Struggling Creditworthy Repeat Home Buyers: Mid-Tier FICO Analysis

Introduction

Fannie Mae's conventional purchase money acquisitions have showed steep volume declines since the mid-2000s. While the acquisition count is trending back up it hasn't reached pre-crisis levels.

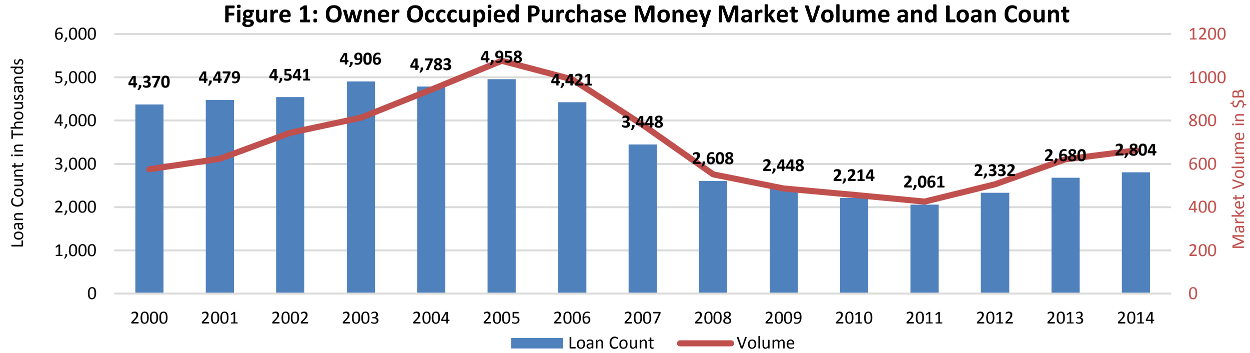
The decline is not homogeneous across FICO scores. The lower the FICO score is, the greater the impact. Fannie Mae acquisitions with FICO scores of 740 or more have the smallest decline in volumes over the past decade. While the greatest drop is in the lowest FICO score (lower than 660) band, this is partly due to new underwriting standards. Mid-tier credit scores, defined as FICO score in the 680-740 range, also show significant reductions in volume and have not picked up since the crisis.

In this paper, we attempt to study the drop in mid-tier credit score lending and discuss the possible underlying causes. We analyze the impact of Fannie Mae eligibility changes and find that the decline in mid-tier lending persists after controlling for eligibility. Further analysis indicates that non-first-time home buyers (hereafter repeat borrowers) are significantly more impacted by the mid-tier lending decline than first-time home buyers. This decline in repeat borrowers is strongest along the U.S. coasts, where the housing crisis diminished borrowers' abilities to retain or gain equity in their current homes, reducing their likelihood of selling their existing homes and purchasing new ones.

Volume is down by 20 percent in 2014 even after applying new eligibility standards to 2002 acquisitions

Figure 1 depicts the owner-occupied purchase money mortgage volume trend from 2002 to 2014 using Home Mortgage Disclosure Act (HMDA) data. For the purpose of comparison, we focus on the volume changes between 2002 and 2014.[1] Compared to 2002 market volume is significantly down when measured in loan counts.[2]

Figure 1: Owner Occcupied Purchase Money Market Volume and Loan Count



Note: Single family owner-occupied mortgage originations with junior liens excluded in 2004 and later. Prior to 2004 lien status is not provided. Source: HMDA

[1] 2002 is a pre-crisis year and it is not a big refinance year such as 2003 within the pre-2009 period making it a reasonably comparable year to 2014.

[2] Throughout this study data is gathered from Fannie Mae's internal proprietary data in combination with external sources.

The housing and mortgage markets underwent many changes since 2000. Many factors have contributed to the mortgage volume changes over the past decade. Underwriting standards went through a period of expansion prior to the crisis, followed by a period of tightening after the crisis. Contributing to the drop in purchase activity, the homeownership rate in the past decade also showed a sharp decline after 2006 dropping to an estimated 64 percent in 2014 (Goodman et al. 2015).

Reviewing Fannie Mae's acquisitions in Table 1, the 2014 volume by loan count for owner-occupied purchase money mortgages is 47.3 percent lower than the 2002 volume, and the decline is significantly larger at lower than 740 FICO scores.[3] For easier representation we have divided FICO scores into six groups. The lowest score band (<660) has the greatest drop, which is partly driven by the minimum 620 FICO eligibility rule for Fannie Mae purchases of conventional mortgages that was put in place in December 2009.

