The American Housing Survey and Non-Traditional Mortgage Products

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

The American Housing Survey and Non-Traditional Mortgage Products

Prepared for:

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Prepared by:

Frederick J. Eggers
Donald Bradley

Econometrica, Inc.
Bethesda, Maryland

Contract No. C-CHI-00839
Task F
Order No. CHI-T0002
Project No. 017-002

September 2007

Table of Contents

List of Tables & Figures

The American Housing Survey and Non-Traditional Mortgage Products

Introduction and Conclusions

The Department of Housing and Urban Development (HUD) funds the Census Bureau to conduct the American Housing Survey (AHS), a biennial record of the physical characteristics, quality, and condition of the nation's housing stock and of the characteristics of the households in occupied housing units. Separate AHS surveys provide periodic examinations of the housing stock in 21 major metropolitan areas. In 2006, HUD contracted with Econometrica, Inc. and ICF International to support the production and use of the AHS. As part of that contract, HUD commissioned this study of the mortgage finance component of the AHS. Specifically, HUD asked the Econometrica team to consider changes to the questions on mortgage finance in the AHS with the objective of obtaining more information on the non-traditional mortgage products that have become so prevalent in housing finance.

This report documents what we learned in the course of this assignment and offers our recommendations for possible changes in the AHS. The almost daily headlines about turmoil in the subprime mortgage market attest to the importance of having reliable, current information about non-traditional mortgages. The AHS and the Survey of Consumer Finance (SCF) are the most likely candidates to fill this need. Although the federal government should consider upgrading both surveys, the AHS does have two advantages over the SCF. First, it is a biennial survey while the SCF is triennial. Second, it appears that the time lag between data collection and data availability is somewhat shorter than for the SCF.

Both surveys would have to be revised substantially to gather the required information, and there are uncertainties about the ability of either survey to produce reliable data. Both surveys depend on the ability of borrowers to understand and remember the details of financial transactions. Non-traditional mortgages have features that are complex and there is concern that many borrowers simply do not understand the features. New questions would have to be carefully crafted and thoroughly tested.

This report focuses on whether and how the AHS could be modified to gather data on non-traditional mortgages. Our research and analysis leads us to the following conclusions:

- The AHS already collects extensive information on mortgages. The sample sizes are large and the response rates are high. A HUD-funded study has identified some weaknesses in the AHS data for analyzing housing finance, but the study recommended ways to eliminate or reduce those weaknesses. The study also verified that the AHS has strengths for use in housing finance analysis.

- The AHS is not used widely for research on mortgages and housing finance. HUD should consider ways to highlight the mortgage data in the AHS and ways to make it easier for analysts to use the AHS for housing finance analysis.

- The AHS questions on payment type (mortgage product) are not easy to use; they spotlight some mortgage products that are no longer common, and they do not identify the most current forms of non-traditional mortgages. These questions should be replaced.

- Given the lack of use by researchers and the need to make improvement in the mortgage product questions, HUD and the Census Bureau should consider broader revisions in the mortgage finance segment of the AHS survey. To facilitate a review of the entire segment, we imbedded our suggestions for revisions and new questions into the Q-code.

- While we concentrate on questions related to mortgage product, we also suggest other modifications to the mortgage segment. We recommend making greater effort to have the respondent provide information from his or her mortgage statement and, in concurrence with the HUD-funded study, also recommend greater use of dependent interviewing for some mortgage-related questions. HUD and the Census Bureau might also consider further modifications to gather information on the issues such as the search for mortgage finance and closing costs.

This report is organized as follows:

- Section 1 summarizes the relevant findings from a HUD-funded study of the mortgage finance data produced by the AHS. This study offers a useful starting point for our analysis because it looks at the overall suitability of AHS data for analyzing housing finance issues.

- Section 2 distinguishes between “traditional” and “non-traditional” mortgage products, describes the features of the most common recent non-traditional products, provides data on the importance of these non-traditional products, and discusses why these products are controversial.

- Section 3 presents the results of preparatory research we conducted. It reports on a meeting with researchers and on discussions with HUD analysts. It also summarizes what we learned from looking at the mortgage-related data in the 2005 AHS public use file.

- Section 4 examines how the AHS collects information on mortgage finance, focusing particularly on how it gathers information on types of mortgage products. The section compares the AHS questions with questions in the SCF and the 2001 Residential Finance Survey (RFS).

- Section 5 contains our suggestions for revisions to the current AHS questions and for additional questions related to mortgage characteristics.

- An Appendix contains our analysis of housing finance variables in the 2005 AHS public use file.

Our general conclusions are reported above.

1. HUD-Funded Study: "Analysis of Housing Finance Issues Using the American Housing Survey"

In February 2004, HUD published a study funded by HUD and conducted by Abt Associates of Cambridge, Massachusetts. The study was entitled: *Analysis of Housing Finance Issues Using the American Housing Survey (AHS)*, and was prepared by Ken Lam and Bubul Kaul.[1] This report examines the strengths and weaknesses of the mortgage data produced in the AHS from the perspective of their ability to shed light on the most common research and policy issues in housing finance. As such, it furnishes the broad context in which we examine the narrow question of how to obtain more detail on mortgage products.

The authors list their goals as determining:

1. what types of mortgage market analysis can be supported by the AHS;
2. what areas of the AHS are problematic for mortgage research; and
3. what analysis techniques or changes in the survey could potentially compensate for the problems.[2]

To answer these questions, the authors first examine whether the AHS is consistent with other data sets. They do this by comparing estimates of various housing finance totals or mortgage characteristics derived from the AHS with estimates of the same totals or characteristics derived from other sources. Then the authors look at the reliability of the answers provided by households surveyed in the AHS. This second test draws upon a characteristic of the AHS that distinguishes it from other sources of mortgage information. The AHS is a longitudinal survey, that is, the Census Bureau goes back to the same housing unit every two years. This feature allows analysts to compare answers from different survey years. Generally, researchers use the longitudinal character of the data to answer questions such as, "Has the quality of the unit deteriorated over time?" or "Has the household refinanced its mortgage?" But longitudinal data collection also allows analysts to see if households provide consistent answers to the same question over time. Using this approach, Lam and Kaul compare how households describe the characteristics of the same mortgages in successive surveys.

---

[1] This study is available at the HUD USER website, www.HUDUSER.org, under *publications*.
[2] Lam & Kaul, page v.

Lam and Kaul speak directly to the focus of our study, the "payment plan" characteristics of mortgages. They classify "payment product type" among the AHS variables that they consider unreliable or uncertain, concluding that:

> Payment product types are not identified accurately in the AHS. In general, ARMs are underreported, and the survey instrument is incapable of identifying borrowers with more sophisticated payment product types such as hybrid ARMs and two-step mortgages. The share of fixed-rate mortgages is generally over estimated, although when measured as a percent of the overall share, the magnitude of the discrepancy is smaller than for ARMs. Thus, the AHS should not be used for analyses of mortgage product choice, and analysts should use caution when including mortgages other than fixed rate mortgages in other types of analyses.

Lam and Kaul criticize the AHS data on payment plan (or mortgage product) on two grounds. First, they observe that the AHS cannot identify the non-traditional mortgage products. Our report is a first step by HUD to correct this deficiency. But, in fairness to the AHS, it should be noted that no other public data source can identify non-traditional mortgages.

Second, Lam and Kaul report that the AHS overestimates the percentage of mortgages that are fixed-rate, self-amortizing mortgages and underestimates the percentage of mortgages that are adjustable-rate mortgages (ARMs). This conclusion is based on comparisons of data on mortgage products by year of origination and by type of mortgage. They compare AHS data on FHA mortgages originated from 1989 to 2000 with data from FHA, distinguishing between home-purchase mortgages and refinance mortgages. They also compare AHS data from 1992 to 2000 on conventional home-purchase mortgages, distinguishing between conforming and jumbo loans, with data from the Mortgage Interest Rate Survey (MIRS) produced by the Federal Housing Finance Board.

With respect to these comparisons, Lam and Kaul report the following additional information:

- The AHS underestimates the number of refinances and the number of jumbo loans. As a consequence, the sample sizes for the comparisons of product types for FHA refinances and conventional jumbos are small.

- Over the 1989-2000 period, the AHS recorded 2 to 6 percent of FHA purchase mortgages as "other," even though almost all FHA-insured loans during this period were either fixed-rate or ARMs. This suggests that the AHS questionnaire sometimes misclassifies product types. Lam and Kaul point out that this could also result from the AHS misclassifying loans as FHA vs. conventional.

- The MIRS has been criticized for misclassifying loans by product type. Specifically, the MIRS was found to overestimate fixed-rate mortgages.[3] If so, then Lam and Kaul conclude that they have underestimated the bias in the AHS, that is, the AHS overestimates fixed-rate mortgages more than is shown by their tables.

Lam and Kaul based their comparisons on a subset of the data in the AHS, namely, mortgages originated in specific years. Table 1 compares the data from the 2001 AHS on the entire stock of primary mortgages with the same data from the 2001 RFS. The two surveys count approximately the same number of primary mortgages, but the AHS estimates a much higher percentage of fixed-rate, self-amortizing mortgages.

Table 1: Comparison of Primary Mortgage Products, AHS vs. RFS[4]

	2001 AHS	2001 RFS
Total Primary Mortgages on owner-occupied housing (in000s)	43,379	43,636
Fixed payment, self-amortizing	91.0%	75.4%
Adjustable rate mortgage	5.0%	11.7%
All other	4.0%	12.9%

Despite their concern about the ability of the AHS questionnaire to correctly identify mortgage product, Lam and Kaul find that AHS respondents provide consistent answers across surveys to the questions related to mortgage type. Mortgages reported as fixed-rate in one year are typically reported as fixed-rate in subsequent years.[5]

In addition to their findings with respect to the mortgage-product questions, the Lam and Kaul study reveals important strengths and weaknesses in the AHS mortgage data that need to be kept in mind when addressing the mortgage-product deficiencies. The conclusions in their report that are most relevant to our work are:

- The AHS underestimates the number of refinances, even after the addition in the 2001 survey of a new variable on loan purpose. The authors speculate that: "…the [AHS] questionnaire does not provide a clear guidance to the homeowners regarding the distinction between lump-sum home equity loans and mortgages that are used to refinance an existing loan in order to take out housing equity (so-called cash-out refinances). As a result, some survey respondents might have incorrectly classified their refinance mortgages as home equity loans."[6] The authors also note that they could only observe the effectiveness of the loan

[3] Lam and Kaul report that the Federal Housing Finance Board has taken steps to reduce errors in reporting. Lam & Kaul, p. 68.
[4] Table 1 uses information from the 2001 AHS Report. The Report uses weights based on the 1990 census, while the RFS uses weights based on the 2000 census.
[5] Consistency was higher for mortgages classified as FHA-insured, ranging from 97 to 86 percent, than for mortgages classified as conventional, where consistency ranged from 86 to 77 percent.
[6] Lam & Kaul, pp. 102-103.

purpose question for 2001, and its disappointing performance may have been the result of the high level of refinancing in 2001.

- The AHS underestimates the percentage of conventional loans that are jumbo loans. The authors attribute this to some combination of respondents underestimating their original mortgage amount or a higher level of non-response among jumbo borrowers.

- For most variables, between 80 and 90 percent of AHS respondents report mortgage information consistently over time.

- The AHS does a good job of reporting the volume of recent originations for home purchase. However, the authors note that researchers should adjust the AHS numbers to account for mortgages that may have terminated between when they were originated and when the AHS survey was conducted.

At the end of their report, Lam and Kaul recommend additional research in certain areas and make specific recommendations for modifications to the AHS questionnaire. While only their third recommendation deals explicitly with mortgage product, we present their complete set of recommendations below because we believe that other recommendations will be relevant to our task. The Lam and Kaul recommendations were:[7]

- Questions should be added to identify the number of refinances that have taken place during the interval since the last survey. The home equity questions also should be changed to ask about lines of credit rather than "home equity loans," since there is no real distinction between lump-sum home equity loans and standard mortgages.

- In the current AHS questionnaire, for homeowners who obtained the mortgage the same year the home was purchased, the survey does not obtain the year of loan origination from the respondents; the origination year information can only be retrieved from the WHNGET variable in the "purchase" module of the AHS survey, which reports the year when the house was obtained. For other homeowners, the survey asks explicitly what year the owner obtained the mortgage and the information is stored in the YRMOR variable. HUD and the Census Bureau should consider asking all homeowners the month and year of mortgage origination explicitly and storing the information in one variable.

- HUD and the Census Bureau should evaluate changes to specific questions that might elicit more accurate reporting of mortgage payment product types. One of the issues to be considered is the cost-effectiveness of making such changes, given the rapid evolution of mortgage products.

[7] Ibid, p. 111.

- New questions should also be considered to collect information on mortgage payment status (delinquency and default) and the termination of mortgages that were previously in place.

- HUD and the Census Bureau should consider asking an explicit question on the unpaid principal balance (UPB). UPB is useful for estimating the current home equity and LTV of each homeowner. Currently, UPB is not collected in the AHS. Users can calculate an estimate using information pertaining to interest rate, original amount and mortgage term. Given the lack of details on adjustment terms for non-fixed rate loans and the instability of the interest rates and mortgage amounts reported across waves of the survey, this method is not likely to yield reliable UPB estimates. Although some borrowers may not be able to report the UPB accurately if asked in the survey, the self-reported estimates can nonetheless provide an internal validity check against the user-calculated amounts.

- Given our findings on the instability of several key variables over time, we recommend that the "dependent interviewing" technique be extended to include mortgage insurance type, payment plan, interest rate (of fixed-rate loans), and principal payment amount. This technique is used to avoid repeating questions to the household if the answer should not have changed since the previous survey. For example, the first-time buyer status question was not asked in the 1999 survey if the same household occupied the housing unit and a valid answer had been obtained in a previous survey.

2. Non-Traditional Mortgage Products

This section has four subsections:

- Section 2.1 describes how the AHS currently reports data on mortgage products and compares its reporting to that of the RFS and other sources.

- Section 2.2 explains how non-traditional mortgages differ from traditional mortgages in one or both of two ways: how the mortgages are underwritten and their terms. It then discusses the intersection between the terms—non-traditional, subprime, and non-conforming—and the confusion that sometimes results from the interplay between these concepts. Finally, the subsection lists the most common forms of mortgages that are considered non-traditional because of their terms.

- Section 2.3 provides evidence on the volume of non-traditional mortgages.

- Section 2.4 explores the controversy associated with these mortgage products.

2.1. Presentation of Data on Mortgage Products in the AHS

As of July 2007, HUD and the Census Bureau had released 22 AHS national reports covering the years between 1973 and 2005. As the mortgage market evolved over this period, the AHS has gathered more information on the financing of owner-occupied housing and the formats of the reports have changed to incorporate the new information and the changing nature of housing finance.

In the format used since the 1985 AHS report, Table 3-15, Mortgage Characteristics – Owner Occupied Units, presents most of the mortgage-related information. In the author's opinion, this is one of the most difficult tables to understand in the entire AHS publication, because it presents counts of mortgaged owner-occupied properties in several different combinations before focusing on the characteristics of various types of mortgages. Table 2 takes data from the first column of Table 3-15 in the 2005 National AHS report and shows how the AHS identifies the class of primary mortgages for which it reports characteristics. Table 2 also presents information on mortgage products in 2005.

Table 2: AHS Mortgage Data from 2005 (all counts in 000s)

	Mortgage Status		
1	Owner-occupied units	74,931	100.0%
2	No mortgage	24,776	33.1%
3	Reverse mortgage	66	0.1%
4	Line of credit not reported	1,694	2.3%
5	Regular mortgage and/or home-equity mortgage	48,394	64.6%
6	Regular and no home-equity lump sum	41,694	55.6%
7	Regular and home-equity lump sum	2,958	3.9%
8	Home-equity lump sum, no regular	1,427	1.9%
9	Home-equity line of credit only	2,315	3.1%
10	Regular mortgage and/or home-equity lump sum	46,079	61.5%
	Payment Plan of Primary Mortgage		**Percent of row 10 minus row 18**
11	Fixed payment, self-amortizing	37,392	90.0%
12	Adjustable rate mortgage	2,441	5.9%
13	Adjustable term mortgage	160	0.4%
14	Graduated payment mortgage	517	1.2%
15	Balloon	518	1.2%
16	Other	24	0.1%
17	Combination of the above	474	1.1%
18	Not reported	4,553	

Of 74.9 million owner-occupied households in 2005 (row 1), the AHS reports that 66,000 have reverse mortgages (row 3).[8] The AHS does not consider reverse mortgages or

[8] A reverse mortgage is an arrangement by which the issuer of the mortgage agrees to pay the homeowner money either in periodic payments or when the homeowner chooses to make a draw on the loan. The

lump-sum home equity loans to be regular mortgages. The 2005 AHS estimates that 24.8 million own their properties free and clear (row 2) and that 48.4 million have some type of mortgage on the property (row 5). Because some households reported no regular mortgage and no lump-sum home equity loan *but* did not answer the questions about having a home equity line of credit, the AHS cannot determine the "mortgaged" status of almost 1.7 million owner-occupied households (row 4).

