January 28, 2005

Impact of Moving and Job Changes on Commuting Time

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The U.S. Department of Housing and Urban Development (HUD) funds the Census Bureau to conduct the American Housing Survey (AHS), a biennial record of the quality, use, and condition of the national housing stock combined with periodic examinations of the housing stock in 47 major metropolitan areas. In 2004, HUD contracted with Econometrica, Inc., and ICF Consulting to support the production and use of the AHS. As part of that contract, HUD commissioned this study of the relationship between moving, job changes, and commuting time.

Economists generally consider the choice of employment and the choice of place of residence as related decisions. In choosing a home, a household should consider ease of commute to a current job or jobs and access to employment opportunities in general. In choosing a new job, members of a household should consider the commuting time and commuting options. Many factors, in addition to commuting concerns, go into the selection of a place to live. These include the price and quality of the unit, quality of local schools, convenience of shopping, and the attractiveness of the neighborhood. Similarly, many factors in addition to commuting concerns go into the selection of a new job. These include: income, promotion potential, the work environment, and the attractiveness of the work. Still, commuting concerns should enter somewhat into both of these decisions.

With this in mind, HUD wants to determine what information the AHS can provide about the relationship between these two decisions. HUD's interests are twofold: to explore the issues involved in using the AHS for this purpose, and to perform some preliminary analysis using the 1999 and 2001 AHS national data. The remainder of this report consists of five sections:

- A brief examination of the relationship between the choice of a home and the choice of a job.
- A discussion of the AHS data and conceptual issues involved in using the AHS to study the relationship between moving or changing jobs and commuting time.
- A discussion of setting up AHS data for this analysis.
- An analysis of AHS data on commuting time for movers, stayers who change jobs, and stayers who do not change jobs.
- A brief summary of findings and suggestions for further analysis.

The mean commuting time for various groups depends upon the proxy used to identify job changers. This report provides the results for the most reasonable proxy and describes how these results vary depending upon the proxy chosen. Although the means change with proxy, the basic patterns remain the same. An appendix contains the results for other proxies.

Relationship Between Choice of Residence and Choice of Job

The introductory section sketched out how commuting time should enter into both the choice of a home and the choice of a job. This relationship is particularly interesting from the perspective of economic theory, because choice of residence is primarily a household decision, and choice of job is primarily a decision by individual members within a household. This statement undoubtedly oversimplifies the complexity of these decisions. The concerns of one member of a household may dominate the concerns of others in the choice of a place to live, and the concerns of other household members may enter into the decision by one member to change jobs. Nevertheless, there appears to be a basic tension between household needs and member needs in making these interrelated decisions. Members commute; households do not.

This tension suggests that it may be important to distinguish among different types of households in studying these decisions. Some households make location decisions with the interests of the entire household in mind. Married-couple households and single parents with children are examples of these households. By contrast, single-person households have only their own interests in mind when making a location decision.

About 5 percent of all adults live in households composed of unrelated individuals.[1] Presumably, location decisions are made independently by the members of these households. For example, one person may choose the residence and then look for roommates to help with living expenses. A second person may choose to become a roommate because the combination of location, housing features, and price are attractive. Location enters the second person's choice of residence independent of the way it enters the first person's choice.

Finally, some adults live in households where they are related to the householder but are not a spouse of the householder. These cases include an adult child living at home, an elderly parent living with a child, or two sisters living together. Presumably, if commuting time became a problem for the non-householder, that person would have the option to move. In our analysis, this group includes the householder as well as persons related to the householder, but not a spouse.

[1] Unmarried partners living together are not included in this group; we included them with married-couple households.

AHS Data and Commuting Time

The AHS has some advantages for analyzing the relationship between moving or job change and commuting:

- It is a large, nationally representative sample.
- It has detailed journey-to-work information asked of all workers.
- It collects detailed information about the unit, the household, and the neighborhood.
- Its longitudinal structure (repeated interviews of the same unit at 2-year intervals) enables us to analyze how commuting changes over time for stayers; that is, persons who remain in the same unit.
- The biennial repetition of the survey offers future possibilities to expand the sample size by using earlier or later surveys to analyze the relationship over a longer time period.

The AHS has two serious drawbacks for the analysis of commuting. First, the survey follows the unit, not the individual. It cannot, therefore, answer how commuting patterns of household members change when a household moves. Second, the survey does not collect information on the place of employment. For this reason, we have to use change in reported distance to work as a proxy for job change.

