TESTIMONY OF

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SUBCOMMITTEE ON HEALTH CARE, DISTRICT OF COLUMBIA, CENSUS AND THE NATIONAL ARCHIVES

HEARING REGARDING

"PROS AND CONS OF MAKING THE CENSUS BUREAU'S AMERICAN COMMUNITY SURVEY VOLUNTARY"

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INTRODUCTION

Chairman Gowdy, Ranking Member Davis, and members of the Subcommittee, thank you for inviting me to testify today and to offer the REALTOR® perspective on the *American Community Survey*, a survey that reports on an annual basis important demographic, income, and housing characteristics information for the approximately 114 million households in this country.

I am Lawrence Yun, Senior Vice President and Chief Economist of the National Association of REALTORS®. I have worked for NAR since 2000, analyzing and advising on real estate and research issues. I hold a Ph.D. in economics from the University of Maryland and a B.S. in Mechanical Engineering from Purdue University.

I am here to testify on behalf of the approximately 1 million REALTORS® who are involved in residential and commercial real estate as brokers, sales people, property managers, appraisers, counselors, and in other capacities involving the real estate profession. NAR members belong to one or more of some 1,400 local REALTOR® associations and boards, and 54 state and territory REALTOR® associations.

My testimony addresses the value of the *American Community Survey*. We thank the Subcommittee on Health Care, District of Columbia, Census, and the National Archives for holding this important hearing concerning the *Survey.*

THE *AMERICAN COMMUNITY SURVEY* PROVIDES KEY DATA FOR UNDERSTANDING MAJOR NATIONAL ISSUES

The *ACS* is part of the decennial census and is the most relied-upon source for up-to-date socio-economic, housing, and financial information, not only for the nation, but also for states and cities. The *ACS* is unique in that it reports detailed data for small areas, such as census blocks.

The importance of the *Survey* is highlighted by some of its uses. For example, more than $400 billion in Federal funds are allocated annually to state and local governments based on census data, including data from the *ACS*. The *ACS* provides the data needed to address major housing issues. Data collected from nearly 3 million households per year allows researchers to analyze changing demographic patterns and to provide current assessments of local real estate market conditions.

ACS DATA USE BY NAR

To be more specific, I would like to discuss how NAR uses the *Survey*. The *ACS* provides an important input to NAR's estimation of Existing Home Sales (EHS), as delineated in the Appendix of this testimony. NAR's monthly sales estimates are based on information from a comprehensive sample of Multiple Listing Services around the country. However, NAR does not obtain information on every single sale. Rather, NAR has data for a representative

sample of home sales on a monthly basis. The monthly information is then grossed--up to obtain an estimate of total national existing home sales each month.

Information from the *ACS* provides the basis for the gross--up. Based on information in the yearly *ACS* we are able to obtain a benchmarked level of sales—that is, an estimated level of total existing home sales in a given year. We then use the sample data from the Multiple Listing Services to estimate total monthly sales, based on the benchmark.

Without the availability of the *ACS* we probably would not have an accurate measure of the Existing Home Sales markets, and it is well known that home sales are one of the important drivers of the economy. Timely information on an important part of the economy would no longer be available. This combination of public and private data provides information on a major part of our economy—information that is of interest to decision makers, the homeowner, and a variety of stakeholders.

Another use of the *ACS* is in computing the housing affordability index at the local market level. NAR publishes a closely watched affordability index, which is based on prevailing mortgage rates, local home prices, and local household incomes. We rely on the *ACS* to provide the local income measurements.

One of the popular reports we provide for our REALTOR® members is the Local Housing Market Report. Included in the report are sales, prices, and housing starts trends. We also include information on population shifts and income trends, the data set that comes from the *ACS*. Our REALTOR® members from the faster growing states such as Arizona, Utah, Texas, Florida, North Carolina, and my home state of South Carolina are particularly delighted to hear about the changing population shifts in their state's favor, recognizing that my observations are based on anecdotal conversations that I have had with REALTOR® members.

ACS SUVERY QUALITY IS VERY IMPORTANT

The major value of the *ACS* is that it is based on a random, statistically accurate sample permitting research analysis at the national, state, and local levels. The key word is "Random." A significant non-response error could be introduced to the analysis if participation in the *Survey* were optional. Moving to a voluntary response to the *ACS* would no doubt reduce response rates, particularly among minority households, low income households and from rural communities.

The accuracy and comprehensiveness of the *Survey* is extremely important. Conclusions from a non-random survey could be incorrect and misleading. For these reasons it is important that households selected for the survey be counted in the database. The option of not answering the survey could bias or render meaningless conclusions based on the database.

NAR'S RECOMMENDATIONS AND CONCLUSIONS

I thank you for this opportunity to present our comments on the *American Community Survey*. It is my understanding that the *Survey* is used by a number of stakeholders and is a major input to decisions involving billions of dollars. In the case of the housing markets, the *ACS* serves as a major input to the computation of Existing Home Sales data and the Housing Affordability Index —information of crucial importance in recent years in addressing the nation's housing problems and issues.

Data integrity is important, and I hope that the *American Community Survey* can continue to obtain the necessary response rates needed to assure the development of accurate and meaningful conclusions.

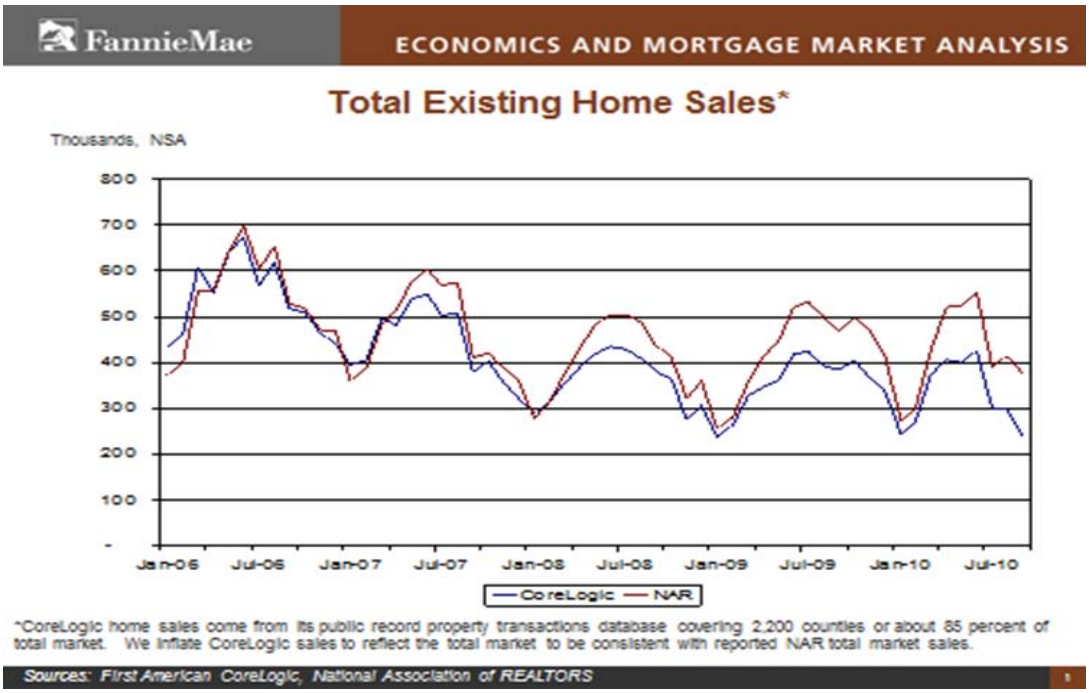
Description of Methodology to Benchmark Existing Home Sales, 2011

SUMMARY

The National Association of Realtors® provides monthly estimates of sales and prices for the Existing Home Sales (EHS) real estate markets. Estimates are generated at the national and regional levels. There was increasing concern that the NAR estimates produced in recent years have overstated the level of existing home sales, with increasing divergence between NAR sales estimates and other housing data starting in 2007. The NAR EHS estimating procedure was previously benchmarked to the year 2000. NAR has now completed a re-benchmarking of the EHS data for each year from 2007 to 2010. Going forward, NAR will re-benchmark Existing Home Sales data every year.

An example of the type of analysis indicating the need for the re-benchmarking effort was presented by FannieMae. Figure 1 depicts growing dispersion between NAR EHS data and CoreLogic existing home sales data starting in 2007.

Figure 1



The NAR re-benchmarked EHS estimates are based on the Census Bureau's *American Community Survey (ACS) 1-year estimates.* The *ACS 1-year estimate* is an annual housing survey based on a rolling sample of approximately 3 million households. NAR also reviewed the use of public records data, working with Lender Processing Services Applied Analytics (LPS). Although the re-benchmarking approach based on *ACS* data was found to be preferable at this time, it is expected that an increasing use of public records data may be appropriate in the future as data coverage and accuracy increase and we reconcile varying EHS estimates available from various public records data providers.

Based on the re-benchmarking effort, downward revisions to annual EHS estimates from the re-benchmarking process averaged 14 percent for the 2007-2010 time periods. Figures 2 and 3 illustrate previously reported annual EHS and the re-benchmarked EHS.