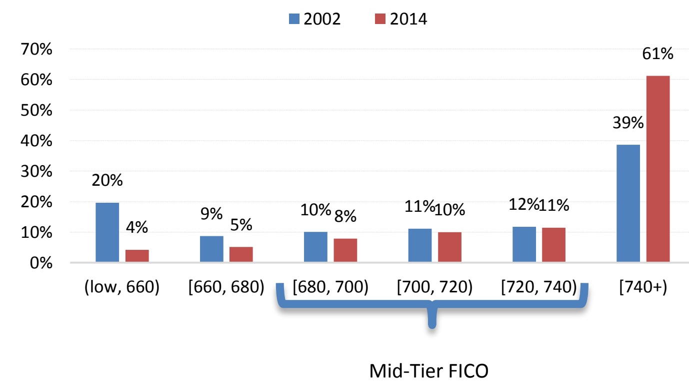
Table 1: Volume Change[4]

Conventional Owner Occupied Purchase Money Mortgages

	2002	2014	% Change
[740+)	544k	455k	-16.4%
[720, 740)	166k	85k	-48.8%
[700, 720)	158k	74k	-52.9%
[680, 700)	142k	59k	-58.5%
[660, 680)	123k	38k	-69.1%
[300, 660)	277k	31k	-88.6%
ALL	1410k	743k	-47.3%

Missing FICO's are excluded, Mid-Tier FICO is shaded.
Source: Fannie Mae

Figure 2: FICO Distribution



Many factors have impacted the availability of credit. Changes in Fannie Mae's eligibility standards eliminate loans with lower than 620 FICO scores, higher than 97 loan-to-value ratios, and more than 50 percent debt-to-income ratios. Products such as negatively amortizing, interest-only, and Alt-A loans have also been discontinued. The loans from 2002 that are not eligible today constituted around 34 percent of that year's acquisitions. After filtering out these loans that are no longer eligible for sale to Fannie Mae from the 2002 data (referred as the "Comparable Loan Set"), volumes in all credit score bands are lower, with the exception of the highest FICO band (>= 740), as shown in Table 2.

Table 2: Volume Change - Comparable Loan Set

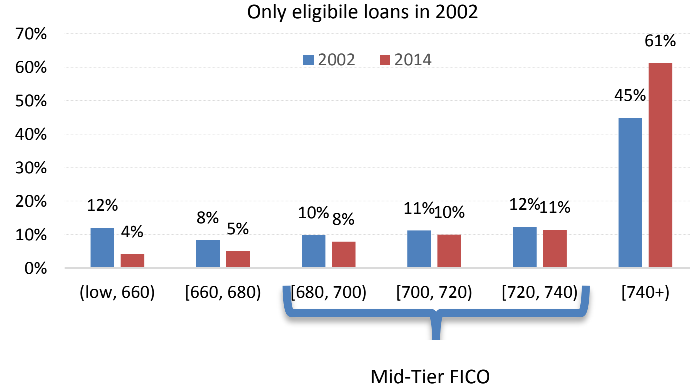
Conventional Owner Occupied Purchase Money Mortgages

	2002	2014	% Change
[740+)	423k	455k	7.4%
[720, 740)	116k	85k	-26.8%
[700, 720)	106k	74k	-29.8%
[680, 700)	94k	59k	-37.1%
[660, 680)	80k	38k	-52.0%
[620, 660)	114k	31k	-72.5%
ALL	932k	743k	-20.3%

Missing FICO's are excluded, Mid-Tier FICO is shaded.
Source: Fannie Mae

Figure 3: FICO Distribution

Only eligibile loans in 2002



[3] We are measuring declines in loan counts rather than dollar volume to avoid additional complications of inflation, home price change and shifts in geographical distribution of Fannie Mae acquisitions.

[4] Missing FICOs constitute only 1% of the overall 2002 acquisitions and 0.08% of 2014 acquisitions.