The AHS considers a home to be "mortgaged" if it has one or more of the following: a regular mortgage, a lump-sum home equity loan, or a home equity line of credit. This is row 5, which is the sum of rows 6 through 9 and, except for rounding, also equals row 1 minus rows 2, 3, and 4. The AHS considers a home to have a "primary mortgage" if it has one or both of the following: a regular mortgage or a lump-sum home equity loan. This is row 10, which is the sum of rows 6, 7, and 8. The AHS considers a home whose only lien is a home equity line of credit to be "mortgaged" but not to have a primary mortgage.

The AHS does not use the term "mortgage product"; instead it characterizes primary (and secondary) mortgages in terms of their "payment plans." The AHS uses seven categories (rows 11 through 17) and "not reported" to describe payment plans. The percentage distribution of rows 11 through 17 is similar to the distribution for 2001 in Table 1 when rows 13 through 17 are aggregated into "all other."

The categories used to describe the payment plans are interesting for several reasons:

- The AHS reports that 1.2 percent of all primary mortgages had balloon payments in 2005. The percentage for 2001 was a slightly smaller 0.9 percent in the 2001 AHS but was 4.3 percent in the 2001 RFS. This suggests that the AHS has difficulty identifying mortgages with balloon payments.

- The AHS presents data on two mortgage products—adjustable term mortgage and graduated payment mortgages—that are rare today. Combined, the two categories account for only 1.6 percent of all primary mortgages in existence in 2005. Since 1985 when this format was introduced, these two categories have never accounted for more than 2.3 percent (the 2001 proportion) of primary mortgages. The 2001 RFS does not include either category in its reporting of mortgage characteristics. The AHS categories appear to be carry-overs from the early 1980s when these products were somewhat more common.

- Even as late as 2005, the sum of "other" and "combination of above" represented only 1.2 percent of all existing mortgages. In the 2001 AHS, these categories combined represented 0.8 percent of all existing mortgages. In 2001, rows 13, 14, 16, and 17 accounted for 3.1 percent of all existing mortgages; the comparable

homeowner is not required to make payments on either the interest or the principal and the interest accrues until the homeowner dies or sells the property. At the sale, the issuer is paid the principal and accrued interest from the sale of the property.

number from the RFS was 8.6 percent. This is another indication that the AHS has difficulty identifying mortgages with unusual terms.

The 2001 RFS defines "mortgaged" and "first mortgages" differently than the AHS. It includes units with reverse mortgages among "mortgaged" properties and it includes units with only home equity lines of credit as having primary mortgages. The differences in definitions have only a small impact on counts. Among the 43.6 million owner-occupied properties with mortgages or installment debt, the 2001 RFS found only 11,000 reverse mortgages and only 1.7 million properties with only home equity lines of credit (3.9 percent).

The 2001 RFS categorizes mortgages by type into five classes: fixed-rate, fully amortizing; fixed-rate with short-term balloon payments; ARMs; reverse mortgages; and other. For each type, the RFS reports the following characteristics: term, current interest rate, presence or absence of a buydown, and whether the loan permits negative amortization. It also records whether there is an option to convert from fixed-rate to ARM or from ARM to fixed-rate and, for ARMs, it lists the index used to adjust the interest rate, the margin over the index, the frequency of adjustment, the per-adjustment cap, and the over-the-lifetime cap.

The Federal Reserve Board (Fed) funds a Survey of Consumer Finance (SCF) that collects extensive information on all the assets and liabilities of a sample of households. Currently the Fed sponsors a new survey every three years and publishes the results in an article in the Federal Reserve Bulletin (FRB). The SCF records information about the features of all mortgage loans, but this information is not reported in the FRB article. Like the AHS and the RFS, the microdata are available to researchers after all information that could identify individual respondents has been removed.

2.2. Non-Traditional Mortgages

A mortgage can be "non-traditional" either because of the way it is underwritten or because of its features. In recent years, some lenders have offered mortgages with simplified or almost non-existent underwriting. These "low-doc" or "no-doc" loans appeal to borrowers who are in a hurry, who have income that is difficult to verify, who have other debts that would normally preclude a mortgage loan, or who do not want to reveal their income or net worth. The recent problems in the subprime market have greatly reduced the ability of lenders to package these mortgages and sell them in the secondary market. For at least the foreseeable future, "low-doc" and "no-doc" loans are likely to be scarce. Nevertheless, we will include these loans under the "non-traditional" rubric.

With respect to the features of a loan, a "non-traditional" mortgage, for the purposes of this paper, will include any normally-underwritten mortgage other than (a) a fixed-rate, self-amortizing mortgage; (b) a fixed-rate, short-term mortgage with a balloon payment; and (c) a "simple" ARM. In this context, "simple" means having a set of rules that determine the interest rate used to calculate *every* payment based on an index, a margin, an agreed-upon frequency of adjustment, a per-period cap, and a lifetime cap.[9]

In the mortgage-related literature, other terms appear that overlap with non-traditional or are synonymous with non-traditional. "Exotic" and "alternative" are used synonymously with non-traditional. Non-traditional mortgages frequently have features that make them ineligible for purchase by Fannie Mae and Freddie Mac, and therefore they are often "non-conforming." But ARMs and fixed-rate mortgages can also be non-conforming if, at origination, their principal balance exceeds the conforming loan limit. For this reason, the term "non-prime" is sometimes used for mortgages that are non-conforming for reasons other than their principal balance. "Non-prime" is synonymous with "non-traditional" as defined in this paper.

Some analysts use "subprime" in the same sense as "non-prime." In our opinion, "subprime" is best reserved for mortgages that present higher risk either because of reduced underwriting, unusual features, or the lower credit worthiness of the borrowers. There is certainly a substantial overlap between "non-traditional" and subprime, since some features of non-traditional mortgages can create higher risk of default. Also, subprime lenders frequently market loans with unusual features. However, so-called type-B or type-C loans can have standard underwriting and standard features and still be subprime because of the lower credit scores of the borrowers.

Focusing on the features of the loan, three types of non-traditional mortgages have become popular with both lenders and borrowers.[10]

> Interest-only mortgages: For a specified number of years, the borrower pays only the interest on the mortgage. Then the mortgage becomes fully-amortizing over the remainder of the term. This structure produces lower payments in the first period and then elevated payments in the second period.
>
> Hybrid ARM: For an initial period, the borrower pays a fixed, below-market rate of interest. After the initial period, the mortgage becomes an ARM with a margin high enough to compensate the lender for the below-market rate in the initial period. (These are also called two-step mortgages.)
>
> Option ARM: An option ARM has three distinguishing features: an initial, below-market interest rate (a buydown); a provision that allows the borrower to determine what payment to make each month (the option); and the ability to add to the outstanding balance by making a payment less than the amount of the

[9] The caps may be unlimited.
[10] Fuller discussion of these mortgage products are provided by the Center for Responsible Lending (see http://www.responsiblelending.org/glossary.html) and the Mortgage Professor (see http://www.mtgprofessor.com/Tutorials2/interest_only.htm, http://www.mtgprofessor.com/glossary.htm, and http://www.mtgprofessor.com/Tutorials2/option_arm_tutorial.htm). The Center for Responsible Lending calls the hybrid ARM an exploding ARM.

accrued interest (negative amortization). After some initial period, the loan becomes a fully amortizing ARM.

A distinguishing feature of all three of these non-traditional mortgage products is that the borrower faces two payment regimes: an initial regime with low payments and a second regime where payments increase to fully amortize the loan and to compensate the lender for the cost of capital and the riskiness of the loan. In the interest-only and hybrid loan, the payments remain the same in the initial period; in the option ARM, the borrower gets to determine the payments in the initial period. The length of this initial period can vary. Typically, in interest-only loans, the interest-only period lasts three or five years. Hybrid ARMs include the 2/28 mortgage with a below-market fixed rate in the first two years followed by payments based on an index interest rate in the remaining 28 years. Other combinations of initial and second terms are common.[11] Option ARMs are often recast after 5 or 10 years.

For each of the three products, the ARM portion of individual mortgages can differ in terms of index, margin, and caps in the same way that simple ARMs can differ from one another.

Any of these three types can be combined with reduced underwriting requirements. Sometimes the loans contain a prepayment penalty, that is, a provision requiring the borrower to provide a stated amount of compensation to the lender if the borrower terminates the loan prior to some predetermined period.

There is another recent mortgage origination practice that HUD might want to track with the AHS, although it does not involve "non-traditional" mortgage products. Typically with conventional (non-FHA and non-VA) mortgages, borrowers must pay for privately provided mortgage insurance if the loan-to-value ratio of the mortgage exceeds 80 percent. To enable borrowers to avoid having to pay mortgage insurance, lenders have given them the alternative of originating two mortgages—a primary mortgage covering 80 percent of the value of the property and a secondary mortgage covering the difference between the actual downpayment and 20 percent of the value of the property.

2.3. Volume of Non-Traditional Mortgages

Non-traditional mortgages are both a recent and a fast-growing phenomenon. The 2001 RFS collected data on 16,929 owner-occupied properties. Of the properties with mortgages, none had mortgages with all three features of an option ARM—namely, a variable interest rate, a buydown, and negative amortization. Yet, according to an article in the November 29, 2005, *Wall Street Journal*, option ARMS accounted for 30 percent of jumbo mortgages in the summer of 2005.

[11] Jack Gutentag, "the Mortgage Professor," says that "hybrid ARM" is a term generally applied to a mortgage with an initial period of at least three years.

There are no publicly available data series on the number of interest-only, hybrid ARMs, and option ARMs originated in recent years. None of the regular data bases used for mortgage research, including the AHS, collects the information needed to identify these products. Apparently, the only sources of information are private organizations that compile data gathered from lenders and other industry sources and sell information to subscribers. The two most frequently cited sources are *Inside Mortgage Finance* and *First American Loan Performance.* Table 3 presents data from the June 15, 2007, issue of *Inside Mortgage Finance*.

Table 3: Recent Volume of Non-Traditional Mortgages (dollars in billions)

	2004	2005	2006	1st Qtr 2007
Total Originations	$2,920.0	$3,120.0	$2,980.0	$680.0
Non-traditional products	$365.0	$866.0	$958.0	$239.0
All Interest-only	$60.0	$481.0	$526.0	$149.0
Interest-only fixed rate	$55.0	$418.0	$387.0	$100.0
Interest-only ARMs	$5.0	$63.0	$139.0	$49.0
Option ARMs	$145.0	$280.0	$255.0	$43.0
40-year balloon	$0.0	$10.0	$90.0	$22.0
Other Alt-A	$160.0	$95.0	$87.0	$25.0
Non-traditional share of all originations	12.5%	27.8%	32.1%	35.1%

Despite all the concern about mortgage underwriting, the non-traditional share has continued to grow into 2007. While total originations fell in dollar terms between 2005 and 2006, the non-traditional share increased substantially and only the option ARMs and Other Alt-A products had a lower dollar volume of originations in 2006 than in 2005. This decline in option ARMs continued into 2007, whereas Other Alt-A appeared to be rebounding somewhat in the first quarter of 2007.[12] The volume of interest-only mortgages has increased substantially over the period and the increase continued into 2007. However, the mix appears to be changing so that ARMs are claiming a larger share of the interest-only mortgages.

2.4. The Controversy Surrounding Non-Traditional Mortgage Products

Since we began work on this project, hardly a day has gone by without a newspaper headline dealing with problems in the mortgage market. During the days in which we drafted this report, central banks around the world have been responding to liquidity concerns that ultimately link back to investments in American mortgages. Media attention has been focused primarily on subprime mortgages, but the underlying concern has been the default rate among subprime mortgages. As this section shows, non-traditional mortgage products have features that create increased risk of mortgage default.

[12] Other Alt-A are mortgages whose borrowers have slightly less than the usual acceptable credit rating or who have elected for less than a fully documented borrower underwriting.

Critics of non-traditional mortgages focus on three potential sources of trouble, which are clearly interrelated:

- Critics maintain that it is difficult for consumers to understand how these products work and the risks involved, and that lenders—either through poor customer service or deliberate exploitation of clients—have failed to provide borrowers with the information needed to make sound choices.[13]

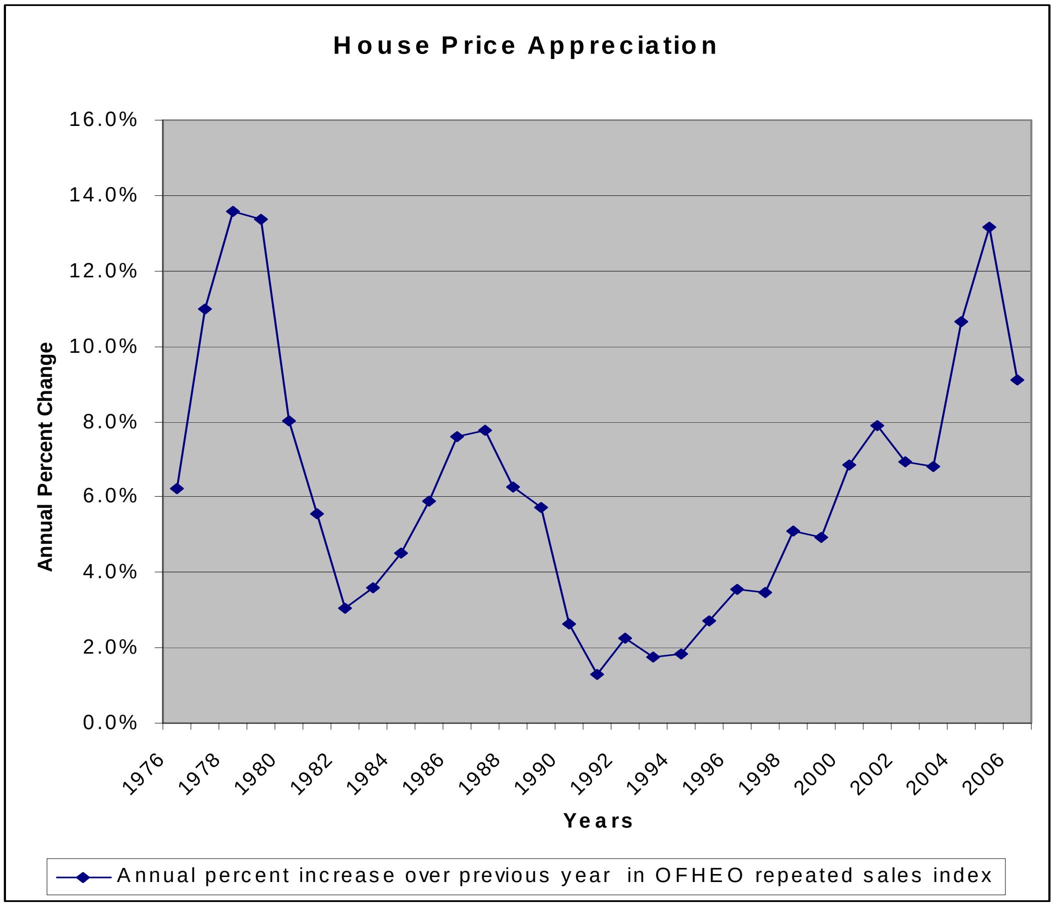
- The shift between payment regimes eventually results in substantial payment shock, that is, in a large increase in the regular mortgage payment. A large proportion of borrowers may not be able to handle the increased payments that result from delayed or negative amortization and the increase in interest rates.