Figure 2: Total Existing Home Sales by Year

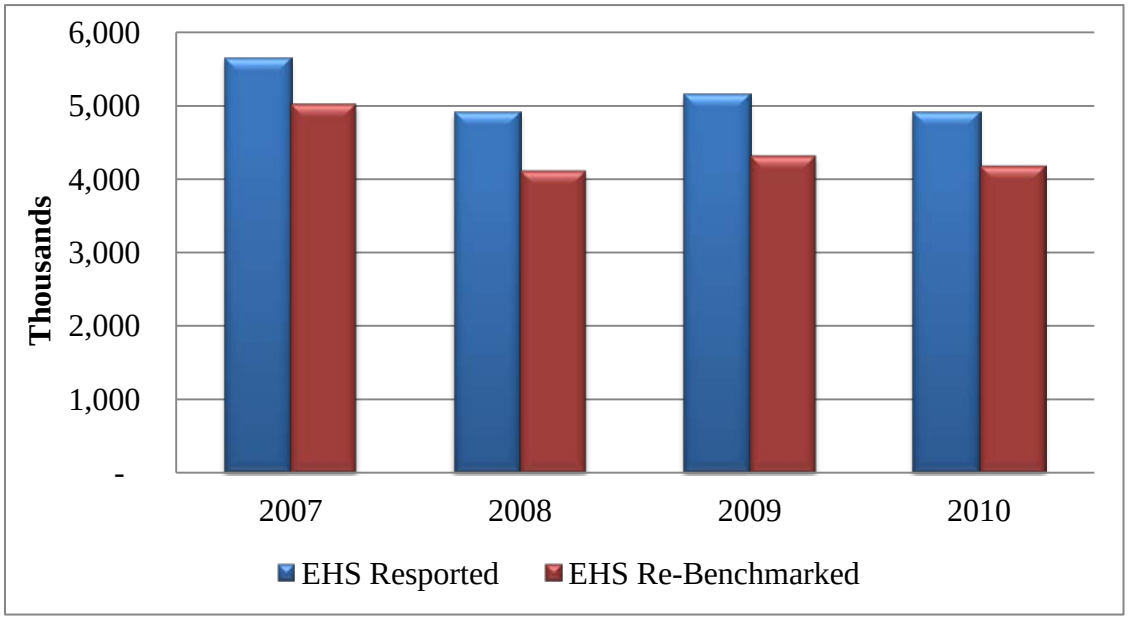


Figure 3: Reported and Re-Benchmarked Annual Existing Home Sales

	Reported Annual EHS	Re-Benchmarked EHS	Revision
2007	5,652,000	5,040,000	-11%
2008	4,913,000	4,110,000	-16%
2009	5,156,000	4,340,000	-16%
2010	4,908,000	4,190,000	-15%
4-year Average	5,157,000	4,420,000	-14%

In the sections below, we set forth steps taken to estimate existing homes sales using the ACS 1-year estimates.

Introduction

The National Association of Realtors® (NAR) provides estimates of existing home sales and prices on a monthly basis through its Existing Home Sales (EHS) reports.[1] The reports use benchmarked estimates of monthly home sales for the base year 1999 rolled forward, based on monthly percent differences on a year-over-year basis in reported sales. The percentage differences in sales between months are based on information obtained from a representative sample of Multiple Listing Services (MLS's) throughout the country. The re-benchmarking process has produced revised estimates of Existing Home Sales (EHS) for the time period 2007-2011. There are no revisions to the price reports, which are based on actual, reported prices rather than benchmarked estimates. The currently reported NAR price series in general track other available indices, so NAR decided on a short-term basis to leave all procedures and computations to be consistent with the existing price reports.

However, NAR is aware that its currently reported price series have been subject to the criticism that reported prices are subject to variations in mix by size of transaction, location of transaction, and date of transaction. These criticisms will be addressed on a longer term basis in the next year by initiating the development of additional NAR price series based on a repeat sales methodology, similar to that used by Case-Shiller and the Federal Housing Finance Administration. The NAR series will be focused on covering broader segments of the market, with attention to additional MSA's and/or specific state information. Until the new series are developed NAR will continue to report prices using the existing methodology.

The actual level of monthly home sales for the entire country is unknown. NAR provides existing home sales estimates based on benchmarks and sample data. Although a number of data vendors provide home sales and inventory information for selected specific geographic areas based on public courthouse records, there is currently no comprehensive, current listing of monthly sales for the entire country based on actual records.

Most economic data are based on benchmarks and samples. For example, while a water meter can measure water flows through a pipe, there is no meter for the dollar flows of Gross Domestic Product (GDP) through the economy. Rather, the Commerce Department's Bureau of

[1] http://www.realtor.org/research/research/ehspage

Economic Analysis benchmarks the GDP data every 10 years, re-estimates the data on an ongoing basis as additional information becomes available through ongoing surveys, and provides updated estimates on an ongoing basis.

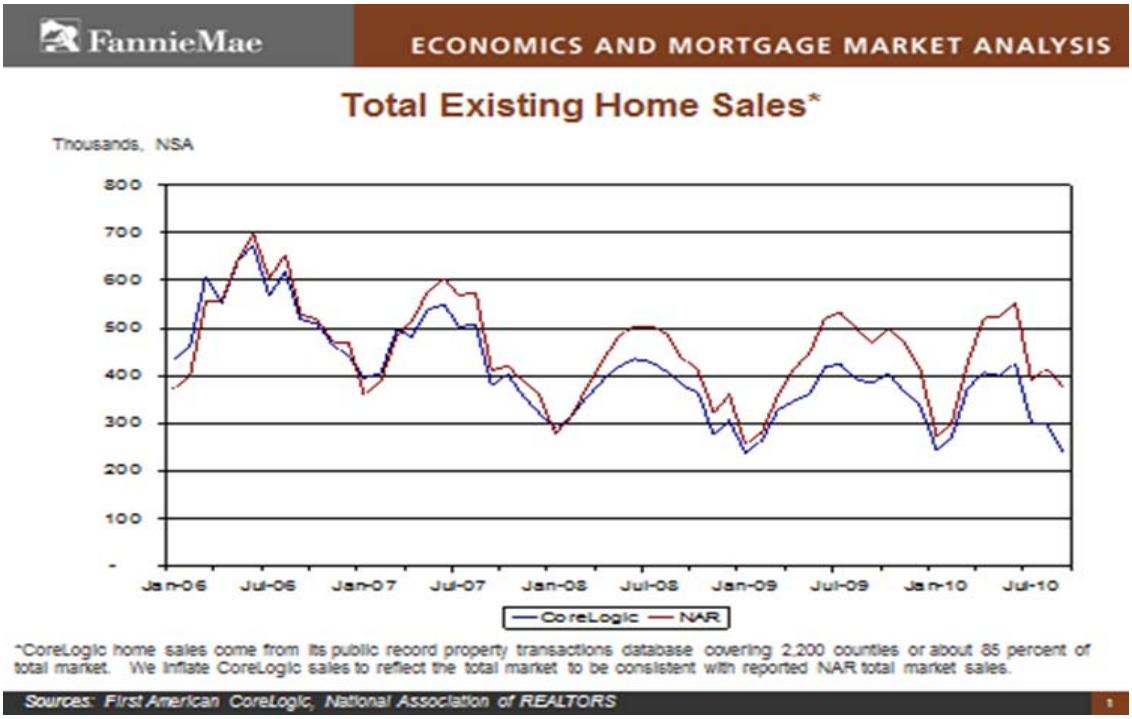
Over a period of time, a number of estimation errors are believed to have entered the EHS estimation process on a cumulative basis, necessitating the need for re-benchmarking.

- Past errors in MLS data are propagated to future time periods based on the methodology.
- Percent of market served by MLS's varies over time. MLS's are believed to have captured a higher proportion of sales starting in 2007, in part due to fewer For Sale by Owner (FSBO) transactions[2]. This will create an upward bias in sales estimates.
- In addition, MLS's tend to expand their coverage over time due to geographic expansion. Thus observed increases in sales for a given MLS may represent increased scope of business, causing sales increases to appear to be greater than is actually the case.
- In a number of states properties may be listed on more than one MLS. Therefore, an individual sale may be recorded by multiple MLS's, again causing recorded sales to be larger than is actually the case.

A comparison of NAR's EHS data in comparison to sales data estimated from information obtained from CoreLogic is presented below. There has been a growing discrepancy between NAR estimates and estimates based on courthouse data as well as other sources. Figure 4 illustrates an increasing difference between NAR's and CoreLogic total existing home sales beginning in 2007.

[2] See for example Chart 6-27: Method Used to Sell Home, 2001-2011 in NAR *Profile of Home Buyers and Sellers 2011.*

Figure 4



Extensive information on the NAR's benchmarking process for the year 1999 based on the data available from the 2000 Census is available on NAR's website.[3] Benchmarked data are subject to revision, and the current EHS re-benchmarking effort realigned the estimating procedures for years 2007 through 2010. Going forward, NAR will benchmark the EHS series annually as the ACS 1-year estimates become available.

Current Existing Home Sales (EHS) Estimation Procedures

A representative sample of approximately 200 MLS's from around the country provide NAR with sales and price data on a monthly basis.

