magnitude of the aggregate effect, but also the wrong direction (see Figure 13B, which compares both the bank-to-bank and shadow bank responses).[23]

This insight has direct consequences for how empirical researchers approach measuring policy consequences and modeling the intermediation sector. When financial regulations and policies change, researchers typically use bank balance sheet data to measure the consequences. Our counterfactuals suggest that drawing quantitative conclusions solely based on bank balance sheet data can be extremely problematic, and difficult to debias without an explicit model of bank retention and shadow bank migration margins.

Bank Stability and Income Redistribution

The third insight is that interventions to achieve bank stability differ in their redistributive consequences. For example, increasing capital requirements achieves bank stability by decreasing on-balance-sheet lending, i.e., reducing jumbo mortgages. Therefore, the cost of bank stability is mainly borne by higher-income borrowers. An expansion of GSE funding increases the appeal of selling loans, also shifting loans from bank balance sheets and increasing bank stability. It does so while expanding lending and benefiting consumers across the income spectrum, but comes at the cost of taxpayers subsidizing GSE lending.

V.E Model Extensions: Raising Equity, Asset Sales, and Jumbo Securitization

Our baseline model is already rich, accounting for equilibrium interactions between banks and shadow banks across several markets, as well as allowing banks to adjust their business models on the balance sheet retention margin. Nevertheless, we limit the model complexity to components which are necessary to match the patterns in the data. In this section, we extend the model on several dimensions. We allow banks to issue equity and sell existing assets so they can adjust their balance sheet capacity endogenously. Second, we investigate whether our conclusions would change if a securitization market for jumbo mortgages were to arise in the future.

Endogenous Balance Sheet Capacity: Bank Equity Issuance and Asset Sales

In the baseline model we assume that issuing loans on the balance sheet becomes increasingly more expensive because banks have a fixed balance sheet capacity. We first extend the model to allow banks to issue equity in order to finance their originations. If a bank wants to keep a mortgage on the balance sheet at a fixed capital ratio, the cost of external funding is a fixed premium over GSE financing costs. This approach nests banks choosing any desired debt-to-equity ratio: If a bank has chosen a certain (arbitrary, not necessarily the current) debt-to-equity ratio, financing an additional mortgage requires only the issuance of enough equity to keep the debt-to-equity ratio constant at the same cost.

[23] Notably, the equilibrium response of the shadow bank sector is quite important in explaining the aggregate lending response to various policies. For example, lowering the conforming loan limit by 25% results in $294 billion decline in lending (Table 11 and Figure 13C). The contraction of lending by shadow banks ($207 billion), accounts for 70% of the aggregate lending response.