Working with AHS Data

Because HUD provides public use files (PUFs) of AHS data in different formats, we had two options for processing the AHS data:

- Use the 1999 and 2001 flat files and study persons within households by type of household; or
- Use the 1999 and 2001 person-level modules, and use information from these modules and additional information from other modules to classify persons by type of household.

We decided that it would be easier to focus on individual movers and stayers and classify them by type of household and, therefore, we constructed our data set from the modules.

We merged the two relevant modules (PERSON and JTW)[2] in both the 1999 AHS (119,354 cases) and 2001 AHS (108,347 cases), and then merged these files together (82,591 cases). We then extracted some other variables from the 2001 AHS in the module (NEWHOUSE) that contains information about the house and household and added this information to the merged file.[3]

Using this information, we classified individuals into five mutually exclusive groups and three combinations by type of household, as identified in Table 1.

Table 1. Individuals by Type of Household

Group	Characteristics of Group Members	Number of Members
A1	The husband and wives in married couple households in which both spouses are present and unmarried partners living together.	37,764
A2	Single head of household with minor children	3,238
A	Persons in "family-type" households (A1 + A2)	41,002
B1	Adult, unrelated persons living together	3,078
B2	Single person households	9,057
B3	Adult persons related to the householder but not a spouse plus the householder if not a member of another group	10,129
B	Persons in "non-family-type" households (B1 + B2 + B3)	22,264
All	All persons (A + B)	63,266

Groups B1 and B3 exclude persons under 17 years of age; therefore, the total is less than the 82,591 persons in the merged file.

We classified individuals as movers and stayers between 1999 and 2001 based on two AHS variables that record the year and month when a person moved into the unit.[4] A mover was any person who lived in the unit when the 2001 survey was conducted, but not when the 1999 survey was conducted. A stayer was a person who lived in the unit when both the 1999 and 2001 surveys were conducted. Table 2 shows the distribution of movers and stayers by type of household.

[2] The AHS codebook (http://www.huduser.org/intercept.asp?loc=/Datasets/ahs/AHS_Codebook.pdf) explains the modules. They can be downloaded from http://www.huduser.org/datasets/ahs.html.
[3] These variables were CONTROL (control number), PER (number of persons in household), ZADULT (number of adults 18+ in household), and USETRN (someone in household uses public transportation).
[4] The relevant variables were MOVE (year person moved in) and MOVM (month person moved in). We eliminated cases for which the Census Bureau allocated values to these variables. A mover was defined by the following code: IF (IN01_MOVE > 1999) OR (IN01_MOVE=1999 AND IN01_MOVM=12). The IN01_ suffix indicates that the variable was taken from the 2001 AHS PUF. The second condition picks up persons who moved into a unit after November 1999, when data collection for the 1999 survey ended. Persons who did not satisfy this code were considered stayers.

Table 2. Movers and Stayers by Type of Household

Group	Stayers	Movers	Percent Movers
A1(married)	32,958	4,806	12.7%
A2(single parent)	2,330	908	28.0
A (persons in family type households)	35,288	5,714	13.9
B1(unrelated persons)	1,820	1,258	40.9
B2(one person households)	7,371	1,686	18.6
B3 (related, but not married, adults)	9,272	857	8.5
B (persons in non-family type households)	18,463	3,801	17.1
All	53,751	9,515	15.0

Group B has a higher percent of movers than group A, but there is even greater variation within the subgroups. Not unexpectedly, the subgroups with the highest propensity to move are unrelated individuals living together, and single parents.

Next we established job histories for stayers. Table 3 on the next page shows the work histories for all the groups and combination of groups.

Persons in single-parent households and unrelated persons living together had the highest percentage with some work history over the two surveys. Single-person households had the lowest percentage, presumably because they have a high percentage of elderly persons.

We experimented with various ways to define job changers. Since AHS does not collect information on the employer, we had to identify a proxy for job changes. We made the assumption that if the distance traveled to work changed by more than some threshold, then a job change occurred.[5] More precisely, we defined a job change as occurring under the following condition:

$$IN01\_DISTJ < IN99\_DISTJ - X \quad OR$$
$$IN99\_DISTJ + X < IN01\_DISTJ$$

where DISTJ is AHS variable for the distance to work in miles, and suffices IN99_ and IN01_ identify the 1999 and 2001 AHS surveys. X is a buffer designed to filter out erroneous determinations of job changes that result simply from variation between surveys in reporting distance to work.

