American Housing Survey

Listing of Programs and Variables Used in Metropolitan CINCH and Rental Dynamics Analysis for 1998/2002 and 2007 American Housing Surveys

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The AHS Metro data in 2007 is available for the following seven Metropolitan Areas:

Baltimore	(SMSA=0720)
Boston	(SMSA=1120)
Houston	(SMSA=3360)
Miami-Ft. Lauderdale	(SMSA=5000)
Minneapolis-St. Paul	(SMSA=5120)
Tampa-St. Petersburg	(SMSA=8280)
Washington	(SMSA=8840)

The AHS Metro data in 1998 is available for only six of these Metropolitan Areas:

Baltimore	(SMSA=0720)
Boston	(SMSA=1120)
Houston	(SMSA=3360)
Minneapolis-St. Paul	(SMSA=5120)
Tampa-St. Petersburg	(SMSA=8280)
Washington	(SMSA=8840)

The AHS Metro data in 2002 is available for only one of these Metropolitan Areas:

Miami-Ft. Lauderdale	(SMSA=5000)

For simplicity reasons, the reference 1998 is used below for the data derived from the 2002 survey for the Miami-Ft. Lauderdale Metropolitan Area.

The following 11 programs and one data set have been posted on the American Housing Survey (AHS) Web site:

- CINCH_98_02_07_METRO_DATA: For each control number, this SAS file contains the weights used in forward-looking CINCH analysis (FLCINCHWT) and the weights used in the backward-looking CINCH analysis (BLCINCHWT), along with the variables used to identify CINCH status and rental affordability status for each of the seven Metropolitan Areas. These variables are defined in this document. One can replicate the Rental Dynamics tables using this file only. To replicate the CINCH tables, one has to merge this file with data from the 1998, 2002, and 2007 Metropolitan AHS files.

- FORWARD_METRO_98_02_07_WEIGHTS: the program used to create FLCINCHWT.

- BACKWARD_METRO_98_02_07_WEIGHTS: the program used to create BLCINCHWT.

- FORWARD_METRO_TABLE_1: the program used to generate Forward-Looking Table 1.

• FORWARD_METRO_TABLE_2: the program used to generate Forward-Looking Table 2.

• FORWARD_METRO_TABLE_3: the program used to generate Forward-Looking Table 3.

• FORWARD_METRO_TABLE_4: the program used to generate Forward-Looking Table 4.

• BACKWARD_METRO_TABLE_1: the program used to generate Backward-Looking Table 1.

• BACKWARD_METRO_TABLE_2: the program used to generate Backward-Looking Table 2.

• BACKWARD_METRO_TABLE_3: the program used to generate Backward-Looking Table 3.

• BACKWARD_METRO_TABLE_4: the program used to generate Backward-Looking Table 4.

• RENT_DYNAMICS_METRO_98_02_07: the program used to generate the rental dynamics core tables.

The following pages define the variables that were used to generate the CINCH and rental dynamics tables. The CINCH_98_02_07_METRO_DATA file contains these variables. Each of the variables defined below is calculated using variables defined elsewhere. Definitions for SAME, INTLOSS, etc., can be found in the companion document, *Weighting Strategy for 1998-2007 CINCH Analysis*.[1] The companion document also explains how the weights were derived. Definitions for NOINT, OWNRENT, and other variables with IN98_ or IN07_ prefixes can be found in the AHS codebook or the Housing Affordability Data System documentation.[2] The IN98_ and IN07_ prefixes indicate which AHS survey (1998 [or 2002] or 2007) was used for the value of that particular variable.

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[1] Found on the HUD AHS Web site under CINCH files at http://www.huduser.org/datasets/cinch.html.
[2] Found at http://www.huduser.org/intercept.asp?loc=/Datasets/ahs/AHS_Codebook.pdf and at http://www.huduser.org/intercept.asp?loc=/Datasets/hads/HADS_doc.pdf.

CONTROL = Control number

> This is the scrambled control number from the AHS masterfile. It is used to preserve confidentiality and to enable longitudinal matches to earlier files. It is a character variable of 12 spaces in length.

IN07_REUAD = Reason unit got added to sample

IN07_REVREUAD = "a revised" Reason unit got added to sample

> IN07_REVREUAD=IN07_REUAD;
> IF (1 LE IN98_ISTATUS LE 4 AND 3 LE IN07_REUAD LE 11) THEN
> IN07_REVREUAD = 2
>
> IN07_REUAD identifies units added to the sample in 2007, but 106 units also had values for IN05_ISTATUS, which indicates that they were part of the sample in 2005. Discussion with the Census Bureau indicates that the REUAD values for these cases are erroneous. Normally, REUAD would be used to identify additions to the stock, but these erroneous values would lead to double counting, that is, there would be 106 cases identified both as SAMES and as additions. Therefore a revised version of REUAD is needed. The code REVREUAD =2 identifies these units.

