

Accessing homeownership with credit constraints

Abstract: The tightening of mortgage credit in the aftermath of the Global Financial Crisis has been identified as a factor in the decline in homeownership in the US to 50 year lows. In this paper, we review findings about the role of borrowing constraints and tightened credit in lowering access to homeownership. We also discuss how institutional changes could hinder or support this access going forward.

I. Introduction

Since 2004, there have been no net gains in the number of homeowners (at 75 million households) despite a 9 million increase in the total number of households (U.S. Census 2017). Homeownership rates are now testing 50 year lows. What has led to this decline? Will this trend reverse? Are there policy alternatives that can impact the likely future trajectory of homeownership?

Becoming a homeowner represents a major transaction, the largest financial decision of a lifetime for most households. Financing is for almost all households necessary to allow that purchase, making mortgage credit availability an important factor in homeownership. And access to mortgage debt by household also has broad implication for the economy due to its effect on consumption (Mian, Rao and Sufi 2013; Mian and Sufi 2015) and household formation.

It can be optimal for a household to own rather than to rent based on its expected permanent income, house price appreciation, and length of tenure due to transaction costs (Henderson and Ioannides 1983; Sinai and Souleles 2005). In addition, owning provides risk-averse households with a hedge against future housing cost increases (Sinai and Souleles 2005). However, due to credit rationing, some of the households for whom owning is optimal based on their permanent income (that is largely determined by their education) and stage in the life cycle are not able to qualify for a mortgage due to insufficient wealth, current income or credit score given prevailing underwriting standards.

As such, mortgage markets are examples of rationed credit markets as described in Stiglitz and Weiss (1981). It is necessary for mortgage lenders to ration access to credit on non-price terms (such as maximum loan to value or debt to income ratio, minimum credit score) that limit access to mortgages for borrowers with insufficient income, wealth or credit quality, even if buying might be optimal for these constrained households and they were willing to accept higher interest rates (Acolin, et al. 2016a; 2016b). This rationing of credit market is due to imperfect information about borrower credit worthiness and the potential for adverse selection when attempting to price default risk by increasing interest rates beyond a certain level.

Linneman and Wachter (1989) provide evidence of rationing in mortgage markets. They show that households subject to income or wealth constraints have a lower propensity to own, and that the wealth constraint has a stronger impact. The findings are confirmed by a substantial literature including findings of credit rationing on nonprice terms and its impact on homeownership presented by Duca and Rosenthal (1991) and Rosenthal, Duca and Gabriel (1991). The impact of credit score on propensity to own in addition to income and wealth constraints is shown in Barakova et al. (2003) and confirmed in Barakova, Calem and Wachter (2014). Further work shows that younger households are particularly affected, including when using measures of permanent income that indicated that owning would be a preferable option to them (Haurin, Hendershott and Wachter 1996). In addition, minority households are also more impacted by borrowing constraints as they are substantially more likely to be wealth-constrained (Gyourko, Linneman and Wachter 1999).

The extent to which mortgage credit is rationed has changed over time, affecting access to homeownership positively or negatively depending on the period (Fetter 2013; Gabriel and Rosenthal 2015; Acolin et al. 2016a). Acolin et al. (2016a) identify three mortgage regimes in the post-World War II

period. The first mortgage regime was characterized by the widespread adoption of the 30-year fixed rate mortgage with low downpayment, what Green and Wachter (2005) call the “American Mortgage.” During that period, the homeownership rate increased from 40 percent in 1940 to 64 percent in the 1960s, a level that was maintained until the late 1990s. A combination of regulatory shifts, new products and changes to the structure of the mortgage chain including the development of alternative mortgage products temporarily alleviated borrowing constraints: Not only lower credit standards that decreased borrowing constraints, but also cheaper credit made which more advantageous for investors to borrow to flip homes (Davidson et al. 2016). By 2004, first time, repeat buyers, and investors accessing this easy credit bid up prices so that affordability constraints limited any further rise in homeownership (Barakova, Calem and Wachter 2014; Acolin et al. 2017). Tightened credit standards and lower access to homeownership characterizes the third regime, following the Great Financial Crisis (GFC) of 2007-09.

In the aftermath of the GFC, homeownership remains a widely shared aspiration. More than 85 percent of non-homeowner respondents to a 2016 survey stated that they want to become homeowners in the future (NAR 2016). In addition, homeownership is an important source of wealth building through the forced saving mechanisms associated with mortgage repayment and has been linked to a number of private and social benefits (Dietz and Haurin 2003). And housing wealth is a larger component of total wealth for African American and Hispanic families than it is for non-Hispanic white families (JCHS 2015). However, in the absence of changes to the mortgage credit supply, the decrease in access to homeownership observed in recent years may persist.

In this paper, we review findings about the role of credit constraints in lowering access to homeownership and how institutional changes could affect this access going forward. Section II presents evidence about the decline in homeownership and the tightening of mortgage credit. Section III discusses causes to the tightened credit conditions that have been identified in the literature and how the profile of younger households contributes to limit access to mortgages. Section IV reviews initiatives and reforms that have the potential to hinder or increase access to homeownership.

II. Evidence on the decline in homeownership and the tightening of mortgage credit

a- Homeownership declined broadly, but particularly for young and minority households

As of the first quarter of 2017, the U.S. homeownership rate reached 63.6 percent, near a 50 year low (U.S. Census 2017).¹ This represents a decline of more than 5 percentage points relative to the homeownership peak of 69.2 percent reached in the second quarter of 2004. The decline appears to have slowed in 2016 and some believe the homeownership rate might have stabilized after reaching 62.9 percent in the second quarter of 2016. However, demographic trends, housing price trends, and continued tight credit are likely to lead to further declines in the future as discussed below.

