

# Characteristics of Daytime Urban Commuters for 20 U.S. Cities: Gender, Work, and Family<sup>1</sup>

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## Abstract

In many cities, the population grows during the workday. Commuting into and out of a city allows workers to live in residential areas, which may better fit their housing needs and family situation. However, there may also be instances where commuting into or out of a city is less than desirable. This study investigates the social and economic characteristics of daytime urban commuters for 20 U.S. cities using restricted access microdata from the 5-year 2009-2013 American Community Survey (ACS). Findings highlight commuter differences by living arrangements, presence of children, class of work, mode and length of commute. The significance of gender is also considered.

## Introduction

The commuter-adjusted daytime population, or the population living in an area, adjusted for the number of commuters into and out, varies greatly across metropolitan areas. For example, the daytime population of Washington, D.C. increases by 79 percent during the day, swelling the population from around 600,000 residents to over 1 million people (McKenzie, Koerber, Fields, Benetsky, and Rapino 2013). The U.S. Census Bureau has produced estimates of the commuter-adjusted population for the 2000 Decennial Census and the 2006-2010 American Community Survey (ACS). However, to date, the estimates for commuter-adjusted populations available in published Census Bureau data products are limited to basic counts for counties and places. We know very little about the characteristics of the population who contribute to the commuter-adjusted daytime population in major metropolitan areas.

Commuting into and out of a city allows workers to live in residential areas that may better fit their needs for housing, as well as family and leisure activities, while still allowing access to employment. However, there may also be instances where commuting into or out of a city is less than desirable. If workers commute long distances to reach low-wage jobs, this could indicate a poor spatial fit between affordable residences and jobs. Furthermore, scholars have argued that the increase in the number of working mothers in recent decades has occurred against a backdrop of cities designed around the separation of public and private land uses (Hayden 2009; Spain 1992). Many residential areas where mothers and their families live are separated from places of employment as well as services such as child care (England 1996; Silbaugh 2007-2008). Women's range of daily mobility tends to be smaller than men's. Previous research has found

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<sup>1</sup> This paper is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed on statistical and methodological issues are those of the authors and not necessarily those of the U.S. Census Bureau.

that women tend to work closer to home and are more likely to commute to work by public transportation (see Hanson 2010 for a review, Rosenbloom 2006). However, most previous research on women and men's commuting behavior is limited to a small number of metro areas in the United States and highlights the need for research that examines commuting behavior in different geographic and social/cultural contexts. This is especially important because, over the last two decades, the relationship between many cities and their suburban neighbors has been in flux. Suburbs are becoming less racially White and economically poorer as Whites and wealthy households move into cities, often displacing minority, working class, and poor residents to the suburbs (Kneebone and Berube 2013).

In this poster, we examine 20 cities among whose populations fluctuate the most due to commuters who enter the area during the day. Specifically, we will focus on the characteristics of commuters coming into these cities. Because the commute to work is both geographically and gender-sensitive, this initial analysis of in-commuters focuses on various household characteristics such as marital status, presence of children and the gender of the commuter.

## Data

To do this analysis, we use restricted-access microdata from the 5-year 2009-2013 ACS. The ACS is an ongoing survey, conducted annually by the U.S. Census Bureau that captures changes in the socioeconomic, housing, and demographic characteristics of communities across the United States and Puerto Rico. The ACS covers several topics related to commuting, including workplace location. Commuter-adjusted population estimates depend on coupling information about workers' place of residence and place of work. The 5-year 2009-2013 ACS-based estimates that accompany this paper begin with a relatively fundamental conceptualization of commuter-adjusted population. The estimates capture the base population for an area (the resident population) adjusted for the number of persons who commute into and out of that area, as illustrated in the following equation:

$$(Commuter-adjusted\ population = Total\ area\ population + Total\ workers\ working\ in\ area - Total\ workers\ living\ in\ area)$$

*Workers* in this analysis are civilians and members of the Armed Forces, 16 years and over, who were at work the previous week. Persons on vacation or not at work the prior week are not included. The *total area population* represents the resident population that lives in a specified geography. The *total workers working in area* includes all workers who indicated a specified area as their place of work regardless of where they live. The *total workers living in area* is defined as the number of workers who are also residents of a specified geography. This estimate includes all workers who reside in the area, regardless of where they work.

We describe the population who commutes into an area in terms of their social and economic characteristics. These include presence and age of children in household, living arrangements of workers, employment characteristics, mode of transportation to work, and commute time. These characteristics provide additional detail about who commutes into cities and how these

characteristics vary across cities. For the purposes of this research we will limit our analysis to cities with at least 500,000 residents.<sup>2</sup>

## **Analysis**

First, we present descriptive data showing the top 20 cities ranked by the change in their population during the day when adjusted for those who commute into and out of the area.<sup>3</sup> We use the newly available 5-year 2009-2013 ACS data to generate these estimates. Second, we show the following characteristics for the workers who commute into each of the 20 cities:

- 1) Marital status
- 2) Presence of children under 6 in the household
- 3) Employment characteristics (class of worker)
- 4) Household income
- 5) Mode of transportation
- 6) Sex, race/ethnicity, and foreign-born status