BLCINCHWT = Backward-looking CINCH weight
> This is the weight applied to 2007 cases in backward-looking CINCH analysis.
> 00000-99999

FLCINCHWT = Forward-looking CINCH weight
> This is the weight applied to 1998 cases in forward-looking CINCH analysis.
> 00000-99999

IN98 = Observation used in the forward-looking analysis
> 1 = a unit that is part of the 1998 housing stock and is used in the forward-looking analysis. This variable has a missing value for all other cases.

IN07 = Observation used in the backward-looking analysis
> 1 = a unit that is part of the 2007 housing stock and is used in the backward-looking analysis. This variable has a missing value for all other cases.

IN98_WEIGHT = Final 1998 AHS weight based on 1980 Census geography
> 00000-99999

IN07_WEIGHT = Final 2007 AHS weight based on 1980 Census geography
> 00000-99999

FLSTATUS = Forward status = status of a 1998 unit in 2007

    1 = in 1998 stock and in 2007 stock:
        IF SAME=1 THEN FLSTATUS=1

    2 = in 1998 stock but a loss in 2007 due to conversion or merger:
        IF INTLOSS=1 AND (32 LE IN07_NOINT LE 33) THEN FLSTATUS=2

    3 = in 1998 stock but a loss in 2007 due to house or mobile home move out:
        IF INTLOSS=1 AND (IN07_NOINT=31) THEN FLSTATUS=3

    4 = in 1998 stock but a loss in 2007 due to nonresidential use:
        IF INTLOSS=1 AND (IN07_NOINT=12 OR IN07_NOINT=14) THEN
        FLSTATUS=4

    5 = in 1998 stock but a loss in 2007 due to demolition or disaster:
        IF INTLOSS=1 AND (IN07_NOINT=30) THEN FLSTATUS=5

    6 = in 1998 stock but a loss in 2007 due to damage or condemnation:
        IF INTLOSS=1 AND (15 LE IN07_NOINT LE 16) THEN FLSTATUS=6

    7 = in 1998 stock but a loss in 2007 for other reason:
        IF INTLOSS=1 AND ((10 LE IN07_NOINT LE 11) OR IN07_NOINT=13 OR
        IN07_NOINT=17 OR (36 LE IN07_NOINT LE 37)) THEN FLSTATUS=7

BLSTATUS = Backward status = status of a 2007 unit in 1998

    1 = in 2007 stock and in 1998 stock:
        IF SAME=1 THEN BLSTATUS=1

    2 = in 2007 stock but not in 1998 stock; added by conversion or merger:
        IF INTADD=1 AND (6 LE IN07_REVREUAD LE 8) THEN BLSTATUS=2

    3 = in 2007 stock but not in 1998 stock; added by house or mobile home move in:
        IF INTADD=1 AND (IN98_NOINT=13 OR (4 LE IN07_REVREUAD LE 5))
        THEN BLSTATUS=3

    4 = in 2007 stock but not in 1998 stock; added from nonresidential use:
        IF INTADD=1 AND ((IN98_NOINT=12 OR IN98_NOINT=14) OR
        IN07_REVREUAD=9) THEN BLSTATUS=4

    5 = in 2007 stock but not in 1998 stock; added by new construction:
        IF INTNC=1 THEN BLSTATUS=5

    6 = in 2007 stock but not in 1998 stock; added from temporary losses in 1998 stock:
        IF INTADD=1 AND (15 LE IN98_NOINT LE 17) THEN BLSTATUS=6

7 = in 2007 stock but not in 1998 stock; added for other reasons
     IF INTADD=1 AND (IN07_REVREUAD = 10) THEN BLSTATUS=7

The last four variables deal with the concept of rental affordability. Previous rental dynamics studies have classified rents into eight categories based on the ratio of the unit's rent to various income levels. HUD has created a group of data sets called the Housing Affordability Data System (HADS) that provides various types of affordability-related information on AHS units for different survey years. The eight categories are derived from the HADS documentation, and HADS variables are used to define the remaining four variables. Definitions of the variables from the HADS data set are found in *Housing Affordability Data System.*[3]

A unit is considered affordable to the members of a class if the rent of the unit is no greater than 30 percent of the highest monthly income for that class. The eight categories are:

   • Non-market: either no cash rent or a subsidized rent.

   • Extremely low rent (affordable to renters with incomes less than or equal to 30 percent of local area median income).

   • Very low rent (affordable to renters with incomes greater than 30 percent but less than or equal to 50 percent of local area median income).

   • Low rent (affordable to renters with incomes greater than 50 percent but less than or equal to 60 percent of local area median income).

   • Moderate rent (affordable to renters with incomes greater than 60 percent but less than or equal to 80 percent of local area median income).

   • High rent (affordable to renters with incomes greater than 80 percent but less than or equal to 100 percent of local area median income).

   • Very high rent (affordable to renters with incomes greater than 100 percent but less than or equal to 120 percent of local area median income).

   • Extremely high rent (affordable to renters with incomes greater than 120 percent of local area median income).

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[3] Located at http://www.huduser.org/intercept.asp?loc=/Datasets/hads/HADS_doc.pdf.