The decline in the homeownership rate has been particularly pronounced among younger households. Relative to their 2004-2005 peaks, the homeownership rate decreased by 9 percentage points for households under 35 years (from 43.6 to 34.3 percent) and by 12 percentage points for those 35 to 44

¹ All figures about the homeownership rate and number of homeowners come from the U.S. Census Current Population Survey/Housing Vacancy Survey available at: <https://www.census.gov/housing/hvs/data/histtabs.html>

years old (from 70.1 to 59.0 percent) as of the first quarter of 2017. By contrast, the homeownership rate for households 65 years and over decreased by 3.2 percent (from 81.8 to 78.6 percent). Whether younger cohorts are able to catch up with the trajectory of previous generations will play an important role in determining the future of homeownership (Myers and Lee 2016).

Minority households who have historically had lower homeownership levels than white households have also experienced a decline in homeownership, with black households experiencing the largest decline. Black homeownership rate declined by 7 percentage points from 49.7 percent at the peak to 42.7 percent in the first quarter of 2017. In contrast, the homeownership rate for Hispanic rebounded in recent years and has declined less than for white overall, declining by 3.5 percentage points (from 50.1 to 46.6 percent) compared to a 4.4 percentage points decline among white households (from 76.2 to 71.8 percent). However, the homeownership gap for all minority group relative to white households remains over 15 percentage points. This racial homeownership gap could contribute to lower overall homeownership rate as the nation becomes more diverse if it is not addressed effectively (Acolin, Goodman and Wachter 2016).

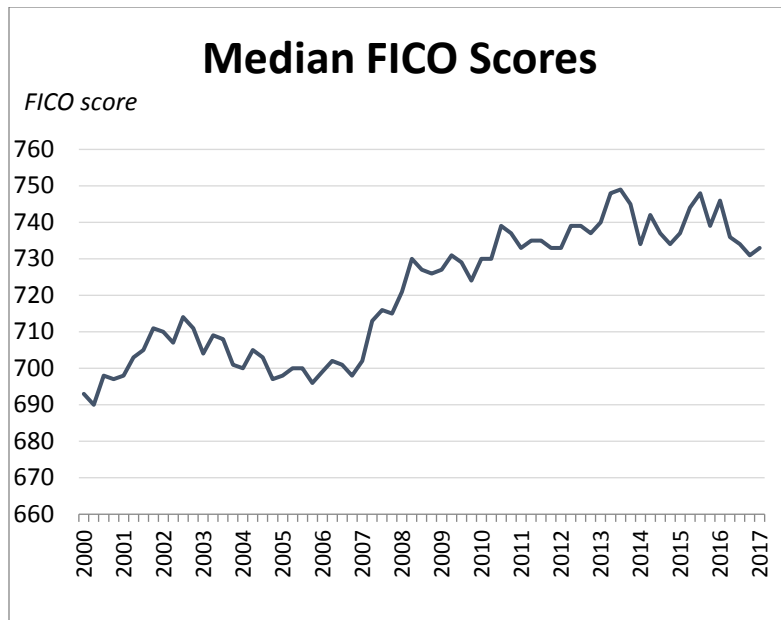
The decline in the homeownership rate, following 10 years of increase between 1994 and 2004, cannot be linked to changes in the age structure and minority share of the population (Acolin et al. 2017). Rather like with the increase in homeownership observed in the previous period, changes in the likelihood of becoming a homeowner given observable characteristics are needed to explain this shift (Gabriel and Rosenthal 2015). The evidence, using Survey of Consumer Finance data, is that the decline in homeownership can be explained by tightening of credit, as discussed below.

b- Tightening of credit

The number of mortgages originated has substantially declined following the GFC and has not completely rebounded in recent years despite low interest rates and an improving economy. In 2005, at the peak of the housing boom, there were 7.2 million purchase mortgage originated, there were 2.4 million originated in 2011 at the bottom of the recession, and by 2015, there were 3.6 million.

Goodman (2017) reviews indicators that together can be used to capture the credit tightening behind the decline in mortgage origination. The findings show that credit has tightened considerably as measured by borrower credit score and the share on non-traditional products. In particular, the median FICO score has increased from around 700 in 2001 to above 730 since 2010 (Fig. 1) and there has been a major decline in the number of mortgages originated to borrowers with FICO score under 660 (Goodman 2016).

Figure 1: Median FICO Scores of Purchase Mortgage Borrowers



Source: Goodman 2017

Two other dimensions of credit risk, median debt-to-income and loan-to-value ratio do not show stricter credit standards in recent years. However, when combined into a Housing Credit Availability Index developed in Li and Goodman (2014), there are clear evidence of credit tightening. The HCAI measures the likelihood that mortgages originated in a given quarter will ever default (defined as being 90 days delinquent or more) based on these four dimensions of credit risk (LTV, DTI, FICO and non-traditional features) under a normal and stress scenario.

The HCAI measure indicates an overall tightening of credit following the GFC that has stabilized in recent years but not loosened. As of 2016, the HCAI indicates that “the market was taking less than half the credit risk it was taking in 2001, a period of reasonable lending standards.” (Goodman 2017: 5). While in 2001 the ex-ante probability of a loan ever defaulting was 12.3 percent, it was 5.1 percent in the second quarter of 2016. This decline in ex ante default probability is driven both by a decline in product risk (with very few non-traditional mortgages originated) and in borrower risk.