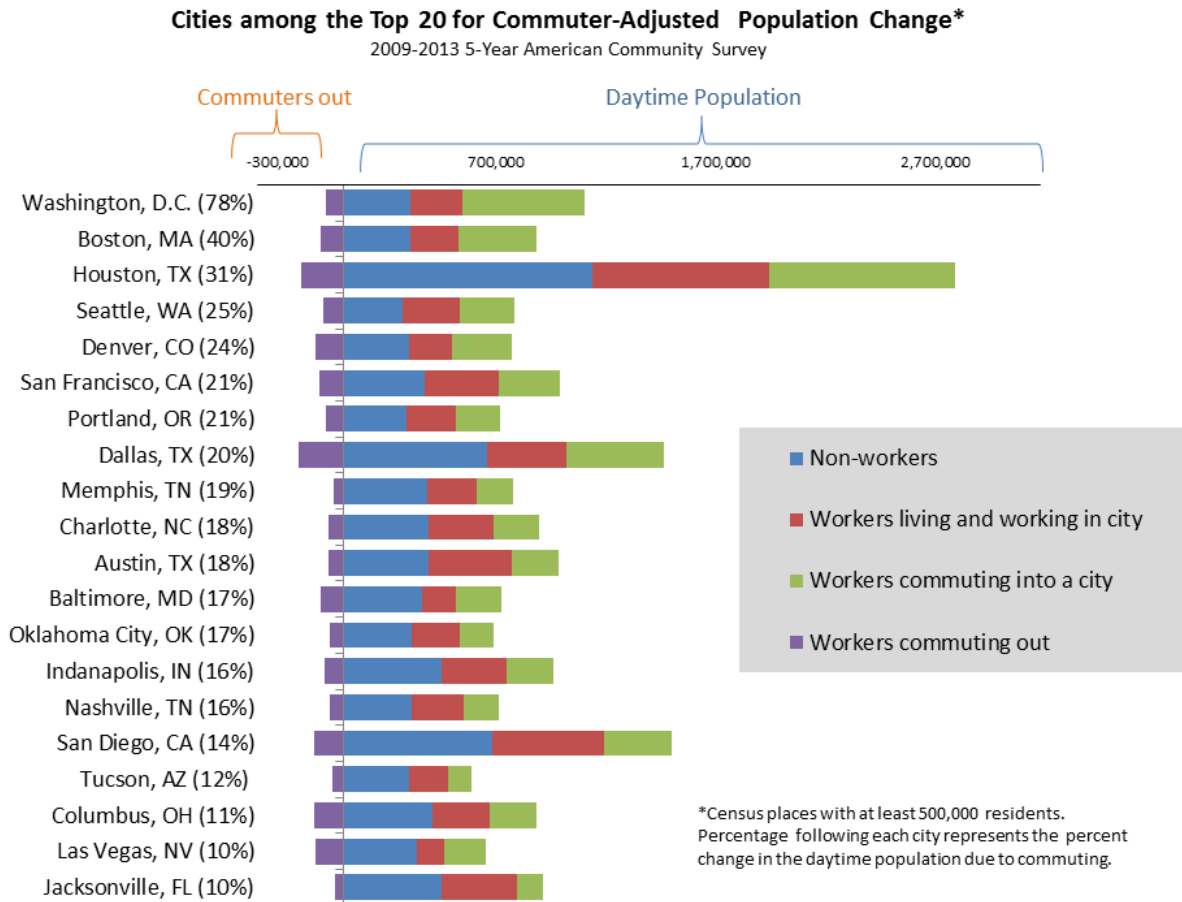
For many geographic areas, a population adjustment that accounts for inflows and outflows of workers results in only modest differences between resident population and the commuter-adjusted daytime population (McKenzie et. al., 2013). However, if we focus on smaller geographic areas, such as cities, the commuter-adjusted population and resident populations can differ significantly. Figure 1 lists cities among the top 20 for commuter-adjusted population change due to commuting. Among cities with a population of 500,000 or greater, Washington, D.C. experienced the greatest population change due to commuting. Most of the population change is due to workers commuting into D.C., reinforcing its role as an area of high employment, attracting workers from outside of the District. Other cities on the list represent a wide variety of regions and labor markets. Several cities are located in the south, such as Charlotte, Memphis, and Nashville. Three major cities from Texas are listed : Houston, Dallas, and Austin.

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<sup>2</sup> For the purposes of this research, we limit our analysis to cities with a population of 500,000 because larger cities often draw in a large number of commuters due to employment opportunities often not found in smaller cities.

<sup>3</sup> For the sake of brevity, findings are only presented for the top 20 cities that experienced the greatest population change due to commuting instead of listing all cities that fit our population threshold.

Figure 1.



The characteristics of commuters who commute into a city may vary by geography. Some areas may attract relatively large numbers of workers with certain characteristics. Various characteristics are highlighted on our poster. Specifically, Jacksonville, FL has the highest share of male commuters at 60 percent. Las Vegas, NV has the lowest share of married commuters at 48 percent. Four out of ten commuters to Washington, D.C. work in government. San Francisco, CA has the lowest share of commuters who drive alone to work at 44 percent.

The daily commuter experience also varies by gender. Findings in our poster highlight differences in mode of commute and travel time for Boston, MA; San Diego, CA; San Francisco, CA; Seattle, WA; and Washington, D.C. We selected to these cities because of their high public transportation usage by commuters in general and San Diego as an example of a city where a higher percentage of commuters drive alone to work. In general, women are more likely to use public transportation than men in Boston, Seattle, San Francisco, and Washington, D.C. Similar percentages of women and men commute all by car to San Diego (84 percent and 83 percent, respectively).

## **Conclusions and Future Analysis**

People don't always live in the same place as they work. Our findings provide a baseline understanding of little understood commuter population –workers who commute into a city they do not reside. The initial findings indicate that the characteristics of commuters varies across major cities in the United States by marital status, class of work, mode of transportation, and gender. Future research will further examine the complex relationship spatial relationship to employment controlling for geography, mode of transportation, and other social and economic characteristics.

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