relative variation in conforming and jumbo interest rates that is driven by GSE institutional constraints and not by borrower demand.

In addition to aggregate data, we also exploit several novel micro-level data moments. First, we use the mean and standard deviation of realized loan sizes for jumbo and conforming loans within a market. Second, we use two moments around the conforming limit discontinuity: the market share of borrowers who obtain conforming loans exactly at the conforming loan limit (see Figure 7A) and the income difference between borrowers exactly at the conforming loan limit and those nearby (see Figure 7B).

Identification Discussion:

While all moments jointly identify the parameters of the model, here we provide an informal discussion of how different moments in the data relate to the identification of different parameters. As in Berry et al. (1995) and Nevo (2000), the aggregate market shares allow us to identify the distribution of preferences for interest rates and non-price attributes of mortgages, once we instrument for price. The price variation induced by the GSE cost shocks allows us to identify the price sensitivity for consumers, α_i. Variation in market shares for a given interest rate across lenders allows us to estimate consumer preferences over non-price attributes, $q_{jt} + \xi_{jct}$. Intuitively, if Quicken has a larger market share for mortgages for a given interest rate, it must be because consumers value Quicken's convenient mortgage screening and documentation system.

Jointly with the aggregate moments, the micro-moments allow us to estimate the preferences for other parameters of the model. Intuitively, consumers who choose a jumbo mortgage choose the mortgage at their ideal size (subject to the consumer-specific LTV constraint). Similarly, consumers who choose a conforming mortgage below the conforming limit choose a mortgage at their ideal size (subject to LTV constraint). Intuitively, the mean and standard deviation of realized loan sizes for jumbo and conforming loans within a market are very informative about the distribution of ideal loan sizes F_i, once we account for the behavior at the discontinuity.

The parameter β_i governs behavior at the discontinuity, and consequently the distribution of loan sizes around the discontinuity are highly informative in identifying these parameters. Recall that a consumer choosing a smaller-than-ideal mortgage suffers disutility β_i. Consider a consumer whose ideal mortgage size is greater than the conforming limit. She has three choices: obtain a jumbo mortgage at the ideal size, obtain a conforming mortgage that is too small—perhaps at a lower rate, or exit the market entirely. When β_i is large, she will be unlikely to take a smaller conforming loan unless the interest rate differential and her price sensitivity are large. In contrast, when β_i is small she is more likely to take a conforming mortgage exactly at the conforming loan cutoff. Therefore, all else equal, β_i governs the amount of bunching at the conforming loan cutoff. Large β_i leads to less bunching and small β_i leads to more bunching. Consequently, the average level of β_i is identified from the observed bunching in the data, and β_i's covariance with income and house price is identified by how bunching varies with income and house prices in the data.

Besides taking a smaller conforming loan, the consumer has the option to obtain a jumbo loan or exit the market entirely. If γ_i is high, holding the conforming market share fixed, then jumbo loans are