- Borrowers (and investors in these mortgages) have assumed that house price appreciation will enable borrowers to escape payment shock and avoid foreclosure by refinancing. This assumption seems wildly optimistic in 2007.

With respect to the last point, non-traditional products came into prominence during a period of rapidly rising house prices, and the problems with these loans became headline material when housing prices stopped rising. Figure 1 presents data on housing price appreciation from the series produced by the Office of Federal Housing Enterprise Oversight.

[13] See Ren S. Essene and William Apgar, *Understanding Mortgage Market Behavior: Creating Good Mortgage Options for All Americans*, Joint Center for Housing Studies, Harvard University, April 25, 2007. Also see discussion of these mortgage products on the websites of the Center for Responsible Lending (http://www.responsiblelending.org/glossary.html) and the Mortgage Professor (http://www.mtgprofessor.com).

Figure 1: Trends in House Price Appreciation



The high rate of usage of non-traditional products in subprime lending has heightened the controversy surrounding these instruments. The following excerpts illustrate the problems associated with non-traditional mortgages used in subprime lending.

From a speech by Federal Reserve Chairman Ben S. Bernanke at the Federal Reserve Bank of Chicago's 43rd Annual Conference on Bank Structure and Competition, Chicago, May 17, 2007:

> In general, mortgage credit quality has been very solid in recent years. However, that statement is no longer true of subprime mortgages with adjustable interest rates, which currently account for about two-thirds of subprime first-lien mortgages or about 9 percent of all first-lien mortgages outstanding. For these mortgages, the rate of serious delinquencies—corresponding to mortgages in foreclosure or with payments ninety days or more overdue—rose sharply during 2006 and recently stood at about 11 percent, about double the recent low seen in mid-2005. The rate of serious delinquencies has also risen somewhat among some types of near-prime mortgages, although the rate in that category remains much lower than the rate in the subprime market. The rise in delinquencies has begun to show through to foreclosures. In the fourth quarter of 2006, about 310,000 foreclosure proceedings were initiated, whereas for the preceding two years the

quarterly average was roughly 230,000. Subprime mortgages accounted for more than half of the foreclosures started in the fourth quarter….

The sharp rise in serious delinquencies among subprime adjustable-rate mortgages (ARMs) has multiple causes. "Seasoned" mortgages—mortgages that borrowers have paid on for several years—tend to have higher delinquency rates. That fact, together with the moderation in economic growth, would have been expected to produce some deterioration in credit quality from the exceptionally strong levels seen a few years ago. But other factors, too, have been at work. After rising at an annual rate of nearly 9 percent from 2000 through 2005, house prices have decelerated, even falling in some markets. At the same time, interest rates on both fixed- and adjustable-rate mortgage loans moved upward, reaching multi-year highs in mid-2006. Some subprime borrowers with ARMs, who may have counted on refinancing before their payments rose, may not have had enough home equity to qualify for a new loan given the sluggishness in house prices. In addition, some owners with little equity may have walked away from their properties, especially owner-investors who do not occupy the home and thus have little attachment to it beyond purely financial considerations. Regional economic problems have played a role as well; for example, some of the states with the highest delinquency and foreclosure rates are among those most hard-hit by job cuts in the auto industry.

The practices of some mortgage originators have also contributed to the problems in the subprime sector. As the underlying pace of mortgage originations began to slow, but with investor demand for securities with high yields still strong, some lenders evidently loosened underwriting standards. So-called risk-layering—combining weak borrower credit histories with other risk factors, such as incomplete income documentation or very high cumulative loan-to-value ratios—became more common. These looser standards were likely an important source of the pronounced rise in "early payment defaults"—defaults occurring within a few months of origination—among subprime ARMs, especially those originated in 2006.

Investors normally have the right to put early-payment-default loans back to the originator, and one might expect such provisions to exert some discipline on the underwriting process. However, in the most recent episode, some originators had little capital at stake and did not meet their buy-back obligations after the sharp rise in delinquencies. Intense competition for subprime mortgage business—in part the result of the excess capacity in the lending industry left over from the refinancing boom earlier in the decade—may also have led to a weakening of standards. In sum, some misalignment of incentives, together with a highly competitive lending environment and, perhaps, the fact that industry experience with subprime mortgage lending is relatively short, likely compromised the quality of underwriting.

From remarks by Federal Reserve Chairman Ben S. Bernanke to the 2007 International Monetary Conference, Cape Town, South Africa, via satellite, June 5, 2007:

> Recent developments in the subprime mortgage market add somewhat to the usual uncertainty in forecasting housing demand. Subprime mortgage borrowing nearly tripled during the housing boom years of 2004 and 2005. But decelerating house prices, higher interest rates, and slower economic growth have contributed to an increased rate of delinquency among subprime borrowers. This increase has occurred almost entirely among borrowers with adjustable-rate mortgages; delinquency rates for fixed-rate subprime mortgages have remained generally stable. Some of the increased difficulties now being experienced by subprime borrowers are likely the result of an earlier loosening of underwriting standards, as evidenced by the pronounced rise in 2006 in “early payment defaults”—defaults occurring within a few months of mortgage origination. All told, the rate of serious delinquencies for subprime mortgages with adjustable interest rates—corresponding to mortgages in the foreclosure process or with payments ninety or more days overdue—has risen to about 12 percent, roughly double the recent low seen in mid-2005. The rate of serious delinquencies has also risen somewhat among some types of near-prime mortgages, although the delinquency rates in those categories remain much lower than the rate in the subprime market….
>
> As a consequence of these developments, investors are now scrutinizing nonprime loans more carefully, and lenders in turn have tightened up their underwriting. Risk premiums on indexes of credit default swaps for subprime mortgage-backed securities (MBS) began to widen sharply late last year, especially for those on pools of mortgages originated in 2006. Credit spreads on new subprime MBS have also risen. Respondents to the Senior Loan Officer Opinion Survey in April indicated a substantial net tightening of standards for subprime mortgages.
>
> Tighter lending standards in the subprime mortgage market—together with the possibility that the well-publicized problems in this market may dissuade potentially eligible borrowers from applying—will serve to restrain housing demand, although the magnitude of these effects is difficult to quantify. Subprime and near-prime mortgage originations rose sharply in 2004 and 2005 and likely accounted for a large share of the increase in the number of home sales over that period. However, originations of nonprime mortgages to purchase homes appear to have peaked in late 2005 and declined substantially since then, and by more (even in absolute terms) than prime mortgage originations. Thus, some part of the effect on housing demand of the retrenchment in the subprime market has likely already been felt. Moreover, indicators such as the gross issuance of new subprime and near-prime MBS suggest that the supply of nonprime mortgage credit, though reduced, has by no means evaporated. That said, the tightening of terms and standards now in train may well lead to some further contraction in nonprime originations in the period ahead. We are also likely to see further increases in delinquencies and foreclosures this year and next as many subprime adjustable-rate loans face interest-rate resets.

While the public statements of Chairman Bernacke are directed to the subprime market, they attest to the importance of being able to track non-traditional mortgage lending.

3. Background Research on AHS Mortgage Variables

The first subsection describes what we learned from a meeting with housing finance researchers and from discussions with HUD analysts. The second subsection summarizes what we learned from looking at the mortgage-related data in the 2005 AHS public use file (PUF). The Appendix contains the complete results from this analysis.

3.1. Discussions with Researchers

On May 30, 2007, we held a meeting at the end of the annual meetings of the American Urban Economics and Real Estate Association (AUEREA) with analysts who are or have been active in analysis of mortgage finance issues. In addition to the Econometrica Team, the attendees were:

Michael Carliner, National Association of Home Builders (retired)
Paul Emrath, National Association of Home Builders
John Fischer, Freddie Mac
Michael Lacour-Little, University of California at Fullerton
Anthony Pennington-Cross, Marquette University
Roberto Quercia, University of North Carolina
Michael Staten, George Washington University
Scott Susin, Bureau of the Census
David A. Vandenbroucke, Department of Housing and Urban Development
Anthony Yezer, George Washington University

The most surprising discovery was how little these analysts use the AHS for studying trends and behavior in the mortgage market. With the exception of individuals from the Census Bureau, HUD, and National Association of Home Builders, only Anthony Yezer had tried to use the mortgage variables in the AHS, and he indicated that he found the AHS difficult to use for these purposes.

In general, the academics at this meeting were pessimistic about being able to revise the AHS to identify non-traditional mortgage products. Their pessimism arose from two concerns. First, they thought that the AHS data-collection methodology was not well suited to achieving this result. The majority of AHS interviews are computer-assisted, telephone interviews and the academics thought that in-person interviews were more conducive to gathering useful information on mortgage characteristics. They also expressed doubts about the respondent having sufficient knowledge to answer these questions, since the Census Bureau normally interviews any adult member of the household. Apparently the academics were unaware that the AHS specifically asks to talk to a person knowledgeable about the mortgage or mortgages for that portion of the questionnaire.

Second, the academics believe that it would be very difficult to phrase questions that would elicit reliable answers even from respondents who were involved in obtaining the mortgage. The features that are needed to identify non-traditional mortgages, such as interest only, negative amortization, and prepayment penalties, are often not understood by the borrowers. Even a condition as straightforward as whether the borrower has the option to pay more or less than the scheduled payment poses difficulties in phrasing questions that will produce accurate answers.

Participants in the meeting expressed interest in obtaining information on such questions as what type of entity originated the mortgage, what type of entity services the mortgage, what were the closing costs, did the loan find the borrowers (i.e., did the originator seek out the homeowner), when do the payments reset, and the remaining principal balance. In general, they thought it would not be feasible to obtain reliable answers to such questions.

Anthony Yezer recommended that the AHS consider adopting the questions used in the Survey of Consumer Finance (SCF).

Separately, the Econometric Team met with William Reeder of HUD on June 27, 2007. Dr. Reeder had very definite ideas on what types of mortgage products he would like the AHS to be able to identify. Specifically, he would like to distinguish among the following types:

- Fixed rate 30-year self amortizing.
- Short-term mortgages with balloon payments.
- Standard ARMs.
- Hybrid ARMs.
- Option ARMs.
- Interest-only mortgages.
- 40-year term mortgages.

He would also like to distinguish mortgages by the level of documentation (Alt-A loans) and the credit worthiness of the borrower (type B & C loans), and to be able to identify cases where borrowers substitute a second mortgage for mortgage insurance. Reeder realized that the AHS may not be able to provide this information. He pointed out that much of this information could only be obtained on recently originated mortgages, because otherwise the respondent may not have sufficient recall to answer the questions accurately.

Reeder provided an interesting idea. He suggested following up on mortgages over time to see if the borrower experiences any “surprises” in the mortgage terms.

By telephone, Fred Eggers spoke with Paul Manchester, Ian Keith, and Randall Scheessele. Manchester provided information about the involvement of Government Sponsored Enterprises (GSEs) with non-traditional mortgages. Both Fannie Mae and Freddie Mac purchase private-label MBSs backed by subprime mortgages, and both agencies purchased low-documentation whole loans. Manchester indicated that the GSEs needed to tap into this market to meet their housing goals. Keith said that HUD's GSE monitoring staff generally uses GSE data or Home Mortgage Disclosure Act (HMDA) data. Keith has not used the AHS for GSE work. Scheessele also said that he mainly uses HMDA data for his subprime work, but he is using AHS data to study the financing patterns of first-time homeowners. Scheessele felt that the limitations with the AHS are no greater than those of other data sets.

3.2. Review of Mortgage-Related Data from the 2005 AHS Public Use File

We identified every AHS variable that relates to either the number of mortgages or the characteristics of first mortgages, and ran frequency distribution on these variables from the 2005 public use file. We did this for three reasons: first, we wanted to obtain a count of the sample sizes available for analysis of the stock of mortgages and for analysis of new originations; second, we need to know what variables the AHS has before we can make suggestions about new variables; and third, we need to know how well these variables are working.

We drew several observations from this initial analysis:

- The sample sizes are large: 17,531 mortgages in total and 8,520 originated in 2003, 2004, or 2005. (Neither total includes units with just home equity lines of credit.)

- In general, the response rates are good.

- There are some obvious mortgage characteristics that are not reported, specifically biweekly payments, negative amortization, and buydowns.

- Conventional mortgages and the subset of conventional mortgages with private mortgage insurance (PMI) are identified almost as residuals.

- The AHS reports on many of the mortgage characteristics that one could use to identify "non-traditional" mortgages, such as whether the interest rate or term can change, but the variables are coded in such a way that analysts cannot combine them to define new "buckets." In particular, "not applicable" is the dominant response to these questions.

The Appendix reports the counts from the frequency distributions and contains our comments on the variables.

4. Questions Used to Collect Information on Mortgage Product Type

This section has four subsections:

- Section 4.1 describes how the AHS questionnaire is structured with respect to the questions on mortgage finance.
- Section 4.2 reports the code used for the questions on mortgage products and provides the code used by the Census Bureau to translate the information gathered in the questionnaire into the tabulation provided in the published AHS reports.
- Section 4.3 contains the questions used in the Survey of Consumer Finance to distinguish mortgage products.
- Section 4.4 discusses the limited information on mortgage products gathered from homeowners by the Residential Finance Survey.

4.1. Structure of the AHS Survey

The Census Bureau primarily uses telephone interviews with computer-based questionnaires to collect the information needed for the AHS.[14] All the questions and instructions to the interviewers are built into the code that runs the program used by the interviewers to ask questions and record answers.[15] The code contains built-in skip patterns that guide the interviewers from one question to the next question depending upon the answers already provided by the respondent. For example, if a respondent indicates that he or she rents the housing unit, the code automatically skips all the questions related to mortgage finance.

The AHS also uses dependent interviewing, that is, for some questions the computer code uses information gathered in the previous surveys either to avoid re-asking a question or to verify the accuracy of a response. Only one of the variables related directly to mortgage finance is included in dependent interviewing. If a mortgage was taken out in the year that the homeowner bought the property, the AHS uses the WHNGET variable for the year of origination. The AHS does not repeat the WHNGET question if it has

[14] The AHS uses a mixture of telephone and in-person interviews. Interviews with new households always take place in person, and interviewers have the option of in-person interviews with cases they consider difficult. All telephone interviews are conducted in the field, either from the field representatives' homes or improvised call centers at the regional offices. The Census Bureau does not use its national call centers for the AHS.

[15] There is no printed version of the questionnaire; as a substitute a file called the Q-code is used. HUD also posts the "instrument items booklet," a Microsoft Word file that contains all the text of the instrument. From a human-readable point of view, this may be considered a closer substitute for a written questionnaire than the Q-code. For 2007, HUD has an executable version of the survey instrument program on its website.

information on WHNGET from a previous survey. Dependent interviewing does affect four variables that could be used in analyzing housing finance; these are LPRICE (purchase price of unit and land), CPRICE (cost of construction plus price of land), DWNPAY (source of downpayment), and PREOCC (received unit as gift or purchased). Dependent interviewing affects a number of variables related to the characteristics of the unit or the occupant, such as UNITSF (square footage of unit) and RACE (race).

The computer program will allow only persons deemed to have sufficient information to answer questions related to mortgage finance. The mortgage section begins with the following notice to the interviewee if the respondent is someone other than the owner, the owner's spouse, or a co-owner:

> THE RESPONDENT IS NOT ELIGIBLE TO ANSWER THE QUESTIONS ABOUT
> MORTGAGES OR OTHER LOANS SECURED BY THE PROPERTY. YOU WILL BE INSTRUCTED
> AT THE END OF THIS INTERVIEW TO ARRANGE A CALLBACK TO SPEAK WITH THE OWNER,
> SPOUSE OF THE OWNER, AND/OR CO OWNER.

In addition, the computer code allows the respondent to do additional research or to arrange for a more knowledgeable respondent:

> The next questions are about mortgages or other loans
> that are secured by the property. You may check your
> records if you wish. If you filled out your letter,
> you may wish to refer to it for these questions.
>
> ***ENTER (C) IF RESPONDENT PREFERS SPOUSE/CO OWNER ANSWER MORTGAGE ITEMS, OR WANTS TIME TO RESEARCH INFORMATION. YOU WILL BE INSTRUCTED AT THE END OF THIS INTERVIEW TO ARRANGE A CALLBACK TO COMPLETE THE MORTGAGE INFORMATION[16]

4.2. AHS Questions on Mortgage Product Type

For the purposes of this paper, we are primarily interested in how the AHS classifies mortgages by what the AHS reports call "payment type." Figure 2 contains the questions asked of respondents with added commentary:

[16] Section 678 of the Q-code.