Goodman, Zhu and Bai (2016) estimate that an additional 6.3 million loans would have been originated between 2009 and 2015 if the decline in loans originated to borrowers with credit scores below 700 had been the same than the decline observed for borrowers with credit score above 700. This difference is driven by the decline in loans made to households with credit score below 660 who saw a 64.9 percent decline in origination relative to 2001 credit standards compared to a 1.4 percent decline for households with credit scores above 700 and a 20.3 percent decline for those with credit score between 660 and 700 (Goodman, Zhu and Bai 2016).²

² As Goodman (2017) points out, this likely represents a higher bound estimate of the credit tightening as the number of loans originated reflects both tightened supply by lenders and a potentially larger drop in demand by lower credit score borrowers (possibly due to having had close relatives and friends experience default and foreclosure, changes in expectation about housing price appreciation, or preference for owning).

Further evidence of credit tightening and its impact on homeownership is provided by Acolin et al. (2016b) which estimates the impact on the likelihood to own of being subject to at least one of three borrowing constraints: income, wealth or credit. They find that for the 2010-2013 period, the impact on homeownership of being constrained is higher than in 2001, and simulation results indicate that the homeownership level would be 2.3 percentage points higher if constraints in 2010-2013 were back to 2001 level, which matches the actual decline in the data.

The findings about direct credit tightening as measured by the amount of ex ante credit risk, the impact of credit tightening on the number of loans issued indicate continued tight credit conditions in the aftermath of the GFC. The increased impact of being borrowing constrained on the likelihood to own suggest that this credit environment has caused the decline in homeownership rates.

III. Drivers of continued tight credit conditions

a- The role of reps and warrants risk, litigation risk and uncertainty around servicing of delinquent mortgages

Regulatory measures and changes to industry practices have been implemented following the high level of mortgage default experienced during the housing and financial crisis of 2007-2011 (McCoy and Wachter 2016a). Cumulatively, these changes have significantly altered the mortgage lending landscape and resulted in an environment in which credit is only available to borrowers who fit within a relatively narrow credit box. The continued uncertainty about reps and warrant risk, litigation risk and the cost of servicing delinquent loans contribute to maintain this tightened credit despite improvement in the overall economy.

The literature identifies relaxed underwriting standards as a key driver of the housing boom and bust that contributed to the GFC (Levitin and Wachter 2011; McCoy and Wachter 2016a). The causes of this relaxation remain an object of debates. Evidence points to the role of changes in the funding of mortgages with the expansion of the private label securities (PLS) channel in which principal-agent problems enabled the underpricing of default risk despite efforts to design mechanisms to limit adverse selection and information asymmetries issues (McCoy and Wachter 2016a).

Goodman (2017) and McCoy and Wachter (2016a) provide recent analysis of the main drivers of the continued credit tightening. Goodman (2017) shows that mortgage lenders are imposing credit overlays that go beyond the requirements imposed by the GSEs (the Government Sponsored Enterprises: Fannie Mae and Freddie Mac) and FHA (Federal Housing Administration); mortgages with a government guarantee currently represent over 70 percent of all mortgage volume in the U.S. (Urban Institute 2017). FHA is a particularly important source of funding for first time homebuyers; 82 percent of total FHA purchase loans are to first time homebuyers (Urban Institute 2017). The reason for these overlays, is that lenders estimate that the potential costs associated with defaults are high enough and uncertain enough to justify limiting origination to loans that are more pristine than is required by the GSEs and FHA. Stated differently, the expected profit of originating loans to less than pristine borrowers are not large enough to compensate the costs in case of default, contributing to the rationing of the mortgage market.

Reps and warrants (representations and warranties) are a key element of the securitization process to manage agency issues. As part of the Mortgage Loan Purchase Agreement between the mortgage sellers (ie: originators or financial institutions that aggregate pools of loans) and the buyers (aggregators or

securitizer), reps and warrants stipulate responsibilities to the seller to properly represent information such as: the characteristics of the loans being transacted, their current payment status and the timing of payments, as well as the legality of their origination and transfer process (McCoy and Wachter 2016a). In the standard Mortgage Loan Purchase Agreement, breaches to the reps and warrants requires the seller to cure the breach within 90 days or if not possible repurchase the loans at issues at the purchase price, effectively providing purchases with a put option in cases of reps and warrants breaches (McCoy and Wachter 2016a).

As mortgage default mounted during the GFC, investors put-back requests for defective loans surged, particularly for PLS which experienced higher default rates than GSEs MBS on average. Repurchase claims on fully documented 30 year loans with full amortization securitized by Fannie Mae did not reach more than 2 percent for the worst vintage, nonetheless, from January 2009 to October 2015, the GSEs collected a total of \$76 billion from over 3,000 companies for loans repurchases (and withdrew or stopped pursuing an additional \$62 billion in repurchase demands) (McCoy and Wachter 2016a). The repurchase claims were much higher for loans with non-traditional features such as interest only loans, low or no documentation loans and those with amortization periods over 30 years (Goodman 2017) but limited information is available about the distribution of recoveries by loan type.

Success with put-back claims have varied based on the type of breach and the length of time since the transaction as well as the litigation capacity of the plaintiff and the solvency of the seller (McCoy and Wachter 2016a). The litigations around the implementation of remedy to breach of reps and warrants revealed to sellers and purchasers potential risks that had largely been overlooked during the boom years. Among the issues that arose were question over what standards to use to establish breaches, what constitute material errors or misrepresentation; the potential for open-ended contingent litigation due to the lack of sunset clauses for making put-back requests.