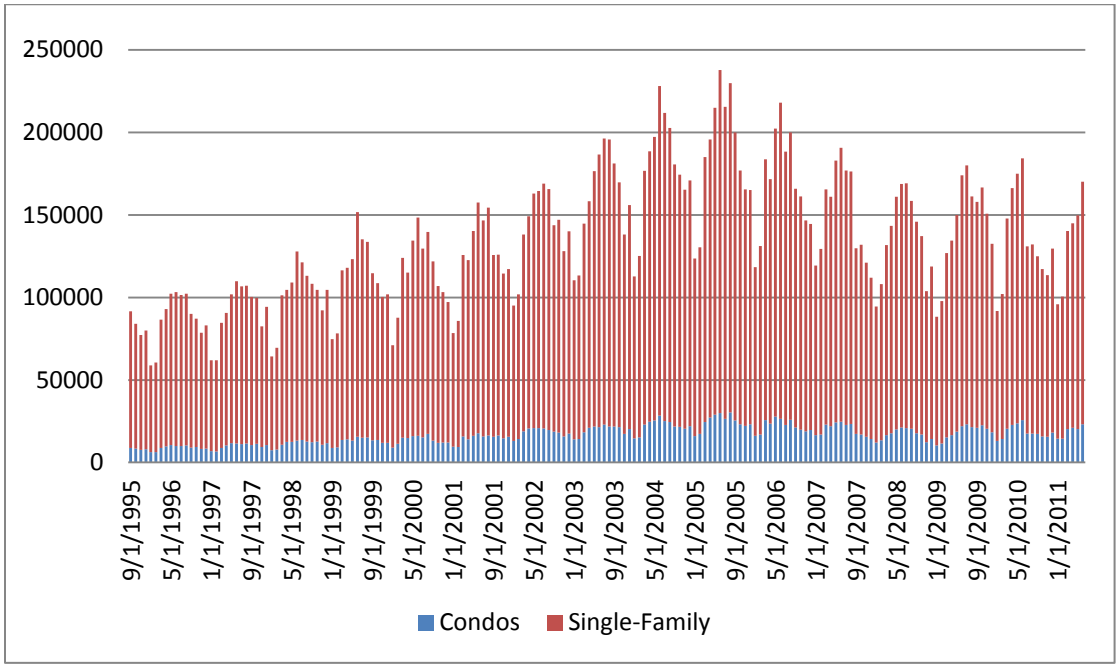
- The Monthly EHS was last benchmarked for 1999 based on the 2000 Census.
- Each month, beginning in January 2000, NAR tracked the percent change in sales in the MLS data from the same period one year ago.

[3] http://www.realtor.org/research/research/rebenmking.

- The percent change from the MLS data was applied to the benchmarked data to estimate monthly sales.

The MLS sales data received from the approximately 200 reporting MLS boards are not seasonally adjusted or annualized. NAR uses the X-12 seasonal adjustment procedure in the EViews software as the basis for seasonality adjustments after the estimation process is completed. Figure 5 depicts unadjusted single-family and condominium sales as reported by the representative sample of MLSs.

Figure 5



Re-Benchmarking Data Sources

In the previous re-benchmarking NAR used the Public Use Micro-Sample (PUMS) of the 2000 U.S. Census, which was based on the Long Form Questionnaire. Subsequent to the 2000 Census, the Bureau replaced the Long Form Questionnaire with the *American Community Survey (ACS).* The *ACS*, an ongoing survey, was one potential source for the re-benchmarking effort. A second potential source was the use of courthouse records (filed public records) of actual sales, as reported by firms such as CoreLogic or Lender Processing Services Applied Analytics (LPS).

The two types of data sources were analyzed for input to the re-benchmarking effort. The major drawbacks to the *ACS* were: (i) that it was a survey; and (ii) that data were collected on a 12 month rolling basis. The major drawbacks to the use of courthouse data were coverage and consistency. While data coverage was not available for some areas, the larger issue was delineation of arms-length transactions using a uniform set of assumptions for the entire country. States and counties across the country record home sales transactions in a non-standardized manner. Accordingly, counting arms-length transaction using public records data (deeds) should be adjusted at state and most ideally at county level. Further, in non-disclosure states, some critical sales information is not publicly available.

The courthouse based property records databases are used by financial institutions and analysts for modeling, risk analysis, and market and financial research purposes. When used for the purposes for which the databases were designed, there appears to be minimal impact from incomplete or missing records. However, when used for the enumeration of all market transactions, courthouse records do not provide adequate information in the form needed at this time. Accordingly, the re-benchmarking process used the *ACS* data in estimating EHS.

In geographic regions where courthouse data were complete, the courthouse records generally provided information substantiating the conclusions obtained from the analysis of the *ACS* database. A discussion of courthouse records data is available in Appendix 2. NAR will continue refining assumptions used to count arm-length transactions and work with the data providers to reconcile the differences in EHS estimates.

Overview of the *American Community Survey (ACS)*

The *American Community Survey (ACS)* was used for the current re-benchmarking effort. The survey is conducted annually by the Census Bureau, providing estimates of various population and housing characteristics nationally and for states and local areas. The survey consists of 12 individual monthly samples collected during the survey year.[4]

[4] Further detail is available in the ACS Design and Methodology Chapter 7 and ACS Accuracy of the Data 2009. Also, this discussion of income data in the ACS illustrates the survey-design issues which are similar for movers: ACS Income Data Background.

The *ACS* collects information on household attributes that are of direct relevance to calculating existing home sales. First, each structure surveyed can be identified as a single-family (detached or attached), multi-family (2 units to 50+ units), or other structure (includes mobile homes, recreational vehicles, *et al*.). In addition, the tenure of each household is characterized as either a homeowner (with and without a mortgage), a renter (paying rent and paying no rent), or in the event no tenure is listed, a vacant home. New homes can be identified based on the year in which the home was built for the 2000, 2006, 2008, 2009, and 2010 surveys.[5] The *ACS* also tracks if the current resident moved within the last 12 months. In the case of owner occupied homes, this serves as a proxy for a home sale. However, since the survey sample is distributed over the year's 12 months, households surveyed in January of 2010, for example, will answer if they have moved in the previous 12 months, which may be in January of 2009. Thus, the results are essentially a moving average of home sales with the average centered in December-January, i.e. December 2009-January 2010 for the *ACS* 2010.

In the case of renter occupied properties, however, the data cannot be directly used to estimate sales. Further discussion is available in a later section. Finally, the *ACS* asks whether the property has a condominium fee or whether there is a condominium fee allocation for owner occupied homes. The combination of the two fields is used to identify owner occupied condominiums.

Derivation of Existing Home Sales from *ACS*

The number of existing home sales for a given year can be calculated individually for owner-occupied homes, renter-occupied homes and vacant homes for both single family homes and condominiums based on the 2000, 2006, 2008, 2009 and 2010 *ACS*[6]. Existing home sales are determined for the EHS breakout groups—Single Family and Condo—and for each tenure

[5] For the 2001-2004 and 2007 *ACS*, the category for when a home was first built is so broad for the most recently built homes, encompassing more than 2 calendar years, that it is impossible to isolate newly constructed homes from pre-existing homes for this cohort. The 2005 *ACS* identifies homes built in 2005, but not 2004, when survey respondents likely moved. Thus the calculations of existing home sales only pertain to the 2000, 2006, 2008 and 2009 *ACS* as it is necessary to exclude sales of newly constructed homes from the analysis.

[6] These surveys yield estimates for the 1999-2000, 2005-2006, 2007-2008 and 2008-2009 calendar years, respectively.

type—owner-occupied, renter-occupied, and vacant. These estimates are done at the state level. State level data is then summed to regional data for distribution to months and calendar years.

Single Family Homes: Calculation for 2009/10

The table "*ACS* Calculation" presents the calculations. For owner occupied existing single family home sales, *ACS* total housing stock is limited to all single family detached and attached owner occupied homes (line 1). Homes built within the current year (line 2), i.e. new homes, are removed from the housing stock. Also, homes where the homeowner moved into the home prior to the last 12 months are removed (line 3) leaving those households that moved into existing owner occupied housing within the last 12 months, our proxy for owner-occupied single-family home sales (lines 4 and 7. See footnote)[7]. Line 5 presents the percentage for "flipped" homes—those that were built, sold, and resold in the same calendar year; at this point the number is assumed to be zero.[8] The existing housing stock is in line 8. The estimates single-family home sales figure is divided by the existing home stock to yield a turnover rate that will be used in calculations for other types of sales (line 9).

For renter-occupied single-family homes, the methodology is similar. We first obtain the stock of single-family renter-occupied homes from the ACS (line 11). We subtract from this stock new homes[9] (line 12) to find the total existing stock of single-family renter-occupied homes (line 13). The turnover rate of existing owner occupied single family homes (line 9) is then applied to the renter-occupied existing single-family home stock to yield an estimate of single-family home sales among renter-occupied properties (line 14).[10]

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[7] A percentage of homeowners who moved this year but purchased a home in a previous year (line 6) could be subtracted out to yield the total number of home sales. This percentage can be derived from the NAR Profile of Home Buyers and Sellers. It is currently set to 0 because it is believed that this number is roughly constant over time, thus the number of owners who purchased previously and moved this year is likely to equal the number who have purchased this year but will not move until next year. In this case, no adjustment is necessary.

[8] The percentage of new homes flipped can be derived from the NAR *Profile of Home Buyers and Sellers* though it is currently set to 0 in this analysis.

[9] No adjustment for flips here.

[10] The analysis makes the explicit assumption that owner occupied, renter occupied, and vacant homes turnover at the same rate.