These equations have a geometric interpretation. Each house is the center of a set of concentric circles. The distance to work in 1999 (IN99_DISTJ) defines the radius of one concentric circle. We then draw two additional concentric circles, an inner circle with a radius of IN99_DISTJ - X and an outer circle with a radius of IN99_DISTJ + X. The buffer is a donut-shaped area around the residence defined by the inner and outer circles.

[5] We recognize that a person can change job location without changing employers. However, for the purpose of this analysis, we believe that any change in job location may have an impact on the commuting convenience of the residential location, whether the employer changes or not.

Table 3. Job History of Stayers by Group

Stayers In Group	Job History						
	0	1	2	3	4	All	(1+3+4) All
	No work history (missing information) in one or both years	Worked in both survey years	Did not work in either survey year	Worked in past survey, did not work in current survey	Did not work in past survey, worked in current survey		(percent)
A1(married)	1,200	16,829	9,302	3,310	2,317	32,958	68.1%
A2(single parent)	100	1,326	445	212	247	2,330	76.6
A (persons in family type households)	1,300	18,155	9,747	3,522	2,564	35,288	68.7
B1(unrelated persons)	112	1,012	333	204	159	1,820	75.5
B2(one person households)	258	2,629	3,556	553	375	7,371	48.3
B3 (related, but not married, adults)	472	3,314	3,040	1,070	1,376	9,272	62.1
B (persons in non-family type households)	842	6,955	6,929	1,827	1,910	18,463	57.9
All	2,142	25,110	16,676	5,349	4,474	53,751	65.0

Any job located in the donut is considered the "same" job. Any job located inside the hole in the donut (the area defined by the top inequality) or any job located outside the donut (the area defined by the bottom inequality) is considered a "job change."

For example, a respondent might say in the 1999 survey that a household member commutes 8 miles to work, but then say in the 2001 survey that the same household member commutes 10 miles. If we let X=3, then any response between 5 and 11 miles would be considered the same job. In this case, we would conclude that the respondent did not change jobs. If the change in response between 1999 and 2001 was simply an error on the part of the respondent, then the buffer has kept us from mistakenly identifying a job change. If the change in response was accurate, then we have mistakenly concluded that no job change occurred.

We experimented with various values for X. In this portion of the document, we report results for X=3. The appendix contains results for X=0, 1, 2, 5, and 10. We were not entirely happy with using 3 miles as a buffer. In one sense it seemed too large a buffer; that is, it seemed likely to filter out legitimate job changes. More than half the commuters traveled less than 10 miles to work. At that distance, a buffer of 3 miles includes an area of 377 square miles, an area greater than a circle with a 10-mile radius. However, even with a buffer of 3 miles, we found that 39 percent of all stayers who worked in both periods outside the home changed jobs between the 1999 and 2001 surveys. We have no alternate source of information on the frequency of job changes, but this frequency seemed high to us.[6]

Table 4 shows cumulative percentage of workers in 1999 by distance to work.[7] After 10 miles, the answers to the distance-traveled-to-work questions tended to cluster around numbers ending in 0 or 5.

Table 4. Distance to Work in 1999

Distance to Work (in miles)	Number of Individuals	Cumulative Percentage
0	2,651	7%
1	2,129	13
2	2,181	19
3	2,336	25
4	1,441	29
5	2,918	37
6 to 10	8,120	59
11 to 20	8,832	83
21 to 30	3,452	92
31 to 40	1,318	96
41 to 50	721	98
more than 50	745	100

[6] The percentage of job changes for all persons by X were as follows: X=0, 75 percent; X=1, 59 percent; X=2, 47 percent; X=3, 39 percent; X=5, 26 percent; and X=10, 14 percent.

[7] Approximately 1,000 workers had DISTJ = 996, which is a code for working at home. We converted these to zeros for Table 4.

Initially we allowed stayers who were not working in one period, but working in the other period, to be defined as job changers. Similarly, we allowed persons who did not work at home in one period, but worked at home in another period, to be defined as job changers. We decided that the analysis produced more credible results if we excluded these persons.

