

American Housing Survey

**Listing of Programs and
Variables Used in CINCH and
Rental Dynamics Analysis for
2003 and 2005 American
Housing Surveys**

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Listing of Programs and Variables Used in CINCH and Rental Dynamics Analysis for 2003 and 2005 American Housing Surveys

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

- **CINCH_03_05_DATA:** For each control number, this 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. 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 2003 and 2005 AHS files.
- **FORWARD_WEIGHTS:** the program used to create FLCINCHWT.
- **BACKWARD_WEIGHTS:** the program used to create BLCINCHWT.
- **FORWARD_1:** the program used to generate Forward-looking Table 1.
- **FORWARD_2:** the program used to generate Forward-looking Table 2.
- **FORWARD_3:** the program used to generate Forward-looking Table 3.
- **FORWARD_4:** the program used to generate Forward-looking Table 4.
- **BACKWARD_1:** the program used to generate Backward-looking Table 1.
- **BACKWARD_2:** the program used to generate Backward-looking Table 2.
- **BACKWARD_3:** the program used to generate Backward-looking Table 3.
- **BACKWARD_4:** the program used to generate Backward-looking Table 4.
- **FLOOKING_BLOOKING:** the program used to generate the rental dynamics core tables.

The next six pages define the variables that were used to generate the CINCH and rental dynamic tables. The CINCH_03_05_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 2003-2005 CINCH Analysis*.¹ The companion document also explains how the weights were derived. Definitions for NOINT, OWNRENT, and other variables with IN03_ or IN05_ prefixes can be found in the AHS codebook or the Housing Affordability Data System documentation.² The IN03_ and IN05_ prefixes indicate which AHS survey (2003 or 2005) was used for the value of that particular variable.

¹ Found on the HUD AHS Web site under CINCH files: <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.

Listing of Programs and Variables

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.

BLCINCHWT = Backward-looking CINCH weight

This is the weight applied to 2005 cases in backward-looking CINCH analysis.
00000-99999

FLCINCHWT = Forward-looking CINCH weight

This is the weight applied to 2003 cases in forward-looking CINCH analysis.
00000-99999

IN03 = Observation used in the forward-looking analysis

1 = a unit that is part of the 2003 housing stock and is used in the forward-looking analysis.

This variable has a missing value for all other cases.

IN05 = Observation used in the backward-looking analysis

1 = a unit that is part of the 2005 housing stock and is used in the backward-looking analysis.

This variable has a missing value for all other cases.

IN03_WEIGHT = Final 2003 AHS weight based on 1980 Census geography

00000-99999

IN05_WEIGHT = Final 2005 AHS weight based on 1980 Census geography

00000-99999

IN03_WGT90GEO = Final 2003 AHS weight based on 1990 Census geography

00000-99999

IN05_WGT90GEO = Final 2005 AHS weight based on 1990 Census geography

00000-99999

FLSTATUS = Forward status = status of a 2003 unit in 2005

1 = in 2003 stock and in 2005 stock:

IF SAME=1 THEN FLSTATUS=1

2 = in 2003 stock but a loss in 2005 due to conversion or merger:

IF INTLOSS=1 AND (32 LE IN05_NOINT LE 33) THEN FLSTATUS=2

3 = in 2003 stock but a loss in 2005 due to house or mobile home move out:

IF INTLOSS=1 AND (IN05_NOINT=31) THEN FLSTATUS=3

4 = in 2003 stock but a loss in 2005 due to nonresidential use:

IF INTLOSS=1 AND (IN05_NOINT=12 OR IN05_NOINT=14)
THEN FLSTATUS=4

Listing of Programs and Variables

- 5 = in 2003 stock but a loss in 2005 due to demolition or disaster:
IF INTLOSS=1 AND (IN05_NOINT=30) THEN FLSTATUS=5
- 6 = in 2003 stock but a loss in 2005 due to damage or condemnation:
IF INTLOSS=1 AND (15 LE IN05_NOINT LE 16) THEN FLSTATUS=6
- 7 = in 2003 stock but a loss in 2005 for other reason:
IF INTLOSS=1 AND ((10 LE IN05_NOINT LE 11)
OR IN05_NOINT=13 OR IN05_NOINT=17
OR (36 LE IN05_NOINT LE 39)) THEN FLSTATUS=7

BLSTATUS = Backward status = status of a 2005 unit in 2003

- 1 = in 2005 stock and in 2003 stock:
IF SAME=1 THEN BLSTATUS=1
- 2 = in 2005 stock but not in 2003 stock; added by conversion or merger:
IF INTADD=1 AND (6 LE IN05_REUAD LE 8) THEN BLSTATUS=2
- 3 = in 2005 stock but not in 2003 stock; added by house or mobile home move
in:
IF INTADD=1 AND (IN03_NOINT=13 OR (4 LE IN05_REUAD LE 5))
THEN BLSTATUS=3
- 4 = in 2005 stock but not in 2003 stock; added from nonresidential use:
IF INTADD=1 AND ((IN03_NOINT=12 OR IN03_NOINT=14)
OR IN05_REUAD=9) THEN BLSTATUS=4
- 5 = in 2005 stock but not in 2003 stock; added by new construction:
IF INTNC=1 AND (IN05_REUAD=3 OR (10 LE IN03_NOINT LE 11))
- 6 = in 2005 stock but not in 2003 stock; added by other reason
(includes temporary losses in 2003 stock):
IF INTADD=1 AND ((10 LE IN05_REUAD LE 11)
OR (15 LE IN03_NOINT LE 17)) THEN BLSTATUS=6

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).