The calculation for existing vacant single family homes follows the same logic as that for renter-occupied homes: the vacant stock is determined (line 16), new homes are subtracted (line 17) yielding the existing stock of vacant homes (line 18) to which the owner-occupied turnover rate (line 9) is applied yielding the estimate of vacant single-family home sales (line 19).

The sum of single-family home sales for each type of occupancy (line 20) is the estimate of all single-family home sales.

Condominiums (Condos) Calculation for 2009/10

Owner-occupied condos can be identified among owner-occupied multifamily properties in the *ACS* by a condominium fee payment or a condominium fee allocation producing the total number of owner-occupied condominiums (line 1). As was the case for single family homes, newly constructed homes are subtracted (line 2) to yield an estimate of the condominium existing housing stock[11] and moves prior to the most recent 12 months are subtracted (line 3) to leave moves in the current year (line 4), our estimate of owner-occupied condominium sales[12].

Since the *ACS* does not distinguish between renter-occupied condominiums and non-condominiums, there is no way, using the *ACS*, to disaggregate condos from non-condos for renter-occupied properties[13]. To work around this, the distribution of existing renter-occupied homes between single family and condominiums is obtained from the National 2007 and 2009 *American Housing Surveys (AHS).* The national *AHS* reports the distribution at the regional level (line 10). For each state, its regional distribution ratio is applied to renter occupied single-family existing homes to calculate the number of renter-occupied existing condos[14] (line 13). Then, the turnover rate of owner-occupied existing condos is applied to the existing stock of

[11] Again, "flips" would be subtracted from the new home population and thus remain in the stock of existing condo homes, but the percent of new homes that are flips is assumed to be 0 in all years.

[12] As was the case in single-family homes, a percentage of homeowners who moved this year but purchased a home in a previous year (line 6) could be subtracted out to yield the total number of home sales This percentage can be derived from the NAR *Profile of Home Buyers and Sellers.* It is currently set to 0 because it is believed that this number is roughly constant over time, thus the number of owners who purchased previously and moved this year is likely to equal the number who have purchased this year but will not move until next year. In this case, no adjustment is necessary.

[13] The ACS question about condo fees to determine what is and is not a condo is only asked of owner-occupants, not renters.

[14] A similar assumption will be made for vacant homes.

renter-occupied condos to estimate the number of condo sales among renter-occupied properties (line 14).

The calculation for vacant condominiums sales is performed in a similar manner where regional distribution ratio between condos and single-family units (line 15) is applied to vacant single-family existing homes to calculate the number of vacant existing condos (line 18). The turnover rate of owner-occupied existing condos is then applied to the existing stock of vacant condos to estimate the number of condo sales among vacant properties (line 19).

The total number of existing condo sales is found by summing the estimates for the three occupancy types (line 20 for condominiums).

Existing Home Sales: Translating Calculations for 2009/10 into Yearly Estimates

The *ACS* survey design is such that sales counted and estimated from a single *ACS* survey year could actually have occurred over a two calendar-year period. This is because samples are taken on a rolling basis, from January to December, and the variable of interest, "Did you move in the last 12 months?", means a different time period depending on when the household was sampled. Unfortunately, the sample date is not reported in the PUMS data and therefore not available to us to use to directly adjust the data.

Instead, we account for this time-period issue by distributing *ACS* sales to months in accordance with the data in our panel in the time period that matches up with the potential timing of moves observed in the *ACS*. Our monthly panel of data from boards is aggregated to the regional level for analysis and publishing, so the distribution of *ACS* data to months was done at the regional level. Regional *ACS* data was obtained by summing state estimates in each region.

Assumptions in the Methodology and Improvements

The data limitations of the *ACS* required two key assumptions: (1) about turnover rates of homes by various occupancy classification and (2) about the number of condos, determined based on the regional distribution of single-family and condominiums.

Owner-occupied vs. Rental and Vacant Home Turnover Rate: The original *ACS* calculations assumed that turnover rates were the same for rental and vacant single-family properties as for owner-occupied single family properties. A better source of this information has not yet been determined. The original benchmark used the *2001 Residential Finance Survey* which is no longer in existence.

Condo Distribution for Renter and Vacant vs. Owner Occupied Homes: The *American Housing Survey* (*AHS*) provides information on condo status of all types of properties at the regional level. The *ACS* estimates apply the *AHS* distribution to the *ACS* figures for a more accurate estimate of renter and vacant condos. The distribution estimate is at a regional level. Alternatively, we could have used data from the *ACS* which suggest that the ratio of condos to single-family homes is the same for rental and vacant properties as for owner-occupied properties (among the existing and newly built housing stock). The *ACS* currently does not publish information that would enable us to determine the distribution by different tenure types and at the state level.

Advantages and Disadvantages of Using *ACS*

Data limitations require a number of assumptions:

- To determine sales among vacant and renter-occupied properties, it is necessary to assume that turnover rates of vacant and renter-occupied single-family and condo homes equal turnover rates among owner-occupied homes.

- To determine how many renter-occupied and vacant homes are condos, we assume that the condominium and single-family distribution is similar among the states at the regional level.

- Data is available with a lag due to survey design, resulting in a 2-year moving average; it is necessary to use NAR existing home sales distributions to convert the moving average data to monthly EHS data.

The methodology also does not adjust for several minor aspects of the housing markets:

- Property flips are not captured: Because the *ACS* records a move in the previous 12 months, anyone who purchased a property, moved into it and renovated it before turning it around to resell—termed a flip—would not be captured. These are estimated to be as many as 164,000 properties according to LPS estimates in 2010. Data from our survey of *Home Buyers and Sellers* shows that approximately one percent of buyer respondents indicate that they expect to live in the home they recently purchased for one year or less. By comparison, seller data from the same survey indicates that as many as 3 to 7 percent of recent sellers lived in the home they recently sold for one year or less.

- The *ACS* estimate captures For Sale by Owner (FSBO) properties. By comparison, the sample of multiple listing services (MLSs) does not capture FSBO properties. As the proportion of FSBO sales relative to agent-assisted sales changes overtime, the MLS sample will reflect that change in addition to any change in the number of home sales. Data from NAR's survey of *Home Buyers and Sellers* shows that FSBO sellers have ranged from 14 to 9 percent of reported sellers in the last decade while agent-assisted sellers have increased from 79 to 88 percent of reported sellers.

- According to the *American Housing Survey*, approximately 7 percent of moves by individuals are not associated with a home sale. In the benchmark conducted using Census 2000 data, 6.0 percent of single-family owner occupied moves were excluded on the grounds that these families were movers who had not actually purchased a property, due to inheritance, gift, or other non-purchase transfer. This reduced the calculated single-family owner occupied turnover rate from 6.4 to 6.0 percent. In that same re-benchmarking, the *Residential Finance Survey* was used to estimate a turnover rate of 7.2 percent among renter-occupied and vacant single family homes. The total turnover rate for all types of properties was 6.2 percent.

  In the current re-benchmarking, there is no comparable data available on renter-occupied and vacant property turnover. As indicated in the last *Residential Finance Survey* in 2001, the turnover rates for these types of properties are generally higher than for owner-occupied properties. To compensate for this likely understatement of renter-occupied and vacant transfers, no assumption was made regarding the prevalence of gift, inheritance, and other

non-purchase transfers. It should be noted that the *American Housing Survey* and other sources do not separate out inheritance transfers from gift transfers, and it is imaginable that some gifts do in fact include properties that were purchased in the year. This is an opportunity for further research.

EHS Calculation Using *ACS*

The following two tables illustrate how the EHS estimate is derived using annual *ACS* data. Table 1 shows the estimate using 2010 *ACS* data, while Table 2 summarizes data sources and calculation steps. The estimate provided in the Table 1 is for illustrative purposes only as it uses national data and calculates the U.S. figure. This figure differs slightly from the aggregated U.S. figure based on sum of states data which is used to benchmark EHS series.

Table 1: ACS Calculation (AHS Distribution used in lines 10 and 15)

	Single Family	Condominiums	Total
Year	2010 ACS	2010 ACS	2010 ACS
I. Owner Occupied Homes			
1) Total Number of Homes	65,863,753	2,489,613	68,353,366
2) Less: Homes built w/in the current year excluding "flips"	-370,357	-13,345	-383,702
3) Less: Homes built prior to current year where h/o moved prior to current year	-62,672,788	-2,295,656	-64,968,444
4) Number of households who moved into an existing O/O home w/in current year	2,820,608	180,612	3,001,220
5) Percent of new homes that were "flipped" in current year	0.0%	0.0%	0.0%
6) Percent of homeowners who moved in current year, but purchased home previously	0.0%	0.0%	0.0%
7) Existing Owner Occupied Homes Sold w/in current year	*2,820,608*	*180,612*	*3,001,220*
8) Homes built prior to current year	65,493,396	2,476,268	67,969,664
9) Turnover Rate	4.3%	7.3%	4.4%
II. Renter Occupied Homes			

10) Distribution of existing renter occupied homes between sf/condo	85.3%	14.7%	100.0%
11) Total Number of Homes	13,284,588	n/a	n/a
12) Less: Homes built w/in the current year	-55,951	n/a	n/a
13) Homes Built prior to the last 12 months	13,228,637	2,278,838	15,507,475
14) Existing Renter Occupied Homes Sold w/in current year	*569,719*	*166,212*	*735,931*
III. Vacant Homes			
15) Distribution of existing vacant homes between sf/condo	86.1%	13.9%	100.0%
16) Total Number of Homes	9,558,951	n/a	n/a
17) Less: Homes built w/in the current year	-10,206	n/a	n/a
18) Homes Built prior to the last 12 months	9,548,745	1,542,486	11,091,231
19) Existing Vacant Homes Sold w/in current year	*411,236*	*112,505*	*523,741*
20) Total Existing Homes Sales based on ACS	3,801,563	459,329	4,260,892

Table 2: Calculation Description

I. Owner Occupied Homes	
1) Total Number of Homes	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, owner-occupied, non-condo homes. Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
2) Less: Homes built w/in the current year excluding "flips"	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, owner-occupied, non-condo homes built in the current year (For example, 2010 for 2010 ACS). Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
3) Less: Homes built prior to current year where h/o moved prior to current year	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, owner-occupied, non-condo homes built in the year prior to the survey year where the household moved into the home prior to the last 12 months of being surveyed. Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
4) Number of households who moved into an existing O/O home w/in current year	Summation of the three entries above
5) Percent of new homes that were "flipped" in current year	Assumed 0%. Note: Very conservative assumption.