The reduction in volume, comparing 2014 to the comparable 2002 loan set, is monotonically increasing as we move toward the lower end of the FICO spectrum. This is not surprising, as the Urban Institute has noted that the industry average FICO for purchase-only originations after 2006 has increased steadily from the low-700s to the mid-700s, while the lower 10th-percentile credit score also spiked from 600 in the early 2000s to 660 in 2014.[5] Comparing the FICO distribution of Fannie Mae acquisitions before and after application of the current eligibility requirements (Figures 2 and 3), the lowest FICO group share has dropped from 20 percent to 12 percent. Taking into consideration the impact of the minimum FICO requirement reducing the number of 2002 loans that would be eligible today, we still observe a decline in the lowest FICO band from 2002 to 2014 by 72.5 percent (Table 2). From this point forward, we continue our analysis using only 2002 loans that would pass today's eligibility requirements of Fannie Mae (the comparable loan set) to achieve apple-to-apple comparisons.

First-time home buyers, compared to eligible volumes in 2002, are up by 45 percent in 2014

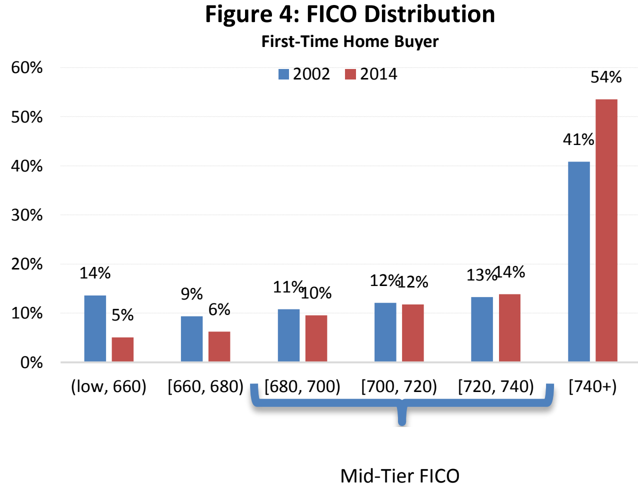
First–time home buyers[6] (FTHB) play a critical role in creating and sustaining a strong housing market, mostly by allowing existing homeowners to sell their properties. They have been the focus of recent housing policy as lending standards, stagnant wages, student debts, and rising home prices created potential road blocks to homeownership (Bai et al., 2015). They have been the subject of many research papers ranging from tax-credit impacts and mortgage product choice to counseling effects and homeownership rate changes (see for instance Cooperstein (1989), Dhillon et al. (1987), Dynan et al. (2013) and Collins and O'Rourke (2011)). Here we continue our comparisons and separate the data into two groups: FTHB and mortgages taken out by experienced borrowers, commonly known as repeat homeowners[7].

Table 3: First-Time Home Buyers
Volume Change - Comparable Loan Set
Conventional Owner Occupied Purchase Money Mortgages

	2002	2014	% Change
[740+)	93k	176k	90.3%
[720, 740)	30k	46k	51.4%
[700, 720)	27k	39k	41.3%
[680, 700)	24k	31k	28.1%
[660, 680)	21k	21k	-3.5%
[620, 660)	31k	17k	-45.8%
ALL	227k	329k	45.2%

Missing FICO's are excluded, Mid-Tier FICO is shaded.
Source: Fannie Mae

Figure 4: FICO Distribution



FTHB are on average up by 45 percent compared to 2002 when we control for product eligibility. While the highest jump is at the highest FICO band, mid-tier FICO acquisitions of FTHBs also shows significant upward trend. As volume declines are not observed for this population, this suggests that the decline in mid-tier

[5] Source: Urban Institute, Housing Finance At a Glance July 2015

[6] A loan is classified as being made to a first-time home buyer if any borrower meets either of the following criteria: 1) Had no homeownership interest during the 3 years prior to the purchase date, or 2) Is a displaced homemaker or single parent who had no homeownership interest other than a joint ownership with a spouse.

[7] In our analysis, we define any borrower who is not a FTHB as a repeat borrower.

FICO lending is not a first-time home buyer issue for Fannie Mae. However, the volume decline is still present below 680 FICO. This is likely because the Federal Housing Administration (FHA) could be picking up lower FICO FTHBs. FHA securities have a historically flat and high FTHB share of their portfolio (81 percent in 2014, Bai et.al. 2015) and lower FICO requirements than conventional mortgages, therefore it would not be surprising to see a shift of lower credit score FTHBs from Government Sponsored Enterprises (GSEs) to FHA. Different factors, such as affordability issues, could also be constraining volume beyond changes in underwriting standards in explaining the FTHB decline in lower than 680 FICO scores. Looking at the FICO distribution, the mid-distribution is similar between 2002 and 2014, while the <680 category still shows a decline in shares and the >=740 category shows an increase (Figures 3 and 4).