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

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- 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).

FLRENT = 2003 rent category

1 = a non-market rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
THEN FLRENT=1
```

2 = an extremely low-rent rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
AND IN03_COST07RELAMICAT=1 THEN FLRENT=2
```

3 = a very low-rent rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
AND IN03_COST07RELAMICAT=2 THEN FLRENT=3
```

4 = a low-rent rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
AND IN03_COST07RELAMICAT=3 THEN FLRENT=4
```

5 = a moderate-rent rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
AND IN03_COST07RELAMICAT=4 THEN FLRENT=5
```

6 = a high-rent rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
AND IN03_COST07RELAMICAT=5 THEN FLRENT=6
```

7 = a very high-rent rental unit in 2003:

```
IF IN03_OWNRENT='2'  
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)  
AND IN03_COST07RELAMICAT=6 THEN FLRENT=7
```

Listing of Programs and Variables

8 = an extremely high-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=7 THEN FLRENT=8
. = missing

BLRENT = Current year (2005) rent category

1 = a non-market rental unit in 2005:
IF IN05_OWNRENT='2'
AND (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
THEN BLRENT=1

2 = an extremely low-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =1 THEN BLRENT=2

3 = a very low-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =2 THEN BLRENT=3

4 = a low-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =3 THEN BLRENT=4

5 = a moderate-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =4 THEN BLRENT=5

6 = a high-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =5 THEN BLRENT=6

7 = a very high-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =6 THEN BLRENT=7

8 = an extremely high-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =7 THEN BLRENT=8
. = missing

Listing of Programs and Variables

FLAFFORD = Forward rental affordability = affordability status in 2005 of 2003 rental unit

- 1 = a non-market rental unit in 2005:
IF IN05_OWNRENT='2'
AND (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
THEN FLAFFORD=1
 - 2 = an extremely low-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =1 THEN FLAFFORD=2
 - 3 = a very low-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =2 THEN FLAFFORD=3
 - 4 = a low-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =3 THEN FLAFFORD=4
 - 5 = a moderate-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =4 THEN FLAFFORD=5
 - 6 = a high-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =5 THEN FLAFFORD=6
 - 7 = a very high-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =6 THEN FLAFFORD=7
 - 8 = an extremely high-rent rental unit in 2005:
IF IN05_OWNRENT='2'
AND NOT (IN05_TENURE='3' OR IN05_Assisted=1 OR IN05_RENT=1)
AND IN05_COST08RELAMICAT =7 THEN FLAFFORD=8
 - 9 = an owner-occupied unit in 2005:
IF (IN05_OWNRENT='1') THEN FLAFFORD=9
 - 10 = a vacant or seasonal unit in 2005:
IF (IN05_VACANCY GE 6) OR (IN05_OWNRENT=.
AND IN05_VACANCY LE 5) THEN FLAFFORD=10
 - 11 = a unit not in the 2005 stock:
IF (10 LE IN05_NOINT) THEN FLAFFORD=11
- . = missing

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BLAFFORD = Backward rental affordability = affordability status in 2003 of a 2005 rental unit

- 1 = a non-market rental unit in 2003:
IF IN03_OWNRENT='2'
AND (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
THEN BLAFFORD=1
- 2 = an extremely low-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=1 THEN BLAFFORD=2
- 3 = a very low-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=2 THEN BLAFFORD=3
- 4 = a low-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=3 THEN BLAFFORD=4
- 5 = a moderate-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=4 THEN BLAFFORD=5
- 6 = a high-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=5 THEN BLAFFORD=6
- 7 = a very high-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=6 THEN BLAFFORD=7
- 8 = an extremely high-rent rental unit in 2003:
IF IN03_OWNRENT='2'
AND NOT (IN03_TENURE='3' OR IN03_Assisted=1 OR IN03_RENT=1)
AND IN03_COST07RELAMICAT=7 THEN BLAFFORD=8
- 9 = an owner-occupied unit in 2003:
IF IN03_OWNRENT='1' THEN BLAFFORD=9
- 10 = a vacant or seasonal unit in 2003:
IF (IN03_VACANCY GE 6) OR (IN03_OWNRENT=.
AND IN03_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 2003 stock but not added through new construction:
IF INTADD=1 THEN BLAFFORD=12
- . = missing