



Improving Future Policy Responses to Foreseeable Bank Risk-Taking

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In the years after the financial crisis of 2007–2008 and the subsequent recession, several empirical studies (including our own) found that collapses in economic activity tend to occur in the aftermath of large credit expansions.¹

These credit expansions—marked by significant increases in “riskier lending” by banks to consequently over-indebted households—are supposedly driven by competitive pressures to lend, and can be exacerbated by perverse incentives or behavioral biases.² These findings have led some to argue that large credit expansions in and of themselves are a key *cause* of severe economic downturns. However, this common narrative misinterprets the role that lending plays in the business cycle. In our research, there is no validity to the concept of a credit cycle “causing” the business cycle.³ Despite the novelty of some of the mechanisms that developed in the run-up to the Great Recession—for example, the collateralizing of subprime mortgages and the unregulated use of derivatives—it, like all recessions, was the result of cyclical variations in economic conditions.

The propensity of banks to engage in riskier lending over the business cycle can therefore be understood simply as an informed response to outside macroeconomic forces and the impact those forces have on the most important factor driving bank decision-making: the bank’s franchise value. Banks benefit from economic rents, and bank franchise value is essentially the (discounted) value of the entire future stream of

SUMMARY

- This brief offers new perspectives on the behavior of banks during the financial crisis of 2007-08 and the limited success of unconventional monetary policies in stimulating bank credit to the private sector during the subsequent economic recovery.
- The common narrative about the financial crisis is that it was caused by a large credit expansion with overly risky loan-granting behavior by banks. We argue, however, that banks actually made optimal financial decisions in the lead-up to the crisis, based on their calculation of their franchise value.
- The brief explains the mechanics of franchise value—how it led banks to shift their portfolios toward riskier household loans before the crisis, as well as how it dampened the impact of quantitative easing and other novel monetary policies meant to stimulate the investment of capital into the private sector.
- Policymakers have failed to recognize the role that franchise value plays in all bank decisions. If they wish to devise appropriate fiscal or monetary policies to prevent or mitigate a future crisis, they need to properly account for how franchise value drives the decision-making of bank managers.

these rents. Rent values fluctuate over time as local and aggregate economic conditions change, and they are the result of the spread between banks' return on assets and their cost of debt. Although, in practice, rents can arise simply from a lack of competition in the banking sector, our research focuses on rents derived from explicit government guarantees on bank deposits (i.e., FDIC deposit insurance). Deposit insurance serves as a form of subsidized financing for banks that lowers the cost of their debt and raises the rents they collect and, thereby, their franchise value.

The key to this alternative interpretation of bank risk-taking is understanding that the fluctuations of a bank's franchise value over the business cycle is what motivates *all* lending behavior—the good and the bad. Rather than suffering from irrational exuberance in the years before the autumn of 2008, bank managers actually foresaw the risks on the horizon and forecasted future economic growth appropriately, which enabled them to make *optimal* investment and financing decisions for their equity shareholders, based on their franchise value.

As we will outline in this Issue Brief, policymakers failed to appreciate

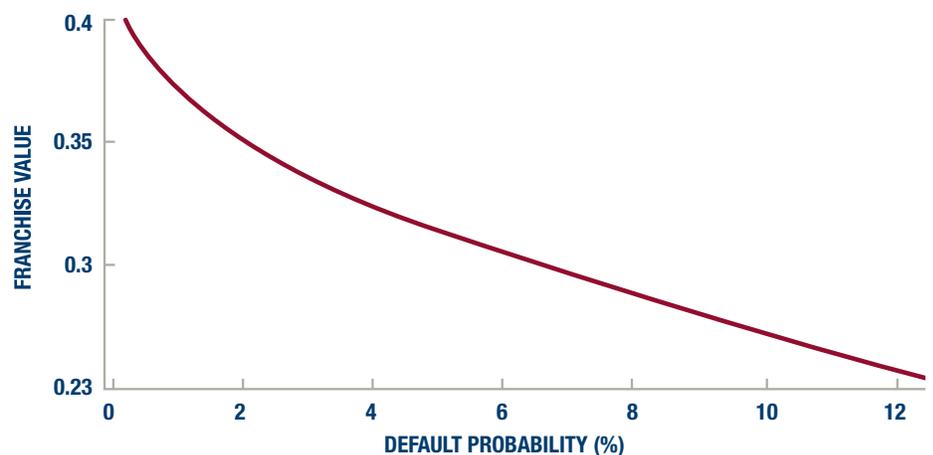
the role that franchise value plays in the decisions of banks. They consequently did not anticipate that banks, in general, actually would hoard reserves (instead of extending credit) in response to the extraordinary measures undertaken by governments and central banks after the start of the financial crisis. There is an important lesson that should be learned here: if policymakers wish to devise appropriate fiscal or monetary policies to prevent or mitigate a future crisis, they need to properly account for the constraints under which bank managers operate and how franchise value drives their decision-making.