Bai et al. (2015) present similar findings in their recent briefing. They find that the FTHB share of GSE-guaranteed mortgages is high, at 42 percent in 2014. From 2001 to 2003, GSE FTHB share was around 25 percent. It then grew steadily to 42 percent during the boom years and dipped to 38 percent as mortgage interest rates started to fall significantly. However, since 2011 the GSE FTHB share is trending up. This increase in FTHB share, along with our observation in Table 3 that lending to FTHB has increased across much of the FICO spectrum, suggests that both mid-tier and higher FICO FTHB are finding ways to gain access to mortgage credit.

FTHB and repeat borrowers are taken to be characteristically different (see for example Patrabansh 2013, 2015 which provides historical comparisons of the two). FTHB are generally younger than repeat borrowers and their loan characteristics pose slightly more risk based on LTV and FICO; they also tend to take out smaller loans compared to repeat home buyers.[8] We should also note that FTHB in 2002 and 2014 are of different generations. FTHB are likely to be Gen-Xers in 2002 and Millennials in 2014.[9] Based on The U.S. Census Bureau's estimates, Millennials defined as those born between 1982 and 2002 represent 83.1 million individuals, greater than both Baby Boomers and Gen-Xers.[10] Given the greater size of the younger millennial generation, one would expect to have higher volumes of FTHB originations in recent years, which is supported by our findings.

Based on Fannie Mae data, at the time of obtaining a mortgage, FTHB are on average about the same age compared to 2002 while repeat buyers have gotten older by four years. The average age of a repeat buyer in 2014 is 46 years old, compared with 42 years old in 2002. The age difference of FTHB and repeat buyer was six years in 2002 and the difference has increased to ten years in 2014, consistent with the findings in Patrabansh (2013).

Table 4: Borrower & Co-borrower Age

Comparable Loan Set - Conventional Owner Occupied Purchase Money Mortgages

	FTHB			Repeat Home Buyer		
	2002	**2014**	**Difference**	**2002**	**2014**	**Difference**
Avg. Borrower Age	36.1	35.5	0.6	41.7	45.8	-4.2
Avg. Co-borrower Age	34.7	34.3	0.4	39.9	44.7	-4.8
Median Borrower Age	33	32	1	40	44	-4
Median Co-Borrower Age	32	31	1	38	42	-4

Source: Fannie Mae

[8] For a detailed illustrations of LTV, FICO and income comparisons between FTHBs and repeat borrowers please refer to "A Study of First-Time Homebuyers" FHFA Mortgage Market Note 2013.

[9] Generation X is the generation born after the World War II Baby Boomers. Researchers commonly use birth dates ranging from the early 1960s to the early 1980s to define Gen-Xers. Millennials follows Gen-Xers. We adopt the U.S. Census definition for millennials as those born between 1982 and 2000.

[10] https://www.census.gov/newsroom/press-releases/2015/cb15-113.html

One implication of aging repeat borrowers is that their credit scores are likely to be better as FICO scores improve with time while everything else is held constant.[11] This would imply that FICO scores are drifting up for repeat borrowers more than first-time home buyers.

Repeat home buyers, compared to eligible volumes in 2002, are down by 40 percent in 2014

Table 5 presents a different story for repeat home buyers. Even after controlling for eligibility changes since 2002, the decline in the mid-tier FICO range is over 50 percent. In every FICO cohort, volume has dropped, and the reduction gets steeper as we move down the FICO spectrum. Compared to FTHB, there is also a greater difference in the mid-tier FICO share from 2002 to 2014 for repeat borrowers.

These considerable volume declines for repeat buyers in the mid-tier FICO range could arise for many reasons. Lower FICO can lead to existing households being potentially "locked" in to their mortgage and property. These borrowers might not even be able to benefit from low mortgage rates by turning over their existing property and purchasing a new one if their equity levels are low or if they are under water. Some homeowners who locked in lower-than-current market rates on their mortgage may have less incentive to move, since any home purchased today would become more expensive than their current residence based purely on prevailing interest rates. And some homeowners who could benefit from current low mortgage rates may even choose not to get back in the housing market if they have seasoned their loan and are amortizing mostly principal. Stagnant wages and the slow recovery of housing prices have also played a role by impacting the income and wealth of home buyers and reducing the likelihood of changing their residence.[12]