6) Percent of homeowners who moved in current year, but purchased home previously	Data Source: NAR Home Buyer and Seller Survey. In our last benchmark, there was a 6% assumption, but since we have assumed 0%.
7) Existing Owner Occupied Homes Sold w/in current year	Equals to line 4 since there is assumption of 0% for line 6. Otherwise, line 6 would be taken out of line 4.
8) Homes built prior to current year	Sum of lines 1 and 2
9) Turnover Rate	Division of lines 7 and 8
II. Renter Occupied Homes	
10) Distribution of existing renter occupied homes between sf/condo	Data Source: 2007 and 2009 AHS National Data - SAS file. For renter-occupied condominiums, the share of renter-occupied condominiums is calculated by dividing total number of multifamily (2+units) renter-occupied condominium units by the sum of renter-occupied single-family and multifamily condominium units. For single family, the share of single-family units is calculated as 1- (the share of renter-occupied condominiums).
11) Total Number of Homes	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, renter-occupied, non-condo homes. Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
12) Less: Homes built w/in the current year	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, renter-occupied, non-condo homes built in the current year (For example, 2010 for 2010 ACS). Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
13) Homes Built prior to the last 12 months	Sum of lines 11 and 12 for single family vacant homes. For condominiums, calculation: (line 13 of single family renter-occupied homes)*((condominiums/(condominiums + single-family))/(single-family homes/(condominiums + single-family))
14) Existing Renter Occupied Homes Sold w/in current year	Multiply line 13 and line 9. Line 9 is turnover rate obtained from owner-occupied homes.
III. Vacant Homes	
15) Distribution of existing vacant homes between sf/condo	Data Source: 2009 AHS National Data - SAS file. For vacant condominiums, the share of vacant condominiums is calculated by dividing total number of multifamily (2+units) vacant condominium units by the sum of vacant single-family and multifamily condominium units. For single family, the share of single-family units is calculated as 1- (the share of vacant condominiums).
16) Total Number of Homes	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, vacant, non-condo homes. Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
17) Less: Homes built w/in the current year	Data Source: 2010 ACS 1-year Public Use Microdata Samples (PUMS) - SAS format. Calculated as the sum of single-family, vacant, non-condo homes built in the current year (For example,

	2010 for 2010 ACS). Sample is controlled to 2010 Census housing unit count (as of April 1, 2010).
18) Homes Built prior to the last 12 months	Sum of lines 16 and 17 for single family renter-occupied homes. For condominiums, multiple line 13 of single-family vacant units and ratio of line 15 of condominium vacant homes and line 15 of single-family vacant homes.
19) Existing Vacant Homes Sold w/in current year	Multiply line 18 and line 9. Line 9 is turnover rate obtained from owner-occupied homes.
20) Total Existing Homes Sales based on ACS	Sum of lines 7, 14 and 19.

Conclusions

Based on the American Community Survey, the EHS series were re-benchmarked for 2007 through 2010. NAR will be reviewing the benchmarking process and data availability on a yearly basis. Until granular, courthouse specific data are available at the level desired, it is expected that the yearly re-benchmarking will be based on the American Community Survey.

Actual courthouse records delineating real estate transactions are a second potential source of data. NAR had originally expected to base the re-benchmarking process on the public records but found that the currently available level of information in records required too many assumptions in arriving at EHS estimates. Tables summarizing the NAR re-benchmarking data are available in Appendix 1. Information on the potential use of courthouse data is presented in Appendix 2.

It should be clearly noted that the re-benchmarked EHS data are estimates of housing activity based on a variety of assumptions. NAR compared the re-benchmark estimate with estimates that could be generated from courthouse data. Various assumptions in each estimating process lead to somewhat different conclusions. With the ACS, the estimates are largely consistent; varying assumptions produced estimates with relatively smaller range. Using public records data to produce EHS estimates resulted in wider range of results.

In table 3, the ACS 2010 (as in data) estimate uses condo turnover rates as obtained from data on owner-occupied condominiums by state and applies them to vacant and renter-occupied condo units. However, in some states with generally low condominium stock, such as West

Virginia, turnover rates on owner-occupied condominiums appeared higher than reasonably expected. Thus, the second alternative, the ACS 2010 (SF Rates) estimate uses ACS single-family turnover rates by state for condos. Nevertheless, single-family turnover rates are generally lower than turnover rates among condominiums. Consequently, the last ACS estimate (US condo rate) and the one used to benchmark EHS uses ACS derived US average condo turnover rate which is applied to all states' existing condominium stock. The estimates in columns titled LPS, CoreLogic, and Boxwood are derived from public records. Total LPS estimate is not grossed up to account for missing coverage, while the grossed up number is extrapolated based on our assumptions delineated in Appendix 2. CoreLogic and Boxwood estimates are both derived from CoreLogic database of public records, with total numbers also not adjusted for missing coverage and grossed up numbers for CoreLogic based on an assumption of 85% and 90% coverage. Boxwood estimate is based on CoreLogic data and it also includes sales of new homes.

Table 3

	ACS 2010 (as in data)	ACS 2010 (SF Rates)	ACS 2010 (US condo rate)	LPS	CoreLogic	Boxwood
TOTAL:	**4,340,455**	**4,093,128**	**4,284,954**	**3,995,427**	**3,589,384**	**4,777,152**
GROSSED UP:				**4,292,588**	**3,988,204 - 4,222,805**	

Appendix 1: Re-benchmarked EHS Series

Table 4: Total Existing Home Sales and National Sales Price of Existing Homes

National Existing Home Sales

Year		Existing Home Sales	Single Family Sales	Condo/Co-op Sales	Existing Home Sales	Single Family Sales	Condo/Co-op Sales	National Mos. Supply	Single Family Mos. Supply	Condo/Co-op Mos. Supply
2008		4,110,000	3,660,000	450,000	*	*	*	10.4	10.0	14.1
2009		4,340,000	3,870,000	470,000	*	*	*	8.8	8.3	12.5
2010		4,190,000	3,710,000	480,000	*	*	*	9.4	9.1	11.9
		Seasonally Adjusted Annual Rate			Not Seasonally Adjusted					
2010	Nov	3,940,000	3,500,000	440,000	304,000	274,000	30,000	9.6	9.4	11.3
2010	Dec	4,450,000	3,940,000	510,000	345,000	304,000	41,000	8.1	7.9	10.1
2011	Jan	4,640,000	4,060,000	580,000	247,000	219,000	28,000	7.5	7.5	7.7
2011	Feb	4,220,000	3,690,000	530,000	253,000	221,000	32,000	8.6	8.4	9.7
2011	Mar	4,360,000	3,830,000	530,000	347,000	301,000	46,000	8.3	8.1	10.0
2011	Apr	4,270,000	3,770,000	500,000	375,000	333,000	42,000	9.0	8.8	10.5
2011	May	4,120,000	3,660,000	460,000	391,000	348,000	43,000	9.1	8.9	10.9
2011	Jun	4,140,000	3,710,000	430,000	440,000	395,000	45,000	9.2	9.0	10.7
2011	Jul	4,000,000	3,560,000	440,000	385,000	340,000	45,000	9.5	9.0	13.1
2011	Aug	4,320,000	3,860,000	460,000	429,000	383,000	46,000	8.4	8.2	10.0
2011	Sep	4,190,000	3,730,000	460,000	369,000	327,000	42,000	8.3	8.0	10.7
2011	Oct r	4,250,000	3,780,000	470,000	343,000	305,000	38,000	7.7	7.6	8.8
2011	Nov p	4,420,000	3,950,000	470,000	337,000	305,000	32,000	7.0	7.0	7.1
vs. last month:		**4.0%**	**4.5%**	**0.0%**	**-1.7%**	**0.0%**	**-15.8%**	**-9.1%**	**-7.9%**	**-19.8%**
vs. last year:		**12.2%**	**12.9%**	**6.8%**	**10.9%**	**11.3%**	**6.7%**	**-27.1%**	**-25.5%**	**-37.3%**
year-to-date:					**3.916**	**3.477**	**0.439**			