In addition to the reps and warrants risk, lenders of FHA insured mortgages face additional litigation risk coming from the position taken by the Department of Justice that lenders who submit loans to receive FHA insurance, and these loans are found to contain any underwriting defects can be held liable under the False Claim Act (McCoy and Wachter 2016a). As such lenders are exposed to civil penalties of \$5,000 to \$11,000 plus tripled the loss estimated to have been incurred by FHA. In 2011, all the top 5 mortgage originators were sued for False Claim Act violations and the government recovered \$5 billion from housing and mortgage fraud claims between January 2009 and October 2015 (McCoy and Wachter 2016a). The uncertainty around when and under what conditions these claims will be enforced, as well as the magnitude of the potential penalty has contributed to drive some of the major lenders away from participating in FHA program.

Finally, an additional substantial cost that emerged for lenders during the crisis was the high and uncertain cost of servicing delinquent mortgages (Goodman 2016b; Goodman 2017). Goodman (2017) reports that as of 2015, the annual cost of servicing nonperforming mortgages was \$2,386, compared to \$181 for performing mortgages and the cost of servicing the former has increased faster than the later. Given expected default, the cost of servicing nonperforming mortgages could potentially be priced in. However, there is substantial uncertainty in servicing costs that is difficult to price due to variations in the ability to transfer servicers and variations in state specific resolutions time from delinquency to a property becoming real estate owned (REO) between states with judicial and nonjudicial foreclosure processes (Goodman 2017). In addition, servicing loans insured by FHA has been substantially more

costly than servicing GSE loans. This is the result of inflexible timelines imposed through the foreclosure process; lenders are fined if the timelines are not met. FHA servicing costs uncertainty is exacerbated by the cost of conveyance and property maintenance once the foreclosure is completed. For FHA insured loans, servicers are responsible for maintenance between the foreclosure and the acquisition of the property by HUD, a period that has increased from 5.7 months in February 2013 to 12 months in August 2016 and can represent substantial maintenance costs for the servicer (Goodman 2017).

The introduction of the qualified mortgage (QM) rule by the Consumer Federal Protection Bureau (CFPB) in 2014 to limit loans originated to borrowers without the ability to repay them raised concerns that it might contribute to further restrict access to mortgages. However, it also provides lenders who meet the QM criteria with more certainty with regard to litigation risks and Bai, Goodman and Seidman (2016) find that it had little impact on mortgage availability two years after its implementation. The QM rule requires lenders to verify borrower ability to repay by requiring income verification, imposing a maximum qualifying debt to income ratio of 43 percent and requiring that Adjustable Rate Mortgages (ARM) be underwritten based on the maximum interest rate that could be charged during the loan's first five years. It also disqualifies loans with certain characteristics: interest only loans and loans with prepayment penalty and limits points and fees to 3 percent of the loan value. Bai, Goodman and Seidman (2016) find no impact of QM on mortgage availability except for a lowering of smaller loans (under \$100,000) since the implementation of the rule, but attribute it to increase in house prices rather than to the maximum points and fees that might discourage smaller loans (due to fixed cost incurred to underwrite them that can exceed 3 percent). They note that the impact of QM might be limited by the exemption that provides lenders with the same protection as QM for any loan they originate that meets the criteria set by the GSEs and government agencies such as FHA.³ In a follow up piece Seidman and Bai (2016) do find a decline in the number of mortgages under \$50,000, but were reluctant to attribute that primarily to QM.

In response to the put back risk, litigation risks, and costs associated with servicing delinquent mortgages, lenders, notably larger banks with substantial capital and long-standing reputations, have either retreated from originating mortgages financed through the government-insured securitization market or have imposed overlays beyond those explicitly required by the GSEs and FHA. Buchak et al. (2017) shows the rise in shadow banking as an outcome of the increase in regulations as traditional banks retreated from markets with higher regulatory burden.

Overlays limit the loan supply to borrowers and products with very low default risk. In addition, originators have put in place processes to limit the risk of making any error. Goodman (2017) cites figures from the Mortgage Bankers Association that indicate that on average, the number of applications processed has gone down from 180 loans per month per underwriter in 2002 to 34 in 2015. This means that underwriters now spend more than 5 times as much times per application in order to originate "error free" loans, despite technological changes that lead to better verification of information and improved productivity.

The response to the high cost and uncertainty around reps and warrants risk and litigation risk and cost of servicing delinquent mortgages contribute to restrict mortgage access by increasing the cost of origination and limiting the profit incentive to originate loans to borrowers who do not precisely fit

³ This exemption is included in the QM rule for a maximal period of 7 years.

within a very strict credit box, in which the loans have virtually no probability of default. In addition, nonbank lenders with lower level of capital have expanded relative to bank lenders, going from less than 20 percent in the immediate aftermath of the crisis to more than 40 percent in 2014 (McCoy and Wachter 2016a). This shift in market share towards thinly capitalized actors rises market risk in time of crisis as reps and warrants might not be exercised effectively against them since they might be insolvent. In FHA space this is an even more relevant issue; with all the major lenders having been sued under the false claims act, 82 percent of FHA lending is done by non-banks originators (Ginnie Mae 2017). During the GFC, all major shadow banking lenders went bankrupt and the experience might be similar in future downturns (Buchak et al. 2017).

b- Effect of credit tightening amplified by demographic changes and recent market trends: need for sustainable loosening of access to mortgages

The tightening of the credit box interacts with a growing share of the market having demographic and economic profiles that have traditionally had difficulty accessing mortgages. Among the factors that amplify the effect of credit tightening on access to homeownership is an increasing share of minority households and a large cohort of young households with volatile employment and credit history.