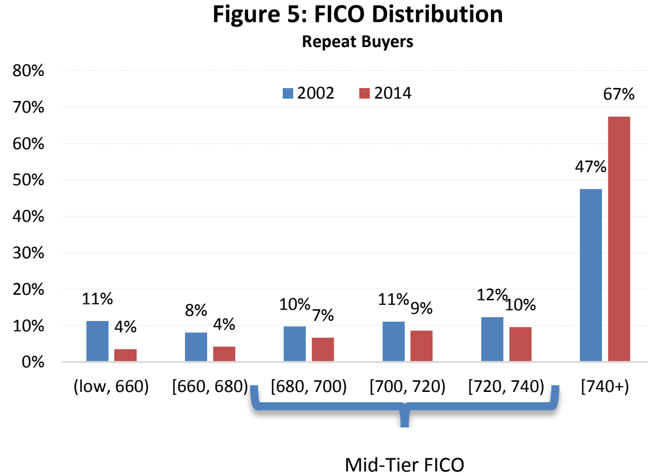
Table 5: Repeat Home Buyers

Volume Change - Comparable Loan Set
Conventional Owner Occupied Purchase Money Mortgages

	2002	2014	% Change
[740+)	325k	279k	-14%
[720, 740)	84k	40k	-53%
[700, 720)	76k	35k	-53%
[680, 700)	67k	28k	-59%
[660, 680)	56k	18k	-68%
[620, 660)	77k	15k	-81%
ALL	685k	414k	-40%

Missing FICO's are excluded, Mid-Tier FICO is shaded.
Source: Fannie Mae

Figure 5: FICO Distribution



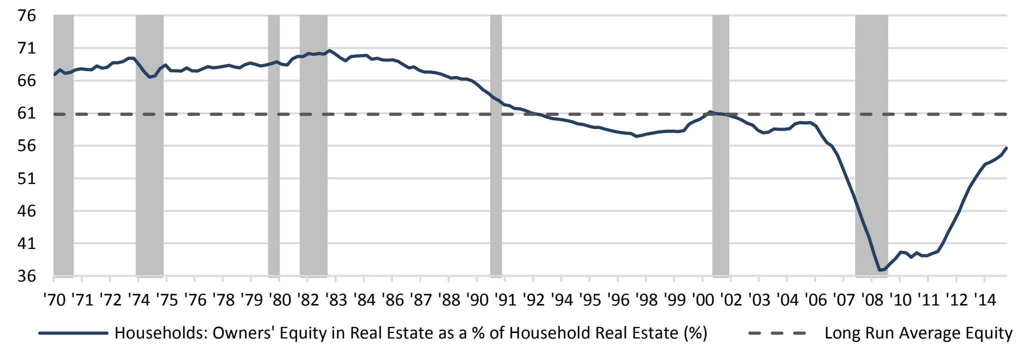
The housing crisis has made it difficult for many repeat borrowers to "move up" from their first home, as homeowners who went through the housing crisis lost significant equity. While some equity has been regained, many borrowers face serious difficulties in today's market; they have not experienced appreciation that, in a normal housing environment, would have helped them to either move up or easily downsize from their current home. As shown in Figure 6, homeowner's equity on the national level is also

[11] http://www.fico.com/en/blogs/risk-compliance/age-before-beauty-credit-worthiness-before-youth/

[12] Sterk (2015) and Modestino and Dennett (2012) find evidence of reduced mobility due to loss of equity. Riley et. al. (2015) suggest that negative equity and falling home prices are associated with delayed homeowner mobility.

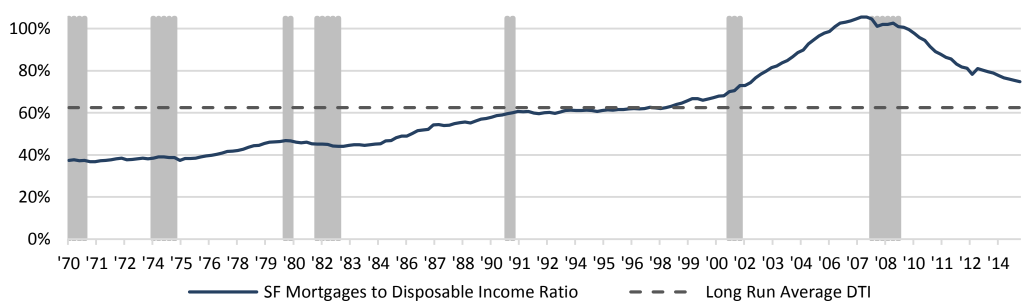
still below historical averages. National debt relative to disposable income for single-family mortgages is still high compared to historical levels, as shown in Figure 7. These all point to increased challenges facing current homeowners.