Figure 2: AHS Code Related to Payment Type

Q-code[17]	Our Comments
Are the payments on this loan the same during the whole length of the [fill temp] (1) Yes (2) No @ [@] <1,D,R> [goto MORTAck18] <2> [goto MORTA17] <H> [etc <h MORT16H>]	The AHS bases its classification on a series of questions about whether and how the monthly payments change. If the respondent says that the payments *do not* change, then the interviewer skips all the questions until question MORTA18.
-- >MORTA17< [missing <D><R><H>] macro ahsmort_TM in time.mac [r](H)[n] How do they change?	If the respondent says the payments change, the interviewer asks a series of questions about the reasons why the payments change. More than one answer is possible.
MARK (X) ALL THAT APPLY @FIXED 1 Change in taxes or insurance, or due to decline in principle balance @ARM 2 Change based on interest rates @GPM 3 Rise at fixed schedule during part of loan @GPMW 4 Rise at fixed schedule during whole length of loan @BLOON 5 Last payment biggest @VARM 7 Other, specify [if morta17@varm eq <X>] @varmsp [endif] [@FIXED]<X> [optional] [@ARM] <X> [optional] [@GPM] <X> [optional]	If the respondent chooses any of the first five options, then the interviewer enters an “X” for the variable corresponding to that option. If the respondent chooses option 7, then the interviewer probes what the “other” reason might be.

[17] Section 693 of the Q-code.

```
     [@GPMW] <X> [optional]
     [@BLOON]<X> [optional]
     [@VARM] <X> [optional]  [#goto MORTA17ck1]
     <H> [etc <h MORT17H>]
     [@varmsp] [allow 45] [default goto MORTA17ck1]

-----------------------------------------------------------------------------------------
>MORTA17ck1<

[if MORTA17@FIXED eq <x>]
  [if MORTA17@ARM ne <x> and MORTA17@GPM ne <x> and
MORTA17@GPMW ne <x>
    and MORTA17@BLOON ne <x> and MORTA17@VARM ne <x>]
      [goto MORTA17ASK1]
  [endif]
[endif]
```

If options 2 through 5 or option 7 are not selected, then the interviewer asks if they change for any other reason (MORTA17ASK1 below).

```
[if MORTA17@BLOON eq <X>]
     [goto MORTA17ASK5]
[endif]
       [goto MORTAck18]
```

If the respondent indicates that the last payment is biggest (option 5), then the interviewer asks how big the last payment is as a percentage of original mortgage amount (MORTA17ASK5).

```
-----------------------------------------------------------------------------------------
>MORTA17ASK1< [missing <D><R>]
macro ahsmort_TM in time.mac

        Do they change for any other reason?

             (1) Yes
             (2) No

              @

      [@] <1> [etc <b MORTA17>]
          <2,D,R> [goto @a]

    [@a] [if MORTA17@BLOON eq <X>]
           [goto MORTA17ASK5]
         [else]
           [goto MORTAck18]
         [endif]
-----------------------------------------------------------------------------------------
>MORTA17ASK5< [missing <D><R>]
macro ahsmort_TM in time.mac
```

```
Of the total amount you borrowed, what percentage
        will have to be paid off in this last payment?

            (1)  1-25 percent
            (2)  26-50 percent
            (3)  51-75 percent
            (4)  76-100 percent

             @


      [@] <1-4,D,R> [goto MORTAck18]
------------------------------------------------------------------------------------------
>MORTAck18<

[if MORTA6a_REFI eq <2>]
     [goto MORTA18_PERUS1]
  [else]
     [goto ENDMORTAck]
[endif]

------------------------------------------------------------------------------------------
```

From our perspective, this approach is interesting for two reasons. Evidently HUD and the Census Bureau decided that the most reliable way to determine the type of mortgage instrument is to ask the owner or owner's spouse questions about how the payment varies. The non-traditional mortgage products we discussed in section 2.2 differ from more traditional mortgage products in how the payments vary over time. These two facts suggest that it may be possible to alter the AHS code to identify the most important non-traditional mortgage products. However, a key difference is that the current AHS questions relate to actual changes in the mortgage payment, whereas with interest-only and hybrid ARMs the payment changes generally come later in the mortgage.

The AHS approach produces variables (FIXED, ARM, GPM, GPMW, BLOON) for the PUF that do not in and of themselves identify the types of mortgage products suggested by their names. Special code must be used to translate these variables into the types of mortgage products reported in Table 3-15. Figure 3 presents that code.

Figure 3: Code Used to Translate PUF Variables into Payment Types

Census Bureau Code	Our Comments
if STATUS eq 1 then do;	STATUS = 1 means a household was interviewed
if MCNT ne 1-4 then PAYPM1 ='B';	MCNT is the count of regular mortgages B means inappropriate
if MCNT eq 1-4 then do; PAYPM1 = 'D'; COUNT = 0;	D means "don't know"

if ARM eq 'X' then COUNT = COUNT + 1;
if GPM eq 'X' then COUNT = COUNT + 1;
if GPMW eq 'X' then COUNT = COUNT + 1;
if BLOON eq 'X' then COUNT = COUNT + 1;
if VARM eq 'X' then COUNT = COUNT + 1;
	VARM = X means payment change for other reasons

if (COUNT eq 2 and (GPM ne 'X' or GPMW ne 'X')) or COUNT gt 2 then PAYPM1 = 7;	PAYPM1 = 7 means combination of the above (PAYPM1 = 1 thru 6)
else if MATBUY eq 2 or NEWMOR eq 1 or NEWMOR eq 3 then do; if ((TERM eq 1-14 and TERM ge AMRTZ) or TERM eq 15-41) and ((VARY eq 1) or (FIXED eq 'X' and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and BLOON ne 'X' and VARM ne 'X')) then PAYPM1 = 1;	NEWMOR = 1 (new mortgage) or = 3 (wrap around) PAYPM1 =1 means fixed payment, self amortizing
else if ((TERM eq 1-14 and TERM ge AMRTZ) or TERM eq 15-41) and (ARM eq 'X' and GPM ne 'X' and GPMW ne 'X' and BLOON ne 'X' and VARM ne 'X') then PAYPM1 = 2;	PAYPM1 =2 means ARM
else if CANVAR eq 'X' and (VARY eq 1 or (FIXED eq 'X' and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and BLOON ne 'X' and VARM ne 'X')) then PAYPM1 = 3;	CANVAR means that the term of the first mortgage can vary; VARY means that payment changes PAYPM1 = 3 means adjustable term mortgage
else if ((TERM eq 1-14 and TERM ge AMRTZ) or TERM eq 15-41) and (ARM ne 'X' and (GPM eq 'X' or GPMW eq 'X') and BLOON ne 'X' and VARM ne 'X') then PAYPM1 = 4;	PAYPM1 = 4 means graduated payment mortgage
else if (TERM eq 1-14 and TERM lt AMRTZ and (VARY eq 1 or ((FIXED eq 'X' or BLOON eq 'X') and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and VARM ne 'X'))) or (TERM eq 1-41 and BLOON eq 'X' and	

ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and VARM ne 'X') then PAYPM1 = 5;	PAYPM1 = 5 means balloon payment
else if (TERM eq 1-41 and TERM lt AMRTZ) and (ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and BLOON ne 'X' and VARM eq 'X') then PAYPM1 = 6;	PAYPM1 = 6 means "other"
else if (CANVAR eq 'X' and (ARM eq 'X' or GPM eq 'X' or GPMW eq 'X' or BLOON eq 'X' or VARM eq 'X')) or ((TERM eq 1-14 and TERM lt ARMTZ) and (ARM eq 'X' or GPM eq 'X' or GPMW eq 'X' or VARM eq 'X')) then PAYPM1 = 7;	PAYPM1 = 7 means combination of the above
else if (VARY eq 'D' or VARY eq 'R' or VARY eq ' ') or (VARY eq 2 and FIXED ne 'X' and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and BLOON ne 'X' and VARM ne 'X') or (VARY eq 2 and FIXED ne 'X' and ARM ne 'X' and GPM eq 'X' and GPMW eq 'X' and BLOON ne 'X' and VARM ne 'X') then PAYPM1 = 'D'; end;	VARY = R means refused PAYPM1 = D means "not reported"

else if NEWMOR eq 2 then do;
if VARY eq 1 or (FIXED eq 'X' and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and BLOON ne 'X' and VARM ne 'X') then PAYPM1 = 1;
 	
else if BLOON eq 'X' and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and VARM ne 'X' then PAYPM1 = 5;
 	
else if (VARY eq 'D' or VARY eq 'R' or VARY eq ' ') or (VARY eq 2 and FIXED ne 'X' and ARM ne 'X' and GPM ne 'X' and GPMW ne 'X' and VARM ne 'X') or (VARY eq 2 and FIXED ne 'X' and ARM ne 'X' and GPM eq 'X' and GPMW eq 'X' and BLOON ne 'X' and VARM ne 'X') then PAYPM1 = 'D';
	NEWMOR = 2 (assumed)

We understand the need to combine information from the set of questions about mortgage features in order to classify a mortgage, but we suggest two improvements. First, HUD and the Census Bureau should provide suggested code to go from mortgage features to mortgage products. Second, the AHS Codebook should clearly indicate that the following variable names—FIXED, ARM, GPM, GPMW, and BLOON—indicate features of mortgages that are related to the mortgage products whose names these variables names resemble, but that the variables do not by themselves identify those mortgage products. We do not suggest changing the names of these variables, because that would create confusion if analysts used PUFs for previous survey years.

4.3. Code Used in the SCF for Mortgage Product Type

As noted previously, Anthony Yezer suggested that the AHS adopt the code used in the Survey of Consumer Finance (SCF) because analysts have found this code reliable. This section lays out the code that the SCF uses to identify mortgage characteristics. The reader should be aware of three potential problems with the presentation in this section. First, the mortgage-characteristics questions are pulled out of context and therefore do not give a full picture of how the SCF queries households. Second, the SCF code has over 100,000 lines, and therefore we may have missed key code elements. Third, the official SCF publications do not present data on mortgage products, and therefore we have no benchmark to tell us the range of information collected on mortgage products in the SCF.

The SCF is a combination telephone and personal interview survey with an approximately equal number of cases completed by each method. While the SCF collects information on all types of loans secured by the property, it focuses initially on regular mortgages and begins gathering detailed information with the primary mortgage. An early question asks if the primary mortgage is a federally guaranteed mortgage or a mortgage from a state program. If the answer is yes, the following question is asked about why the borrower selected this type of loan:

X727(#1) Why did you choose this type of loan?

Credit Terms/Cost Of Loan
1. Interest rate -- low (er) / reasonable/best available rates
4. Finance charges low (er) or none (other than interest or NA if includes interest.)
5. Amount of the down payment
6. Size of (monthly) payments; payment amount; longer contracts -- more time to pay off loan
9. Easier to get credit -- require less information/collateral; less stringent rules for giving credit; get credit approval faster; no red tape
25. Credit terms/arrangements -- NA what: "affordable terms"
26. Give the best (a better) deal -- NA how
29. Other credit terms or cost of loan
30. Special features for first-time home buyers
80. No Choice, NEC
81. Used before, always use
83. Recommended
85. Home inspection policy
90. Assumed or assumable; seller-financed
-7. Other
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no mortgage: X723=5; not federally guaranteed: X724^=1)

This question gets at some of the reasons that borrowers choose non-traditional mortgages. However, as noted, it is only asked of borrowers who use federally guaranteed loans or loans from state programs.

The code then probes as to whether this primary mortgage is a refinance. If it is a refinance, the interviewer gathers detailed information on the purposes of the refinance. After these questions, the SCF asks about the amount of the loan and how much is still owed. Then the SCF asks about the original term, the remaining term, the payment amount, and the frequency of payment using these questions:

> How many years or payments did you agree upon when the
> (land contract/loan) was taken out (or refinanced)?

X806(#1) NUMBER OF YEARS
X906(#2)
X1006(#3) Code number of years
- -1. NO SET NUMBER OF YEARS
- -7. Unable to calculate from number of payments
- 0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/no third mortgage: X931^=1 or (X723=5 and X830^=1))

X807(#1) NUMBER OF PAYMENTS
X907(#2)
X1007(#3) Code number of payments
- -1. NO SET NUMBER OF PAYMENTS
- -7. Unable to calculate from number of years
- 0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/no third mortgage: X931^=1 or (X723=5 and X830^=1))

X9154(#1) Recode: Term of loan in months
X9155(#2)
X9156(#3) Code number of months
- -1. NO SET NUMBER OF YEARS/PAYMENTS
- -7. Unable to calculate from number of payments/years
- 0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/no third mortgage: X931^=1 or (X723=5 and X830^=1))

****
NOT INCLUDED IN THE PUBLIC DATA SET
****

X808(#1) How much are the payments?
X908(#2)
X1008(#3) Code amount

-1. None
-2. NO REGULAR PAYMENTS
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/no third mortgage: X931^=1 or (X723=5 and X830^=1); no set number of payments: X806/X906/X1006=-1 or X807/X907/X1007=-1)

X809(#1) INTERVIEWER: CODE WITHOUT ASKING IF ALREADY MENTIONED
X909(#2) (And how often are they due?)
X1009(#3)

Code frequency
2. *Week
3. *Every two weeks
4. *Month
5. *Quarter
6. *Year
8. *Lump sum/one payment only
11. *Twice per year
12. Every two months
22. Varies
23. 13 times a year; every 4 weeks
24. Every 6 weeks
31. *Twice a month
-1. NO PAYMENT
-2. NO REGULAR PAYMENTS
-7. *Other
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/no third mortgage: X931^=1 or (X723=5 and X830^=1); no set number of payments: X806/X906/X1006=-1 or X807/X907/X1007=-1)

X813(#1) What is the typical payment?
X913(#2)
X1013(#3) Code amount

-1. None
-2. NO TYPICAL PAYMENTS

0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/no third mortgage: X931^=1 or (X723=5 and X830^=1); set number of payments and positive payment: X806/X906/X1006^=-1 and X807/X907/X1007^=-1 and X808/X908/X1008>0)

Then the SCF asks about the inclusion of property taxes and insurance and about balloon payments.

X810(#1) Does the amount include property taxes or homeowners' insurance? (Which?)

1. *Taxes only
2. *Insurance only
3. *Both
4. *Neither
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; no typical payment: X813=-1 or -2/X913=-1 or -2/X1013=-1 or -2)

X811(#1) Will the (regular) payments repay the loan completely, or
X911(#2) will there be a balance payable, or "balloon" payment, when
X1011(#3) the loan is due?

1. *Repay completely
2. *Balance payable or Balloon
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/ no third mortgage: X931^=1 or (X723=5 and X830^=1; no typical payment: X813=-1 or -2/X913=-1 or -2/X1013=-1 or -2)

X812(#1) What will the balance due or balloon payment be?
X912(#2)
X1012(#3) Code amount

0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/ no third mortgage: X931^=1 or (X723=5 and X830^=1; no typical payment: X813=-1 or -2/X913=-1 or -2/ X1013=-1 or -2; no balloon payment: X811^=2/X911^=2/X1011^=2)

X7571(#1) Are you paying off this (land contract/loan) ahead of
X7570(#2) schedule, behind schedule, or are the payments about
X7569(#3) on schedule?

1. *ON SCHEDULE
2. *AHEAD OF SCHEDULE
3. *BEHIND SCHEDULE
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/ no third mortgage: X931^=1 or (X723=5 and X830^=1; no set number of payments: X811=-1/X911=-1/X1011=-1; no typical payment: X813=-1 or -2/X913=-1 or -2/ X1013=-1 or -2)

X815(#1) When do you expect this (land contract/loan) to be repaid?
X915(#2)
X1015(#3) Code year (4 digits)

-1. Reverse annuity loan
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/ no third mortgage: X931^=1 or (X723=5 and X830^=1; loan on schedule: X7571=1/X7570=1/X7569=1)

At this point the SCF asks about interest rate and then goes into a series of detailed questions about the institution that services the loan and the institution that originated the loan. The last question in the series dealing with originating lender asks why this lender was chosen. The question contains a few elements that might relate to subprime lending or non-traditional products; the question is:

What is the most important reason you chose this lender?

