**Aggregate Lending and Modern Financial Intermediation: Why Bank Balance Sheet Models Are Miscalibrated**

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Discussants: Jeremy C. Stein, Itamar Drechsler

Martin Eichenbaum opened the discussion by noting the importance of the topic. He added that when thinking about bank capital, the effective constraint is tied to regulation. For example, in the Common Equity Tier 1 (CET1) ratio, the denominator is risk-weighted assets, so there is a lot of action in terms of shifting the balance sheet composition in order to get the right risk weights. If you used microdata on banks that just did a large M&A transaction, you would see that they immediately sell off assets to reduce risk-weighted assets in order to get to their target CET1 ratio. He also added that accounting also matters. There is a question about whether to hold an asset as available for sale (AFS) or hold to maturity (HTM). If there were losses on AFS assets, this would result in an immediate hit to CET1 capital. He questioned how this applies to SVB. Jeremy Stein responded that at the SVB size level, those losses do not flow through regulatory capital regardless of whether the asset is AFS or HTM. Martin Eichenbaum noted the distinction and concluded his comments with a general point that when you get specific about the capital ratio, it opens a lot of issues for regulation and for the risk-weighted composition of assets held.

Greg Buchak thanked the discussants. He pointed out that a common theme from both was the distinction between who produces the security and who holds the security. He added that Jeremy Stein’s discussion focused on the capital structure of who produces the mortgage. He agreed with Jeremy Stein’s comment that banks provide warehouse financing for nonbanks and so there is some risk. However, he noted that the key question is whether nonbanks are runnable in the same way as banks and in relation to Martin Eichenbaum’s comments, whether Quicken Loans is runnable in the same way as SVB. He stated that while he was not sure of the answer, it was an important question to consider.

Turning to the discussion of Itamar Drechsler, Greg Buchak noted the very interesting data on long-term holders of securities. While he agreed with Itamar Drechsler that banks are important holders, the key question for whether bank balance sheets are quantitatively important for lending prices and quantities of a particular asset is whether that asset can be sold in the secondary market. While it is true that banks do own a significant share of agency RMBS, there exist good substitutes for bank balance sheets for owning these assets. He explained that, as their model highlights, shocks to bank capital impact these sellable assets primarily along the margin of who owns them, rather than aggregate prices and quantities of these assets. Whether banks own 30% or 50% of these sellable assets at a particular time is largely (quantitatively and qualitatively) immaterial to this channel in the model. What matters is that sellable assets that happen to be owned by banks should be clearly delineated from unsellable assets that must be held by banks. These include assets like jumbo mortgages, or as Itamar Drechsler mentions, other real estate loans for which liquid secondary markets do not exist. Because the sales margin does not exist for these assets, shocks to bank balance sheets transmit directly to prices and quantities of these assets.

Jennifer La’O asked whether there are specific empirical moments that can help distinguish between Jeremy Stein’s model and the authors’ model. Jonathan Parker added that a key part of the model is the elasticity of substitution between lending of nonbanks and banks. He felt more transparency on the empirical approach was needed. Greg Buchak responded that they borrow the elasticities from the literature. For example, they can work out the price elasticity by using a bunching estimator to look at what is conforming versus non-conforming and offered to provide more detail offline.
Jonathan Parker noted that the mortgage market is quite a specific market which might not be similar to other markets due to the presence of GSEs. For example, nonbanks can do a lot on mortgages as mortgages are not information intensive, but nonbanks have not really penetrated markets where banks are ‘special’. Gabriel Chodorow-Reich commented that another area where banks are special is in relation to committed versus uncommitted credit. The former includes term loans or mortgages and is very easy to securitize and subsequently sell off. The latter is very important for C&I and is specific to banks, so would likely remain with banks. He asked whether the authors agreed with that assessment. Similarly, Şebnem Kalemli-Özcan commented that big banks provide the majority of C&I lending and she does not see why this would change and go to nonbanks. She also asked the authors that if we are concerned about nonbanks, should we regulate them more.

Greg Buchak responded that they only focus on the US mortgage market because it is easier to measure. He emphasized that the points they make apply more broadly. He noted that when looking at other countries, mortgage markets typically do not have GSEs and so there is a lot of variation in terms of whether mortgages are deposit-financed. He agreed with Jeremy Stein that the focus here is on the bank balance sheet versus everything else rather than whether it is a bank or nonbank that originates to distribute. Finally, Greg Buchak explained that they are not arguing that nonbanks are great but are making a positive statement that they are important. Normatively, they want to know more about them to think through the issues more carefully.

Tomasz Piskorski re-emphasized that we cannot measure total lending from banks’ balance sheet data or bank data alone and assess the responses of the credit market to various polices based solely on such data combined with a traditional balance sheet model of lending. One overarching insight from their work is that taking into account the endogenous shadow bank migration margin and the balance sheet retention margin is critical to understanding the consequences of various policies including macroprudential ones both in terms of their magnitude, direction, and their distributional effects.

Amit Seru further added that in the model of Jeremy Stein, regulation does not do much. But we know that regulation has a big impact on financing of nonbanks. For example, SoFi and Quicken Loans can make jumbo loans, but they choose not to because they do not wish to take the credit risk. He emphasized that the key message is that for quantitative stuff you need to do IO modelling. For example, if you look at the riskiest part of FHA-related mortgages, 80-90% of them are from nonbanks. Banks were regulated aggressively so they left these markets. Nonbanks could enter because there was a secondary loan-sale market. While nonbanks can enter the jumbo loan markets, they do not because the associated securitization market essentially disappeared after the global financial crisis. He explained that regulation has had many ripple effects. Therefore, whether nonbanks make the system safer or more fragile is not as simple as highlighted by the discussions of Itamar Drechsler and Jeremy Stein.

Frederic Mishkin asked about the agency problems inherent in the originate to distribute model. Specifically, whether this moral hazard issue creates additional vulnerabilities and whether the Dodd-Frank Act has dealt with it. Greg Buchak responded with a technical point that the government guaranteed mortgages are not riskless from the point of view of the originator. If a mortgagor defaults early, the GSEs will try and put the mortgage back to the originator. This ‘put-back’ risk is one of the main things that nonbanks are worried about.

Amit Seru concluded the discussion by highlighting that while he does not believe that Dodd-Frank has solved the moral hazard issue, one must look at the system as a whole. Moreover, given that nonbanks have double the capital of banks, one could see this as a sign that the markets are working.