida, and Minnesota. Comparing these data with the top 5 states for out-of-state driver's license surrenders, according to the Oregon Department of Motor Vehicles (DMV),[17] underscores a remarkable degree of overlap in 2013: 1) California, 2) Washington, 3) Arizona, 4) Texas, and 5) Colorado.

---

[16] Accessed through the Minnesota Population Center's Integrated Public Use Microdata Series.
[17] For Oregon DMV Out-of-State Driver's License Surrender data, see: https://www.oregon.gov/ODOT/DMV/pages/news/driver_stats.aspx

Figure 5. Percent of Annual Domestic Migration by State Origin to the Portland Metro, 2012-2014
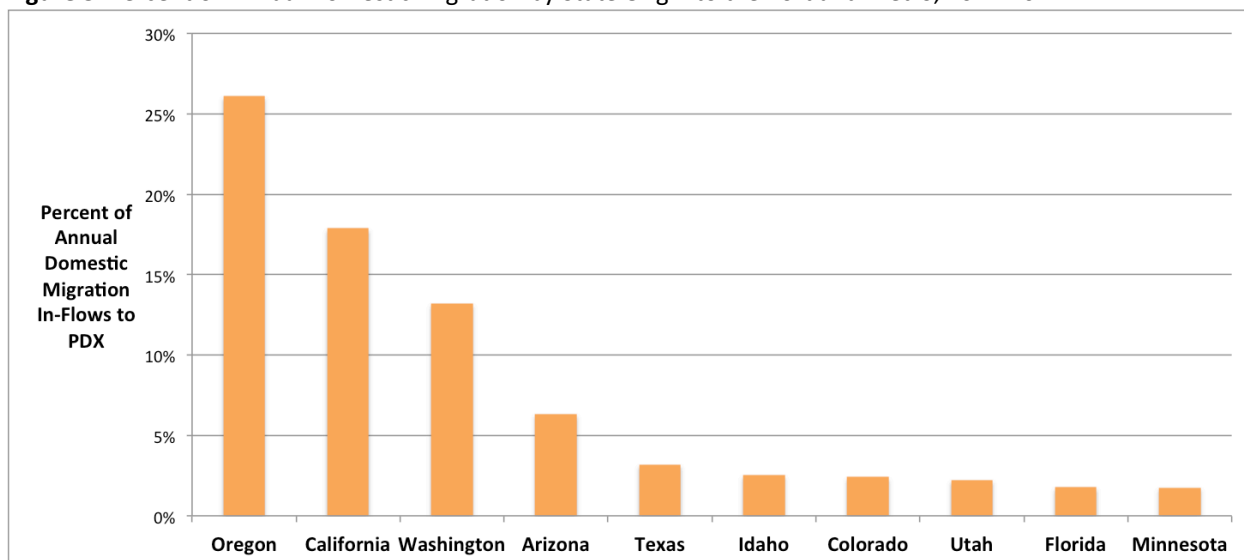
Source: Integrated PUMS (Ruggles et al. 2012). Decennial U.S. Census (1980-2000), American Community Survey (ACS) 2005-2007 and 2008-2010 (3-year estimates), and 2012-2014 (combined 1-year estimates). Calculated by authors.
Note: Margin of error (MOE) values that accompany ACS estimates are not reported here.

Racial/Ethnic Diversity of Portland Migration Flows

Together, many factors explain why some migration streams are more racially/ethnically diverse than others across the urban landscape. These factors include, but are not limited to: 1) racial/ethnic diversity of proximate sending areas, 2) industrial structure and employment opportunities, 3) higher rates of migration among certain races/ethnicities (e.g., African-Americans and Asians),[18] 4) existing social and institutional networks within a metro region, and 5) the ability of cities to cultivate and sustain established racial/ethnic minority neighborhoods. To assess the racial/ethnic diversity of migration flows in Portland, while at the same time minimizing uncertainty that is introduced from the effects of the Great Recession, our analysis compares post-Great Recession migration patterns (2012-2014) with patterns exhibited during the pre-Great Recession period (2005-2007). In some instances, data reliability is limited, but in general the data reveal several critical points with respect to race/ethnicity.

First, the Portland metro attracted and retained roughly 15,000 white (non-Hispanic) migrants annually prior to and following the Great Recession (14,600 [+/- 6,600] and 15,000 [+/- 6,400] during the 2005-2007 and 2012-2014 periods, respectively) (Figure 6).[19] This means that in Portland, white, non-Hispanic migrants accounted for more than half of all net annual in-migration in both 2005-2007 (54 percent) and 2012-2014 (62 percent). Second, the rest of Portland's net annual in-migration is split fairly evenly among Asian or Pacific Islander (non-Hispanic) and Hispanic migrants; both racial groups account for roughly 20-25 percent of Portland's total net annual in-migration in both periods. Given that 75.2 percent of Portland metro residents identify as white alone, non-Hispanic, according to 2013 1-year ACS data, a key takeaway is that the overall net annual flow of migrants is *more diverse* than the Portland metro region as a whole.

