Overview

Residential location is strongly responsive to the location of employment opportunities. Employment decentralization appears to have been a quantitatively important — but by no means sole — cause of population suburbanization. Other important factors include rising real incomes after World War II, state and federal road building programs and the growing racial diversity and poverty in inner city neighborhoods.

Introduction

In 2007, nearly two-thirds of metropolitan residents lived and worked outside of an officially-designated central city. This spatial pattern is a contemporary phenomenon. Just fifty years ago, the majority of economic activity took place in central cities; cities contained 59 percent of employment and 52 percent of residential population in 1960. The concurrent moves of both workers and firms out of central cities has led to a large literature in urban economics asking whether workers followed jobs out to the suburbs or whether jobs followed workers (Steinnes 1982; Grubb 1982; Palumbo and Hutton 1987; Greenwood and Stock 1990; Thurston and Yezer 1994; Boarnet 1994).

The location decisions of households and firms are closely related. Employees often live close to work in order to minimize the time spent on their commute. At the same time, firms choose to locate near residential areas in order to take advantage of the nearby customer base, in the case of retail stores, and to offer compensation to their potential work force in the form of a shorter commute.

As a result, simply noting that households and firms both left cities for the suburbs over the past five decades does not tell us which was the leader and which the follower (or, whether some common factor propelled both households and firms out of the city). In the abstract, we could imagine learning about how the location decisions of households and firms interact by running a vast social experiment. In this experiment, we could randomly assign the firms in 50 metropolitan areas to the suburban ring, while confining the firms in another 50 areas to the central city, and observe where households choose to locate. Alternatively, we could randomly assign large numbers of households to either the suburbs or the central city and observe the location decisions of firms.

Outside of a virtual reality game like SimCity, we could never actually conduct such a social experiment. Instead, my co-author Robert A. Margo and I considered an analogous “natural” experiment in the real world: the location of jobs in the public sector. The placement of government facilities are often historically determined and difficult to change. Therefore, we can think of the location of government facilities as being “as good as” randomly assigned to either the central city or the suburbs, allowing us to then observe the location decisions of individuals who work in these facilities. Of course, government employees differ from the rest of the workforce in ways that may also determine their residential choices. Thus, we strive to find a suitable control group.

We consider two large government employers located in the central city: state governments in capital cities and the processing and distribution centers of the United States Postal Service. We also examine defense contractors that, despite being in the private sector, were encouraged during the Cold War
to locate outside of central cities as a countermeasure against conventional or nuclear attack.

In all cases, we find clear evidence that firm location is an important determinant of residential location. Postal employees, particularly those working in centralized sorting and processing facilities, and employees of state governments in capital cities are much more likely than comparable workers to live in central cities. Likewise, employees who work for defense contractors are more likely than workers in other heavy manufacturing industries to live in the suburbs. The magnitude of the relationship that we find between place of employment and place of residence suggests that the movement of firms out of central cities can explain 20 percent of the residential suburbanization over the past fifty years.

State capitals

State government is concentrated in capital cities. In all states, the choice of a capital city was established by the early twentieth century, long before the process of suburbanization began. In many cases, core state buildings, such as the state capitol and the state supreme court, were built in the historic central business district well over a century ago and have never been moved.

Table 1 shows that state workers in capital cities are disproportionately likely to work downtown compared with other workers in the capital area (75.6 percent versus 55.4 percent). Perhaps as a result, state workers in capital cities are also more likely to live in the central city (36.4 percent versus 26.9 percent). Of course, state workers can differ from the rest of the workforce in a number of ways that may also influence their residential location. We present data on two of these characteristics in Table 1. State employees are more likely than other workers to hold a college degree and are more likely to be black; they also tend to be older and are more likely to be female.

We use state employees in non-capital cities as our comparison group. Outside of capital cities, there is no inherent reason—and indeed no empirical pattern—for state employees to work downtown. For example, State Bureaus of Motor Vehicles, which issue and renew drivers’ licenses, are often located well outside of the central business district close to major highways. Indeed, according to Table 1, state workers in non-capital cities are only slightly more likely than other workers to either work or live in the central city. If we compare the gap between state employees and other workers in capital and non-capital cities, we see that state employees in capital cities are 14.3 percentage points more likely than work in the central city and 3.7 percentage points more likely to live there. These findings imply that, for every 1,000 workers assigned to the central city, 258 of them will choose to live in the central city (= 3.7/14.3 * 100).