FRANCHISE VALUE: WHY BANKS SHIFT THEIR RISKS

During economic expansions, bank franchise value is generally large and banks protect it by avoiding excessive risks that may lead to early bankruptcy. Over time, however, aggregate risks eventually build, and franchise values begin to fall as risk premia rise (see Figure 1). It is at this point that risk-taking throughout the banking sector begins to accelerate.

For a brief glimpse into what this looks like in practice, consider the following facts regarding banks' responses to macroeconomic conditions in the 2003–2008 period:

FIGURE 1: RELATIONSHIP BETWEEN FRANCHISE VALUE AND THE LIKELIHOOD OF DEFAULT



NOTES

- 1 See Borio and Lowe (2002); Reinhart and Rogoff (2009); Jord'a, Schularick, and Taylor (2011); Schularick and Taylor (2012); Mian and Sufi (2009); Mian, Sufi, and Verner (2017); Krishnamurthy and Muir (2016).
- 2 Work by Minsky (1977) and Kindleberger (1978) already emphasizes the potential for over-optimism to destabilize the economy. Behavioral explanations include neglected risks (Gennaioli, Shleifer, and Vishny, 2012) and extrapolative beliefs (Barberis, Shleifer, and Vishny, 1998; Greenwood and Hanson, 2013).
- 3 The primary source for this Issue Brief is Gomes, Grotteria,

- & Wachter (2019), "Foreseen Risks." All references in this brief can be found in that source.
- 4 Hirtle (2016).
 - 5 This maximum leverage position is defined by the need to pay a fine proportional to deposits when leverage exceeds this value. Generally, even a small cost will be enough to ensure that banks comply with the regulatory constraint.
 - 6 Duchin and Sosyura (2014); Bassett, Demiralp, and Lloyd (2017).
 - 7 Carpinelli and Crosignani (2018).
 - 8 Di Maggio, Kermani, and Palmer (2016).

- 9 Rodnyansky and Darmouni (2017).

- Bank leverage, while relatively low in the early 2000s, increased steadily from 2004, and then grew exponentially from 2006 until the onset of the crisis (see Figure 2).

crisis, benefiting equity holders at the potential future expense of banks' debt holders.

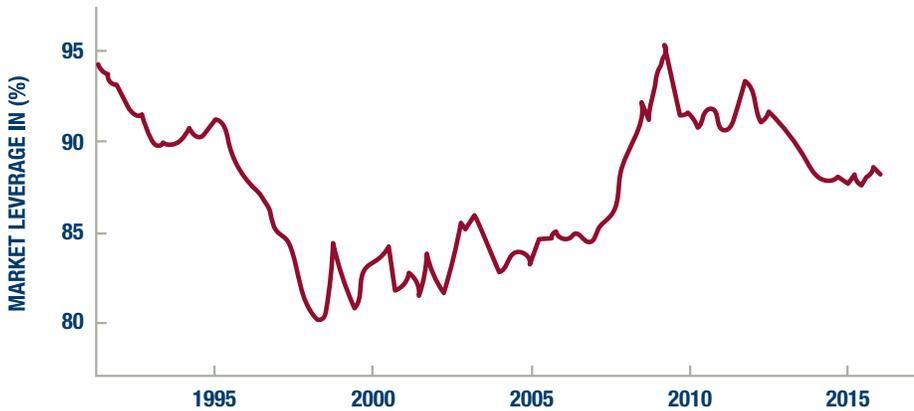
These facts suggest a picture of increased risk-taking and pessimism

safe investments and seeking to stay in business, to being a "bad bank," in effect taking advantage of the subsidy offered to depositors by becoming over-leveraged. For a bank with low leverage, the shift does not occur until the probability of a crisis is as high as 5%. For a bank with the middle value (in our sample), it occurs at 2%. For a bank with the highest leverage, even the smallest probabilities of crisis compel it to maintain assets at their lowest value.⁵

We can see the same mechanisms at work in the optimal portfolio allocation of a bank. When the probability of a crisis is low, well-capitalized banks avoid risky loans to households; however, poorly capitalized banks will make those loans. But at a threshold level, the loan portfolio shifts toward over-weighting the risky household loans. This shift occurs at the same point at which the bank decides to hold less equity.

What explains the shift from "good bank" to "bad bank" when the likelihood of an impending crisis rises? In a word, franchise value, which decreases as the crisis probability increases. When a bank becomes over-leveraged and invests in risky household loans, it is effectively "gambling for resurrection." If the gamble pays off, a bank can generate high returns for its equity holders. If the gamble leads to a bad outcome, a bank could be shut down, either by regulators or by bankruptcy. Of course, if a shutdown is foreseen as likely regardless, equity holders cannot be further penalized, so they may find it preferable to exploit the additional reward from gambling on risky assets. In the data that we have from 2003-2008, that is precisely what we see.

