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Non-Qualifying Mortgages

Introduction and Investment Considerations

November 2019

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Executive Summary:

- **Post-crisis mortgage regulation created two classes of mortgage loans, "qualified mortgages" and "non-qualified mortgages," based on certain loan characteristics including income verification and debt to income ratios**
  - While originators of both loan types certify the borrower's ability to repay, lenders have full safe harbor if the loan conforms to all qualified mortgage ("QM") standards and has a borrowing rate within 150bp of the Prime rate.[1]
  - Not surprisingly, in a risk averse post-crisis lending environment, lenders issued a disproportionate share of QM loans to avoid litigation risk and credit loss (the GSEs and Ginnie Mae purchase and wrap most QM loans).
    - From 2014-2019, nearly 80% of all mortgages were conventional conforming or FHA/VA loans, which all carry the QM designation and therefore fall within the safe harbor.[2]

- **These regulations, while well intended, had the unforeseen consequence of limiting credit to tens of millions of creditworthy borrowers whose incomes and credit profiles do not conform with the strict QM guidelines**
  - Primary non-qualified mortgage ("non-QM") borrower types include self-employed borrowers or those with alternative incomes, expanded or near-prime credit borrowers with recent credit events, and investor loans to single-family rental owners.
  - Non-QM lending has expanded quickly to provide credit to these underserved cohorts, especially self-employed borrowers.
    - According to a Zelman analysis, from 2017-2019 over 30% of non-QM loans were classified non-QM because they did not satisfy the Appendix Q documentation rules related to underwriting income, employment, and liabilities.[3]
  - Importantly, non-QM lending is unlike subprime lending, and features higher FICO scores, lower LTVs, and improved post-crisis documentation and underwriting. Non-QM underwriting is more like early Alt-A lending.[4]

- **Likely near-term changes to federal mortgage finance policy are designed to 'level the playing field' between government lending and private markets**
  - There are two likely sources of near-term mortgage finance reform which would impact non-QM lending, both of which we believe would increase the role for private capital in mortgage lending.
  - First, the Treasury Housing Reform Plan directed FHFA to examine and potentially reduce its role in lending to "non-core" loans including investor loans, jumbo prime, second homes, and cash out refinancings to "Limi[t] certain GSE activities for which Government support is not necessary or justified."[5]
    - The Urban Institute estimates that 34% of GSE production in 2019 was in high balance loans, cash-out refinancings, investor loans, and second homes.[6]
  - Second, the CFPB has announced plans to allow the temporary QM exemption for loans with a DTI above 43% (known as the "QM Patch") to expire in January 2021 or soon after if an extension is needed.[7]
    - According to the CFPB, the Patch allowed the GSEs to purchase $234bn of mortgages in 2018 which would not have been permitted under the original guidelines.[8]

- **The non-QM market has grown quickly, with $35bn of origination in 2019 or 1.7% of all originations, up from $7bn or 0.4% in 2017.[9]**
  - For historical context, pre-crisis non-jumbo expanded prime lending totaled $247bn per year from 2000-2003, or 11% of originations, illustrating the potential growth as non-QM lending channels expand.[10]
  - Non-QM securitizations increased to more than $20bn in 2019 from $9bn in 2018 and $3bn in 2017, illustrating the financing market support for non-QM expansion.[11]

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[1] Urban Institute, " What, If Anything, Should Replace the QM GSE Patch?", August 2018. https://files.consumerfinance.gov/f/documents/201603_cfpb_atr-and-qm-comparison-chart.pdf

[2] Inside Mortgage Finance data, "Mortgage Originations by Product," data through 2Q'19

[3] Zelman and Associates, "A Deep Dive on Non-QM Lending," October 1, 2019.

[4] Morgan Stanley, "Non-QM: We're Not in Legacy Anymore," October 11, 2019.

[5] U.S. Department of the Treasury, "Housing Reform Plan," September 5, 2019.

[6] Urban Institute, "The Trump Administration's Perplexing Plans for Fannie and Freddie," October 2019.