Another salient data point is among African-American migrants. Here, Figure 6 shows that in 2005-2007 for example, the net annual flow of African-American migrants was essentially zero (-64, +/- 1,000), and by 2012-2014 the Portland metro recorded a net annual *negative* flow of -800 (+/- 1,700). Because these estimates are not statistically different from each other, we are unable to say that there was an increase in the net *outflow* of African Americans between the two periods. Despite the considerable degree of statistical uncertainty however, the data underscore the very real possibility that more African-Americans are leaving the Portland metro than moving to

---

[18] For more information on current U.S. mobility and migration rates, see *Geographical Mobility: 2015-2016* (http://census.gov/newsroom/press-releases/2016/cb16-189.html)

[19] For the corresponding NMQ values by race/ethnicity, see Figure B3 (Appendix B).

the region (e.g., in 2012-2014 for example, the net annual migration estimate range is 900 to -2,500). To contextualize the potential net *outflow* of African Americans in Portland, we produced similar data tabulations for a number of comparative metro regions, including: Seattle, Austin, Minneapolis/St. Paul, Pittsburgh, and Raleigh/Durham (see Appendices E1-E5).

Figure 6. Portland Absolute Net Annual In (Out) Migration by Race/Ethnicity, 2005-2007 and 2012-2014
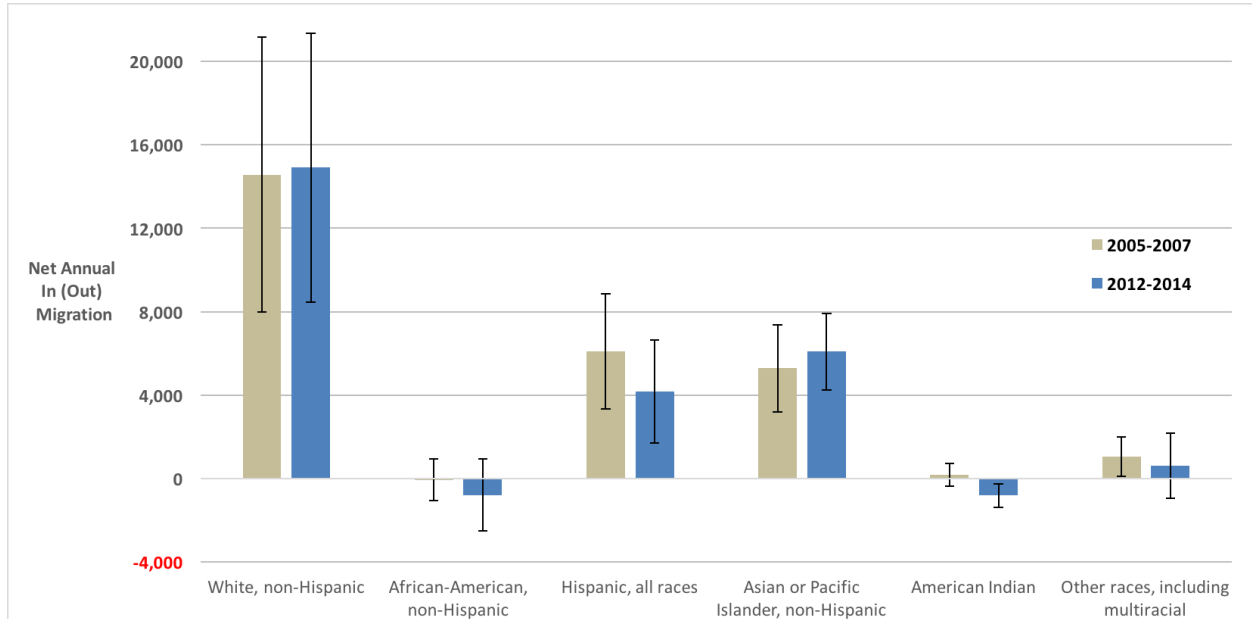
Note: Bars represent statistical uncertainty (i.e., margin of error [MOE]) that accompanies ACS estimates. The above data are to be interpreted with the corresponding MOE values.

Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors.

While poor data quality limits our ability to provide more analytical detail (e.g., reporting the specific city origins/destinations of in and out migrants), we do have reasonable assurance that migration streams are contributing to racial/ethnic diversity in the Portland metro region. For African-Americans though, the data point to a potential net *outflow* from the Portland metro region. Complicating this trend, when migration data are disaggregated by nativity (i.e., native and foreign-born), there appears to be a discernable difference in nativity for gross in and out-migration flows of African-Americans, although more analysis is needed given the corresponding sampling error. We plan to more fully address this issue in a forthcoming *America on the Move* report.

To this point, we can only speculate on the underlying factors driving the net outflow of African-American residents in the Portland metro (e.g., effects of gentrification in North and Northeast Portland). Relying on survey and interview data, our next report explores *how* individuals decide to move to Portland, why they stay, and how the region's growth challenges might introduce costs that disproportionately burden individuals of color and young people of lower socioeconomic status. It is our hope that the Portland region will begin identifying, reassessing, and implementing best practices for attracting and retaining all individuals in order to demonstrate and support the region's commitment to diversity and equity.

Appendices

Appendix A—NMQ Equation[20]

> **Net Migration Quotient**
> = 100*
> (Net Migration / Total Migration)

---

[20] Net Migration Quotient (NMQ) is a measure of Demographic Effectiveness (DE), which contextualizes how "effective" net migration is as redistributing population between places. For more information, see our earlier research reports (Jurjevich, J.R. and G. Schrock. 2012. "Is Portland Really the Place Where Young People Go to Retire? Migration Patterns of Portland's Young and College-Educated." September. Schrock, G. and J.R. Jurjevich. 2012. "Is Portland Really the Place Where Young People Go To Retire? Analyzing Labor Force Outcomes for Portland's Young and College-Educated." September.) and, Plane, D.A. and P. Rogerson. 1994. The Geographical Analysis of Population With Applications to Planning and Business. New York, NY: John Wiley and Sons, Inc.