National Sales Price of Existing Homes

Year		Existing Home Price	Single Family Price	Condo/Co-op Price	Existing Home Price	Single Family Price	Condo/ Co-op Price
			Median			Average (Mean)	
2008		$198,100	$196,600	$209,800	$242,700	$241,700	$250,500
2009		172,500	172,100	175,600	216,900	217,000	216,300
2010		172,900	173,100	171,700	220,000	220,600	215,700
		Not Seasonally Adjusted			Not Seasonally Adjusted		
2010	Nov	170,200	170,900	164,900	218,100	219,400	208,700
2010	Dec	168,800	169,300	165,000	217,900	218,600	212,700
2011	Jan	157,900	158,500	153,500	205,800	207,000	197,400
2011	Feb	156,100	156,900	150,600	202,300	203,000	197,900
2011	Mar	159,800	160,600	154,200	207,300	208,300	200,700
2011	Apr	161,100	161,300	159,900	210,200	210,400	208,400
2011	May	169,300	169,800	165,500	217,600	218,600	210,400
2011	Jun	175,600	176,100	171,300	226,000	227,100	217,800
2011	Jul	171,200	171,700	167,800	220,400	221,200	214,400
2011	Aug	171,200	171,200	171,100	219,500	219,800	217,400
2011	Sep	165,300	165,400	164,500	212,800	212,900	212,200
2011	Oct r	160,800	161,100	158,900	205,900	206,400	201,900
2011	Nov p	164,200	164,100	164,600	210,500	210,800	208,100
	vs. last year:	**-3.5%**	**-4.0%**	**-0.2%**	**-3.5%**	**-3.9%**	**-0.3%**

Table 5: Existing Home Sales and Prices by Region, SAAR and NSA

Existing Home Sales

Year		U.S.	Northeast	Midwest	South	West
2008		4,110,000	570,000	950,000	1,590,000	990,000
2009		4,340,000	590,000	980,000	1,630,000	1,140,000
2010		4,190,000	570,000	920,000	1,620,000	1,080,000
				Seasonally Adjusted Annual Rate		
2010	Nov	3,940,000	520,000	830,000	1,550,000	1,040,000
2010	Dec	4,450,000	600,000	950,000	1,700,000	1,200,000
2011	Jan	4,640,000	570,000	980,000	1,800,000	1,290,000
2011	Feb	4,220,000	540,000	890,000	1,610,000	1,180,000
2011	Mar	4,360,000	550,000	900,000	1,730,000	1,180,000
2011	Apr	4,270,000	540,000	920,000	1,700,000	1,110,000
2011	May	4,120,000	530,000	870,000	1,630,000	1,090,000
2011	Jun	4,140,000	500,000	880,000	1,640,000	1,120,000
2011	Jul	4,000,000	510,000	890,000	1,620,000	980,000
2011	Aug	4,320,000	540,000	930,000	1,690,000	1,160,000
2011	Sep	4,190,000	540,000	910,000	1,670,000	1,070,000
2011	Oct r	4,250,000	510,000	920,000	1,700,000	1,120,000
2011	Nov p	4,420,000	560,000	960,000	1,740,000	1,160,000
vs. last month:		**4.0%**	**9.8%**	**4.3%**	**2.4%**	**3.6%**

vs. last year:	**12.2%**	**7.7%**	**15.7%**	**12.3%**	**11.5%**
year-to-date:					

U.S.	Northeast	Midwest	South	West	Inventory*	Mos. Supply
*	*	*	*	*	3,130,000	10.4
*	*	*	*	*	2,740,000	8.8
*	*	*	*	*	3,020,000	9.4
		Not Seasonally Adjusted				
304,000	38,000	61,000	120,000	85,000	3,150,000	9.6
345,000	43,000	71,000	136,000	95,000	3,020,000	8.1
247,000	28,000	48,000	97,000	74,000	2,910,000	7.5
253,000	34,000	54,000	99,000	66,000	3,010,000	8.6
347,000	41,000	72,000	138,000	96,000	3,030,000	8.3
375,000	45,000	79,000	148,000	103,000	3,200,000	9.0
391,000	48,000	89,000	150,000	104,000	3,130,000	9.1
440,000	54,000	97,000	171,000	118,000	3,160,000	9.2
385,000	57,000	88,000	151,000	89,000	3,150,000	9.5
429,000	57,000	92,000	170,000	110,000	3,020,000	8.4
369,000	47,000	82,000	149,000	91,000	2,900,000	8.3
343,000	43,000	71,000	140,000	89,000	2,740,000	7.7
337,000	40,000	68,000	134,000	95,000	2,580,000	7.0
-1.7%	**-7.0%**	**-4.2%**	**-4.3%**	**6.7%**	**-5.8%**	**-9.1%**
10.9%	**5.3%**	**11.5%**	**11.7%**	**11.8%**	**-18.1%**	**-27.1%**
3.916	**0.494**	**0.840**	**1.547**	**1.035**		

Sales Price of Existing Homes

Year		U.S.	Northeast	Midwest	South	West	U.S.	Northeast	Midwest	South	West
				Median					Average (Mean)		
2008		$198,100	$266,400	$154,100	$169,200	$271,500	$242,700	$297,800	$183,400	$211,600	$312,300
2009		172,500	240,500	144,100	153,000	211,100	216,900	276,300	171,100	192,700	256,700
2010		172,900	243,500	141,600	150,100	214,800	220,000	281,500	172,500	193,000	264,100
				Not Seasonally Adjusted					Not Seasonally Adjusted		
2010	Nov	170,200	240,400	138,900	146,400	213,100	218,100	279,700	171,800	189,600	264,400
2010	Dec	168,800	237,600	140,100	148,500	204,500	217,900	279,500	174,200	193,200	255,900
2011	Jan	157,900	235,700	126,900	135,200	190,600	205,800	272,900	160,100	179,400	240,800
2011	Feb	156,100	230,200	121,100	135,700	189,500	202,300	268,200	153,900	178,000	238,900
2011	Mar	159,800	232,800	126,200	137,900	195,200	207,300	270,200	158,700	182,100	247,700
2011	Apr	161,100	235,800	131,600	142,000	191,300	210,200	275,800	164,500	186,100	244,000
2011	May	169,300	241,500	138,800	148,100	206,200	217,600	281,500	169,700	192,400	257,900
2011	Jun	175,600	258,300	145,400	154,800	205,900	226,000	295,000	178,800	203,200	258,900
2011	Jul	171,200	245,600	145,700	152,600	191,600	220,400	287,000	178,700	198,700	246,100
2011	Aug	171,200	243,700	141,400	150,300	208,100	219,500	283,300	174,400	193,400	258,900

2011	Sep	165,300	229,400	135,700	144,600	208,100	212,800	271,100	165,800	186,000	259,500
2011	Oct r	160,800	222,300	131,700	140,700	199,700	205,900	259,300	160,400	181,300	250,300
2011	Nov p	164,200	240,200	133,400	143,300	195,300	210,500	275,900	163,500	185,400	246,300
	vs. last year:	**-3.5%**	**-0.1%**	**-4.0%**	**-2.1%**	**-8.4%**	**-3.5%**	**-1.4%**	**-4.8%**	**-2.2%**	**-6.8%**

Appendix 2: Use of Courthouse Data in Estimation of Existing Homes Sales

While NAR is not using courthouse data in the current re-benchmarking process, NAR has explored the potential use of the data in detail. This section describes the steps and assumptions needed in order to use courthouse data to benchmark EHS and our overall evaluation of the information. At this time there are challenges in using courthouse data for re-benchmarking purposes. However, we believe that as the data consistency improves, the use of courthouse data in the future may be an opportunity.

Lender Processing Services Applied Analytics (LPS) was the data vendor providing NAR with public records counts. LPS collects real estate data from public records at the courthouse level for residential and commercial properties by examining Deeds, Assessments, and Stand Alone Mortgages (SAMs) records. The company has data for approximately 89 percent of the total U.S. housing stock. Data coverage varies by year.

LPS collects data on the housing stock and sales of existing homes. Since LPS does not have data on the total U.S. housing market, the LPS data could potentially serve as the basis for estimating the entire housing market, grossed-up on the basis of Census data. The process of extrapolating LPS data to estimate the total EHS for the entire nation, described in the following sections, is straightforward:

- Estimate total housing stock of single family, townhouse, and condominium/cooperatives, based on LPS data. This stock of homes is designated "Existing Homes Available For Sale" (EHAFS). This estimate will be less than the actual stock of housing due to the absence of LPS coverage in some areas.

- Estimate total housing stock of single family, townhouse, and condominium/cooperatives, based on Census data, providing an EHAFS estimated based on Census data.

- Estimate Existing Home Sales (EHS) based on LPS data. Again, this estimate will be less than the actual sales due to the absence of LPS coverage in some areas.

- Gross-up EHS estimates derived from LPS data to the entire country, based on the relationship between LPS and Census EHAFS data.

The stock of Existing Homes Available for Sale—EHAFS-L—is estimated based on LPS data.[15] These homes constitute the housing inventory and have already been sold at least once; newly constructed homes not previously sold are thus excluded from EHAFS-L. The EHAFS-L count was obtained from LPS furnished count on Assessment records, Deeds, or Stand Alone Mortgage (SAM) records. Data are available separately for single-family homes and condominiums. Townhouses can fall into either category based on the presence/absence of a condo rider, which identifies the payment of a condominium fee.