[7] Bureau of Consumer Financial Protection, "Advance notice of proposed rulemaking", July 25, 2019. JP Morgan, "QM patch to expire—but will QM change?", July 2019.

[8] Ibid.

[9] Nomura Securitized Product Research, As of December 31, 2018. Total origination actuals and forecasts from the Mortgage Bankers Association through November 20, 2019.

[10] Inside Mortgage Finance data, "Mortgage Originations by Product," data through 2Q'19.

[11] Bank of America, "Securitized Products Strategy, Securitization Weekly", November 4, 2019.

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Section 1: What is a Qualifying and Non-Qualifying Mortgage?

What is the QM Rule?

Enacted in 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act amended the Ability-to-Repay ("ATR") standards under the Truth in Lending Act of 1968 ("TILA") requiring mortgage lenders to make a "reasonable, good faith determination" of a borrower's ability to repay a mortgage and to provide supporting documentation.[12]

These regulations took effect in January 2014 after the Consumer Financial Protection Bureau ("CFPB") also created the Qualified Mortgage rule to establish protections from liability for lenders under this requirement. Loans that do not meet the definition of a QM are generally referred to as "non-qualified" or "non-QM" loans. [13]

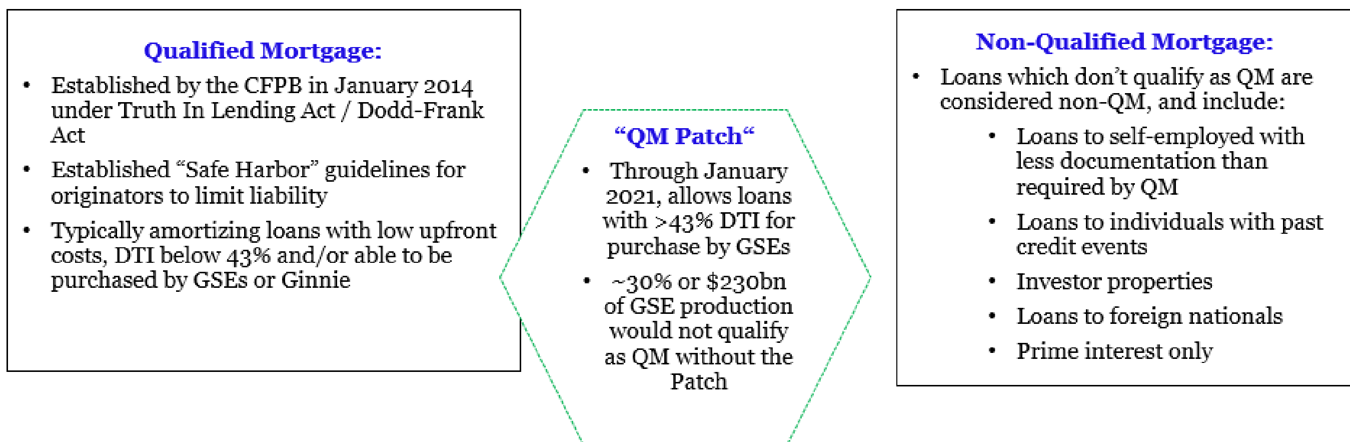
The QM rule established the following underwriting standards and safe product guidelines:[14]

- Product Features:
  - no loans with interest-only payments, balloon payments, terms longer than 30 years, or with negative amortization
- Excessive Fees:
  - upfront points and fees must not exceed 3%
- Debt-to-income ratios ("DTIs"):
  - borrower's total DTI must not exceed 43%
    - *unless* the loan is eligible for guarantee by the GSEs or Ginnie Mae or is originated and held by a small bank
- Income and Debt Underwriting:
  - Must follow Appendix Q rules related to underwriting and calculating income, employment, and liabilities

QM loans provide legal protection for lenders[15]

- QM loans with APR less than 150bp above the Average Prime Offered Rate ("APOR') are offered "safe harbor".
- High-priced loans with APRs 150bps above the APOR offer *rebuttable* presumption that the lender has complied with ATR, but that presumption may be challenged in court by the borrower.