Table 5 shows the estimated number of job changes by household type for a buffer of 3 miles. The frequency of job change is similar across all groups except for group B2 (single-person households) and group B3 (adult members related to the householder but not a spouse). Single-person households have a very low rate of job change. Many of these persons are elderly, and because we do not count stopping work as a job change, this lower frequency is not surprising. In setting up group B3, we speculated that persons related to the householder but not a spouse might be more footloose. The higher rate of job change indicated this.[8]

Table 5. Job Changes by Members in Stayer Households with X=3

Group	Working Stayers	Job Changers	Percent Job Changers
A1(married)	12,092	4,681	38.7%
A2(single parent)	965	393	40.7
A (persons in family type households)	13,057	5,074	38.9
B1(unrelated persons)	732	312	42.6
B2(one person households)	1,936	634	32.7
B3 (related, but not married, adults)	2,402	1,134	47.2
B (persons in non-family type households)	5,070	2,080	41.0
All	18,127	7,154	39.5

Changes in Commuting Times

Before looking at how commuting time changed with job change, we want to compare the commuting time of movers, stayers who do not change jobs, and stayers who do change jobs. We use the 2001 times because we want to look at the commute of job changers after their job change. Table 6 contains these results for a buffer of 3 miles.

[8] As noted earlier, this group includes the householder if the householder is not included in another group.

Table 6. Average Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=3 (in minutes)

Average Commuting Time	Movers	Stayers Who Do Not Change Jobs	Stayers Who Change Jobs
A1(married)	15.62	17.72	27.47
A2(single parent)	15.06	16.37	28.35
A (persons in family type households)	15.54	17.62	27.54
B1(unrelated persons)	13.82	17.25	27.61
B2(one person households)	14.29	17.27	26.16
B3 (related, but not married, adults)	13.53	15.02	24.54
B (persons in non-family type households)	13.96	16.31	25.50
All	14.91	17.27	26.95

Movers have the shortest commute; stayers who do not change jobs have a longer commute; and stayers who do change jobs have the longest commute. This pattern is true for all five groups. Moreover, as the tables in the appendix show, the pattern holds for all values of buffer we tested. Movers always had the shortest commute and job changers the longest. This was true in the aggregate and for all groups.

For X=3, we also compared the three groups on the basis of first quartiles, medians, and third quartiles. In all cases, movers had the shortest commutes, stayers who did not change jobs had commutes as long as or longer, and stayers who changed jobs had the longest commutes. (See Table 6Q in the appendix.) The consistency of these results suggests that travel time is an important consideration in choosing a house, but that other considerations dominate travel time when changing jobs. The "stayers who do not change jobs" are a blend of old movers who have not changed jobs after the move and old movers who changed jobs after the move but before the 1999 survey. Therefore, it is not surprising that their travel times are intermediate between movers and job changers.

In the appendix, average commuting time for job changers increases from 22 minutes when X=0, to 32 minutes for X=10. This is not surprising, because as X increases, the change in distance traveled needed to trigger the determination that a job change has occurred increases. The change in distance traveled can be either positive or negative, but the negative changes are truncated. Consider, for example, a person working 3 miles from home. With X=3, only job changes with new traveled distances greater than 6 miles would be counted. In other words, only increases in distance to work would be counted as a job change. Therefore, as X increases, our measurement of commuting time for job changes is biased upwards.[9]

Table 7 shows how travel time changed for stayers who changed jobs between the 1999 and 2001 AHS surveys. The results indicate that job changers reduced their travel time slightly (less than a minute) on average. The direction of the change depended on the

[9] The travel time of stayers who do not change jobs shows no trend as X changes.

group. Single parents had the largest increase in travel time. Unrelated individuals and the members of households with adult members related to the householder but not a spouse also showed increases in travel time. Commuting time decreased for members of married-couple or partner households and for single-person households. Only the change for married-couple or partner households is statistically significant.

Table 7. Commuting Time in 1999 and 2001 for Stayers Who Changed Jobs for X=3 (in minutes)

Working Stayers Who Changed Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	27.47	28.48	-1.00*
A2(single parent)	28.35	25.52	2.83
A (persons in family type households)	27.54	28.25	-0.71
B1(unrelated persons)	27.61	26.21	1.39
B2(one person households)	26.16	27.21	-1.05
B3 (related, but not married, adults)	24.54	23.53	1.01
B (persons in non-family type households)	25.50	25.05	0.44
All	26.95	27.32	-0.37

* Significant at the 0.05 level of significance.