To obtain an estimate of EHAFS-L, we used the LPS definition of properties in terms of land use codes. Land use codes counted in the EHAFS-L included single family, townhouses, cluster homes, condominiums, cooperatives, row houses, rural residences, planned unit development units, seasonal, cabin, or vacation residences, bungalows, zero lot line homes, patio homes, duplexes, and triplexes. Manufactured, modular, or pre-fabricated homes were also included unless they were trailers. Multifamily units, such as quadruplexes and dwellings with 4 units or more, were included if they had a condo rider.

To identify the year in which a property entered the EHAFS-L, the property was assumed to have been initially sold based on the year of first recorded Deed, Mortgage or Assessor Sale. The transaction did not have to have been arms-length. Once the property enters the EHAFS-L criteria, it is counted as EHAFS-L for all subsequent years.

In the effort to exclude new properties still owned by the developer (presumably new homes and therefore not having been already sold at least once), a number of properties were excluded from the EHAFS-L counts based on vesting codes. Properties excluded from the EHAFS-L were those built in or since 2008 with Assesse Vesting code being one of the following: Company/Corporation, Contract Owner, Doing business as (DBA), Government, Joint Venture, Partnership. Additionally, for properties built in or since 2008 where Assesse or Owner Name contained one of the following, they were also excluded from the EHAFS-L count: LLC, L.L.C., builder, homes, assoc., develop, bank, mortgage, church, prayer. If a property was built prior to 2008, it was not subjected to Assesse or Owner Name qualification. As a result, foreclosed properties built prior to 2008 and which reverted back to bank ownership are included

[15] Two measures of Existing Homes Available For Sale (EHAFS) are computed. One estimate is based on LPS data—EHAFS-L. One estimate is based on Census Data—EHAFS-C.

in the EHAFS-L count. Using this approach, it is possible that an existing home built and sold after 2008 but in foreclosure might be counted as a new home.

EHAFS Data Issues

Several issues were identified in estimating the EHAFS-L count.

Null-Year Properties: There were 7,340,879 properties for which LPS had no information on the year built—i.e., no Assessor, Deed or SAM sales on record. The states with the largest share of these properties include Wisconsin (14% of 7.3 million), Michigan (10%), Illinois (9%), Iowa (8%), and Louisiana (6%). There are two ways to treat these types of properties, delineated as "null-year" properties.

- First, null-year properties could be excluded from the EHAFS-L count. Subsequently, the grossing-up of sales based on the relationship between LPS estimated EHAFS-L and the Census EHAFS-C estimate would account for this omission, assuming that the turnover rate of null-year properties was consistent with other properties for which sales data was available.

- Alternatively, in areas where EHS has at least 25 percent coverage, the null-year properties can be included in the EHAFS-L count. In those cases, they are assumed to account for properties that have not in fact turned over.

In most cases, there is no prior sales information for null-year properties. However, there are also a number of cases where the year the property was built is not recorded in the assessment file, but subsequent sales information is available. There are 202 counties for which data exclusively comes from the assessment records, are flagged as having EHS coverage for 2010, and do not have year built information on at least 50 percent of the properties. In such cases, property is counted in 2010 EHAFS-L regardless of when the property was built. It is thus possible that a newly constructed home not previously sold is inadvertently counted in the EHAFS-L. By the same token, a new home sale may be inadvertently counted in the EHS as well.

Multifamily Units: For certain land use codes used for the EHAFS-L count, there may be some bias introduced in the estimate. First, all duplexes and triplexes are counted as EHASF-L regardless whether they had a condo rider or not. It is conceivable that in some states, apartment complexes offer duplex and triplex units to renters. Counting these may overstate the EHAFS-L estimate. Additionally, LPS treats multifamily units in apartment buildings as one unique property rather than identifying the number of units within the building. Since the EHAFS-L count derived from LPS data counts only multifamily units that are also condominiums, the exclusion of apartment buildings from the analysis should not be a problem.

Date Consistency: Finally, EHAFS-L is the stock of total existing homes that could sell for at least the first time in a given year. This number is not exactly comparable to an inventory as of a given date, in the case of the Census—April 1. Based on the analysis of LPS data we generated an estimate of EHAFS-L for 2010, broken out between condominiums and single-family residences.

Estimation of Existing Homes Sale (EHS) Based on LPS Data

Existing Home Sales are the count of arm's-length sales of previously sold homes - that is homes classified as EHAFS-L. The EHS-L data comes from Deed and Assessment records only; mortgage data is not used. To be included in the EHS-L count for a specific year, a property would have had to meet EHAFS-L criteria and be sold in the year tallied.[16]

In order to identify a sale, sales are sorted by year and then by recording date(s) within the year. Deed sale records were taken as priority over Assessment sale records. In areas with full deed coverage, assessment records were not counted. However, if deed coverage is not complete and if two records were pulled based on Assessment and Deed Data, and have the same month and year, the Deed record is taken.

To identify EHS-L in Deed records, a sale is counted if Document Type Code is not one of the following:

[16] Existing Home Sales based on LPS data are denoted as EHS-L. The ultimate objective is to estimate total EHS reported by NAR; these are simply denoted as EHS.

Figure 6

AG	Agreement of Sale
CS	Contract of Sale
IT	Intrafamily Transfer & Dissolution - Due to dissolution of marriage, refinancing or the document reports a transaction is between family members for any reason (at least one party has to have the same last name under Buyer & Seller) & no consideration (in non-disclosure states, where sales price is unavailable, when it is unclear that the parties are related, default to coding according to document heading) . NOTE: If parties have same last name and there IS Full consideration, the doc type code will reflect document heading.
GF	Gift Deed
TD	Trustee's Deed (Certificate of Title)
DL	Deed in Lieu of Foreclosure
FC	Foreclosure
LD	Land Contract
SD	Sheriff's Deed - Common in New Jersey. The default code for transfers where borrower is in default, in other states document may be called something other than Sheriff's Deed, i.e. "Masters in Equity Deed" in SC.
GR	Ground Lease
LA	Legal Action/Court Order
PA	Public Action - Common in Florida (Clerks Tax Deed or Tax Deeds). Also when property sold for taxes.
QC	Quit Claim Deed

Additionally, the record is not counted in the EHS-L if the Buyer is one of the builders identified by LPS or if the Sale Transaction Type is coded as a new residential construction transaction.

The EHS-L estimation method encounters challenges in identifying properties with two transactions in a year—that is, properties that are being flipped. For example, if two sales are identified in Deed data and are more than 3 months apart, both sales are counted. The 3-months rule is introduced to avoid counting two sales based on multiple document filings for on a single sale. In using the Assessment records, however, properties sold more than once a year may be more difficult to identify if the county records do not keep data on previous sales. Consequently, EHS-L counts in states where the data largely relies on Assessments records may be undercounting some of the EHS-L. Finally, foreclosures reverting ownership to a bank are excluded from the EHS-L count by exclusion of certain Document Types, for example Trustee's Deed and Foreclosure, as well as counts where Buyer is the lender or where buyer is in LPS

Lender Table. In contrast, foreclosures sold off by banks to the public are included in the EHS-L count.

LPS Coverage

Although SAMs coverage information is available, only deeds and assessments coverage is used, because in all cases where there is SAMs data available, there is also either deeds or assessments coverage. There are three types of EHS coverage: full, partial, and no coverage.

Full EHS Coverage

A county is classified as having 100 percent coverage in 2010 if either deed date range and/or assessment sales date range covers the entire year 2010. In those cases, the total EHS 2010 count as reported by LPS is used. There are 1,337 counties with full coverage, representing 83 percent of total housing units.

Partial Coverage

A county is classified as having partial coverage when deed or assessment date ranges do not cover the entire year of 2010; that is, data are available for some—but not all--months. There are 824 counties with partial coverage in 2010 representing 9 percent of total housing units. In cases with partial coverage, total 2010 EHS-L count is obtained by extrapolating the reported LPS count to the full year. This method may introduce a degree of bias into the EHS estimate because the sales count for the part of the year for which data is not available is assumed to follow the same trend as for the count available. The approach fails to consider seasonality patterns. The extrapolation was performed for counties with at least 25 percent of annual coverage. Counties with less than 25 percent coverage are treated as having no coverage. There are, in fact, very few counties with less than 50 percent coverage in cases for which coverage is available.

There may be upward bias arising in cases where the last recorded sale was prior to 2010. In these cases the method assumes no coverage for 2010, and the sales are extrapolated based on

the state's turnover rate. However, in rural counties with limited home sales activity, it may be that there simply were no sales in 2010.

As an alternative approach, in areas where EHS-L data are obtained from the assessment records, it is possible to use the date the assessment file was produced to determine the partial coverage instead of relying on recorded dates alone. Using this method instead may reduce the upward bias. In the next iteration of the re-benchmarking process, we intend to address both the seasonality issue and the use of date the assessment file was produced. In addition, we intend to address the potential variation between urban and rural turnover rates, which may further limit any bias resulting from extrapolating the coverage.

No Coverage

A county is classified as having no data coverage in 2010 if any of the following occurs: (1) either deeds date range or assessment sale date range does not cover any days in 2010; (2) if assessment records do not contain information on sales; or if (3) a county's coverage accounts for less than 25 percent of the year 2010 (as discussed in the previous section). There are 981 counties with no coverage, representing 8 percent of total housing units.

For counties with no coverage, the EHS-L turn-over rate is assumed to be the same as for the counties in the state for which there is EHS-L coverage. The assumption of consistent turnover rate may lead to upward bias in EHS-L estimates.