Exhibit 1: Characteristics of Qualified and Non-Qualified Mortgages



Source: Pretium Partners, https://www.federalregister.gov/documents/2013/01/30/2013-00736/ability-to-repay-and-qualified-mortgage-standards-under-the-truth-in-lending-act-regulation-z, https://www.consumerfinance.gov/about-us/newsroom/bureau-releases-qualified-mortgage-anpr/., JPM, "QM patch to expire—but will QM change?". July 26, 2019.

12 https://www.federalregister.gov/documents/2013/01/30/2013-00736/ability-to-repay-and-qualified-mortgage-standards-under-the-truth-in-lending-act-regulation-z. https://files.consumerfinance.gov/f/documents/cfpb_adult-fin-ed_mortgage-rules.pdf. https://files.consumerfinance.gov/f/documents/201603_cfpb_atr-and-qm-comparison-chart.pdf.

13 . Urban Institute, " What, If Anything, Should Replace the QM GSE Patch?", August 2018.

14 Zelman and Associates, "A Deep Dive on Non-QM Lending," October 1, 2019.

15 Urban Institute, " What, If Anything, Should Replace the QM GSE Patch?", August 2018. https://files.consumerfinance.gov/f/documents/201603_cfpb_atr-and-qm-comparison-chart.pdf.

What is the QM Patch?

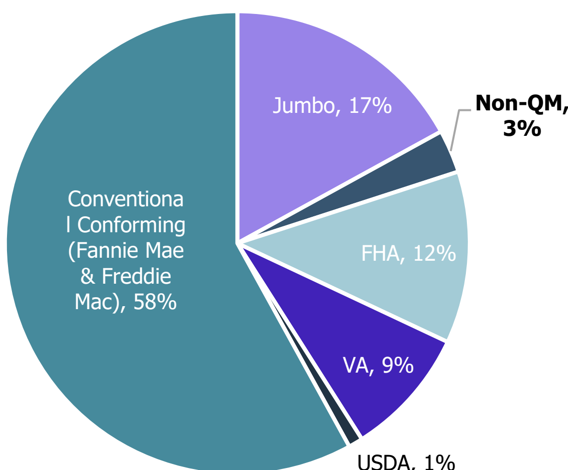
- In January 2014, the CFPB issued a rule, commonly known as the 'QM patch' that exempts GSE-eligible loans from the 43% DTI cap and Appendix Q underwriting requirements until January 2021.[16]
  - Due to the carve-outs for loans eligible to be purchased by Fannie Mae, Freddie Mac, and Ginnie Mae, the QM distinction today generally aligns with agency-eligible loans
  - In contrast, non-QM generally encompasses all mortgages not guaranteed by the federal government and backed by private capital
  - Jumbo mortgages with loan amounts in excess of the GSEs' allowances may be either QM or non-QM depending on the product features and underwriting
    - "It is not accurate to say that agency = Qualified Mortgage and therefore non-agency = Non-Qualified Mortgage. While it is true that, as a result of the "QM Patch", agency mortgages are all Qualified Mortgages, the inverse is not true." – Morgan Stanley[17]
- The QM Patch is set to expire in January 2021, subject to extensions.
  - In 2018, the QM Patch allowed the GSEs to acquire $226bn of loans which otherwise would not have fit the QM definition. This amount was 30% of all GSE purchases, and 14% of the total origination volume of US mortgages.[18]
- In July 2019 the CFPB issued an Advanced Notice of Proposed Rulemaking soliciting comment on its decision to let the QM Patch expire in 2021, including discussion around amendments to documentation and income requirements.[19]

QM Changed Proportion of Private vs. Government Backed Loan Originations[20]

Post-crisis mortgage regulation has greatly increased the proportion of borrowers in government-backed programs from Fannie Mae, Freddie Mac, or Ginnie Mae. In our view, this reflects a risk-averse post-crisis lending environment where lenders issued a disproportionate share of QM loans to avoid litigation risk and credit loss.

