



NatEquity Knowledge Base

NatEquity Data Analytics to Refine Target Markets

NatEquity has applied data analytics to open source data to estimate the size of homeowner markets, age 75 and older, in selected coastal California and other prospective target markets nationally. These two principle open source data bases are from Federal Reserve Bank of St. Louis FRED data and U.S. Census bureau data by numerous reporting categories for different years. This data is not collected and reported using the same format. Data from these sources and their subparts estimate homeowner age, sex and top tier home values by county and city level by state. This analysis is further refined to the county level where NatEquity applied Society of Actuaries Variable Basic Table (VBT) aging analysis to estimate the number of homeowner households, age 75 plus, who live in single family detached homes in the in what the FRED (Case Shiller CoreLogic) data estimates are homes in the top value tier.

NatEquity has used two different years of data, 2010 and 2009-2013, to estimate the household population in the eleven coastal counties of California. As explained below, these similar data sets from two periods produced similar but different household populations that have to be reconciled.

Estimate One by Peter Mazonas using 2010 Census data. The year 2000 county-level National Census recorded U.S. population by age bracket; important to NatEquity were the 65 & older and 85 & older categories. To arrive at an age 75 and older target market category NatEquity used a proprietary interactive model using the Society of Actuaries 2008 Variable Basic Table (VBT 2008) to age the 65 and older category data. NatEquity made the assumption that at age 75, 2/3 of the target population are females and 1/3 are males. This produced the result that 79% of persons age 65 are still alive at age 75. The number of households in the resulting population, age 75 and older, was then assumed to be 80% of the total population. These assumptions are supported by U.S. Census Bureau data reported in “American Fact Finder” descriptors for selected towns in Marin County California. The eleven counties selected are all in the FRED (Case Shiller CoreLogic) top tier house price categories. This analysis estimates 1.9 million households, age 75+, in the target California counties (Excel tab From 2000 Census).

Updated Estimate One by Peter Mazonas using 2016 County-level Population U.S. Census Data.

NatEquity applied the same logic above to the 2016 census estimates. The result was 2.1 million households in the top tier single family detached target California counties (Excel tab 2016 Update).

Result, Estimate One: 2.1 million households, age 75 and older in the targeted coastal California counties. This analysis made no attempt to add the cohort population age 70 that would age into the target population by year 2020 because no segmented data was available for seniors ages 70-75.

Analysis of Second Tier California Counties and Top Tier Home Value Counties in Selected Other States.

NatEquity also tracks more home value/home appreciation volatile counties in California. These include Napa, Sonoma, Sacramento, San Bernardino and Riverside counties. The same 2016 data analysis of these counties adds another 564,000 probable households (Excel tab 2016 Update).

Extending this same analysis to key top tier counties in NY, TX, WA, IL, CT and NJ, MD, MA adds another 2.3 million households. Virginia was not included because available data only recorded the largest 100 counties in America. The total second tier California counties and counties not fully analyzed in other states adds another 2.9 million prospect households to the 2.1 target coastal California households, grand total of 5 million households in top tier home value counties nationally (Excel tab 2016 Update).

Estimate Two by Eric Ranson using 2009-20113 Housing Census Updates. NatEquity's actuary, Eric Ranson, started his analysis using 2009-2013 U.S. Census American Community Survey data that records the number of seniors in top tier home value categories by target counties in California. This data has the advantage of breaking NatEquity critical age categories down by 60 to 64, 65 to 74 75 to 84 and 85 years and older. A summation category of 65 years and over allowed us to test the accuracy of NatEquity's actuarial aging done in Estimate One above.

NatEquity acknowledges a problem with this data is that home values in the period 2009-2013 were depressed, but also because the Census Bureau uses a national home value estimator model that moved many top tier home values to the second of the three tiers. The decision was to actuarially age and add seniors ages 65-75 to the 75+ category (Excel target markets tab). This is a proxy for rebounding home values.

Result, Estimate Two: This estimate produced 2 million target households in the coastal California counties (Excel tab Targeted markets).

Further Work to be Done

Additional analytics using both open source and commercially available data will refine the two above target market estimates. NatEquity proposed the follow steps:

1. Review, clean-up and reconcile the above estimates.
2. Adjust to actual current FRED and American Fact Finder home value estimates. Because these are all high home price appreciation locations, the assumption is that many second-tier homes and their senior occupants will be elevated to the top tier target category.
3. Apply county level Proposition 13 data. FRED (Case Shiller CoreLogic) relies upon First American/CoreLogic data that is not believed to be accurate for homes that have not sold since year 2000. Adjusting the top tier and thus the number of qualified households by estimating additional households with Prop. 13 data should increase the size of the target market.
4. County level Prop. 13 data show which households have applied for a senior property tax exemption discount. By address this property tax exemption discount can be cross checked against First American data that shows how long the homeowners have been residents at that address. Additional First American data fields such as financing information will help identify homes that may have understated values.
5. Query county level building permit data, if any, since data of purchase to identify major home improvements that added value but did not change the property tax assessed value of the home. This is a big problem because residents often understate the value of improvements to

not trigger property tax reassessment. These improvements do not get picked up, since 2000, by First American.

6. Isolate the cohort of homeowners in target areas and use credit reporting data to determine homeowner credit scores, credit activity or lack thereof, and last recorded employer before retirement to begin estimating retirement income and anything else about their home.
7. NatEquity's pre-qualification algorithms can then be applied to this data to target individual households for direct mail. Missing in many cases will be an accurate count of bedrooms and baths added by unrecorded improvements. This data can be added to the pre-qualification data when the homeowner responds to direct mail outreach.

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