An immediate question is whether the reduction in commuting time was the result of the job change or the result of a general decline in commuting time. To answer this we compiled the same numbers for stayers who did not change jobs in Table 8. Although commuting appeared to have improved in general, the improvement was less than that experienced by job changers. None of the observed changes is statistically significant.

Table 8. Commuting Time in 1999 and 2001 for Stayers Who Did Not Change Jobs for X=3 (in minutes)

Working Stayers Who Did Not Change Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	17.72	17.71	0.01
A2(single parent)	16.37	17.05	-0.67
A (persons in family type households)	17.62	17.66	-0.04
B1(unrelated persons)	17.25	17.47	-0.22
B2(one person households)	17.27	17.25	0.02
B3 (related, but not married, adults)	15.02	15.08	-0.06
B (persons in non-family type households)	16.31	16.36	-0.05
All	17.27	17.31	-0.04

The appendix shows that average commuting time declined for job changers for all values of X that we tested. In all cases the changes were less than a minute and greater than the decline for stayers who did not change jobs.[10] For all values of X that we tested, travel time declined for members of married-couple and partner households and for single-person households. It increased for single-parent households, unrelated individuals, and members of households with adult members related to the householder but not a spouse. While varying X affects the magnitude of the numbers, it does not affect the pattern of the results.

Tables 6 and 7 might appear to be contradictory. Table 6 shows that job changers have the longest commute, but Table 7 shows that changing jobs appears to slightly reduce commuting time. One explanation is that stayers with the longest commute are more likely to change jobs.

Summary and Recommendation for Further Analysis

The objectives of this report included both learning more about job changes and commuting and learning more about using the AHS to study this relationship. The main findings are:

- The AHS does not ask whether a person has changed jobs within the past 2 years. The absence of such a question limits its usefulness into two ways: we cannot determine to what extent moves are associated with job changes and we have to use proxies to determine whether stayers changed jobs.
- Using changes in commuting distance as a proxy for job changes works in the sense of producing credible and consistent results, but it requires the use of a buffer. Small buffers appear to result in overestimating the number of job changes; large buffers raise concerns about underestimating the number of job changes.

- Type of household appears to be related to the decision to move, the decision to change jobs, and commuting changes related to job changes. Organizing persons by type of household is important for the analysis.

- Among movers, stayers who do not change jobs, and stayers who do change jobs, movers have the shortest commutes in minutes, and stayers who do change jobs have the longest commutes. This result is consistent across household types and did not change when we used different buffers to define job changers.

- On average, job changers have shorter commutes in minutes after the job change. While this result persists when we change the size of the buffer, the difference was less than one minute in all cases and not statistically significant for a buffer of 3 miles.

[10] The appendix does not repeat Table 8 for different values of X.

- The relationship between job change and commuting time seems to depend upon household type. Commuting time decreased for members of married-couple or partner households and for single-person households. For a buffer of 3 miles, only the change for married-couple or partner households was statistically significant. Single parents had the largest increase in travel time. Unrelated individuals and the members of households with adult members related to the householder but not a spouse also showed increases in travel time. This pattern across household types persists when we change the size of the buffer.

These results suggest a few avenues for further exploration using the AHS. First, using similar tabular analysis with the 1999 and 2001 data, one could examine how income is related to job change and distance and time commuted. Job change is defined by either an increase or decrease in distance commuted greater than some buffer. It would be interesting to learn whether increased distances were associated more often with increased income. Second, one could employ regression analysis to determine how household type, age, race and ethnicity, city versus suburban location, and income affect job change and distance (or time) commuted. Finally, one could repeat the analysis for the 2001 and 2003 AHS surveys to see if the same patterns repeated themselves. With respect to the AHS survey, HUD and the Census Bureau should consider whether to add a simple question for each household member on job change since the last survey.

Appendix

Table 5a. Job Changes by Members in Stayer Households with X=0

Group	Working Stayers	Job Changers	Percent Job Changers
A1(married)	12,092	8,952	74.0%
A2(single parent)	965	738	76.5
A (persons in family type households)	13,057	9,690	74.2
B1(unrelated persons)	732	562	76.8
B2(one person households)	1,936	1,337	69.1
B3 (related, but not married, adults)	2,402	1,953	81.3
B (persons in non-family type households)	5,070	3,852	76.0
All	18,127	13,542	74.7