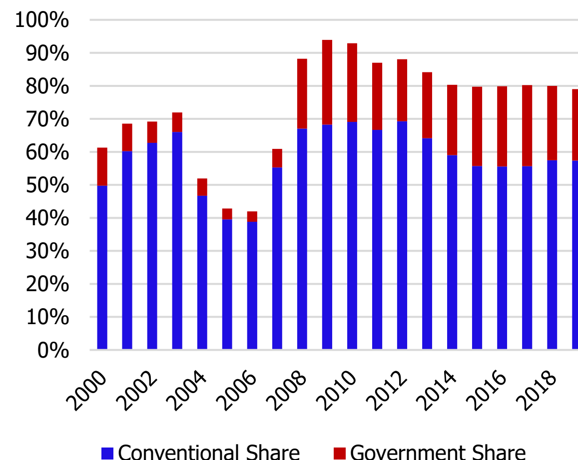
- From 2014-2019, nearly 80% of all mortgages were conventional conforming or FHA/VA loans, which all carry the QM designation and therefore safe harbor.
  - For comparison, from 2000-2004, before lending conditions deteriorated, 68% of loans were conventional conforming or FHA/VA.
  - There has been a large increase in FHA/VA loans, which now comprise 22% of lending, up from 8% between 2000-2003.

Exhibit 2: Distribution of 2018 Mortgage Originations



Source: Inside Mortgage Finance, HMDA, Zelman & Associates analysis

Exhibit 3: GSE/Ginnie Share of Mortgage Originations



Source: Inside Mortgage Finance

[16] Urban Institute, " What, If Anything, Should Replace the QM GSE Patch?", August 2018.

[17] Morgan Stanley, "The Fast & The Fascinating Non-QM Market", January 18, 2019.

[18] Wells Fargo, "Life After the GSE QM Patch," July 26, 2019.

[19] https://www.consumerfinance.gov/about-us/newsroom/bureau-releases-qualified-mortgage-anpr/. Wells Fargo, "Life After the GSE QM Patch," July 26, 2019. JP Morgan, "QM patch to expire—but will QM change?", July 26, 2019. Nomura, "securitized Products Weekly," July 26, 2019.

[20] Zelman and Associates, "A Deep Dive on Non-QM Lending," October 1, 2019. Inside Mortgage Finance, "Mortgage Originations by Product", data through 2Q 2019.

Section 2: Non-QM Product Types

The ATR and QM regulations established clear guardrails on lending, but in practice the regulations make accessing mortgage credit more difficult for large groups of otherwise historically creditworthy borrowers who fall outside the prescribed QM definition

- Borrowers are typically ineligible for a QM loan due to a documentation, credit, or DTI feature in their loan which, by definition, makes that loan non-QM.
  - Many non-QM loans are expanded prime, near prime, or investor loans (which do not fall under the QM rule).
  - According to Morgan Stanley, "due to the stringent nature of [the QM] rules, a vast number of otherwise worthy borrowers do not qualify for QM loans."[21]
- Many of these borrowers do not have traditional incomes and/or are self-employed, preventing lenders from underwriting their income to satisfy Appendix Q with proper documentation (i.e. W-2s) for QM purposes.
  - According to a Zelman analysis of KBRA data, in 2017-2019 over 30% of non-QM loans were non-QM because they did not satisfy the Appendix Q documentation. [22]
  - According to the Urban Institute, 8.5% of the U.S. population is self-employed, including 6.1% of those household heads aged 20-39 and 10.6% of those heads aged 40-59. [23]
    - "Mortgage use and the homeownership rate within each income bucket fell more for self-employed households than for salaried households. The fact that this happened in the face of stable median incomes in each income bucket suggests that other factors, such as tight credit availability, are at play and have affected self-employed households more adversely."