Figure 6: National Home Equity



Source: Federal Reserve Board; Owners' Equity in Real Estate as a percentage of U.S. Household Real Estate (%).

Figure 7: National Mortgage Debt to Income

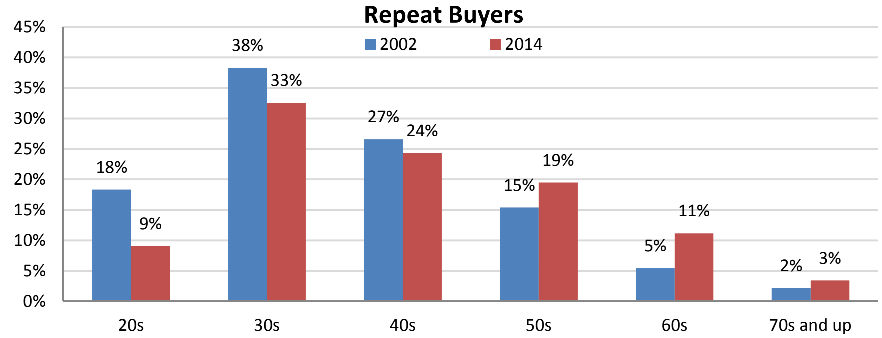


Source: Federal Reserve Board, Bureau of Economic Analysis and Fannie Mae Calculation.
Ratio = Total Mortgages on 1-4 Family Structures (NSA, Bil.$) / Personal Disposable Income (SAAR, Bil.$)

Figure 8 presents the shares of Fannie acquisitions across age cohorts for repeat buyers of 2002 and 2014. Homeowners back in 2002 tended to engage in another home purchase (trade up) earlier in life. Even though 30-year-olds still constitute the greatest share of the age spectrum, the distribution in 2014 has shifted toward the older generation, especially 50s and up. As also stated in FICO’s Risk & Compliance analysis, older borrowers tend to have better FICO scores. Credit scoring takes into account the age of the credit accounts a borrower has and, generally the longer the credit history, the higher the accompanying credit score is. Plus, fewer older consumers are searching for credit and opening new accounts, which translates into higher FICO scores.[13] In light of these observations, aging repeat home buyers could also be a contributing factor to the “missing” mid-tier FICO piece.

[13] http://www.fico.com/en/blogs/risk-compliance/age-before-beauty-credit-worthiness-before-youth/