Table 5b. Job Changes by Members in Stayer Households with X=1

Group	Working Stayers	Job Changers	Percent Job Changers
A1(married)	12,092	6,998	57.9%
A2(single parent)	965	595	61.7
A (persons in family type households)	13,057	7,593	58.2
B1(unrelated persons)	732	458	62.6
B2(one person households)	1,936	981	50.7
B3 (related, but not married, adults)	2,402	1,606	66.9
B (persons in non-family type households)	5,070	3,045	60.1
All	18,127	10,638	58.7

Table 5c. Job Changes by Members in Stayer Households with X=2

Group	Working Stayers	Job Changers	Percent Job Changers
A1(married)	12,092	5,614	46.4%
A2(single parent)	965	470	48.7
A (persons in family type households)	13,057	6,084	46.6
B1(unrelated persons)	732	374	51.1
B2(one person households)	1,936	763	39.4
B3 (related, but not married, adults)	2,402	1,322	55.0
B (persons in non-family type households)	5,070	2,459	48.5
All	18,127	8,543	47.1

Table 5d. Job Changes by Members in Stayer Households with X=5

Group	Working Stayers	Job Changers	Percent Job Changers
A1(married)	12,092	3,070	25.4%
A2(single parent)	965	255	26.4
A (persons in family type households)	13,057	3,325	25.5
B1(unrelated persons)	732	215	29.4
B2(one person households)	1,936	425	22.0
B3 (related, but not married, adults)	2,402	792	33.0
B (persons in non-family type households)	5,070	1,432	28.2
All	18,127	4,757	26.2

Table 5e. Job Changes by Members in Stayer Households with X=10

Group	Working Stayers	Job Changers	Percent Job Changers
A1(married)	12,092	1,633	13.5%
A2(single parent)	965	127	13.2
A (persons in family type households)	13,057	1,760	13.5
B1(unrelated persons)	732	119	16.3
B2(one person households)	1,936	230	11.9
B3 (related, but not married, adults)	2,402	387	16.1
B (persons in non-family type households)	5,070	736	14.5
All	18,127	2,496	13.8

Table 6a. Average Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=0 (in minutes)

Average Commuting Time	Movers	Stayers Who Do Not Change Jobs	Stayers Who Change Jobs
A1(married)	15.62	19.00	22.37
A2(single parent)	15.06	18.02	22.23
A (persons in family type households)	15.54	18.93	22.36
B1(unrelated persons)	13.82	17.02	23.06
B2(one person households)	14.29	17.02	21.59
B3 (related, but not married, adults)	13.53	16.30	20.24
B (persons in non-family type households)	13.96	16.76	21.12
All	14.91	18.35	22.01

Table 6b. Average Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=1 (in minutes)

Average Commuting Time	Movers	Stayers Who Do Not Change Jobs	Stayers Who Change Jobs
A1(married)	15.62	17.25	24.58
A2(single parent)	15.06	15.97	24.52
A (persons in family type households)	15.54	17.16	24.58
B1(unrelated persons)	13.82	16.50	24.75
B2(one person households)	14.29	16.22	24.03
B3 (related, but not married, adults)	13.53	14.69	21.90
B (persons in non-family type households)	13.96	15.66	23.02
All	14.91	16.76	24.13

Table 6c. Average Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=2 (in minutes)

Average Commuting Time	Movers	Stayers Who Do Not Change Jobs	Stayers Who Change Jobs
A1(married)	15.62	17.47	26.13
A2(single parent)	15.06	16.25	26.51
A (persons in family type households)	15.54	17.39	26.16
B1(unrelated persons)	13.82	17.04	26.09
B2(one person households)	14.29	16.98	25.11
B3 (related, but not married, adults)	13.53	14.79	23.37
B (persons in non-family type households)	13.96	16.08	24.32
All	14.91	17.03	25.63

Table 6d. Average Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=5 (in minutes)

Average Commuting Time	Movers	Stayers Who Do Not Change Jobs	Stayers Who Change Jobs
A1(married)	15.62	18.89	29.16
A2(single parent)	15.06	17.60	31.44
A (persons in family type households)	15.54	18.80	29.33
B1(unrelated persons)	13.82	17.86	30.83
B2(one person households)	14.29	17.86	28.44
B3 (related, but not married, adults)	13.53	16.10	26.48
B (persons in non-family type households)	13.96	17.08	27.72
All	14.91	18.33	28.85

Table 6e. Average Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=10 (in minutes)