(Was it because they were recommended to you, because they had low interest rates or fees, because of the location of their offices, because you had done other business with them, because it was easier to qualify for the loan, or for some other reason?)

1. *RECOMMENDED
2. *LOW INTEREST RATES OR FEES
3. *LOCATION OF OFFICES
4. *OTHER BUSINESS WITH THEM
5. *EASY TO QUALIFY (for credit); only place that would give us a loan

6. Many services in one place
10. Low fees/service charges
11. Personal relationship; they know me; know/like them; R/Spouse works there
21. No choice -- assumed existing debt and lender from previous owner
22. No choice -- financed through contractor/developer/previous owner/builder and this was their financial institution/ land contract
23. No choice, n.e.c.
24. Flexible loan terms; choice of loan terms
25. Handled VA loans/other government program
26. Participated in first time buyer program
27. Government-sponsored program, n.e.c.
32. Clear information
33. Mortgage sold to another lender
40. Current or past relationship through work, n.e.c.
-7. *OTHER REASON
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2)

****
FOR THE PUBLIC DATA SET, CODE 25 IS COMBINED WITH CODE 27
****

After the SCF asks a brief question about the purpose of the loan, it asks whether the loan has an adjustable interest rate. The first question is:

X820(#1) Is this an adjustable rate (contract/mortgage); that
X920(#2) is, does it have an interest rate that can rise or fall
X1020(#3) from time to time?

1. *YES
5. *NO
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2/no second mortgage: X830^=1/ no third mortgage: X931^=1 or (X723=5 and X830^=1)

Then the SCF asks a series of questions about the parameters of the adjustable rate loan. An interesting question in this set is the following:

X825(#1) When the interest rate on your (land contract/mortgage) changes, does the size of your monthly payments also change?

1. *YES
5. *NO
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

After the ARM questions, no further questions in the SCF code could be identified that related to the type of mortgage product. The code displayed above is used for second and other subordinate lien mortgages as well.

4.4. Questions in the RFS That Relate to Mortgage Product

The Residential Finance Survey (RFS) is primarily a mail-questionnaire survey. The unique feature of the RFS is that it collects information on mortgage financing from both the homeowner and from the lender. Most of the questions dealing with mortgage characteristics were asked only of the lender. The mail questionnaire sent to the homeowner in 2001 contained these questions that deal with mortgage characteristics:

8d What was the amount of your CURRENT FIRST mortgage when you placed, assumed, or refinanced it?

8e What are the regular required payments to the lender on your CURRENT FIRST mortgage? Round to the nearest dollar.

8f How often do you make these payments?

Monthly
Biweekly (every 2 weeks)
Quarterly
Other – Specify

8g What does this regular payment include?

Principal
Interest
Real estate taxes
Property (fire, hazard, flood, or earthquake) insurance
Mortgage insurance
(NOT mortgage life insurance)
Other
Mark all that apply.

8h Is your CURRENT FIRST mortgage —

1 A FHA insured loan?
2 A VA guaranteed loan?
3 A loan guaranteed by the Rural Housing

Service/Rural Development (formerly FmHA)?
4 A loan insured by a private mortgage insurance company?
5 None of the above

17 What were the expenses for this property in 2000 for — Include payments made to the lender, except for principal and interest payments.
a. Real estate taxes?
Do NOT include special assessments or taxes in arrears from prior years.
b. Special assessments (payments for improvements to streets, sidewalks, etc.)?
c. Property (fire, hazard, flood, or earthquake) insurance?
d. Mortgage insurance (exclude mortgage life insurance)?

5. Suggested Revisions and Additions to AHS Questions Related to Mortgage Characteristics

The first subsection discusses the range of changes that we propose. The second subsection contains our suggestions, which are imbedded in the AHS Q-code.

5.1. Range of Suggested Changes

The principal goal of this project is to explore ways in which the AHS can provide reliable and useful information on non-traditional mortgage products. The major focus of this section involves improvements to the AHS questionnaire that relate to mortgage products. However, we suggest additional changes in the questionnaire to correct what we perceive as other deficiencies in describing mortgage characteristics. Some of these additional changes respond to recommendations by Lam and Kaul.

Our goals are:

- To make the collection of information on mortgage products fuller and more flexible. “Fuller” means asking about the most important characteristics needed to identify both the most common traditional mortgage products and the most important non-traditional mortgage products. “More flexible” means collecting the characteristics in a manner that would allow users to identify other mortgage products, including products not yet devised, by combining the answers to the question on important characteristics.

- To create new variables that use the characteristics to classify mortgages on surveyed units into categories corresponding to the most common traditional and non-traditional mortgage products.

- To collect information relevant to other important housing finance issues, including:

- o Frequency of mortgage payment.
- o Improved information on privately insured mortgages.
- o Second mortgages to avoid PMI.
- o Surprises – asking borrowers if they experienced any surprises with their instrument.

5.2. Suggested Changes in AHS Questionnaire

Before turning to the questionnaire, we begin with two procedural recommendations:

- First, we recommend that the AHS include in its cover letter a specific request that the homeowner have a copy of his or her latest mortgage statement in front of them when the interviewer calls. For knowledgeable homeowners, this request should impose little additional burden. For those who are not knowledgeable (perhaps clueless) about their mortgages, the additional burden is essential to obtain reliable answers and should actually benefit the homeowner by helping him or her understand how to read the statement. We would argue that the AHS would be better off losing some respondents by postponing this portion of the interview until the homeowner has the requisite documentation. The current crisis in the mortgage market would appear to justify additional respondent burden.

- Second, we recommend that some questions should be limited to borrowers who have taken out a mortgage in the period between surveys, since this group is likely to be most familiar with the more exotic features of their mortgages.

The approach we follow in this section is to replicate the relevant Q-code for first-lien regular mortgages and then make the recommended changes to existing questions in red and add new questions in blue directly into the Q-code. Comments are in green. In addition to the color-coded identifiers, revisions are prefaced with the tag [change], [addition], or [comment], as appropriate. Changes in the form of deletions are identified by strike-through text. The reader needs to keep three caveats in mind:

- First, we are adding new language not new code. We will leave it to the Census Bureau to translate the language into code.

- Second, the language is only suggestive. We expect that both HUD and the Census Bureau will want to work over the language and invite others to critique the changes as well.

- Third, we decided to put all the changes that we think are desirable on the table even if they add additional burden and even if we have doubts about being able to implement them successfully. If HUD and the Census Bureau are going to consider changes, then it is efficient to include all the possibilities. In the few cases where we have doubts about the getting reliable answers, the green text notes our concerns.

Extracted from:

AMERICAN HOUSING SURVEY - 2005 National Instrument

CAPI INSTRUMENT

Running under: CASES 4.4 Version

Revised: 5/28/2004

```
        [if HHMEM eq <1> and AGE ge <14>]
          [if SPOUS eq <0> or SPOUS eq <>]
            [if respline eq L_NO and TEN(L_NO) eq <X>]
                [add <1> to index]
             [endif]
        [else]
        [if respline eq L_NO and TEN(L_NO) eq <X> or index2 eq <1>]
              [add <1> to index]
            [endif]
          [endif]
        [endif]
    [roster end PERSONS]
    [if index ge <1>]
      [goto MORTINTRO]
    [else]
      [store <1> in MGMFL]
      [goto MORTCALLBK]
    [endif]
```

>MORTCALLBK<
macro ahsmort_TM in time.mac

WARNING

THE RESPONDENT IS NOT ELIGIBLE TO ANSWER THE QUESTIONS ABOUT MORTGAGES OR OTHER LOANS SECURED BY THE PROPERTY. YOU WILL BE INSTRUCTED AT THE END OF THIS INTERVIEW TO ARRANGE A CALLBACK TO SPEAK WITH THE OWNER, SPOUSE OF THE OWNER, AND/OR CO-OWNER.

PRESS ENTER TO CONTINUE @

[@] [NODATA] [goto end_mort2]

>MORTINTRO<
macro ahsmort_TM in time.mac

The next questions are about mortgages or other loans that are secured by the property. You may check your records if you wish. If you filled out your letter, you may wish to refer to it for these questions.

ENTER (C) IF RESPONDENT PREFERS SPOUSE/CO-OWNER ANSWER MORTGAGE ITEMS, OR WANTS TIME TO RESEARCH INFORMATION. YOU WILL BE INSTRUCTED AT THE END OF THIS INTERVIEW TO ARRANGE A CALLBACK TO COMPLETE THE MORTGAGE INFORMATION.

(C) Skip over Mortgage Questions for now.

(P) Proceed with Mortgage Questions.

@

```
[@] <C,P>
 [if MORTINTRO eq <C>]
   [store <1> in MGMFL]
   [goto END_MORT2]
 [else]
  [store <0> in MGMFL]
    [goto mort1a_mg]
 [endif]
```

>MORT1a_MG< [missing <D><R><H>]
macro ahsmort_TM in time.mac

[r](H)[n]

Not counting home equity loans, is there a mortgage or any loans on this [fill HTYPEFILL]? [Comment] Should HUD and the Census Bureau rethink not classifying lump-sum home equity loans as regular mortgages?

FR: THIS INCLUDES LAND CONTRACTS

(1) Yes
(2) No

@

```
[@] <1> [goto MORT1b_REGMOR]
    <2,D,R> [goto @a]
    <H> [etc <h MORT1aH>]
    [@a] [store <> in MORT1b_REGMOR]
         [goto MORT2a_HELUMP]
```

>MORT1b_REGMOR< [missing <D><R><H>]
macro ahsmort_TM in time.mac

[r](H)[n]

How many mortgages (or loans) are there now on the [fill HTYPEFILL]?

(DO NOT COUNT HOME EQUITY LOANS) [Comment] Should HUD and the Census Bureau rethink not classifying lump-sum home equity loans as regular mortgages?

(1-7) [r]@[n] mortgages

```
[@]  <1-7>
     <D,R>  [goto MORT2a_HELUMP]
     <H>    [etc <h MORT1bH>]
```

>MORT2a_HELUMP< [missing <D><R><H>]
macro ahsmort_TM in time.mac

```
   [store <> in temp1]
 [if MORT1b_REGMOR ge <1>]
    [store <also> in temp1]
```

[else]
[store <> in temp1]
[endif]

[r](H)[n]

Do you [fill temp1] have a [bold]lump sum[normal] home equity loan,
that is, a home equity loan that is paid out in a one-time lump-sum
amount and that must be repaid over a period of time?

(1) Yes
(2) No

@

[@] <1> [goto MORT2b_HELUMN]
<2,D,R> [goto @a]
<H> [etc <h MORT2aH>]
[@a] [store <> in mort2b_helumn]
[goto MORT2c_HELC]

>MORT2b_HELUMN<[missing <D><R>]
macro ahsmort_TM in time.mac

How many [bold]lump sum[normal] home equity loans do you have?

(1-10) [r]@[n] loans

[@] <1-10>
<D,R> [goto MORT2c_HELC]

>MORT2c_HELC< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[store <> in temp1]
[if MORT1b_REGMOR ge <1> or MORT2b_HELUMN ge <1>]
[store <also> in temp1]
[else]
[store <> in temp1]
[endif]

[r](H)[n]

Do you [fill temp1] have a home equity [bold]line of credit[normal],
that is, a home equity loan that allows you to borrow
against it as often as you wish up to a fixed limit?

(1) Yes
(2) No

@

```
   [@]  <1> [goto MORT2d_HELCN]
        <2> [goto @a]
        <D,R> [goto @a]
          <H>    [etc <h MORT2cH>]
        [@a] [store <> in MORT2d_HELCN]
             [goto MORT3ck]
-------------------------------------------------------------------------------------
>MORT2d_HELCN<[missing <D><R>]
macro ahsmort_TM in time.mac

        How many home equity [bold]lines of credit[normal] do you have?

           (1-10)      [r]@[n] line(s) of credit

     [@] <1-10,D,R>  [goto MORT3ck]

-------------------------------------------------------------------------------------
>MORT3ck<

[if MORT1b_REGMOR eq <1> and MORT2a_HELUMP eq <2> and MORT2c_HELC eq <2>]
     [goto MORT3_LANDC]
[else]
     [goto MORT4ckAPR]
[endif]

-------------------------------------------------------------------------------------
>MORT3_LANDC<  [missing <D><R><H>]
macro ahsmort_TM in time.mac
                                             [r](H)[n]
        Is your mortgage a land contract?

          (1) Yes
          (2) No

           @

    [@]  <1,2,D,R> [goto MORT4ckAPR]
          <H> [etc <h MORT3H>]

-------------------------------------------------------------------------------------
>MORT4ckAPR<
[if (MORT1b_REGMOR eq <D> or MORT1b_REGMOR eq <R>) and (MORT2d_HELCN ge <1> and
MORT2d_HELCN le <10>)]
     [goto MORT20ck]
[endif]
[if (MORT1b_REGMOR eq <D> or MORT1b_REGMOR eq <R>) and MORT2d_HELCN eq <>]
     [goto END_MORT]
[endif]
[if (MORT1b_REGMOR ne <> or MORT2b_HELUMN ne <>)]
     [goto MORTA5_INTRO]
[endif]
[if MORT1a_MG eq <2> and MORT2a_HELUMP eq <2> and RET12a@NRPAYMB eq <1>]
```