Appendix B1—Net Migration Quotient (NMQ), Largest 50 U.S. Metro Areas, 2008-2010
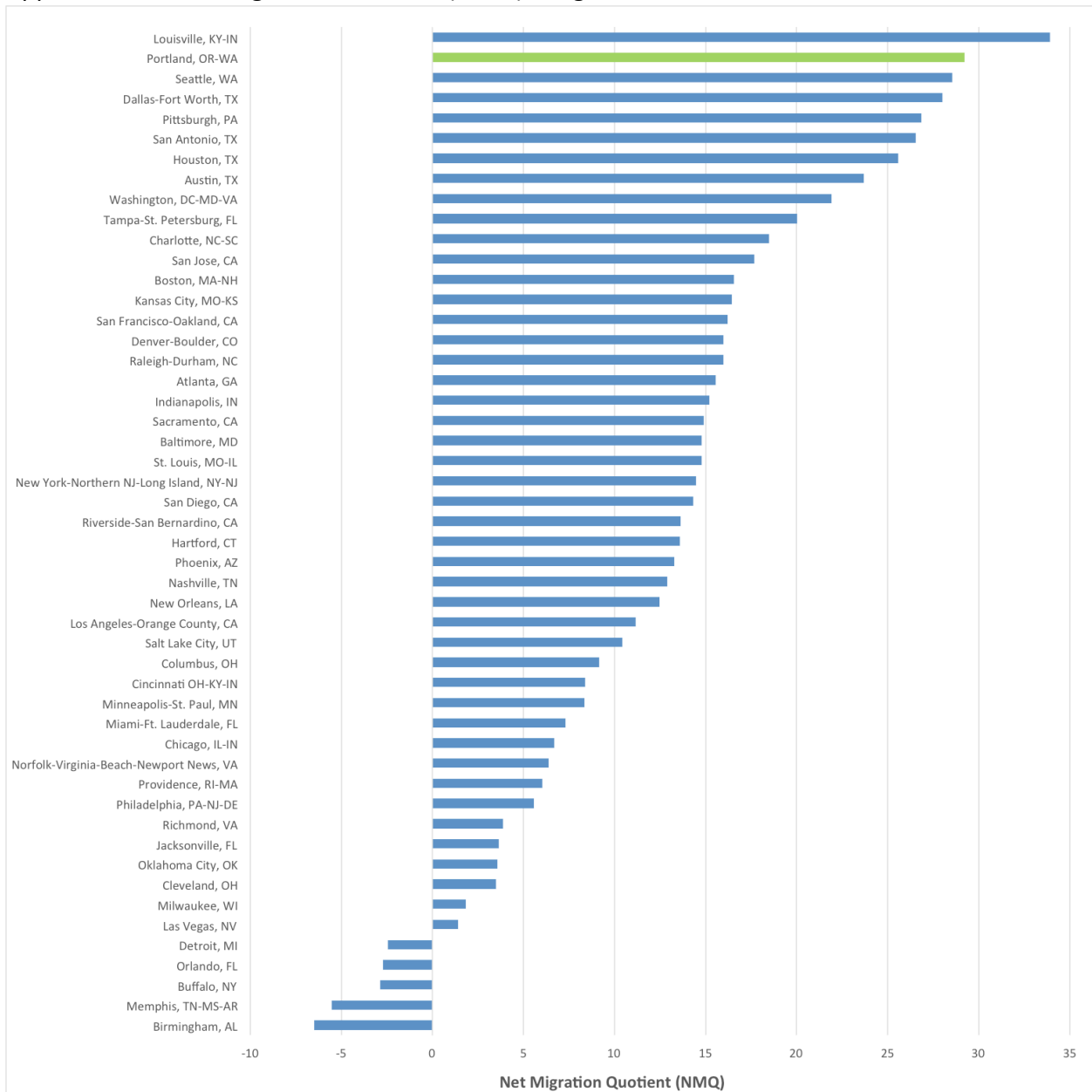
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2008-2010 (3-year estimates). Calculated by authors.

