mortgage lending. This incomplete migration towards shadow banks illustrates that tighter capital regulations on the banking sector are not being completely absorbed through the shadow bank migration channel. Thus, the notion that shadow banks might pick up the slack in bank lending entirely is not correct.

Higher capital requirements primarily hurt banks and higher consumers in higher-income zip codes where there is a greater demand for jumbo loans. Given the capital requirement of 9%, bank profits decrease by roughly $24 billion, while shadow bank profits are essentially unchanged. As capital requirements increase, banks lose their comparative advantage of financing loans on balance sheet. Total consumer surplus declines by roughly $45 billion, and a typical borrower sees her consumer surplus decline by roughly $1,617 under the 9% capital requirement scenario versus the baseline. Welfare effects differ significantly within the income distribution, with the majority of these declines occurring for borrowers in high-income markets that rely on jumbo lending. The top income quartile markets see consumer surplus decline by roughly $32 billion, while consumer surplus in the bottom income quartile markets declines by only $1 billion. The decline in consumer surplus occurs along two margins: (i) the borrowers who still borrow jumbo loans now pay higher rates and (ii) the borrowers who switched to conforming mortgages, or exited the market, now do not borrow the optimal amount. Finally, it is important to note that these losses have to be weighed against possible welfare gains of moving risk from bank balance sheets (e.g., Egan et al. 2017).

Bank Stability

There are two dimensions through which capital requirements affect bank stability: retaining mortgage risk on bank balance sheets, and bank profits. Even a small reduction in capital requirements results in a large increase in the share of loans retained on the bank balance sheets. Reducing capital requirements to 4.5% expands the balance sheet holdings of mortgages by 54% (~$360 billion annually). Conversely, the primary consequence of increasing capital requirements is a large decline in on-balance-sheet lending. As capital requirements increase to 9% and balance sheet financing becomes significantly more expensive, the share of balance-sheet financed lending drops from 37% to 14%, and banks' balance sheet holdings of mortgages drop by 63%. In other words, capital requirements operate primarily on the balance sheet retention margin. These large adjustments starkly illustrate the importance of the bank balance sheet retention margin in responding to increases in capital requirements. This risk is instead shifted to GSEs and indirectly to taxpayers, who insure these mortgages. Offsetting somewhat the decrease in risk is also a decrease in expected bank profits, which decline with tighter capital requirements.

V.B Secondary Market Interventions: Quantitative Easing

Instead of targeting banks, financial intermediation policies can target secondary markets for loans. One set of such major policies during the last financial crisis was referred to as quantitative easing (QE). The Federal Reserve intervened in the securitization market by purchasing large amounts of GSE-guaranteed mortgages, hoping to decrease the rates at which GSEs purchased mortgages from originators, and, in turn, easing access to mortgages. Estimates suggest mortgage rates declined