[goto MORT4apr_MGP1]
[endif]
[if MORT1b_REGMOR eq <> and MORT2b_HELUMN eq <> and MORT2d_HELCN ge <1> and MORT2d_HELCN le <10>]

```
   [goto MORT20a1_HECR1]
[endif]
[if MORT1b_REGMOR eq <> and MORT2b_HELUMN eq <> and MORT2d_HELCN eq <>]
   [goto MORT22CK]
[endif]
-------------------------------------------------------------------------------------
>MORT4apr_MGP1< [missing <D><R>]
macro ahsmort_TM in time.mac
                    **POSSIBLE PROBLEM**

      Earlier you told me that someone not living here pays some of
      the mortgage or utility costs. Was that for the utility costs,
      the mortgage, or both?

         (1)  Previous answer to RET12a incorrect
         (2)  Utility costs only
         (3)  Mortgage costs only
         (4)  Both utility and mortgage costs

          @

    [@] <1> [goto @a]
       <2,D,R> [goto MORT20ck]
       <3,4> [goto MORT4av_MGP2]
[@a] [store <2> in ret12a@nrpaymb]
   [goto MORT20ck]
-------------------------------------------------------------------------------------
>MORT4av_MGP2< [missing <D><R>]
macro ahsmort_TM in time.mac
                    **POSSIBLE PROBLEM**

      Then there is a mortgage or other loan on this [fill HTYPEFILL],
      is that correct?

         (1) Yes
         (2) No - (PROBE AS NECESSARY TO DETERMINE IF THERE IS A MORTGAGE)

          @

    [@] <1,2,D,R> [goto @a]

[@a] [if @ eq <1>]
   [store <1> in mort1a_mg]
     [goto MORT1b_REGMOR]
  [endif]
 [if @ eq <2> or @ eq <D> or @ eq <R>]
  [if mort4apr_mgp1 eq <3>]
   [store <2> in ret12a@nrpaymb]
     [if mort2c_helc eq <2>]
       [goto mort22ck]
     [endif]
  [endif]
```

```
  [endif]
    [if (@ eq <2> or @ eq <D> or @ eq <R>) and mort4apr_mgp1 eq <4>]
          [store <2> in mort4apr_mgp1]
        [if mort2c_helc eq <2>]
           [goto mort22ck]
        [endif]
    [endif]
    [if mort2c_helc eq <1>]
      [goto mort20a1_hecr1]
    [endif]
     [goto end_mort]
```

```
>MORTA5_INTRO<
macro ahsmort_TM in time.mac
[store <> in temp1]
[store <> in temp2]
[store <> in temp3]
[store <> in temp4]
[store <> in temp5]   [store <> in temp6]  [store <> in temp7]
[if MORT1b_REGMOR eq <1>]
      [store <1 mortgage> in temp1]
      [store <> in temp2]
[else]
[if MORT1b_REGMOR ge <2>]
      [store MORT1b_REGMOR in temp1]
      [store <mortgages> in temp2]
[else]
[if MORT1b_REGMOR eq <>]
      [store <> in temp1]
      [store <> in temp2]
[endif][endif][endif]
[if MORT2b_HELUMN eq <1>]
      [store <1 lump sum home equity loan> in temp3]
      [store <> in temp4]
[else]
[if MORT2b_HELUMN ge <2>]
      [store MORT2b_HELUMN in temp3]
      [store <lump sum home equity loans> in temp4]
[else]
[if MORT2b_HELUMN eq <>]
      [store <> in temp3]
      [store <> in temp4]
[endif][endif][endif]
[if MORT2d_HELCN eq <1>]
      [store <1 home equity line of credit> in temp5]
      [store <> in temp6]
[else]
[if MORT2d_HELCN ge <2>]
      [store MORT2d_HELCN in temp5]
```

```
     [store <home equity lines of credit> in temp6]
[else]
[if MORT2d_HELCN eq <>]
     [store <> in temp5]
     [store <> in temp6]
[endif][endif][endif]

        Earlier you told me you have

        [fill temp1] [fill temp2]
        [fill temp3] [fill temp4]
        [fill temp5] [fill temp6]

        PRESS ENTER TO CONTINUE @

     [@] [NODATA]

--------------------------------------------------------------------------------
>MORTA5a_SUBMOR< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[store <> in temp6]
[if MORT1b_REGMOR ge <1>]
  [store <1> in morta]
[else]
[if MORT1b_REGMOR eq <> and mort2b_helumn ge <1>]
  [store <2> in morta]
[endif] [endif]
[if (MORT1a_MG eq <1> and MORT2a_HELUMP eq <2> and MORT2c_HELC eq <2>) or
  (MORT1a_MG eq <2> and MORT2a_HELUMP eq <1> and MORT2c_HELC eq <2>)]
    [store <Now> in temp6]
[else]
    [store <First> in temp6]
[endif]
[if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <1>]
     [store <2> in MORTA5a_SUBMOR]
           [goto MORTA5b_MATBUY]
[endif]
      [store <> in temp][store <> in temp7]
    [if MORT1b_REGMOR eq <1>]
       [store <the mortgage> in temp]
       [store <mortgage> in temp7]
    [else]
       [store <the first mortgage> in temp]
       [store <first mortgage> in temp7]
    [endif]

                                        [r](H)[n]

        [fill temp6], I am going to ask you about your [fill temp7].

        Did you get [fill temp] through a State or local government
        program that provides lower cost mortgages?
```

```
        (1) Yes
        (2) No

         @

     [@] <1,2,D,R> [goto MORTA5b_MATBUY]
        <H> [etc <h MORT5aH>]

---------------------------------------------------------------------------------------
>MORTA5b_MATBUY< [missing <D><R><H>]
macro ahsmort_TM in time.mac
  [store <> in temp3][store <> in temp4][store <> in temp5] [store <> in temp6]
  [if MORT1b_REGMOR ge <1>]
      [store <> in temp5]
    [else]
  [if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <1> and MORT2d_HELCN eq <>]
      [store <Now,> in temp5]
  [else]
      [store <First,> in temp5]
  [endif][endif]
  [if MORT1b_REGMOR eq <> and MORT2b_HELUMN eq <1>]
      [store <I am going to ask you about your lump sum home equity loan.> in temp4]
  [else]
  [if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <2>]
      [store <I am going to ask you about your first lump sum home equity loan.> in temp4]
  [else]
      [store <> in temp4]
  [endif] [endif]
       [if MORT1b_REGMOR eq <1>]
         [store <CURRENT mortgage> in temp3]
       [else]
       [if MORT1b_REGMOR ge <2>]
         [store <CURRENT first mortgage> in temp3]
       [endif][endif]
       [if MORT1b_REGMOR eq <> and MORT2b_HELUMN eq <1>]
         [store <CURRENT lump sum home equity loan> in temp3]
       [else]
       [if MORT1b_REGMOR eq <> and MORT2b_HELUMN gt <1>]
         [store <first current lump sum home equity loan> in temp3]
       [else]
       [endif][endif]
       [if out_cushom eq <5> or OUT_PREOCC eq <1>]
         [store <acquired> in temp6]
       [else]
         [store <bought> in temp6]
       [endif]
                                              [r](H)[n]
      [fill temp5] [fill temp4]

      Did you get the [fill temp3] the same year
      you [fill temp6] your home?
```

```
(1) Yes
            (2) No

             @

      [@] <1,D,R> [goto @a]
          <2> [goto @b]
          <H> [etc <h MORT5bH>]
          [@a] [if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <1>]
                  [store <1> in MORTA5c_NEWMOR]
                  [store <2> in MORTA6a_REFI]
                      [goto mortack7a]
                   [else]
                      [goto MORTA5c_NEWMOR]
                [endif]
           [@b] [if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <1>]
                  [store <2> in MORTA6a_REFI]
                       [goto mortack7a]
                   [else]
                      [goto MORTA6a_REFI]
                [endif]

-------------------------------------------------------------------------------------
>MORTA5c_NEWMOR< [missing <D><R><H>]
macro ahsmort_TM in time.mac
         [store <> in temp3]
         [if MORT1b_REGMOR eq <1>]
            [store <the mortgage> in temp3]
         [else]
            [store <the first mortgage> in temp3]
         [endif]

                                                          [r](H)[n]
        With regard to [fill temp3], did you get a new
        mortgage or did you assume someone else's mortgage?

             (1) New
             (2) Assumed
             (3) Wrap around

              @

      [@] <1,D,R> [goto morta6a_refi]
          <2> [goto MORTA5d_AMMORT1]
          <3> [goto MORTA7b_TERM2]
          <H> [etc <h MORT5cH>]

------------------------------------------------------------------------------
>MORTA5d_AMMORT1<     [missing <D><R><H>]
macro ahsmort_TM in time.mac
```

[r](H)[n]

How much was left to pay off when you assumed it?

(1-9999997) $1-$9,999,997
(9999998) $9,999,998 or more

$ @ .00

[@] <1-9999998> [input format enter right commas < >]
<D,R>
<H> [etc <h MORT5dH>]
[store MORTA5d_AMMORT1 in OUT_AMMORT1]
[goto MORTA5e_TERM1]

>MORTA5e_TERM1< [missing <D><R><H>]
macro ahsmort_TM in time.mac

[r](H)[n]

How many years remained on the mortgage then?

(1-40) [u]@[n] Years

[@] <1-40,D,R> [goto MORTA8]
<H> [etc <h MORT5eH>]

>MORTA6a_REFI< [missing <D><R>]
macro ahsmort_TM in time.mac

Was this mortgage a refinancing of a previous mortgage?

(1) Yes
(2) No

@

[@] <1> [goto MORTA6b]
<2,D,R> [goto MORTAck7a] ???

>MORTA6b<
macro ahsmort_TM in time.mac

What were the reasons for refinancing this mortgage?

MARK (X) ALL THAT APPLY
@lowint (1) To get a lower interest rate
@redmon (2) To reduce the monthly payment
@incper (3) To increase the payment period for the mortgage
@redpay (4) To reduce the payment period for the mortgage
@extlon (5) To renew or extend a loan that has fallen due,
without increasing the outstanding balance
@gtcash (6) To receive cash or increase the outstanding balance of the loan
@othref (7) Other reason, specify

[Change] @optarm (8) To have the option of paying less than the regular monthly payment
[if MORTA6b@othref eq <X>] @2 [endif]

[@lowint] <X,D,R> [optional]
[@redmon] <X,D,R> [optional]
[@incper] <X,D,R> [optional]
[@redpay] <X,D,R> [optional]
[@extlon] <X,D,R> [optional]
[@gtcash] <X,D,R> [optional]
[@othref] <X> <D,R> [goto MORTA6b_ck] [optional] [goto MORTA6b_ck]
[@2] [allow 45] [default goto MORTA6b_ck]

>MORTA6b_ck<
[if MORTA6b@gtcash eq <X>]
[goto MORTA6c_CASH]
[else]
[goto MORTAck7a]
[endif]

>MORTA6c_CASH< [missing <D><R>]
macro ahsmort_TM in time.mac

How much cash did you receive?

(1-999997) $1-$999,997
(999998) $999,998 or more

$ @ .00

[@] <1-999998> [input format enter right commas < >]
<D,R>

>MORTA6d_ADDTNS<[missing <D><R>]
macro ahsmort_TM in time.mac

What percentage was used for additions, improvements
or repairs to the home?

(0-100) @ %

[@] <0-100,D,R>

>MORTAck7a<

[if MORTA5b_MATBUY eq <2>]
[goto MORTA7a_YRMOR]
[else]
[if MORTA5b_MATBUY eq <1> and MORTA5c_NEWMOR eq <1>]
[goto MORTA7b_TERM2]
[endif][endif]

>MORTA7a_YRMOR< [missing <D><R>]
macro ahsmort_TM in time.mac
[store <> in temp]
[if MORT1b_REGMOR ge <1>]
    [store <mortgage?> in temp]
  [else]
    [store <loan?> in temp]
[endif]
[Comment] There may be a skip pattern that skips this question if MATBUY=1. If so, the skip pattern should be eliminated if MNMOR is adopted.
     What year did you get the [fill temp]

        (1900-2005) [u]@[n] Year

    [@] <1900-2005,D,R> [goto MORTA7b_TERM2]

[Addition] New variable MNMOR
        What month of {year} did you get the [fill temp]?
[Comment] We add the MNMOR variable because we think it is needed to determine whether the previous survey picked up this mortgage or whether this is the first time the AHS is gathering information on this mortgage. Lam and Kaul wanted to have month of origination so that one could compare the AHS data on origination activity to other sources by quarter. Adding MNMOR would permit this, but we do not attach any significant importance to that outcome.

>MORTA7b_TERM2< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[store <> in temp]
[if MORT1b_REGMOR ge <1>]
    [store <mortgage,> in temp]
 [else]
    [store <loan,> in temp]
[endif]
[r](H)[n]
     When you first obtained THIS [fill temp]
     how many years was it for?

        ENTER 0 IF VARIES

        Number of Years [u]@[n]

    [@] <0-14> [goto MORTA7c_AMRTZ]
       <15-40> [goto MORTA7d_AMMORT2] <D,R>[goto MORTA7d_AMMORT2]
       <H> [etc <h MORT7bH>]

>MORTA7c_AMRTZ< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[r](H)[n]
     At your current payments, how long would it take to pay off the loan?

(1-40) [u]@[n] Years

[@] <1-40, D, R> [goto MORTA7d_AMMORT2]
<H> [etc <h MORT7cH>]

>MORTA7d_AMMORT2< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[r](H)[n]

[Comment] Lam and Kaul recommend asking this question only once (dependent interviewing); we concur.
How much was borrowed?
(1-9999997) $1-$9,999,997
(9999998) $9,999,998 or more

$ @ .00

[@] <1-9999998,D,R> [input format enter right commas < >]
<H> [etc <h MORT7dH>]
[store MORTA7d_AMMORT2 in OUT_AMMORT1]
[goto MORTA8]

[Addition] New variable UNPBAL.
Does your mortgage statement indicate how much you still owe on the mortgage, that is, your unpaid principal balance? What is that amount?

>MORTA8< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[store <> in temp1]
[if MORT1b_REGMOR eq <>]
[store <loan> in temp1]
[else]
[store <mortgage> in temp1]
[endif]

[r](H)[n]
Does this [fill temp1] cover-- (READ ANSWER CATEGORIES BELOW)

(1) Yes (2) No

Other homes or apartments besides this one? @PINCOP
Farm land? @MFARM
A business on this property? @MCOM

[@PINCOP] <1,2,D,R>
[@MFARM] <1,2,D,R>
[@MCOM] <1,2,D,R>
<H> [etc <h MORT8H>]

>MORTA8ck<
[if MORTA8@PINCOP eq <1> or MORTA8@MFARM eq <1> or MORTA8@MCOM eq <1>]

```
    [goto MORTA9_RESMOR]
   [else]
    [goto MORTA10]
  [endif]
```

```
>MORTA9_RESMOR< [missing <D><R><H>]
macro ahsmort_TM in time.mac
   [store <> in temp5]
     [store <amount> in TEMP5]
    [if MORTA7d_AMMORT2 onpath and MORTA7d_AMMORT2 valid]
      [store MORTA7d_AMMORT2 in TEMP5]
    [else]
      [if MORTA5d_AMMORT1 onpath and MORTA5d_AMMORT1 valid]
        [store MORTA5d_AMMORT1 in TEMP5]
    [endif] [endif]
                                        [r](H)[n]
    How much of the $[fill TEMP5] applies just to your home?

       (1-9999997)      $1-$9,999,997
       (9999998)        $9,999,998 or more

        $ @ .00

   [@] <1-9999998> [input format enter right commas <        >]
      <D,R> [missing] [goto MORTA10]
      <H> [missing][etc <h MORT9H>]
```

[Comment] In 2005, only 125 answered yes to PINCOP, 36 to MCOM, and 95 to MFARM. The small number of cases and the possibility of getting good answers to a UNPBAL type question for these cases do not seem worth the effort of trying for a UNPBAL variant.

```
>MORTA10< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[store <> in temp]
[if MORT1b_REGMOR ge <1>]
   [store <mortgage> in temp]
 [else]
   [store <loan> in temp]
[endif]
```

[Comment] Lam and Kaul recommend not re-asking this question on fixed rate mortgages (dependent interviewing). We are sympathetic, but at this point in the interviewing, we do not know whether it is a fixed rate mortgage and whether it has only one regime.

```
                                        [r](H)[n]
  [Change] Looking at your mortgage statement, what is the current interest rate on the [fill temp]?
      (Rounded down to nearest 1/8 percent)
      (0 = no fraction, 1 = 1/8 percent,
       2 = 1/4 percent, 3 = 3/8 percent,
       4 = 1/2 percent, 5 = 5/8 percent,
       6 = 3/4 percent, 7 = 7/8 percent)

         @INTW   @INTF    percent
```

[@INTW] <1-20,D,R><H> [etc <h MORT10H>]
[@INTF] <0-7,D,R> [goto MORTA11_PMT]
<H> [etc <h MORT10H>]

>MORTA11_PMT< [missing <D><R><H>]
macro ahsmort_TM in time.mac

[Comment] We do not see how the questionnaire deals with biweekly payments. Doubling biweekly payments underestimates the monthly payment.

[r](H)[n]

[Change] Looking at your mortgage statement, what is the current ~~monthly~~ payment?

(Include as much of PITI as they pay)

(1-9997) $1-$9997
(9998) $9998 or more

$ @ .00

[@] <1-9998> [input format enter right commas < >]
<D,R> [goto MORTA12a]
<H> [etc <h MORT11H>]

[Addition] New variable FQMTPAY
How often do you make a payment on your mortgage?
Every month
Twice a month
Every two weeks
Other

[Addition] New variable CHMTPAY
Has the amount of your mortgage payment increased over what it was 12 months ago?
Yes – go to next three questions
No, D, R – skip to MORTA12a

[Addition] New variable WHYCHMT
Why did your mortgage payment increase? MARK (X) ALL THAT APPLY
Property taxes or homeowners insurance increased
The adjustable interest rate increased
Rules used to calculate the adjustable interest rate changed ([Comment] This is a stretch, but best to start from an ambitious set of questions and work down to a workable set.)
Interest rate changed from fixed rate to adjustable rate
Mortgage changed from interest only to interest plus payment to reduce mortgage balance
Mortgage no longer allows you to decide how much to pay

[Addition] New variable SHOCK
Was the amount of the mortgage payment so great as to make it difficult to afford the payment?
Yes – ask next question
No, D, R – skip to MORTA12a

[Addition] New variable SHOCKAM
Did the mortgage payment change by more than 25 percent? If “yes,” ask more than 50 percent?

>MORTA12a< [missing <D><R><H>]

macro ahsmort_TM in time.mac

[Change] Looking at your mortgage statement, besides principal and interest, does the payment include:

(READ ANSWER CATEGORIES)

(1) Yes (2) No

Property taxes? @TAXPMT
Homeowner's insurance? @INSPMT
Private Mortgage Insurance? @PMIPMT
Anything else? (exclude anything already mentioned) @OTHPMT

[@TAXPMT] <1,2,D,R>
[@INSPMT] <1,2,D,R>
[@PMIPMT] <1,2,D,R>
[@OTHPMT] <1,2,D,R>
<H> [etc <h MORT12aH>]

[if MORTA12a@PMIPMT eq <1>]
[goto MORTA12b_PMIAMT]
[else]
[if MORTA12a@OTHPMT eq <1>]
[goto MORTA12c_AMTM]
[else]
[goto MORTA13_MORTIN]
[endif][endif]

>MORTA12b_PMIAMT<[missing <D><R>]
macro ahsmort_TM in time.mac

[Comment] Note this transforms PMIAMT from an annual amount to a per payment amount. Also note that it picks up FHA premiums as well, which is new. We don't know whether mortgage statements normally break out the FHA premium. This needs to be checked.