Appendix B2—Net Migration Quotient (NMQ), Largest 50 U.S. Metro Areas, 2005-2007
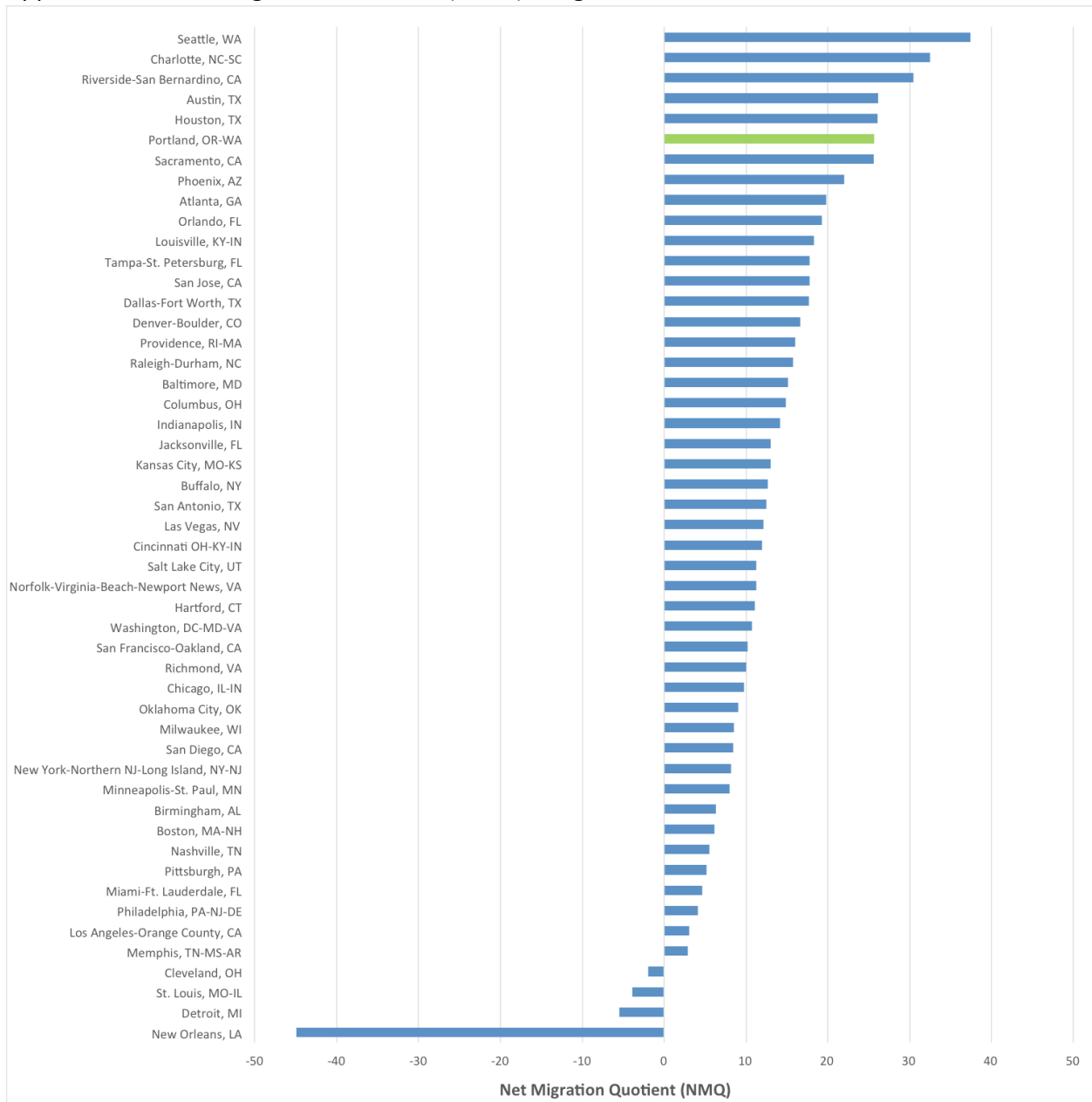
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007 (3-year estimates). Calculated by authors.

Appendix C—Migration Trends Among Individuals With Less Than a Bachelor's Degree

While the Portland metro attracted and retained just a few hundred more YCE migrants annually between the Great Recession and post-Great Recession periods, 2008-2010 to 2012-2014 (Table 1), the region's annual net in-migration of young adults (25-39 years of age) with *less than* a Bachelor's degree more than doubled during the same time. As illustrated in Table C1, during 2008-2010 the Portland region's net annual gain in young adult (YA) migrants (i.e., individuals 25-39 with *less than* a Bachelor's degree) was just 2,500. By 2012-2014 however, the number more than doubled to almost 5,500 net in-migrants annually.

Given that the Great Recession recovery has yielded uneven job growth across wage sectors,[21] particularly for middle-wage jobs, combined with significant cost of living increases in the Portland metro,[22] this finding is somewhat surprising, and perhaps even counterintuitive. Compared to YCE migrants, YA migrants are more sensitive to precarious economic conditions, so the data suggest a degree of "pent up demand" among YA migrants, with many putting off the decision to move to the post-Great Recession period when overall risk was lessened.

Table C1. Portland, OR Migration by Age, Migrants with a *Less Than* a Bachelor's Degree, 1980 to 2012-2014

| *Less than a Bachelor's Degree*	1980	1990	2000	2005-2007	2008-2010	2012-2014
Gross Annual In-Migration, 25-39	26,920	50,542	61,803	18,150	15,751	18,598
Gross Annual Out-Migration, 25-39	16,620	32,846	42,427	13,972	13,161	13,145
Net Annual In-Migration, 25-39	10,300	17,696	19,376	4,178	2,590	5,453

Note: Total net migration figures **are not** comparable across decennial census and ACS periods because of a change in the migration question (i.e., a 5-year versus 1-year time period). For more information, see: http://www.census.gov/programs-surveys/acs/guidance/comparing-acs-data/2014.html

Source: Integrated PUMS (Ruggles et al. 2012). Decennial U.S. Census (1980-2000), American Community Survey (ACS) 2005-2007 and 2008-2010 (3-year estimates), and 2012-2014 (combined 1-year estimates). Calculated by authors.