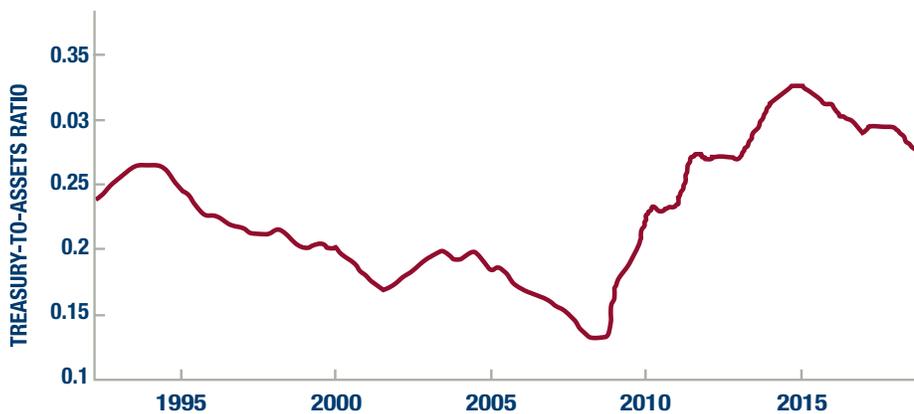
FIGURE 2: MARKET LEVERAGE OF BANK HOLDING COMPANIES, 1992-2016



- Banks held fewer and fewer safe assets (e.g., Treasuries and cash) on their balance sheets until the third quarter of 2008 (see Figure 3).

about the future that accelerated before September 2008. This is not surprising. As the probability of a crisis rises above certain thresh-

FIGURE 3: RELATIVE SIZE OF SAFE ASSETS IN BANK PORTFOLIOS, 1992-2019



- Large bank holding companies were implementing extensive stock repurchases in the lead-up to the crisis to bolster their own share prices.⁴
 - Bank dividend payouts remained high before and during the

olds, a bank's incentives change in a dramatic way. The probability of a shutdown can increase to the point where avoiding it entirely becomes too costly. In that case, a bank shifts from being a "good bank," making

POLICY LESSONS

After the 2008 financial crisis, executive branches and central banks in advanced economies responded by providing the banking sector with additional guarantees on funding. These included the Capital Purchase Program (CPP) and the first round of quantitative easing measures (QE1) in the United States, and the long-term refinancing operations (LTRO) in Europe. The dominant policy rhetoric was that poor bank balance sheets lay behind the sharp reduction in credit. Although policymakers intended for banks to increase their lending to the private sector, in many cases this did not happen. In the U.S., institutions that were included in the Capital Purchase Program did not increase their loans.⁶ Similarly, other researchers conclude that LTROs in Europe were equally ineffective in boosting bank lending.⁷

This behavior need not be puzzling. As our model suggests, we can understand these interventions through their impact on bank franchise value. Several of these policies worked to provide banks with funding at very favorable terms, in effect subsidizing the banking sector (CPP and LTROs were explicitly designed to do just that) and increasing the franchise value of banks. These policies succeeded chiefly in reinforcing banks' incentives to hold more safe assets.

A consequence of interventions like QE1 was that banks could rely on (relatively) more equity. This was because with increased franchise values, default would trigger larger losses for equity holders. As a result, this policy intervention produced a decline in expected bank failure rates.

However, the increased conservatism by equity holders also manifested itself in the optimal portfolio composition of banks. In general, the optimal asset composition subsequently tilted more towards government bonds and away from risky private loans. Only poorly capitalized banks eschewed this behavior to remain fully invested in private sector loans. Thus, policies that effectively subsidized bank equity holders by allowing them tap debt markets at below-market rates led many banks to reduce overall risk taking. In the U.S., some researchers describe a “flypaper effect” in which banks chose to hold excess reserves with the central bank rather than expand credit to the private sector.⁸ This effect is particularly strong when the likelihood of a crisis was high.

These findings add a fresh perspective to the ongoing debate about the effects of unconventional monetary policies on bank lending. In particular, they suggest an explanation for the perceived limited success of unconventional monetary policies in stimulating bank credit to the private sector during the economic recovery after the recent financial crisis. Our results are also consistent with other evidence, which finds that U.S. banks with mortgage-backed securities on their books increased lending relative to their peers after QE1.⁹ These banks, gambling for resurrection, remained the most eager to replace safe assets with risky ones.

CONCLUSIONS

While it may be plausible that households, perhaps based on lack of experience, over-optimism, or simply rule-of-thumb behavior, took more

risk than, ex post, proved optimal in the run-up to the 2008 crisis, it is harder to believe that banks, en masse, decided to lend to such households purely based on over-optimism, as observable economic conditions worsened.

Our study suggests that reapplying recent policies toward banks in a future crisis might have effects counter to what is intended. A bank's decisions over time are driven by fluctuations in its franchise value. Methods to strengthen banks, while conferring some long-run benefits, might actually result in less lending if they increase this franchise value. On the flip side, any policy with the side effect of weakening banks might actually result in more undesirable lending, and further bank instability, as banks gamble for resurrection. In both cases, ignoring the incentive effects of policy on banks could itself exacerbate underlying risks.

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