[Change] Looking at your mortgage statement, how much was the ~~private~~ mortgage insurance payment?

(1-999997) $1-$999,997
(999998) $999,998 or more

$ @ .00

[@] <1-999998> [input format enter right commas < >]
<D,R>

[if MORTA12a@OTHPMT eq <1>]
[goto MORTA12c_AMTM]
[else]

[goto MORTA13_MORTIN]
[endif]
[Addition] New variables TAXAMT and INSAMT:

Looking at your mortgage statement, how much were the property taxes?

Looking at your mortgage statement, how much was the homeowners insurance last year?

[Comment] Note that these provide an alternative way to get AMTI and AMTX. AMTI and AMTX, as appropriate, should be skipped if INSPAY =1 or TAXPAY = 1. We note that some mortgage statements group taxes and hazard insurance under “escrow payment.” So we will need to work on this.

>MORTA12c_AMTM<[missing <D><R>]
macro ahsmort_TM in time.mac

How much were the other charges last year?
(Exclude property tax, homeowner's insurance and PMI)

(1-9999997) $1-$9,999,997
(9999998) $9,999,998 or more

$ @ .00

[@] <1-9999998> [input format enter right commas < >]
<D,R> [missing] [goto MORTA13_MORTIN]

>MORTA13_MORTIN< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <1>]
[store <4> in MORTA13_MORTIN]
[store <1> in MORTA14_BANK]
[goto MORTA16_VARY]
[endif]
[Comment] Lam and Kaul recommend asking this question only once (dependent interviewing); we concur.
[r](H)[n]
Is the mortgage an FHA, VA,
Rural Housing Service/Rural Development
mortgage, or some other type?

(1) FHA
(2) VA
(3) Rural Housing Service/Rural Development
(formerly Farmer's Home Administration)
(4) Some other type

@

[@] <1-2> [goto MORTA16_VARY]
<3> [goto MORTAck18]
<4,D,R> [goto MORTA14_BANK]
<H> [etc <h MORT13H>]

>MORTA14_BANK< [missing <D><R><H>]
macro ahsmort_TM in time.mac

[Comment] While we are playing with this language, we could ask for more detail on the originator, perhaps asking this only of those who obtained a mortgage between surveys. The problem is most borrowers do not understand the differences among banks, S&Ls, the affiliates of banks or S&Ls, mortgage bankers, and mortgage brokers.

[r](H)[n]

Did you borrow money from a bank or other organization OR did you borrow it from an individual?

(1) Bank or Organization
(2) Individual

@

[@] <1,D,R> [goto MORTA16_VARY]
<2> [goto MORTA15_SELL]
<H> [etc <h MORT14H>]

[Comment] One possibility is to have the following two questions for second mortgages or refinances of first mortgages:
[Addition] New variable: LNFNBR
Did you decide to refinance because a lender called you on the telephone or sent you a solicitation in the mail? If so, did you obtain the loan from the firm that contacted you?
Yes – if answer to both parts of question is yes
No – if answer to either part of question is no
[Comment] We suggest this question because “loans that find people” are considered a problem in the subprime context.

[Comment] Another possibility to be asked only of new mortgages (since last survey – dependent interviewing):
[Addition] New variable: DOC
Did the lender tell you that you could get the mortgage without having to supply the usual amount of information about your income, assets, and debts?
Yes – ask next question
No – continue
Did the lender require any information about your income, assets, or wealth?
Yes
No

Coding of DOC:
0 No to first question
1 Low doc loan – yes to both questions
2 No doc loan – yes to first question; no to second question

>MORTA15_SELL< [missing <D><R><H>]
macro ahsmort_TM in time.mac

[r](H)[n]

Was that the former owner of the home?

(1) Yes
(2) No

@

[@] <1,2,D,R> [goto MORTA16_VARY]
<H> [etc <h MORT15H>]

[Comment] At this point, we suggest changes in the questionnaire that break with the way questions were asked in the past. The changes would eliminate the following variables: VARY, FIXED, ARM, GPM, GPMW, VARM, BLOON, and LOON.

[Comment] We suggest eliminating GPM because we think that graduated payment mortgages are very uncommon these days and because it would be easy to misclassify a hybrid-ARM or interest only mortgage as a graduated payment mortgage using the old language. We also suggest not tracking adjustable term mortgages because they are so unusual. This would eliminate CANVAR. The other variables are dropped because we ask the questions differently, and the information would not be comparable between future surveys and old surveys.

[Comment] We also suggest that these questions be asked ONLY of loans originated since the last survey. YRMOR and MNMOR would be used to make this determination. These questions would become part of the set of questions that use dependent interviewing.

[Comment] Since we are identifying "new" mortgages, we should guard against a possibility that Lam and Kaul worried about:
[Addition] New variable: NREFI
This is a new mortgage. We last interviewed this unit in <date> OR you acquired this unit on <WHNGET>. Is this the only time you refinanced the mortgage since <interview or acquisition>? If "no", how many times have you refinanced since <interview or acquisition>?
1 if "yes"
COUNT otherwise

>~~MORTA16_VARY< [missing <D><R><H>]~~
~~macro ahsmort_TM in time.mac~~
~~[store <> in temp]~~
~~[if MORT1b_REGMOR ge <1>]~~
~~[store <mortgage?> in temp]~~
~~[else]~~
~~[store <loan?> in temp]~~
~~[endif]~~
~~[r](H)[n]~~
~~Are the payments on this loan the same during~~
~~the whole length of the [fill temp]~~

~~(1) Yes~~
~~(2) No~~

~~@~~

~~[@] <1,D,R> [goto MORTAck18]~~
~~<2> [goto MORTA17]~~

~~<H> [etc <h MORT16H>]~~

~~>MORTA17< [missing <D><R><H>]~~
~~macro ahsmort_TM in time.mac~~
~~[r](H)[n]~~
~~How do they change?~~
~~MARK (X) ALL THAT APPLY~~

~~@FIXED 1 Change in taxes or insurance, or due to decline~~
~~in principle balance~~
~~@ARM 2 Change based on interest rates~~
~~@GPM 3 Rise at fixed schedule during part of loan~~
~~@GPMW 4 Rise at fixed schedule during whole length of loan~~
~~@BLOON 5 Last payment biggest~~
~~@VARM 7 Other, specify~~
~~[if morta17@varm eq <X>] @varmsp [endif]~~

~~[@FIXED]<X> [optional]~~
~~[@ARM] <X> [optional]~~

~~[@GPM] <X> [optional]~~
~~[@GPMW] <X> [optional]~~
~~[@BLOON]<X> [optional]~~
~~[@VARM] <X> [optional] [#goto MORTA17ck1]~~
~~<H> [etc <h MORT17H>]~~
~~[@varmsp] [allow 45] [default goto MORTA17ck1]~~

~~>MORTA17ck1<~~

~~[if MORTA17@FIXED eq <x>]~~
~~[if MORTA17@ARM ne <x> and MORTA17@GPM ne <x> and MORTA17@GPMW ne <x>~~
~~and MORTA17@BLOON ne <x> and MORTA17@VARM ne <x>]~~
~~[goto MORTA17ASK1]~~
~~[endif]~~
~~[endif]~~
~~[if MORTA17@BLOON eq <X>]~~
~~[goto MORTA17ASK5]~~
~~[endif]~~
~~[goto MORTAck18]~~

~~>MORTA17ASK1< [missing <D><R>]~~
~~macro ahsmort_TM in time.mac~~

~~Do they change for any other reason?~~

~~(1) Yes~~
~~(2) No~~

~~@~~

~~[@] <1> [etc <b MORTA17>]~~
~~<2,D,R> [goto @a]~~

~~[@a] [if MORTA17@BLOON eq <X>]~~
~~[goto MORTA17ASK5]~~
~~[else]~~
~~[goto MORTAck18]~~
~~[endif]~~

~~>MORTA17ASK5< [missing <D><R>]~~
~~macro ahsmort_TM in time.mac~~

~~Of the total amount you borrowed, what percentage~~
~~will have to be paid off in this last payment?~~

~~(1) 1-25 percent~~
~~(2) 26-50 percent~~
~~(3) 51-75 percent~~
~~(4) 76-100 percent~~
@

[Comment] The first two questions in this new series are taken from the SCF.

[Addition] Will the (regular) payments repay the loan completely, or will there be a balance payable, or "balloon" payment, when the loan is due?

1. *Repay completely
2. *Balance payable or Balloon
0. Inap. (Does not own any part of HU; no first mortgage or no second mortgage or no third mortgage; no typical payment)

[Addition] What will the balance due or balloon payment be?

Code amount

0. Inap. (Does not own any part of HU; no first mortgage or no second mortgage or no third mortgage; no typical payment; no balloon payment)

[Addition] Now we have a series of questions about how your mortgage works. Previously we asked you to look at your mortgage statement and answer questions about what is the payment you make on your mortgage and how much of that regular payment is due to interest and reducing the mortgage balance. Now we want to know the rules that determine how much you pay toward interest and the mortgage balance in each payment. The rules may not be on your mortgage statement. We are asking you to remember how your lender described your mortgage when you signed your mortgage documents.

[Addition] First, we need to know whether the rules are constant or whether the rules will change in the future.
New variable: REGIME
Did your lender tell you that your payments would be low for a few years but at a definite time in the future the payments would increase?

No – go to questions on fixed vs. adjustable rate mortgage.
Yes – clarify with next question

[Addition] Is the interest rate on your mortgage an adjustable rate; that is, does it have an interest rate that can rise or fall from time to time? {[Comment] Wording is a modified form of a SCF question}

No – proceed to questions about mortgage rules
Yes – ask next question

[Addition] I need to clarify. Do you expect your payments to change in the future because you have an adjustable rate mortgage and adjustable rate mortgages change over time, or because the lender told you the adjustable rate is calculated one way now but will be calculated a different way in the future?

Calculated a different way in the future – proceed to questions about mortgage rules
Just because an ARM or D or R – go to questions on fixed vs. adjustable rate mortgage

[Comment] This last question is probably the most problematic in the new series.

[Addition] RE the coding of REGIME

2 – multiple regimes if the answers to the preceding questions lead to questions about mortgage rules
1 – one regime only if No on first question or Yes on first question and second question and "just because an ARM" on third question
D or R – if D or R to any of the three questions

[Addition] New Variable REGTERM

From the time you took out your mortgage, how many years is it until the rules change?

[Addition] New variable: REGDIF
How do the current rules differ from the rules that will be used <REGTERM> years after the origination of your mortgage? CHECK "X" ALL THAT APPLY.

1 Now I pay only the interest on my mortgage; in the future I will have to pay both interest and principal.
2 Now I pay an interest rate that is a below market interest rate; in the future I will have to pay a higher rate.
3 Now I pay a fixed interest rate; in the future I will have to pay an adjustable rate.
4 Now I can choose how much to pay for each mortgage payment; in the future the lender will determine how much I pay.
5 Some other difference; specify

[Addition] New variable: WHYNON
Why did you choose this type of loan?

Credit Terms/Cost Of Loan
1. Interest rate -- low (er) / reasonable/best available rates
4. Finance charges low (er) or none (other than interest or NA if includes interest)
5. Amount of the down payment
6. Size of (monthly) payments; payment amount; longer contracts -- more time to pay off loan
9. Easier to get credit -- require less information/collateral; less stringent rules for giving credit; get credit approval faster; no red tape
25. Credit terms/arrangements -- NA what: "affordable terms"
26. Give the best (a better) deal -- NA how
29. Other credit terms or cost of loan
30. Special features for first-time home buyers
80. No Choice, NEC
81. Used before, always use
83. Recommended
85~~. Home inspection policy~~
90. Assumed or assumable; seller-financed
-7. Other
0. Inap. (Does not own any part of HU: no mortgage)

[Comment] The preceding question was an adaptation of an SCF question on why an FHA or VA mortgage.

[Addition] New variable: ADJRATE
[Comment] This uses the language from the SCF with modifications.
[Addition] Is your current interest rate an adjustable rate (contract/mortgage); that is, does it have an interest rate that can rise or fall from time to time?

1. *YES
2. *NO

[Comment] Currently the AHS does not ask about the details of adjustable rate mortgages but the SCF does. We have added the SCF questions here as an alternative to consider:

[Addition] Does the change in your interest rate depend on some other interest rate?

1. *YES
5. *NO
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

Coding of ADJRATE to be based on the answers to these two questions; here is our suggestion:

1 ARM if “yes” to both questions or “yes” to first question and D or R to second question
2 Fixed rate if “no” to first question or (“yes” to first question and “no” to second question)
D if D to first question

[Addition] On what other rate does it depend?

1. Consumer Price Index (CPI); "cost of living"
2. GDP (Gross Domestic Product) Deflator
3. Prime (interest) Rate
4. Treasury Bill/Bond Rate (T-Bill rate)
5. "Current rate", "going rate", "market rate": n.f.s.
6. District/regional rate
7. Other index; index NEC
8. CD rate
9. Other specific interest rate (includes LIBOR etc.)
10. "Federal Reserve rate"
11. FHLBB (Federal Home Loan Bank Board)
12. FSLIC (Federal Savings and Loan Ins. Corp)
13. Ginny Mae rate

-7. Other

0. Inap. (Does not own any part of HU; no first mortgage; not adjustable rate; change doesn't depend on other rate)

****

FOR THE PUBLIC DATA SET, CODE 8 IS COMBINED WITH CODE 9; CODE 11 IS COMBINED WITH CODE 12

****

[Addition] How often can your interest rate change?

[Addition]
X823(#1) Code number of times

0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

[Addition]
X824(#1) INTERVIEWER: CODE WITHOUT ASKING IF ALREADY MENTIONED
Code frequency

1. Day
2. *Week
3. *Every two weeks
4. *Month
5. *Quarter
6. *Year
8. *In total
11. Twice per year; every six months
12. Every two months
13. *Every three years
15. *Continuously floating rate/whenever rate changes
16. *Every seven years
17. *Fixed for 2 or more years, then variable annually
22. Varies
25. Every two years
26. Every four years
27. Every five years
28. Every ten years
30. At seven years
31. *Twice a month
32. Every eight years
33. Initially fixed for 2 or more years, then variable more frequently than annually
34. Initially fixed for 2 or more years, then variable less frequently than annually or frequency NA

-7. *Other
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

[Addition]
X825(#1) When the interest rate on your (land contract/mortgage) changes, does the size of your monthly payments also change?

1. *YES
5. *NO
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

[Addition]
X826(#1) What is the most the rate can rise at any one time?

(POINTS = PERCENTAGE POINTS)

Code percent * 100
-2. No limit
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

[Addition]
X828(#1) What was the interest rate on this (land contract/mortgage) when you first got it?

Code percent * 100
0. Inap. (Does not own any part of HU: X508^=1 or 2 and X601^=1, 2, or 3 and X701^=1, 3, 4, 5, 6, or 8 and X7133^=1; no first mortgage: X723^=1 or 2; not adjustable rate: X820^=1)

[Addition]
X827(#1) What is the highest the rate can go up to over the life of the loan?

INTERVIEWER: WE WANT THE HIGHEST RATE ALLOWED, NOT THE MAXIMUM AMOUNT BY WHICH THE RATE COULD RISE.

[@] <1-4,D,R> [goto MORTAck18]

>MORTAck18<

[if MORTA6a_REFI eq <2>]
[goto MORTA18_PERUS1]
[else]
[goto ENDMORTAck]
[endif]

>MORTA18_PERUS1<[missing <D><R>]
macro ahsmort_TM in time.mac

What percentage of this loan was used for the purchase of the home or additions, improvements or repairs to this home?