---

[21] For more information on Oregon's economy in the post-Great Recession period, see the presentation by Christian Kaylor, Workforce Economist from the Oregon Employment Department: http://www.oracwa.org/documents/WorkforceDemographics-ChristianKaylor.pdf

[22] An example of the recent increases in cost of living are best illustrated through housing costs—both the median home sales price and median rents. For more information, see: https://www.trulia.com/real_estate/Portland-Oregon/market-trends/ and http://www.oregonmetro.gov/news/you-are-here-snapshot-portland-area-housing-costs

Appendix D—Migration by Age, *All* Portland Migrants

Figure D1. Portland Absolute Net In (Out) Migration by Age Cohort, *All* Migrants
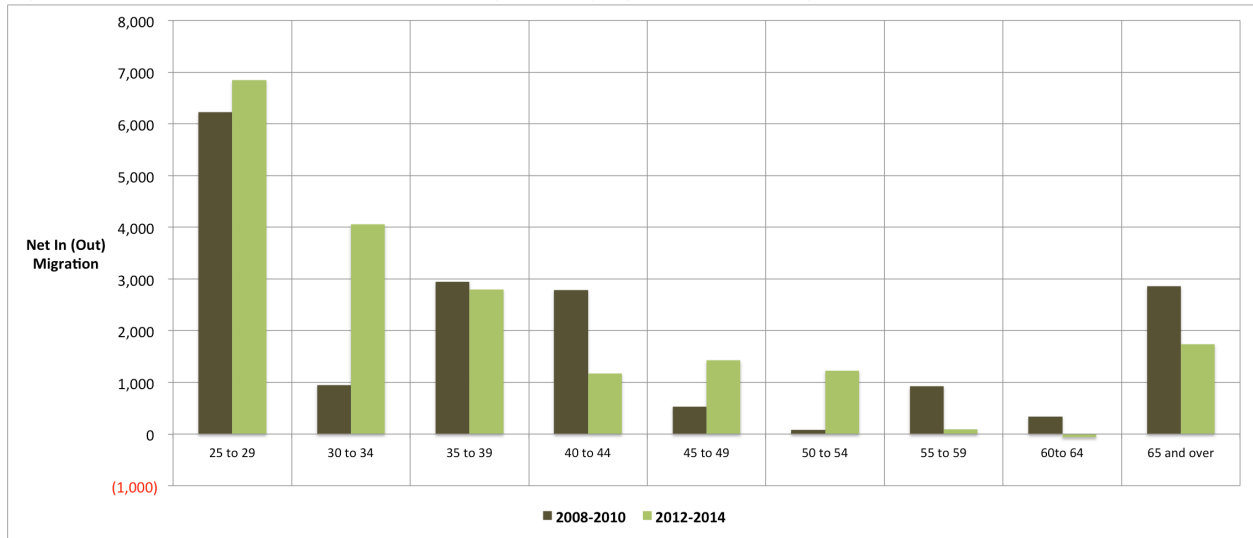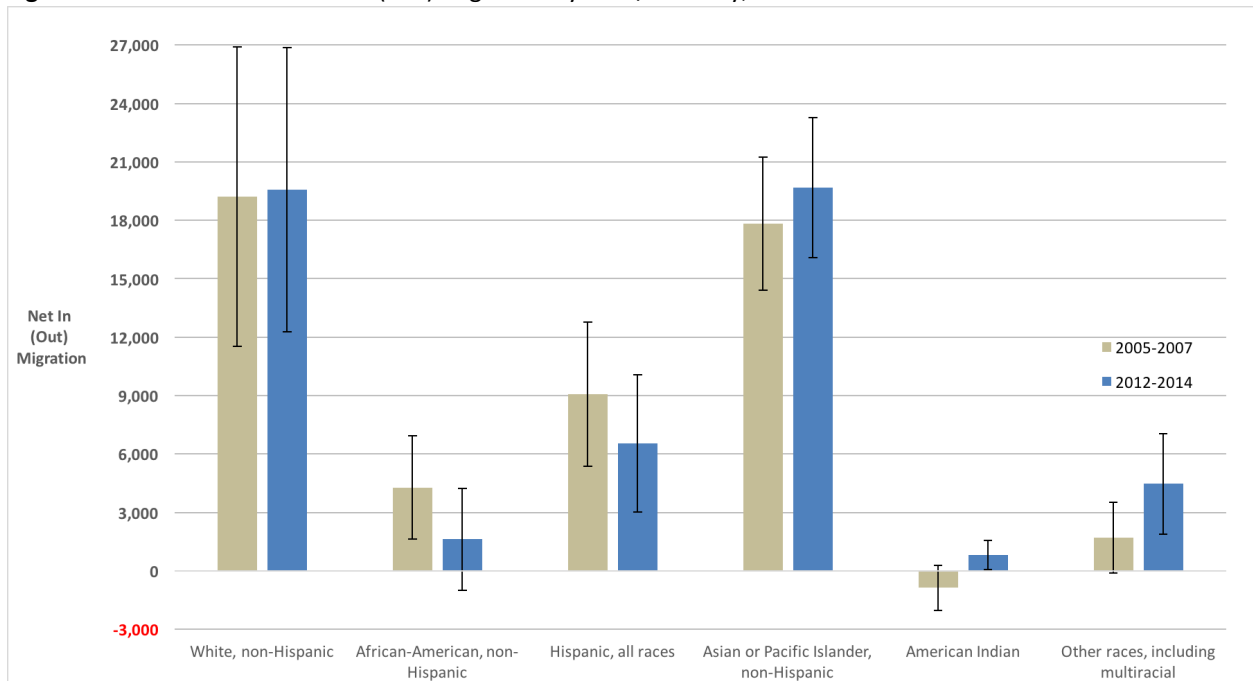

Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2010-2012, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors. Margin of error (MOE) values that accompany ACS estimates are not reported here.

