

of dollars) across various bank capital ratio requirements (in percentages) relative to the baseline scenario. Roughly, the difference between total bank lending response and on-balance sheet bank lending response—indicated by the dashed arrow—captures the importance of the balance sheet retention margin, while the difference between aggregate lending response, including shadow banks and the total bank lending response—indicated by the solid arrow—captures the importance of the shadow bank migration margin.

While higher capital requirements lead to a substantial decline in the bank balance sheet lending volume, the overall decline in the bank lending volume is considerably smaller because banks expand off-balance-sheet lending through loan sales. The shadow bank migration margin further moderates the adverse impact of bank capital requirements aggregate lending. For example, our model predicts that increasing bank capital requirements from current levels to 9% (Table 9 and Figure 10) reduces bank balance sheet lending by two-thirds, but *overall* mortgage lending declines by only 2.5%. One margin of adjustment that is important is the balance sheet retention margin: *total* bank lending declines by only 9.5% as banks adjust their lending from retention to selling. Accounting for migration to shadow banks fills another 7%, leaving the net decline to be just 2.5%.

It is clear from this example as well as other counterfactuals that a model of financial intermediation must carefully account for both of these margins when evaluating policies. This insight extends well beyond the U.S. market. For instance, the U.K. does not have a large and liquid secondary market for mortgages. Therefore, the impact of financial regulation will differ substantially from the perspective of consumers as well as bank stability. The current Basel regulatory framework proposes a uniform treatment of capital requirements across countries. Our framework suggests that increasing capital requirements in the U.K. would result in a substantially higher contraction in overall lending since the bank retention margin is absent in the U.K. Thus, the consequences of imposing similar regulations across countries could result in dramatically different responses depending on the market.

#### *Policy Intervention Targeting: Banks or Secondary Markets?*

The second general insight is that the adjustment depends on whether policy interventions target traditional banks or secondary markets. The concrete examples we analyze are capital requirements versus secondary market interventions such as the GSE premium (QE), conforming loan limits, or, as in extensions below (Section V.E), having a jumbo securitization market. When tighter regulation only targets traditional banks, as is the case with increased capital requirements, solely focusing on bank balance sheets overstates the adverse effect of such policies on overall lending volume. The adjustments on the shadow bank migration margin and the balance sheet retention margin work to offset the adverse impact of tightening. For policies that tighten the secondary market, such as increasing the GSE financing cost or lowering the conforming loan limit, the balance sheet retention margin still offsets some of the adverse effect as shown in Figure 13B and 13C. The shadow bank migration margin, however, exacerbates the effect by lending contracts for shadow banks, leading to a large overall decline in lending. Ignoring the role of shadow banks can yield not only the wrong