(0-100) @ %

[@] <0-100, D, R> [goto ENDMORTAck]

>ENDMORTAck<
[store <0> in HELS]
[if mort1b_REGMOR eq <> and mort2b_HELUMN eq <1>]
[goto mort20ck]
[endif]
[if MORT1b_REGMOR gt <1>]
[store <1> in mortb]
[goto MORTB5a_SUBMR2]
[else]
[if MORT1b_REGMOR eq <1> and MORT2b_HELUMN ge <1>]
[store <1> in HELS]
[store <2> in mortb]
[store <2> in MORTB5a_SUBMR2]

```
      [goto MORTB5INTRO]
   [else]
     [if mort1b_regmor eq <> and mort2b_helumn ge <2>]
     [store <1> in HELS]
     [store <2> in mortb]
     [store <2> in mortb5a_submr2]
     [goto mortb5intro]
   [else]
     [goto MORT20ck]
   [endif][endif][endif]

-------------------------------------------------------------------------------------------
>MORTB5INTRO<
macro ahsmort_TM in time.mac
  [store <> in temp]
    [if MORT1b_REGMOR eq <1> and MORT2b_HELUMN eq <1>]
      [store <> in temp]
    [else]
    [if MORT1b_REGMOR eq <1> and MORT2b_HELUMN ge <1>]
      [store <first> in temp]
     [else]
    [if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <2>]
      [store <second> in temp]
    [endif][endif][endif]

        Now I am going to ask you about your [fill temp]
        lump sum home equity loan.

             PRESS ENTER TO CONTINUE @

 [@] [NODATA] [goto MORTB5b_MATBY2]
-------------------------------------------------------------------------------------------
>MORTB5a_SUBMR2< [missing <D><R><H>]
macro ahsmort_TM in time.mac
                                                       [r](H)[n]

        Did you get the second mortgage through a State or local
        government program that provides lower cost mortgages?

             (1) Yes
             (2) No

              @

      [@] <1,2,D,R> [goto MORTB5b_MATBY2]
          <H> [etc <h MORT5aH>]

-------------------------------------------------------------------------------------------
>MORTB5b_MATBY2< [missing <D><R><H>]
macro ahsmort_TM in time.mac
[store <> in temp1]
[store <> in temp2]
```

```
[if MORT1b_REGMOR ge <2>]
   [store <second mortgage> in temp1]
[else]
[if MORT1b_REGMOR eq <1> and MORT2b_HELUMN eq <1>]
   [store <current lump sum home equity loan> in temp1]
[else]
[if MORT1b_REGMOR eq <1> and MORT2b_HELUMN ge <1>]
   [store <first current lump sum home equity loan> in temp1]
[else]
[if MORT1b_REGMOR eq <> and MORT2b_HELUMN ge <2>]
   [store <second lump sum home equity loan> in temp1]
[endif][endif][endif] [endif]
         [if out_cushom eq <5> or OUT_PREOCC eq <1>]
            [store <acquired> in temp2]
         [else]
            [store <bought> in temp2]
         [endif]
```

[r](H)[n]

Did you get the [fill temp1] the
same year you [fill temp2] your home?

(1) Yes [change] – go to PMIALT
(2) No

@

[@] <1, D, R> [goto MORTB5c_NEWMR2]
<2> [goto MORTB6a_REFI2]
<H> [etc <h MORT5bH>]

[Addition] New variable: PMIALT
Did you take out this loan so that you would not have to purchase private mortgage insurance?

[Comment] FROM THIS POINT ON IN THE CODE, THE AHS SHIFTS TO SECOND AND THIRD MORTGAGES, HOME EQUITY LINES OF CREDIT, HOME EQUITY LUMP-SUM MORTGAGES, AND REVERSE ANNUITY MORTGAGES.

[Comment] WITH RESPECT TO SECOND AND THIRD MORTGAGES AND HOME EQUITY LUMP-SUM MORTGAGES, WE RECOMMEND THE SAME CHANGES AS INDICATED ABOVE.

Appendix: Counts of Responses to AHS Mortgage-Related Questions

We identified every AHS variable that relates to either the number of mortgages or the characteristics of first mortgages and ran frequency distributions on these variables from the 2005 public use file.

Questions about the Number of Mortgages

The 2005 AHS national file has information on 59,581 housing units. The sample includes 34,248 owner-occupied units[18] but, of these, 4,645 did not respond to the AHS survey.[19] The result is that interviewed, owner-occupied units total 29,603.

Of the 29,603 interviewed, owner-occupied units, 17,531 (59 percent) have a mortgage other than a home equity line of credit, and 12,072 have no mortgage other than a home equity line of credit.[20]

- Of the 17,531 with a "regular" mortgage, 16,567 have only one regular mortgage, 942 have two, and 22 have three.[21]
    - Another variable reports on 18,092 units with regular mortgages. 16,011 have one, 1,987 have two, 83 have three, and 11 have four.[22]

- Of the same 29,603, 1,733 have a lump sum home equity loan. We presume these are counted in the 17,531.[23]
    - 1,705 have one lump sum, 27 have two, and 1 has three.[24]

- There are 4,041 with home equity lines of credit (15 percent of those responding). We did not check the overlap among these 4,031 and the 17,531.
    - 4,022 units responded to the question about the number of home equity lines of credit. 3,989 have one, 28 have two, and there were 5 other answers, including 1 having ten.

[18] 10,068 have no information on tenure. These consist of 2,817 type B and C losses, 602 usual residence elsewhere (URE) units, and 6,649 vacant units.
[19] 3,717 of the non-responses were refusals.
[20] Based on MG; there were 107 edits to MG.
[21] Based on REGMOR; "don't know" and "refused" are allowed response categories but these categories had zero responses; 13,217 responses were edited.
[22] Based on MCNT; 1,031 responses were edited.
[23] Based on HELUMP; "don't know" and "refused" are not response categories. There were 27,870 "no" answers. The Census Bureau edited 1,722 of the responses to this question.
[24] Based on HELUMN; "don't know" and "refused" are not response categories; there were 27,879 edited cases.

- 17,865 owner-occupied units have one or more mortgages, including home equity lines of credit. 13,075 have one, 4,330 have two, 429 have three, and 31 have four or more.[25] By inference, there are 334 interviewed, owner-occupied units with a home equity line of credit only.

27,771 units responded to the question on source of downpayment.[26]

18,092 responded to the question of whether the mortgage was obtained in the year the house was bought.[27] 10,836 said "yes" and 7,236 "no." 936 were "not applicable."

- Of the 10,836, 3,998 bought their unit in 2003 or later (1,504 in 2003; 1,762 in 2004; and 732 in 2005).[28]

- Of the 10,836, 10,725 were new mortgages, 104 were assumed, and 7 were wrap-around mortgages.[29]

- There were 7,256 responses to the question of the year the mortgage was obtained. This question is asked of those who did NOT obtain the mortgage in the year the house was bought.

    - Of the 7,256, 4,522 obtained their mortgages in 2003 or later (2,197 in 2003; 1,618 in 2004; and 707 in 2005).[30]

- Combining this information, we have information on 8,520 recent originations (3,701 in 2003; 3,380 in 2004; and 1,439 in 2005).

Questions about Mortgage Characteristics

Now we have a series of questions involving specialized mortgage contracts.

- Only 11,627 units have answers recorded about whether the mortgage is a land contract. 1,444 "yes"; 9,964 "no"; 218 "don't know"; and 1 "refused."[31]

- 17,893 have recorded answers as to whether the mortgage includes commercial property. 36 "yes"; 16,846 "no"; 22 "don't know"; 936 "not applicable"; and 53 "refused."[32]

---

[25] Based on NUMMOR; "don't know" is an allowed response but there were none in this category.
[26] DWNPAY – in addition, there were 242 "don't know," 406 "refused," and 30,978 "not applicable."
[27] Based on MATBUY; there were 1,922 edited cases.
[28] Based on WHNGET; 329 of the 10,836 answers were edited.
[29] Based on NEWMOR; 1,892 cases were edited.
[30] Based on YRMOR; 81 cases were edited.
[31] Based on LANDC.
[32] Based on MCOM; 126 cases were edited.

- 16,957 have recorded answers as to whether the mortgage includes farm land. 95 "yes"; 16,788 "no"; 22 "don't know"; and 52 "refused."[33]

- 16,957 have recorded answers as to whether the mortgage includes other units. 125 "yes"; 16,759 "no"; 21 "don't know"; and 52 "refused."[34]

The AHS asks whether the mortgage was borrowed from a bank or other organization or from a person. These are the only two options. The question was considered "not applicable" for 3,582. Of the remaining 14,825, 13,823 said "bank or other organization," 302 "other individual," 62 "don't know," and 98 "refused."[35]

- Of the 302 "other individual: 170 said "yes" to former owner, 130 said "no," 1 "don't know," and 1 "refused."

The AHS has a series of variables that deal with payment type. The variables cover key topics in classifying mortgages but, looking at the coding of the variables and the distribution of values for each variable, we are not sure an analyst could combine the variables in any creative way. They allow an analyst to classify a mortgage into certain pre-determined buckets: ARMs, GPMs, etc., but do not allow the analyst to create new buckets. In Table A-1 on the next page, notice that "not applicable" (B) is, by far, the most frequent response. We do not see a way to determine why a question was "not applicable." Also, for most of the variables, instead of "yes" or "no," one gets "X," which is a "yes" but with "no" not being allowed. The way the question is asked evidently relegates the "no's" to "not applicable." (Further, we do not see how one can determine if a mortgage is a fixed-rate, level-payment mortgage. There is no variable that identifies these.)

Another surprise is how the AHS treats insured vs. uninsured and government insurance vs. PMI. The questions appear to have been designed when FHA and VA were the policy interest.

- The question label MORTIN actually asks whether the mortgage is FHA, VA, or FmHA (now Rural Housing Service) with "other type" as the default. "Other type" can be state or local insured, uninsured, or PMI. There were 16,807 responses, 14,131 of which were "other type."[36]

- Another question (PMIPMT) asks whether the mortgage payment includes PMI premiums. There were 2,409 "yes" answers.[37]

[33] Based on MFARM; 126 cases were edited.
[34] Based on PINCOP; 126 cases were edited.
[35] Based on BANK; there were no edits or allocations.
[36] There were 1,061 not applicable, don't know, or refused in addition to the 16,807.
[37] There were 1,521 not applicable, don't know, or refused

Table A-1: AHS Variables Related to Characteristics of the Primary Mortgage

Name:	VARY	MRTYP1	FIXED	ARM	GPM	GPMW	BLOON	CANVAR	VARM	ARMASK	RAM
Definition:	1st mortgage payments change	Type of 1st mortgage (see two options below)	1st mortgage changes for taxes/ insurance	1st mortgage changes due to interest rate	1st mort payments rise on fixed schedule part length of mortgage	1st mort payments rise on fixed schedule whole length of mortgage	1st mortgage's last payment biggest	Term of 1st mortgage can vary	1st mortgage changes for other reason	1st mortgage changes for other reason	Has reverse annuity or HE conversion mortgage
Yes	14076										27
No	2480									837	5704
X			1077	1110	255	76	53	102	249	17028	
B not applicable	1081	936	15388	15388	15388	15388	15388	1040	15388	3	53813
D don't know	120										6
R refused	108										3
Regular		17531									
Lump sum		561									

Table A-2: AHS Variables Related to Reasons for Refinancing Primary Mortgage

Name:	GTCASH	LOWINT	EXTLON	INCPER	REDMON	REDPAY	OTHREF
Definition:	1st mortgage refinanced to receive cash	1st mort refinanced to get lower interest	1st mortgage refinanced to renew/extend	1st mort refinanced to increase pmt period	Refinanced to reduce monthly payment	Reason for refinance reduced payment of 1st	1st mortgage refinanced for other reason
X	932	6130	70	227	1797	801	642
B not applicable	11974	11974	11974	11974		11974	11974
D don't know	1	1	1	1	1	1	3
R refused	2	4	2	3	2	3	2

The AHS asks whether a government program provides the first mortgage. Of 17,982 responses, 1,184 said "yes"; 15,723 "no"; 936 "not applicable"; 84 "don't know"; and 55 "refused."[38] The question is apparently designed to identify subsidized mortgages because it is named SUBMOR, but the question does not inquire as to whether there is a reduced interest rate or other subsidy.

The AHS reports term; 1-40 are allowed answers but the frequency distribution for 2005 had no responses greater than 30.[39] We need to check whether this is artificial; it probably is because answers to the question on years remaining on the term ranged up to 32 years.[40]

The AHS reports interest rate by whole percent and fraction of a percent. There were 18,092 responses to both questions. Whole percent ranged from 1 to 20.[41] Fractions are reported in 1/8 of a percentage point; answers are rounded to nearest 1/8th.[42]

The AHS reports on whether a mortgage is a refinance of a previous mortgage. There were 17,947 responses: 7,054 "yes"; 9,703 "no"; 1,047 "not applicable"; 73 "don't know"; and 70 "refused."[43]

The AHS also enquires about the reason for refinancing. Table A-2 on the preceding page lists these variables. The respondent could choose multiple reasons.[44]

- Of the 932 who said to get cash, 825 specified the amount of cash.[45]

The AHS identifies what is included and what is not included in the monthly mortgage payment.

- 17,869 replied re taxes: 10,825 "yes"; 6,343 "no"; 936 "not applicable"; 166 "don't know"; 139 "refused."[46]
- 17,869 replied re insurance: 9,377 "yes"; 7,252 "no"; 936 "not applicable"; 165 "don't know"; 139 "refused."[47]
- 17,869 replied re insurance: 2,409 "yes"; 13,939 "no"; 936 "not applicable"; 442 "don't know"; 143 "refused."[48]
- With respect to land payments, there were 58,967 "not applicable"; 23 "yes"; 15 "no."[49]

[38] Based on SUBMOR; 4 cases were edited.
[39] Based on TERM; 645 cases were edited; 1,712 cases were allocated.
[40] Based on AMRTZ; 246 cases were edited; 232 cases were allocated.
[41] Based on INTW; 3,541 cases were allocated.
[42] Based on INTF; 112 cases were edited; 3,541 cases were allocated.
[43] Based on REFI; no edits or allocations.
[44] There were no edits or allocations for these variables.
[45] Based on CASH; there were also 82 "don't know" and 32 "refused." This variable is topcoded at $999,999, but $267,231 was the largest reported value.
[46] Based on TAXPMT; no edits or allocations.
[47] Based on INSPMT; no edits or allocations.
[48] Based on PMIPMT; 25 cases were edited.

- 17,869 replied re other payments: 266 “yes”; 16,315 “no”; 936 “not applicable”; 211 ”don’t know”; 141 “refused.”[50]

The AHS reports payment amount; it is topcoded at the 97th percentile. 936 cases were considered “not applicable”; 18,092 reported amounts ranging up to $3,972.[51]

- The AHS separately reports PMI payment: 16,619 “not applicable”; 1,385 ”don’t know”; 93 “refused.”[52] 904 reported amounts up to $4,894.[53]

The AHS reports the amount borrowed or assumed. 18,092 report amounts up to $635,219; 936 cases were “not applicable.”[54]

- The AHS identifies separate amounts related to the unit and the amount related to other charges.
    - With respect to the unit, 18,793 “not applicable”; 67 “don’t know”; 14 “refused.” 126 reported amounts up to $581,389.[55]
    - With respect to other charges, 18,762 “not applicable”; 118 “don’t know”; 19 “refused.” 125 reported amounts up to $12,062.[56]

Finally, the AHS reports the percent of the 1st mortgage used for additions and improvements. There were 18,953 recorded responses: 9,325 “not applicable”; 367 “don’t know”; 134 “refused.” 9,127 reported percentages ranging from 0 to 100 percent.[57]

[49] Based on LANPMT; 2 cases were edited.
[50] Based on OTHPMT; 5 cases were edited.
[51] Based on PMT; 2,722 cases were edited.
[52] Based on PMIAMT; 27 cases were edited.
[53] According to the codebook, $3,999 is the highest amount allowed and it is topcoded at the 97th percentile.
[54] Based on AMMORT; 3,617 cases were allocated. The variable is topcoded using VALUE’s topcode.
[55] Based on RESMOR; 24 cases were edited. The variable is topcoded using VALUE’s topcode.
[56] Based on AMTM; 4 cases were edited. The variable is topcoded at the 97th percentile.
[57] Based on PERUS1; no edits or allocations.