Figure D2. Net Migration Quotient (NMQ) of Portland Net In (Out) Migration by Age Cohort, *All* Migrants
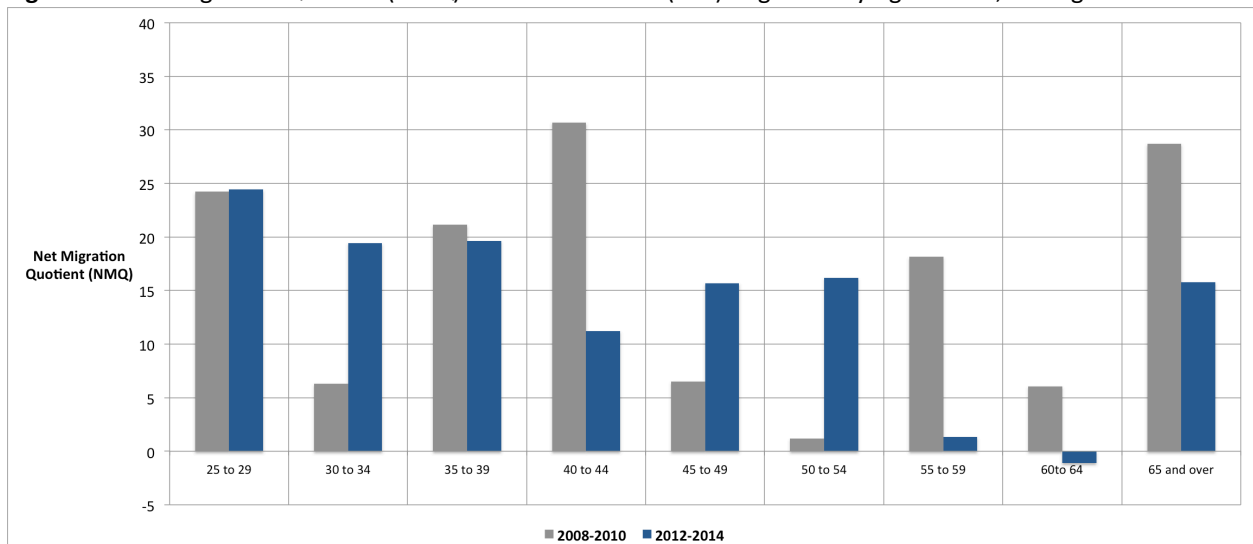
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2010-2012, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors. Margin of error (MOE) values that accompany ACS estimates are not reported here.

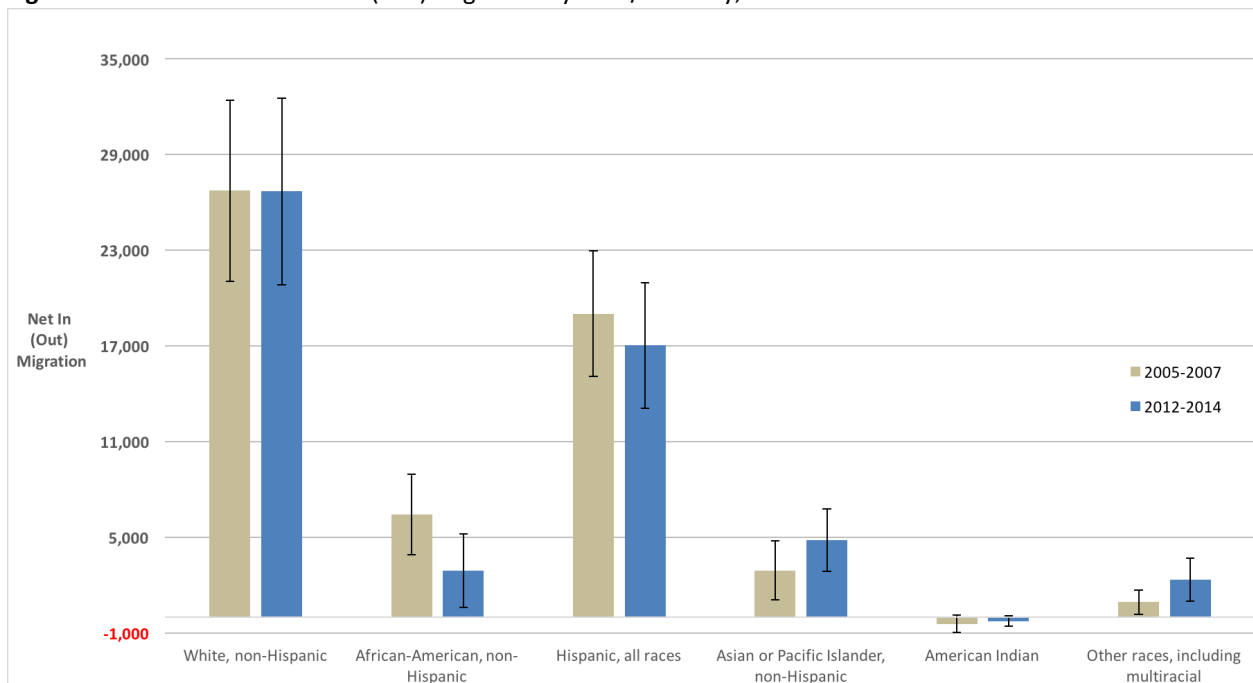# Appendix E—Migration by Race/Ethnicity for Select Metropolitan Areas