As mentioned in the first section, minorities experience a persistent homeownership gap. Based on census projections, the U.S. is expected to become a majority minority country within the next 20 years (Acolin, Goodman and Wachter 2016) and an overwhelming share of the growth in the number of households (over 80 percent) will be minority households (Goodman, Pendall and Zhu 2015). Based on projected age and racial composition and average headship and homeownership over the last 20 years, the homeownership rate is expected to decrease to 62 percent by 2020 and 61 percent by 2050 relative to 65 percent in 2010 (Acolin, Goodman and Wachter 2016).

Given these projections, increasing the homeownership rate would require a substantial expansion of access for minority households, particularly for Hispanics who will represent the largest number of new households in coming decades. Minority households are more likely to face borrowing constraints due to lower credit scores, wealth and income. Due to the historic minority homeownership gap, young minority households are more likely to not be able to rely on parent to provide downpayment assistance (Gyourko, Linneman, and Wachter 1999), Hispanic are more likely to be in multi-earner households and to be immigrants. By the 2020s, Goodman (2017) predicts that minorities will account for all net growth in homeownership, making the needs of this population a major focus of efforts to expand mortgage lending and access to homeownership.

Another element that contributes to lower access to homeownership is that strict employment history and employment verification figure preeminently among the overlays imposed by lenders in response to the risks reviewed in the previous subsection. However, in the aftermath of the GFC, many applicants have had volatile employment with periods of unemployment. Long term changes to the economy also contribute to the emergence of more workers with several jobs, as well as income as independent workers that lenders have traditionally had difficulty underwriting. In addition, credit usage, particularly student loans, can also represents a barrier to save for a downpayment and meet Debt to Income ratio requirements, preventing them to qualify under existing underwriting standards. The rising affordability

challenges experienced in housing markets across the country are due to a conjunction of factors⁴ that further limits households' ability to save for a downpayment and contributes to a potential "discouraged renter effect" that can durably limit household access to homeownership (Acolin and Wachter 2017).

Access to homeownership provides households with a valuable hedge against future housing cost increases (Sinain and Souleles 2005). As a result, homeownership can be a source of stability for households, particularly important in a context in which rents may continue to increase faster than wages. In addition, without access to homeownership, fewer households would have the opportunity to build wealth by owning their home, further exacerbating economic inequality. Access to homeownership contributes to increase social mobility as homeownership is the main form of tenure in areas with higher levels of opportunity, making it an element of intergenerational mobility (Acolin and Wachter 2017).

Recognizing the changing profiles of borrowers and the impact of changes in lifestyle and labor markets is a step towards adapting lending underwriting practices in a way that make mortgages available while taking into account the risk associated with borrower profiles that do not fit within the traditional credit box. The next section reviews some of the programs and innovations that show promise to deliver sustainable mortgages that address these changes in borrower profiles.

IV. Increasing Access to Homeownership

a- GSE initiatives and remaining actions

Initiatives that have the potential to loosen access to mortgage credit while ensuring financial stability and consumer protection are now being implemented. The GSEs and their regulator, FHFA, have taken steps to provide clarity to lenders and have implemented programs to expand the credit box. However, the effect has been relatively limited. We suggest several additional actions could be taken that can be taken to open the credit box. Even so, as we argue below, with the GSEs and the MI companies doing risk based pricing, while the FHA does not, the bulk of the more risky mortgages will go through FHA. Moreover, uncertainties remain with regard to the future of the institution themselves although that does not have a direct impact on the access to credit issues.

Reps and Warrants. Going back to 2012, the GSEs, under FHFA guidance, have taken steps to address issues with the reps and warrants framework that emerged during the crisis. The new framework they adopted provides 36 months sunset for reps and warrants, clarifies life-of-loan exclusions that do not sunset, limits put-backs requests to loans issued after 2009, introduces a loan review earlier in the process, produces a detailed taxonomy of loan defects with remedies to clarify when violations trigger repurchases, and instituted an independent resolution process (Goodman 2017). Going further, Fannie Mae introduced Day 1 Certainty programs in 2016 that waive certain reps and warrants on the day of purchase for data they can automatically verify at the point of origination (income, assets and employment) or through the automated valuation model (appraised value), Freddie intends to do so in 2017. (Goodman 2017).

⁴ These includes an insufficient supply of new housing units (Acolin, Goodman and Wachter 2016) due to factors negatively affecting housing supply such as land use regulations, as well as rising income inequality and renewed preference for living in central cities.

Increasing the downpayment box. Fannie Mae and Freddie Mac have each taken initiatives targeted at increasing access to mortgages for borrowing constrained households. These programs such as Fannie Mae's Home Ready and Freddie Mac's Home Possible make mortgages available with downpayments as low as 3 percent. They target low and moderate income borrowers (below area median income) and households in underserved areas.