FLRENT = 1998 rent category

    1 = a non-market rental unit in 1998:
        IF IN98_OWNRENT='2' AND (IN98_TENURE='3' OR IN98_Assisted=1 OR
        IN98_RENT=1) THEN FLRENT=1

    2 = an extremely low-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=1 THEN FLRENT=2

    3 = a very low-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=2 THEN FLRENT=3

    4 = a low-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=3 THEN FLRENT=4

    5 = a moderate-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=4 THEN FLRENT=5

    6 = a high-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=5 THEN FLRENT=6

    7 = a very high-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=6 THEN FLRENT=7

    8 = an extremely high-rent rental unit in 1998:
        IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
        OR IN98_RENT=1) AND IN98_COST07RELAMICAT=7 THEN FLRENT=8

    . = missing

BLRENT = Current year (2007) rent category

    1 = a non-market rental unit in 2007:
        IF IN07_OWNRENT='2' AND (IN07_TENURE='3' OR IN07_Assisted=1 OR
        IN07_RENT=1) THEN BLRENT=1

    2 = an extremely low-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =1 THEN BLRENT=2

3 = a very low-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =2 THEN BLRENT=3

4 = a low-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =3 THEN BLRENT=4

5 = a moderate-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =4 THEN BLRENT=5

6 = a high-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =5 THEN BLRENT=6

7 = a very high-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =6 THEN BLRENT=7

8 = an extremely high-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =7 THEN BLRENT=8

. = missing

FLAFFORD = Forward rental affordability = affordability status in 2007 of 1998 rental unit

1 = a non-market rental unit in 2007:
        IF IN07_OWNRENT='2' AND (IN07_TENURE='3' OR IN07_Assisted=1 OR
        IN07_RENT=1) THEN FLAFFORD=1

2 = an extremely low-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =1 THEN
        FLAFFORD=2

3 = a very low-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =2 THEN
        FLAFFORD=3

4 = a low-rent rental unit in 2007:
        IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1
        OR IN07_RENT=1) AND IN07_COST08RELAMICAT =3 THEN
        FLAFFORD=4

5 = a moderate-rent rental unit in 2007:
      IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1 OR IN07_RENT=1) AND IN07_COST08RELAMICAT =4 THEN FLAFFORD=5

6 = a high-rent rental unit in 2007:
      IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1 OR IN07_RENT=1) AND IN07_COST08RELAMICAT =5 THEN FLAFFORD=6

7 = a very high-rent rental unit in 2007:
      IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1 OR IN07_RENT=1) AND IN07_COST08RELAMICAT =6 THEN FLAFFORD=7

8 = an extremely high-rent rental unit in 2007:
      IF IN07_OWNRENT='2' AND NOT (IN07_TENURE='3' OR IN07_Assisted=1 OR IN07_RENT=1) AND IN07_COST08RELAMICAT =7 THEN FLAFFORD=8

9 = an owner-occupied unit in 2007:
      IF (IN07_OWNRENT='1') THEN FLAFFORD=9

10 = a vacant or seasonal unit in 2007:
      IF (IN07_VACANCY GE 6) OR (IN07_OWNRENT=. AND IN07_VACANCY LE 5) THEN FLAFFORD=10

11 = a unit not in the 2007 stock:
      IF (10 LE IN07_NOINT) THEN FLAFFORD=11

. = missing

BLAFFORD = Backward rental affordability = affordability status in 1998 of a 2007 rental unit

1 = a non-market rental unit in 1998:
      IF IN98_OWNRENT='2' AND (IN98_TENURE='3' OR IN98_Assisted=1 OR IN98_RENT=1) THEN BLAFFORD=1

2 = an extremely low-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1 OR IN98_RENT=1) AND IN98_COST07RELAMICAT=1 THEN BLAFFORD=2

3 = a very low-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
      OR IN98_RENT=1) AND IN98_COST07RELAMICAT=2 THEN
      BLAFFORD=3

4 = a low-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
      OR IN98_RENT=1) AND IN98_COST07RELAMICAT=3 THEN
      BLAFFORD=4

5 = a moderate-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
      OR IN98_RENT=1) AND IN98_COST07RELAMICAT=4 THEN
      BLAFFORD=5

6 = a high-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
      OR IN98_RENT=1) AND IN98_COST07RELAMICAT=5 THEN
      BLAFFORD=6

7 = a very high-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
      OR IN98_RENT=1) AND IN98_COST07RELAMICAT=6 THEN
      BLAFFORD=7

8 = an extremely high-rent rental unit in 1998:
      IF IN98_OWNRENT='2' AND NOT (IN98_TENURE='3' OR IN98_Assisted=1
      OR IN98_RENT=1) AND IN98_COST07RELAMICAT=7 THEN
      BLAFFORD=8

9 = an owner-occupied unit in 1998:
      IF IN98_OWNRENT='1' THEN BLAFFORD=9

10 = a vacant or seasonal unit in 1998:
      IF (IN98_VACANCY GE 6) OR (IN98_OWNRENT=. AND IN98_VACANCY
      LE 5) THEN BLAFFORD=10

11 = a unit added by new construction:
      IF INTNC=1 THEN BLAFFORD=11

12 = a unit not in the 1998 stock but not added through new construction:
      IF INTADD=1 THEN BLAFFORD=12

. = missing