Figure E1. Seattle Absolute Net In (Out) Migration by Race/Ethnicity, 2005-2007 and 2012-2014

Note: Bars represent statistical uncertainty (i.e., margin of error [MOE]) that accompanies ACS estimates. The above data are to be interpreted with the corresponding MOE values.
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors.
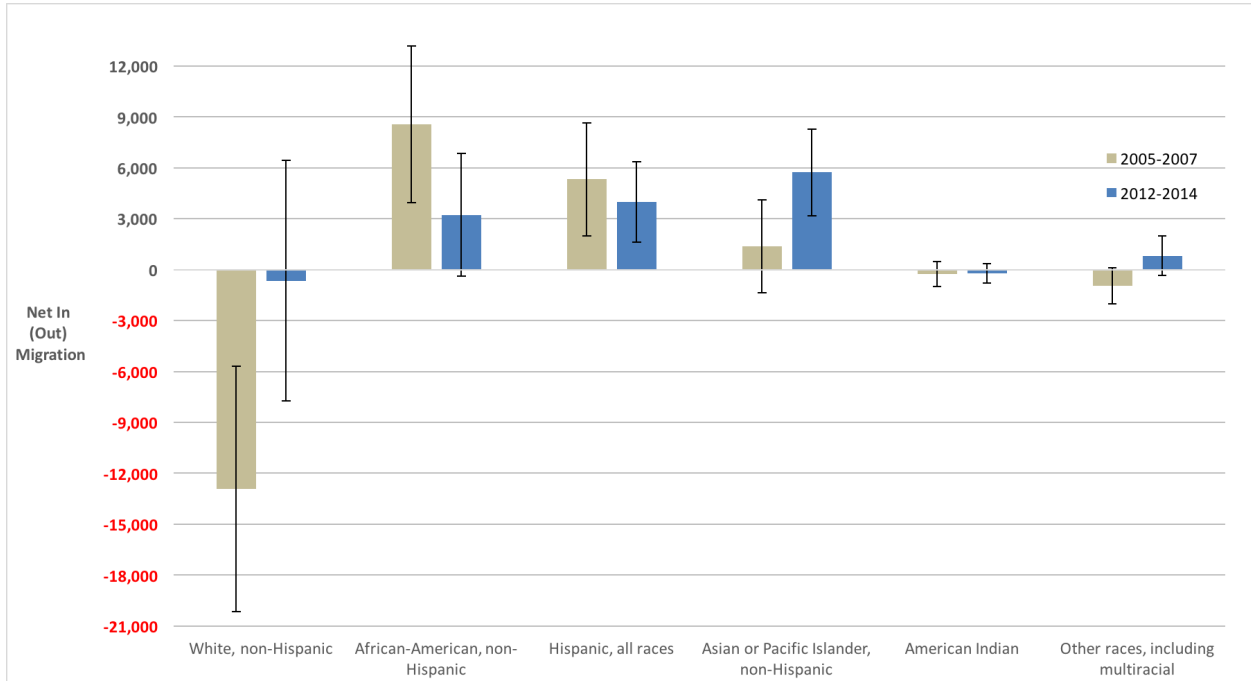
Figure E2. Austin Absolute Net In (Out) Migration by Race/Ethnicity, 2005-2007 and 2012-2014

Note: Bars represent statistical uncertainty (i.e., margin of error [MOE]) that accompanies ACS estimates. The above data are to be interpreted with the corresponding MOE values.
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors.
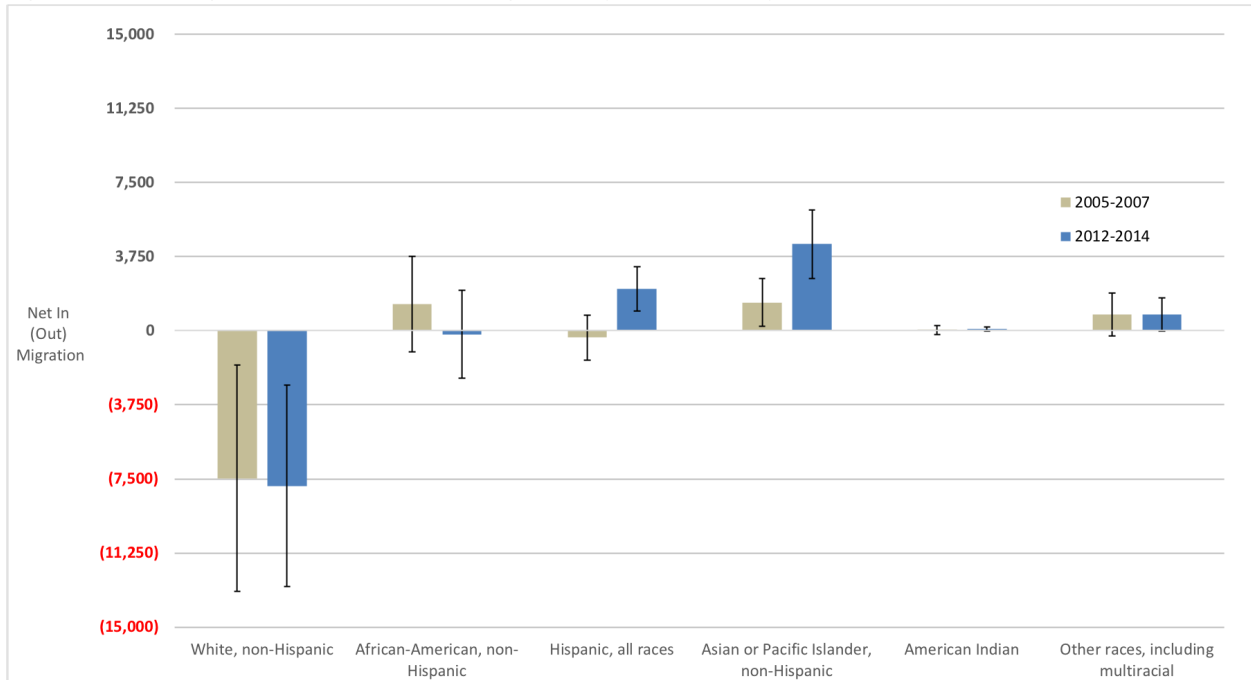
Figure E3. Minneapolis/St. Paul Absolute Net In (Out) Migration by Race/Ethnicity, 2005-2007 and 2012-2014