Increasing the DTI box. As of July 2017, Fannie Mae has increased their maximum debt to income ratio from 45 to 50 percent of pre-tax income (compared to the 43 percent imposed by the QM rule). This change was justified by the GSEs to enable borrowers with an otherwise strong profile to access mortgages, citing the case of borrowers with student debt payments that would bring them over the previous limit (Olick 2017). Golding, Goodman and Zhu (2017) estimate that this would add approximately 95,000 new borrowers per annum. Fannie Mae has also announced that student loan debt that is covered under an income based repayment program will be "counted" toward DTI at the reduced amount documented in the credit bureau files, not the stated amount (Fannie Mae 2017). In addition, debt paid by someone else will not count toward a borrower's debt-to-income ratio (Fannie Mae 2017). Note that while Fannie Mae addresses income based repayment plans, they do not address student loan forbearance. This too deserves a look.

Possible Enhancements in the credit scoring dimension—none implemented so far. Fannie's and Freddie's programs are primarily aimed at creditworthy households with credit score above 660 or 680 although they allow some exceptions for borrowers without credit score or thin files and borrowers with credit score between 620 and 660 can potentially qualify if they had mitigating factors. A limit of these programs is that they take into account the lower of the FICO score when there are two borrowers. As a result, the second borrower often stays off the mortgage; so the application does not reflect the full amount of family income. Moreover, The GSEs are currently using a very dated FICO model for screening borrowers, although they are looking seriously at updated credit score models—later versions of FICO, as well as Vantage score. These later models score more borrowers than earlier models. In addition, efforts to make it possible for the GSEs to process loans for borrowers that do not use traditional credit or have credit scores by relying on measures of credit worthiness that include regular rent, telecom, and utility payment are being studied. It is important to realize that credit has been very tight in the credit score dimension, and while there has been a lot of chatter, there has been very little action.

GSE use of risk-based pricing. There need to be a recognition that since the GSEs do risk based pricing and FHA does not, the riskier borrowers (higher LTV/lower FICO) are apt to go the FHA route. The higher interest rate charged by the GSEs due to the loan-level price adjustments (LLPAs) combined with the mortgage insurance premiums effectively add to the cost of loans for underserved households that meet the criteria of the GSEs programs; these additional pricing adjustments have contributed to limit the uptake of these programs.

Duty to Serve. In 2016, FHFA released its Duty to Serve Underserved Markets rule that updates GSEs responsibility in allocating mortgage credit to underserved borrowers and markets mandated by the 1992 Federal Housing Enterprises Financial Safety and Soundness Act (FHEFSSA). The implementation of the rule requires the development of comprehensive plans by Fannie and Freddie to support the manufactured housing, affordable housing preservation and rural housing markets and serve very low, low and moderate income households.

More flexibility in sourcing income is needed. Variable income is an issue for many borrowers, those that are partly on commission, those that have not held their job long enough (less than two years) those that always have a second income, but that second income comes from a variety of sources. Certainly, the GSEs (and FHA) need to make sure the borrower has a constant income stream, but today's verification may be too rigid. Moreover, many families also have people not on the mortgage contributing to it. Fannie Mae's Home Ready program makes it possible (under some conditions) to take into account income from family members who contribute to the mortgage payment but are not the mortgage in order to meet the qualifying Debt to Income (DTI) ratio. The inclusion of this additional income may better reflect ability to repay in the case of nontraditional households. Including that income particularly affects minority households who are more likely to have these household types. We believe that Fannie's Home Ready program is a good start, and if this experience proves positive, which we expect it will, we would hope more consideration is given to the income of borrowers not on the mortgage.

b- FHA remaining work to be done to increase access

FHA has played an historical role in expanding access to homeownership (although its original policies had exclusionary dimensions) and in recent decades has effectively provided mortgages to first time homeowners, including lower income and minority households with limited wealth (Wachter and Acolin 2016). However, as discussed in section III, FHA lenders have faced specific risks that have lead a number of participants in the FHA program, including some of the larger ones, to reduce their participation or withdraw from issuing FHA insured mortgages altogether (Parrott, Goodman and Zandi 2015; Goodman 2017). However, as we show in Figure 2 below, and discuss later in this section, FHA is still the product of choice for most borrowers putting down less than 5 percent, as the GSEs and private mortgage insurance companies do risk based pricing, while the FHA does not.