US Postal Service

Most postal processing and distribution plants are located near central business districts (Boustan and Margo, 2009). The centralization of mail processing dates from the early twentieth century, when the bulk of intercity mail was transported by rail. At the time, central post offices were built near the main downtown rail terminal. Even as trucking and air travel eclipsed rail transport, postal facilities have remained downtown and face a number of regulatory and political impediments to relocation. In contrast, the location of mail carrying follows population patterns. As businesses and households moved out to the suburban ring, mail carriers followed suit.

Beyond these historically-determined differences in job location, postal employees who work in processing plants and as mail carriers are otherwise very similar. The qualifications for entering the postal service are roughly uniform across these occupations. Job seekers take a civil service exam and available positions are filled by one of the three top-scoring candidates.

Table 2 compares the work and residential locations of the two types of postal employees. 60.2 percent of postal clerks work in a central city, compared to only 50.3 percent of mail carriers. As a result, postal clerks are more likely than mail carriers to live in the central city (43.4 percent versus 33.8 percent). After controlling for other personal characteristics, such as age, education and gender, these residential patterns imply that, if 1,000 workers were assigned to the central city, 236 of them would choose to live in the central city as well (3.6/15.2 * 100).

Defense contractors

During the Cold War, the federal government encouraged firms with defense contracts to locate outside of central cities, which were thought to be prime targets for nuclear attack (O’Mara, 2006). Manufacturing plants in defense-related industries are, as a result, more likely to be in the suburbs and — by the logic of our analysis — their work force may be more likely to live in the suburbs.

The census does not clearly identify workers whose firms hold defense contracts. We opt for a narrow definition of defense-related workers, focusing on those in the “guided missiles, space vehicles, and parts” manufacturing industry. We ex-

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1. Our results are based on individual census records from the 1980 Integrated Public Use Microdata Series, or IPUMS (Ruggles, et al. 2008). We relied on data from 1980 because it was the only year in which the public use sample of the Census contained place of work and place of residence and distinguished between individuals who work in the central city and those who work in the central business district.
clude industries such as aircraft manufacturing that may conduct substantial business with the federal government but that also have a sizeable civilian component. Our control group contains all workers in other transportation manufacturing industries.2

Table 3 examines the work and residential locations of workers in the guided missiles industry and other transportation manufacturing industries. Indeed, 70.9 percent of positions in the guided missiles industry are located outside of a central city, compared to 61.1 percent of related heavy manufacturing. After controlling for other personal characteristics, we find that workers in this industry are also more likely to live outside of the central city. These residential patterns imply that, if 1,000 workers were assigned to the central city, 232 of them would choose to live in the central city as well (2.0/8.6 * 100). The estimated relationship between place of work and place of residence is remarkable stable across these three cases studies.

Table 3: Work and residential locations of employees for defense contractors

<table>
<thead>
<tr>
<th></th>
<th>Employee in guided missiles</th>
<th>Employee in transport manufacturing</th>
<th>Raw difference</th>
<th>Regression-adjusted difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in suburb</td>
<td>70.9</td>
<td>61.1</td>
<td>9.8</td>
<td>8.6</td>
</tr>
<tr>
<td>Live in suburb</td>
<td>65.2</td>
<td>67.7</td>
<td>-2.5</td>
<td>2</td>
</tr>
</tbody>
</table>

This table reports sample means based on the 1980 IPUMS 5% sample.

Conclusions

We find that residential location is strongly responsive to the location of employment opportunities. According to our estimates, moving 1,000 jobs into the central city would encourage around 250 working residents to reside in the city. Urban politicians have obvious political interests at stake if their constituencies rise or fall in size. Moreover, urban planners may be concerned with population loss as a harbinger of building decay and neighborhood decline. Some fraction of the incomes of central city residents will be spent on locally produced goods and services, including owner-occupied housing, thereby generating tax dollars for local government expenditures. Our rule of thumb is that for every X jobs added or subtracted to the center city’s base, the center’s working population will increase by 0.25*X, or (roughly) one resident for every four jobs.

Furthermore, our results imply that around 20 percent of the residential suburbanization that took place between 1960 and 2000 can be attributed to the decentralization of employment opportunities. In other words, employment decentralization appears to have been a quantitatively important — but by no means sole — cause of population suburbanization. Other important factors include rising real incomes after World War II, state and federal road building programs and the growing racial diversity and poverty in inner city neighborhoods.3

Reference


2 We exclude ship building, which often takes place at harbors adjacent to the central city and therefore is disproportionately centralized.
3 Margo (1992) argues that rising real incomes can account for 40 percent of the movement to the suburbs from 1950 to 1980. According to Baum-Snow (2007), each interstate highway built through a central city reduced urban population by 16 percent. Households were also attracted to the suburbs by their racial and income homogeneity. Boustan (2010) finds that reversing the black migration from the rural South would have slowed the loss of urban white population by 17 percent.