

EXECUTIVE SUMMARY

Concentration in Mortgage Lending, Refinancing Activity, and Mortgage Rates

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Housing is a critical channel for the transmission of monetary policy to the real economy. As shown by Bernanke and Gertler (1995), residential investment is the component of GDP that responds most strongly and immediately to monetary policy shocks. In addition, housing is an important channel through which monetary policy affects consumption. An easing of monetary policy allows households to refinance their mortgages at lower rates, reducing payments from borrowers to lenders. If borrowers have higher marginal propensities to consume than lenders, as would be the case if borrowers are more liquidity constrained, then refinancing should boost aggregate consumption in the presence of frictions. Indeed, refinancing is probably the most direct way in which monetary policy increases the disposable cash flow of liquidity-constrained households (Hurst and Stafford 2004).

Using monetary policy to support housing credit has been an increasing focus of the Federal Reserve in recent years. In particular, the Federal Reserve's purchases of mortgage-backed securities (MBS) in successive rounds of quantitative easing have had the explicit goal of supporting the housing market. One of the aims of quantitative easing was to lower mortgage rates by reducing financing costs for mortgage lenders (Bernanke 2009, 2012). However, it has been argued that the efficacy of this policy has been hampered by the high indebtedness of many households (Eggertson and Krugman, 2012; Mian, Rao, and Sufi, 2012). "Underwater" households whose mortgage balances exceed the values of their homes have been unable to refinance, potentially reducing the impact of low interest rates on the economy. Others have noted that the reduction in MBS yields from quantitative easing has only been partially passed through to borrowers, leading to historically high values of the so-called "primary-secondary

spread” – the spread between mortgage rates and MBS yields (Dudley, 2012). Fuster, et al. (2012) consider a number of explanations for the increase in spreads, including greater costs of originating mortgages, capacity constraints, and market concentration, but conclude that the increase remains a puzzle.

In this paper, we explore in more detail whether market power in mortgage lending can explain a significant amount of the increase in the primary-secondary spread and thereby impede the transmission of monetary policy to the housing sector. We build on the literature in industrial organization that argues that cost “pass-through” is lower in concentrated markets than in competitive markets – when production costs fall, prices fall less in concentrated markets than they do in competitive markets because producers use their market power to capture larger profits. In the context of mortgage lending, this suggests that when the Federal Reserve lowers interest rates, mortgage rates will fall less in concentrated mortgage markets than in competitive mortgage markets. This could dampen the effects of monetary policy in such markets.

Using the yield on MBS guaranteed by government-sponsored enterprises, Fannie Mae and Freddie Mac, as a proxy for the costs of mortgage financing, we find that mortgage rates are less sensitive to costs in concentrated mortgage markets. A decrease in MBS yields that reduces mortgage rates by 100 basis points (bps) in the mean county reduces rates only 73 bps in a county with concentration one standard deviation (18%) above the mean. Moreover, when MBS yields fall, the quantity of refinancing increases in the aggregate. However, the quantity of refinancing increases 35% less in the high-concentration county relative to the average county. The effects on mortgage rates and the quantity of refinancing compound each other. In a high-concentration county, fewer borrowers refinance, meaning that fewer households see their mortgage rates reduced at all. And of the borrowers that do refinance, the rates they are paying fall less on average. The magnitude of the combined effect is substantial: monetary policy transmission through the mortgage market has approximately half the impact in the high-concentration county relative to the average county.

Our estimates also suggest that increases in the concentration of mortgage lending can explain a substantial fraction of the rise in the primary-secondary spread. Extrapolating from our results, the 250 bps decline in MBS yields since the onset of the financial crisis should translate into a 150 bps reduction in mortgage rates given the current level of concentration. This implies

that the decline in MBS yields should be associated with an approximately 100 bps increase in the primary-secondary spread – roughly the magnitude of the increase observed by Fuster, et al. (2012). Our estimates suggest that if the concentration of mortgage lending were instead at the lower levels observed in the 1990s, the same decline in MBS yields would have resulted in a 40% smaller increase in the spread – an increase in the spread of 60 bps rather than 100 bps.

Of course, mortgage market concentration is not randomly assigned, so it is difficult to ascribe causality to these results. We attempt to address endogeneity concerns in a variety of ways. First, our basic results are robust to a battery of controls including county and time fixed effects, population, wages, house prices, and mortgage characteristics. Moreover, we control for the interaction of changes in MBS yields with these characteristics. Thus, our results show that market concentration reduces the sensitivity of mortgage rates to MBS yields even after controlling for the possibility that this sensitivity can vary with county characteristics. Second, we use a matching procedure to ensure that the counties we study are similar on observable dimensions. This does not affect the results.

Third, we use bank mergers as an exogenous determinant of mortgage market concentration. Specifically, we examine a sample of counties where mortgage lending concentration is increased by bank mergers, but the counties in the sample were not the key motivation for the merger. In particular, we focus on counties where the banks involved in a merger are important, but the county itself makes up only a small fraction of the banks' operations. Mergers increase the concentration of mortgage lending in such counties. However, because the county makes up a small fraction of each of the bank's operations, it is unlikely that the county was an important driver of the merger. In this sample of counties, we show that the sensitivity of refinancing and mortgage rates to MBS yields falls after the merger, consistent with the idea that increased concentration causes less pass-through.

Our results have both time series and the cross-sectional implications for the effectiveness of monetary policy. Specifically, the impact of monetary policy could be decreasing over time due to the increase in average mortgage market concentration. In addition, even

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