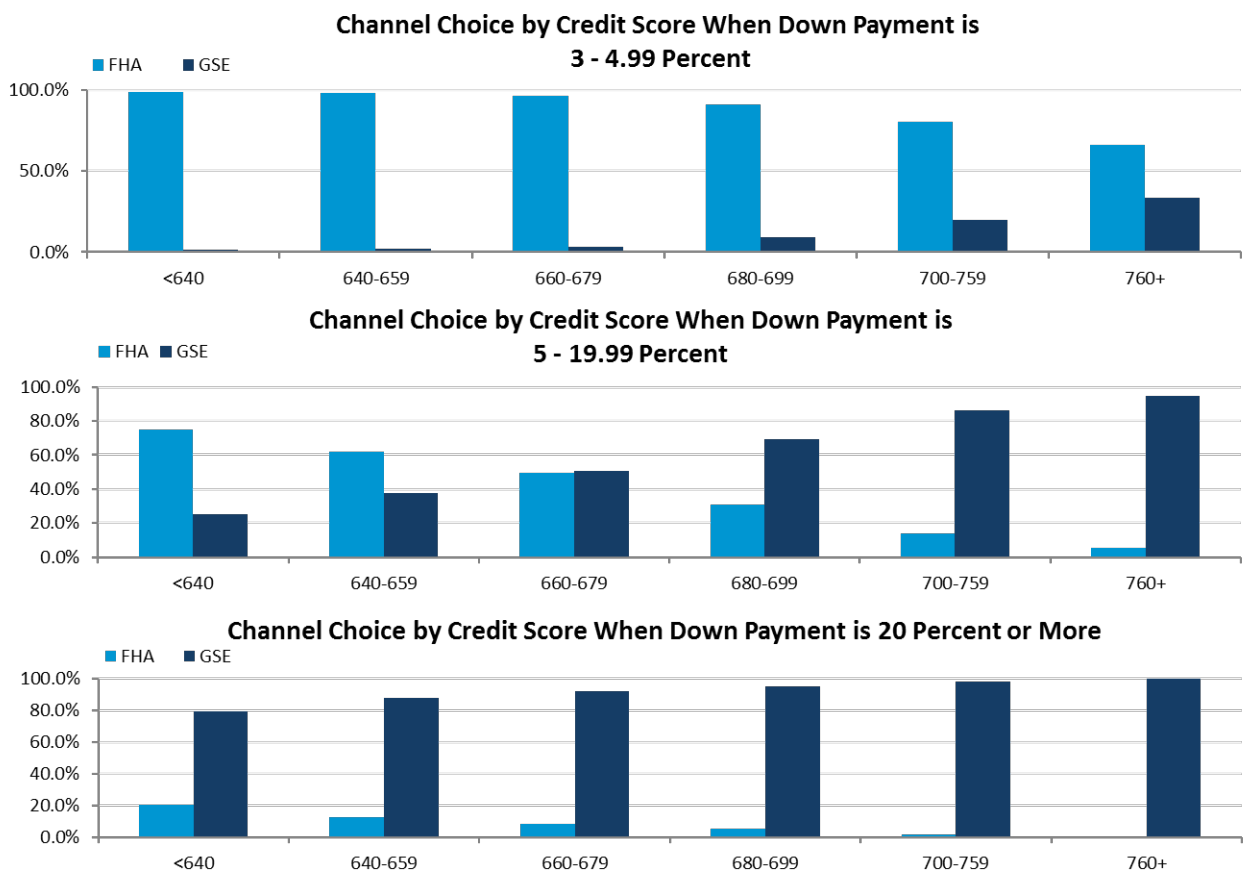
FHA actions to date FHA actions to address these issues have been more tardive than those taken by the GSEs and remain incomplete. Starting in 2015 (compared to 2012 for the GSEs), FHA has taken steps to clarify the environment for lenders participating in its program. In June 2015, it released a defect taxonomy that provide a new method for defining defects and their severity. However, this defect taxonomy, which is potentially a very valuable tool, has not been implemented. That is, there is no remediation attached to various defects. In August, 2015, FHA introduced their supplemental performance metric, so lenders with a higher risk portfolio are not penalized for high early pay defaults, performance is compared against loans with similar riskiness. In September, 2015, FHA put together their 900 mortgagee letters into a single handbook, eliminating inconsistencies. The Mortgagee letters are the primary way FHA coordinates with their lenders. In February 2016, FHA lengthened the timelines faced by servicers for due diligence in each stage of the delinquency process and improved its preservation and conveyance standards by increasing repair allowance and defining more precisely conveyable conditions.

What still needs to be done? Goodman (2017) points to several actions that remain needed to increase the interest of large lenders in participating in the program and remove the overlays they impose to borrowers beyond FHA criteria. These steps include clarifying what defects expose lenders to the False Claims Act and triple indemnification (the Defect Taxonomy could be harnessed to do this) and revamping FHA servicing to make due diligence timelines more flexible by covering the entire process

rather than each stage and further lengthening the timelines, as well as increasing repair allowance and shortening conveyance timelines.

FHA actions have a disproportionate impact Increasing lender participation in FHA would have an important impact on access to mortgage credit for first time homebuyers, particularly those with limited wealth for a downpayment and lower credit score. For those, FHA generally remains the least costly option, especially since FHA cut its mortgage insurance premium in January 2015 (Goodman 2017). Figure 2 shows the distribution of borrowers by LTV and FICO score. Note that almost all borrowers putting down less than 5 percent go the FHA route, with a few exceptions for those with FICO scores over 760. For borrows putting down 5-19.99 percent, borrowers with FICOs of under 660 generally choose FHA, those with FICOs over 680 chose conventional execution. And when the borrower is putting down 20 percent or more, almost all choose conventional execution. The bottom line: FHA constitutes the bulk of the high LTV lending, particularly to those with lower credit scores. This the credit box that is the most impacted by lender overlays, due to the False Claims Act, and the high and uncertain costs associated with servicing delinquent loans.

Figure 2: Mortgage Channel Choice by Credit Score and Down Payment



Note: Purchase and refinance mortgages

Source: Urban Institute

c- Other sources of mortgage credit for 1st time buyers

During the mortgage boom of the early 2000s, non-traditional mortgages securitized through the PLS market became an important source of credit for borrowing constraint households. Features of these non-traditional products could address income, wealth and credit constraint by decreasing initial payment, requiring low downpayment or extending repayment terms. In addition to somewhat higher interest rates (but not commensurate to their risk), these loans were offered with higher fees or prepayment penalties. An important origination channel for these loans were mortgage brokers than sold them to larger financial institutions that aggregated them and sold PLS to investors. However, the supply of these products proved to be procyclical and contributed to the crisis (McCoy and Wachter 2017). Proposals to solve the procyclical nature of the PLS structure by addressing the issues that were revealed in the GFC with the first generation of PLS remain to be implemented and the revival of a PLS market that would provide loans to nonprime borrowers remains elusive (Goodman 2016a).