Estimation of EHAFS Based on 2010 Census Data

Data from the 2010 Census were used to estimate EHAFS-C, for comparison with the EHAFS-L estimate obtained from the LPS data. Using the 2010 Census data, the total count of EHAFS-C was based on county level data from the 2010 Decennial Census, Summary File 1, Tables H3, H4, H5, and HCT1 on General Housing Characteristics in 2010. Summary File 1 (SF 1) contains the data compiled from the questions asked of all people and about every housing unit. Housing items include occupancy status, vacancy status, and tenure (whether a housing unit is owner-occupied or renter-occupied).

Summary File SF1 does not break out the number of units in structure. The units in structures provide information on the housing inventory by subdividing the inventory into one-family homes, multi-family homes, apartments, and mobile homes. The latest available product containing the units in the structure information by tenure for all counties is 2005-2009 *American Community Survey* (*ACS*)[17]. Thus, distribution of owner-occupied and renter-occupied by units in structure, based on information from the *ACS*, is applied to the Census 2010 SF1 count. The next available data on distribution of units in structure by tenure will be available in 2006-2010 ACS which is expected to be release at the end of 2011.

The housing units considered in the EHAFS-C include the following: 1) all owner-occupied housing units except mobile homes and the category including boats, RV, Van, etc.; 2) all renter occupied 1-unit detached units and a share of multifamily units (includes 1-unit attached and 2 or more units) that are condominiums; and 3) vacant units that are for sale, sold but not occupied, seasonal, and other vacant (Other Vacant—If a vacant unit does not fall into any of the categories specified above, it is classified as "Other vacant." For example, this category includes units held for occupancy by a caretaker or janitor, for migrant workers, and for personal reasons of the owner).

Given the lack of data on the share of renter occupied condominiums in the Decennial Census or the *ACS*, renter condominium occupancy data is obtained from the 2009 *American Housing Survey* (AHS). The *AHS* is however available only at the national level and for four Census regions. Thus, rates are applied at the Census region level. Also, rates are generated separately for 1-unit detached and 2 or more housing units. Estimation of 2010 EHAFS-C is presented in (1) where subscripts Census and ACS indicate the data source:

$$\text{2010 Census EHAFS-C}_{state} = (a - b) + (c + d) + c + e - f \quad (1)$$

$a = \text{all owner-occupied units}_{Census}$

b = owner-occupied mobile homes + owner-occupied boats, RV, etc. =
= (owner-occupied units_{Census}) * (% owner-occupied mobile units_{ACS} + % owner-occupied
boats units_{ACS})

[17] http://www.census.gov/acs/www/Downloads/data_documentation/SubjectDefinitions/2009_ACSSubjectDefinitions.pdf

c = all renter-occupied 1-unit detached =
= (renter-occupied $units_{Census}$) * (% renter-occupied 1-unit $detached_{ACS}$)

d = renter-occupied condominiums =
= (AHS_1% * % 1-unit $attached_{ACS}$ * renter-occupied $units_{Census}$) + (AHS_2% * % 2+ $units_{ACS}$ * renter-occupied $units_{Census}$)

e = vacant for sale + vacant sold/no occupied+ vacant seasonal + vacant other

f = 2010 housing starts, SAAR

AHS_1% = percent of renter-occupied 1-unit attached that are condominiums
AHS_2% = percent of renter-occupied 2+ units that are condominiums

As noted by f, new construction built in 2010 is excluded from the estimate. New privately owned housing units started is available from Bank of Tokyo-Mitchubishi UFJ at state level. Data is seasonally adjusted at annual rates.

Differences between LPS and Census projections for EHAFS

Given the number of assumptions made in the Census and LPS estimates of the EHAFS, the two often differ even for areas for which full coverage is available in 2010. Differences may arise for a number of reasons.

- First, there may be differences in the way land uses are captured. While the Census estimate attempts to account for renter-occupied condominiums, it does so at one of the four Census region levels. Naturally, that share may vary significantly within regions as well. Also, there may be differences in the way two sources categorize modular and mobile homes.

- The Census estimates EHAFS-C based on April 1, 2010. In contrast, LPS records accept a house as EHAFS-L if it is sold at any point during the given or previous years.

- In addition, in the case of LPS furnished data there are over 7 million homes nationally for which there is no record of year built. These are the null-year built properties, which are

considered in the estimation process. The Census includes these properties in its inventory count.

Computation of Existing Homes Sales

The states were divided into four groups, based on the quality of available data at the county level. The eighteen states of Group 1 had data that appeared to have complete coverage based on courthouse records. In the other states, a number of assumptions previously outlined needed to account for lack of data or coverage:

- Group 1 States: A review of the data at the county level for the 18 states in Group 1 indicated that the annual sales and housing stock data were complete and usable as presented. Data was available for the entire year for all of the counties. Accordingly, the EHS-L data was adopted as an input to the estimating process, requiring no further adjustment for the 2010 base year.
  - Group 1: 18 States, 100 Percent Coverage: AZ, CA, CT, DC, FL, GA, HI, MA, MD, NH, NJ, NV, RI, TN, VT, CO, NY, OH
- Group 2 States: Consisting of 14 states, the EHS-L and EHASF-L data appeared to be complete at the county level for 2010 for a subset of the counties. However, data was missing at the county level for the entire year for some of the counties. In these cases, the EHS-L data was grossed-up for the missing counties based on the relationships between EHAFS-C and EHASFS-L.
  - Group 2: 14 States, Counties at 0 or 100 Percent Coverage: AK, DE, ID, IN, ME, MI, NC, ND, NM, PA, SC, UT, WA, WI
- Group 3 States: Consisting of 13 states, this group included states with some counties missing data for all of 2010, and some counties having data for part but not all of 2010. In these cases county data was grossed up to a full year based on number of months missing data, and state data was grossed up to a full year based on number of counties missing data.

  - Group 3: 13 States: Varying Coverage by County: AL, AR, IL, KS, KY, LA, MN, MT, NE, OK, OR, TX, VA

- Group 4 States: Consisting of 6 States, these states had levels of coverage that we considered to be inadequate. Too much data appeared to be missing to provide a reliable basis for estimation. Accordingly, we used the 2010 *ACS* estimates to account for their number of existing homes sales.

  - Group 4: IA, MO, MS, SD, WV, WY

Final Estimates—National Level

The table summarizes LPS, CoreLogic and Boxwood estimate of 2010 EHS. The "Total" numbers represent counts not adjusted for missing coverage while the "Grossed Up" estimates adjusts for missing coverage. The range of CoreLogic grossed up estimates is based on 85% and 90% extrapolation of CoreLogic data coverage. Boxwood EHS count is based on CoreLogic's data, however it includes sales of new homes as well.

Table 6

	LPS	CoreLogic	Boxwood
TOTAL:	**3,995,427**	**3,589,384**	**4,777,152**
GROSSED UP:	**4,292,588**	**3,988,204 - 4,222,805**	

Courthouse Estimates—State Level

At the state level the magnitudes of the revisions vary from state to state, and in many cases were significantly greater than was the case for the national data. The size of the revisions appears to be a function of a variety of factors:

- The initial benchmark may have been subject to an error; this could particularly be the case where comprehensive data were not available.
- MLS/Board consolidation, posting on multiple MLSs, reporting inaccuracies, or changes in business composition over time may have resulted in cumulative inaccuracies.
- Inaccuracies in processing the data may have cumulated over time.

Conclusions on Courthouse Data

The brief review of assumptions and adjustments required to implement the re-benchmarking process using courthouse level data suggests that at this time the available data are not standardized and therefore subject to large fluctuations depending on the set of assumptions used in the analysis. This appears largely to be a function of the data generation and collection process. Courthouse data are public records and can be filed and processed, and sent to a data vendor, such as LPS and CoreLogic, with delay. In addition, for a number of counties data collection by the vendor may not have yet been implemented. Finally, in some cases a review of the compiled data is impeded by a lack of consistency or clarity across records in terms of the delineation of type of transaction.

It appears that coverage of courthouse records continues to improve. Accordingly, future re-benchmarking efforts may be able to make increasing use of these data sources.

Lawrence Yun is Chief Economist and Senior Vice President of Research for the National Association of REALTORS®. He directs research activity for the association and regularly provides commentary on real estate market trends for its 1 million REALTOR® members. Dr. Yun is responsible for generating Existing Home Sales statistical series, which provide one of the most comprehensive information about national and regional home sales and home prices. He also creates NAR's real estate market forecasts and participates in many economic forecasting panels, including Blue Chip and the Wall Street Journal. He appears regularly on financial news outlets and is a frequent speaker at real estate conferences throughout the United States. In 2008, USA Today listed him among the top 10 economic forecasters in the country. Dr. Yun received his undergraduate degree from Purdue University and earned his Ph.D. from the University of Maryland at College Park.

Committee on Oversight and Government Reform
Witness Disclosure Requirement – "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

Name: Lawrence Yun

1. Please list any federal grants or contracts (including subgrants or subcontracts) you have received since October 1, 2009. Include the source and amount of each grant or contract.

None

2. Please list any entity you are testifying on behalf of and briefly describe your relationship with these entities.

None, other than the National Association of REALTORS.

3. Please list any federal grants or contracts (including subgrants or subcontracts) received since October 1, 2008, by the entity(ies) you listed above. Include the source and amount of each grant or contract.

None

I certify that the above information is true and correct.

Signature: L. Yun

Date: 2-28-12