Average Commuting Time	Movers	Stayers Who Do Not Change Jobs	Stayers Who Change Jobs
A1(married)	15.62	19.77	32.57
A2(single parent)	15.06	18.36	40.54
A (persons in family type households)	15.54	19.67	33.14
B1(unrelated persons)	13.82	19.02	35.39
B2(one person households)	14.29	18.68	31.38
B3 (related, but not married, adults)	13.53	17.25	31.41
B (persons in non-family type households)	13.96	18.06	32.04
All	14.91	19.22	32.82

Table 6Q. Quartiles of Commuting Time in 2001 for Movers, Stayers Who Do Not Change Jobs, and Stayers Who Change Jobs for X=3 (in minutes)

	Movers			Stayers Who Do Not Change Jobs			Stayers Who Change Jobs		
Group	**Q1**	**Q2 (Median)**	**Q3**	**Q1**	**Q2 (Median)**	**Q3**	**Q1**	**Q2 (Median)**	**Q3**
A1(married)	0	10	22	8	15	25	15	25	35
A2(single parent)	0	10	20	7	15	20	12	20	30
A (persons in family type households)	0	10	20	8	15	22	15	23	35
B1(unrelated persons)	2	10	20	10	15	25	15	25	40
B2(one person households)	0	10	20	8	15	22	15	20	30
B3 (related, but not married, adults)	0	10	20	7	12	20	15	20	30
B (persons in non-family type households)	0	10	20	7	15	20	15	20	30
All	0	10	20	8	15	20	15	20	35

Table 7a. Commuting Time in 1999 and 2001 for Stayers Who Did Change Jobs for X=0 (in minutes)

Working Stayers Who Did Change Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	22.37	22.89	-0.53
A2(single parent)	22.23	20.60	1.63
A (persons in family type households)	22.36	22.72	-0.36
B1(unrelated persons)	23.06	22.45	0.61
B2(one person households)	21.59	21.96	-0.37
B3 (related, but not married, adults)	20.24	19.69	0.56
B (persons in non-family type households)	21.12	20.88	0.24
All	22.01	22.20	-0.19

Table 7b. Commuting Time in 1999 and 2001 for Stayers Who Did Change Jobs for X=1 (in minutes)

Working Stayers Who Did Change Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	24.58	25.22	-0.64
A2(single parent)	24.52	22.51	2.02
A (persons in family type households)	24.58	25.01	-0.43
B1(unrelated persons)	24.75	24.22	0.54
B2(one person households)	24.03	24.60	-0.57
B3 (related, but not married, adults)	21.90	21.28	0.62
B (persons in non-family type households)	23.02	22.79	0.23
All	24.13	24.37	-0.24

Table 7c. Commuting Time in 1999 and 2001 for Stayers Who Did Change Jobs for X=2 (in minutes)

Working Stayers Who Did Change Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	26.13	27.00	-0.87
A2(single parent)	26.51	24.07	2.44
A (persons in family type households)	26.16	26.77	-0.61
B1(unrelated persons)	26.09	25.21	0.88
B2(one person households)	25.11	26.00	-0.90
B3 (related, but not married, adults)	23.37	22.60	0.77
B (persons in non-family type households)	24.32	24.05	0.27
All	25.63	25.99	-0.35

Table 7d. Commuting Time in 1999 and 2001 for Stayers Who Did Change Jobs for X=5 (in minutes)

Working Stayers Who Did Change Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	29.16	30.51	-1.35
A2(single parent)	31.44	26.74	4.70
A (persons in family type households)	29.33	30.22	-0.89
B1(unrelated persons)	30.83	28.99	1.84
B2(one person households)	28.44	29.89	-1.44
B3 (related, but not married, adults)	26.48	25.05	1.43
B (persons in non-family type households)	27.72	27.07	0.64
All	28.85	29.27	-0.43

Table 7e. Commuting Time in 1999 and 2001 for Stayers Who Did Change Jobs for X=10 (in minutes)

Working Stayers Who Did Change Jobs	Average Commuting Time in 2001	Average Commuting Time in 1999	Change in Commuting Time
A1(married)	32.57	34.97	-2.40
A2(single parent)	40.54	31.79	8.75
A (persons in family type households)	33.14	34.74	-1.60
B1(unrelated persons)	35.39	32.98	2.41
B2(one person households)	31.38	35.54	-4.16
B3 (related, but not married, adults)	31.41	28.49	2.92
B (persons in non-family type households)	32.04	31.41	0.64
All	32.82	33.75	-0.94