Steps taken by private industry have the potential to ease access to credit at the margin. As of July 2017, tax liens and civil judgements will be dropped from consumers profiles if the information is not complete, potentially affecting positively the score of up to 7 percent of borrowers (Olick 2017). Innovations in the underwriting process with direct verification of assets, income and employment history by lenders and improvement in automated valuation models have also the potential of decreasing the monetary cost of mortgage origination and the length of the process as well as ensuring better risk management. The growth of FinTech lenders can also contribute to provide alternative forms of underwriting and additional source of funding for mortgages, although the fact that they are largely non depository institutions and therefore part of the shadow banking sector creates its own set of challenges (Buchak et al. 2017).

d- Remaining uncertainty over GSE reform

An area that has received a lot of attention but in which progress has been limited so far is the reform of the GSEs that have been under conservatorship since 2008. Despite a number of proposals for reform by industry groups and other experts, introduced legislation have so far failed to be enacted (McCoy and Wachter 2016b; Parrott 2017; Parrott et al. 2016; 2017). Resolving the uncertainty about the future structure of the system, the levels and form of government support and the risk sharing mechanisms used as part of the securitization process has the potential to spur investment in mortgages by market actors and increase the supply of capital for mortgages. There is still no consensus around long term reforms of the GSEs and the timeline remains uncertain. However, there is relatively broad support for preserving the 30 year fixed rate mortgage and having institutions that assume centralized functions in the securitization process to support standardization, liquidity, consumer protection and access to credit with private capital taking the first loss and government providing a catastrophic guarantee (McCoy and Wachter 2016b). In addition, steps have been taken in recent year that can be incorporated into the transition towards a long term solution such as the adoption of credit risk transfer instruments: Fannie Mae's Connecticut Avenue Securities (CAS), and Freddie Mac's Structured Agency Credit Risk (STACR) and the development of a single securitization platform by Fannie Mae and Freddie Mac under FHFA authority (Goodman, Parrott and Zandi 2015; Goodman et al. 2016).

The form that long term GSE reform will ultimately take will have a fundamental impact on the structure of the US mortgage market from the type of products offered to their issuers, pricing and availability (McCoy and Wachter 2017). Among other issues, McCoy and Wachter (2017) emphasize the necessity to set up the system in a way that recognizes the cyclicity of housing market and support stability in order to bring costs of capital down across the cycle. They conclude that a solution that maintains the

structure of the market around a 30 year fixed rate mortgage affordable and widely available while curbing the procyclical tendencies of industry practices remains elusive due to the incomplete nature of real estate markets that lack effective short-selling mechanisms and tools to identify market-wide leverage among other limitations.

The steps taken by FHFA and the GSEs to provide certainty to lenders and effectively expand the credit box support broader access to homeownership. However, the continued uncertainty about the future of these entities and the need for comprehensive reform of the securitization market need to be addressed (McCoy and Wachter 2016b) but reform remains unlikely in the near term (Goodman 2017).

V. Conclusion

In this article we have demonstrated that homeownership rates have declined across the board, especially for young and minority borrowers. We argue that this is due in large part to tight credit. In particular, the role of reps and warrants risk (in which lenders fear they have not actually sold the risk on insured or guaranteed loans, since if the loan defaults, Fannie, Freddie or FHA will ask them to repurchase it). The liability for triple damages under the false claims act and the high and uncertain costs of servicing delinquent loans all contribute to tight credit conditions. We also show that the effects of tight credit are amplified by demographic changes (the increase in minority homeownership) as well as economic changes (the increase in variable income). While the GSEs have done a great deal to try to give lenders certainty on reps and warrants (the lender is responsible solely for manufacturing defects, not subsequent performance), and servicing issues, FHA has done much less. However, because the GSEs do risk based pricing and FHA does not, the bulk of the lower credit mortgages are going to FHA.

To truly open the credit box, and give all creditworthy borrowers access to the mortgage credit that they need to buy a home, three sets of actions are necessary.

Reforms to FHA. In particular, FHA needs to make it clear when the False Claims Act will be used; as lenders need the certainty that they will only be responsible for material manufacturing defects. FHA servicing procedures are very cumbersome and overly rigid.

The implementation of credit scoring models needs to be updated. The GSEs and FHA are using dated FICO models. Later FICO or Vantage models score more borrowers with greater accuracy, many borrowers do not use credit and hence do not have a credit score; they are currently squeezed out of the market. When there are multiple borrowers, the lower credit score is used, forcing some families to try to qualify for a mortgage with only one income, as the second has too low a credit score. The GSEs could also begin incorporating telecom, utility, and rental information (when available) into their automated underwriting systems.

Misstatement of DTI ratios. Income that is not counted but should be, and expenses that are counted that should not be could cause DTIs to appear to be higher than they actually are. Variable income is an issue for many borrowers: those that are partly on commission, those have not held their job long enough (two years), those that always have a second income, but that income is seasonal. In multi-generational families, there are borrowers not on the mortgage that contribute to the income. Counting liabilities in another issue. Fannie recently announced they would use the actual payment for borrowers with student loans that are in an income based repayment plan; borrowers in forbearance receive no relief. The DTI overlays that are used by the GSEs and FHA do not allow consideration for these issues.

Programs such as Fannie Mae's Home Ready and Freddie Mac's Home Possible, despite their potential benefits, by their very nature may entrench these effects.

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