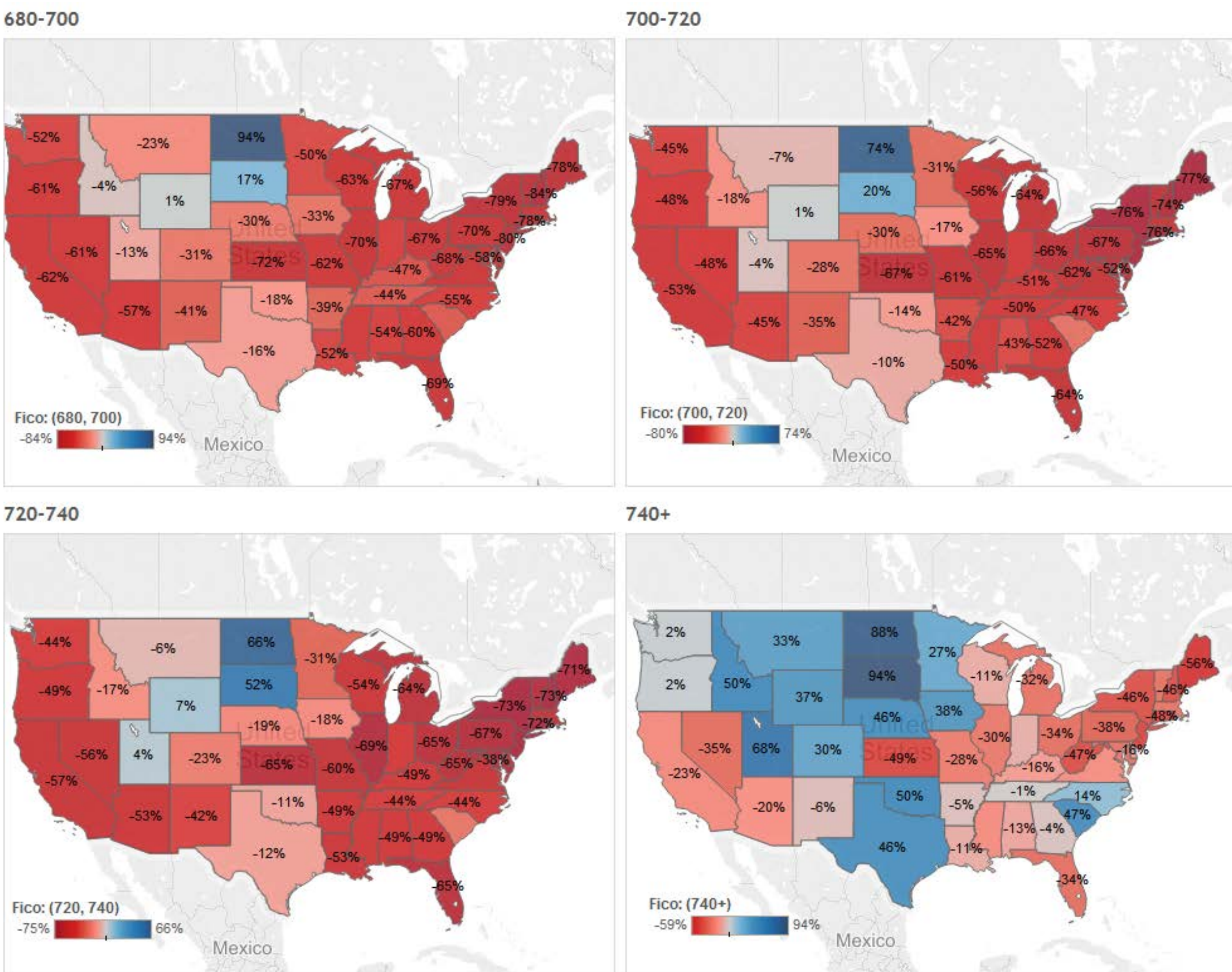
Figure 8: Comparable set - Age Distribution



Source: Fannie Mae

Comparing the decline in repeat buyers by state, those states that had more significant home price declines during the crisis show the greatest drop, which supports the idea that these existing homeowners were hit hard during the recent financial crisis and might be still struggling with equity, credit, or employment issues.

Figure 9: Repeat Home Buyer Volume Change by State for Main FICO Groups



Source: Fannie Mae

Coastal regions that suffered significantly during the economic downturn, especially California, Florida, and the Northeast, might have more mid-tier FICO repeat home buyers who are “locked” in their current home by low equity. Studying Florida homeowners, Andersson and Mayock (2014) found voluntary household mobility declined by around 25 percent due to reductions in equity between 2006 and 2010.[14] States that had house price depreciation and higher unemployment rates are more susceptible to “lock-in” effects.

Conclusion

This paper uses Fannie Mae acquisitions from 2002 and 2014 for owner-occupied purchase money mortgages to better understand the mid-tier credit score (680 to 740) lending. After controlling for eligibility changes that were implemented post-housing crisis, we find that repeat home buyers experienced more significant volume declines in the mid-tier FICO cohort compared with first-time home buyers. We present discussions around several possible underlying factors including equity loss, income and wealth constraints, and aging repeat home buyers.

Based on our findings, policy changes that expand “access to credit” programs to include repeat borrowers may encourage home purchase activity within the mid-tier FICO segment. For borrowers who lost significant value on their property, carefully designed renovation products may provide some level of support. This would not only help borrowers to achieve their home of choice, but also would increase house values and could open up avenues for possible future home sales and turnover buyers.

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December 2, 2015

The author would like to thank to Eric Brescia, Yana Davidovich, Douglas Duncan, Hamilton Fout, Patty Koscinski, Jude Landis, Jonathan Lawless, Mark Palim, Carlos Perez, Stephanie Postles, Hsiu-Wen Wu, the ESR Group, and PUMA Analytics Forum participants for valuable comments and support in creating this Housing Insight paper. All errors and omissions are the responsibility of the author.

[14] Andersson and Mayock’s sample showed decline in equity from 2006 to 2010 by 70% while predicted voluntary mobility is reduced by 25% in the same period.

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