Note: Bars represent statistical uncertainty (i.e., margin of error [MOE]) that accompanies ACS estimates. The above data are to be interpreted with the corresponding MOE values.
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors.
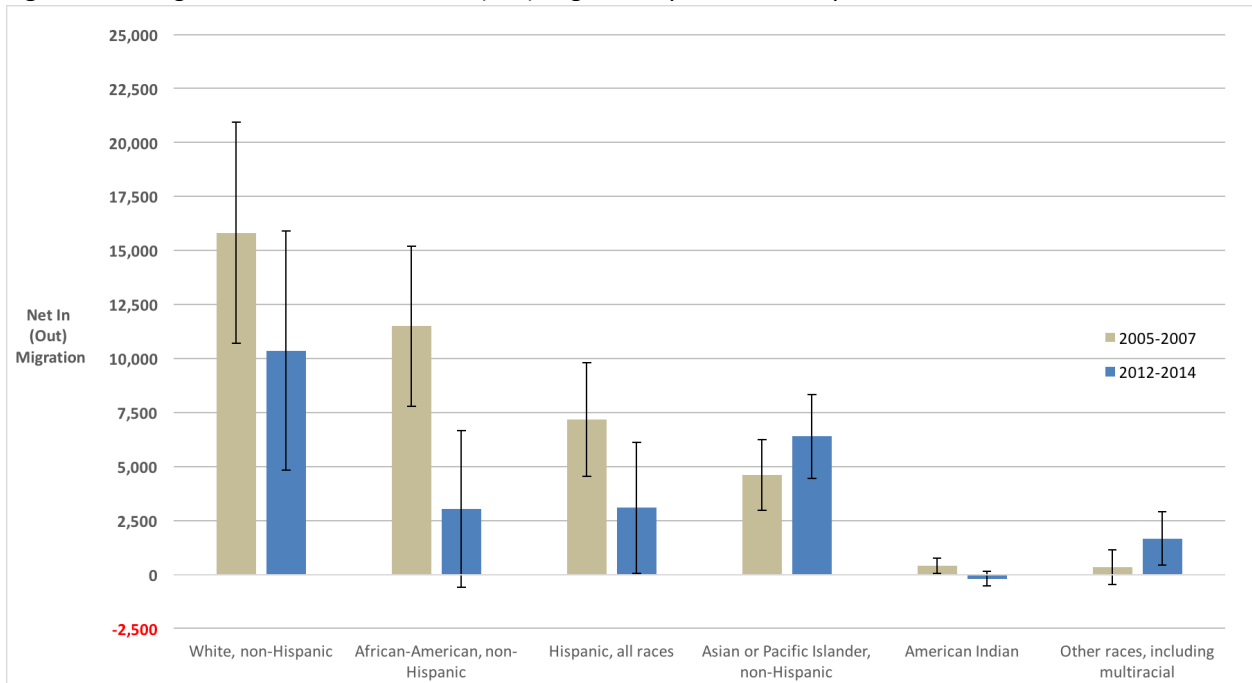
Figure E4. Pittsburgh Absolute Net In (Out) Migration by Race/Ethnicity, 2005-2007 and 2012-2014

Note: Bars represent statistical uncertainty (i.e., margin of error [MOE]) that accompanies ACS estimates. The above data are to be interpreted with the corresponding MOE values.
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors.

Figure E5. Raleigh/Durham Absolute Net In (Out) Migration by Race/Ethnicity, 2005-2007 and 2012-2014

Note: Bars represent statistical uncertainty (i.e., margin of error [MOE]) that accompanies ACS estimates. The above data are to be interpreted with the corresponding MOE values.
Source: Integrated PUMS (Ruggles et al. 2012). American Community Survey (ACS) 2005-2007, 3-year estimates, and 2012-2014 (combined 1-year files). Calculated by authors.