Non-QM lending focuses on several types of loans to underserved borrowers:

- Alternative Documentation:
  - For business owners, freelance employees, consultants, or other borrowers who have an irregular income and are unable to provide income verification that fulfills Appendix Q (W-2s), non-QM lenders provide an important alternative.
  - Bank statement programs typically use 12-24 months of bank or asset statements to verify income and will often include part-time, overtime, or bonus income that may not always be included under Appendix Q.
  - This is the largest non-QM sector. Alt-doc borrowers have few other options under the current QM definition.
- Non-Prime / Subprime:
  - This segment targets lower credit borrowers or those with prior negative credit events, but generally requires compensating factors like a substantial down payment.
  - This is the smallest segment of the non-QM market and generally experiences higher prepay speeds as borrowers tend to improve their credit scores and refinance into conventional mortgages.
- Investor Loans:
  - Investor loans are business-purpose loans and are not subject to ATR / QM. That said, they make up a significant portion of non-QM securitizations.
  - These loans finance properties that fall outside of agency guidelines and include loans for fix and flip or single-family rentals.

Exhibit 4: Primary Non-QM Borrower

	Non-QM Borrower Type			
	Self-Employed	High DTI Jumbo	Prior Credit Impairment	Investors / Foreign Nat.
Borrower Profile	Tax records may not accurately capture creditworthiness	Lives in high-cost MSA, leading to high DTI ratio		Real estate investors
	Alternative income documentation	Higher salaries and strong residual income		Borrowers from outside U.S.
Borrower Need	Alternative income documentation loan	Higher DTI ratio loan		Investor properties outside QM guidelines
Non-QM Feature	Income documentation outside of Appendix Q	DTI > 43%		NA - Business purpose loans outside of TILA
Risk Mitigant	Third party records (bank statements), credit profile, FICO, LTV	Residual income; housing ratio; FICO checks, LTV	Qualify at fully amortized payment, income verification, LTV	FICO, LTV

Source: Deephaven Mortgage.

[21] Morgan Stanley, "The Fast & The Fascinating Non-QM Market", January 18, 2019.
[22] Zelman and Associates, "A Deep Dive on Non-QM Lending," October 1, 2019.
[23] Urban Institute, "The Continued Impact of the Housing Crisis on Self-Employed Households", December 2018.

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Deephaven Mortgage is one of the largest non-QM originators in the U.S. In Exhibit 5 we illustrate their trailing twelve-month production to highlight several points:

- ~73% of Deephaven's loan origination was to expanded or near-prime borrowers with an average FICO of 720 and LTV below 75%.
  - 67% of these borrowers were self-employed and used bank statements, rather than W-2s, to prove their ability to repay the mortgage.
- 11% of Deephaven's origination was to investors and foreign nationals, a group we expect will expand if the government reduces their role in the non-owner-occupied market.
- Only 15% of Deephaven's loans were to non-prime borrowers, but unlike subprime lending these borrowers have ~73% LTVs (i.e. 25-30% equity in their homes) and FICOs of 650+, compared to subprime where average FICOs were ~625 with LTVs in the low 80%.[24]

Exhibit 5: Deephaven Non-QM Production (TTM through 3Q 2019) [25]

Loan Type	Expanded Prime	Near Prime	Non-Prime	Investor Advantage
Borrower Profile	Borrowers with one of more characteristics that do not meet traditional Agency or prime jumbo requirements		Borrowers with credit blemishes or prior housing issues	Business purpose loans for investment properties
	Self employed borrowers who have to rely on alternative documentation and jumbo borrowers with DTIs over 43%		*Borrowers with past credit impairments or bankruptcies*	*Real estate investors and borrowers from outside the U.S.*
Credit Profile				
TTM Production ($mn)	$761	$1,085	$367	$285
% of TTM Production	30%	43%	15%	11%
FICO	743	712	654	725
Average Balance	$565,000	$520,000	$300,000	$355,000
GWAC	5.64%	6.78%	7.77%	7.14%
W.A. LTV	73%	76%	73%	64%
W.A. DTI	34%	38%	38%	NA
% Purchase	64%	57%	55%	43%
% Non-Owner	0%	10%	4%	98%
% Foreign National	0%	0%	0%	11%
% Bank Statement	78%	59%	36%	0%

[24] Morgan Stanley, "The Fast & The Fascinating Non-QM Market", January 18, 2019.

[25] Deephaven Mortgage, data through 3Q 2019.

Section 3: Post-Crisis Credit Box

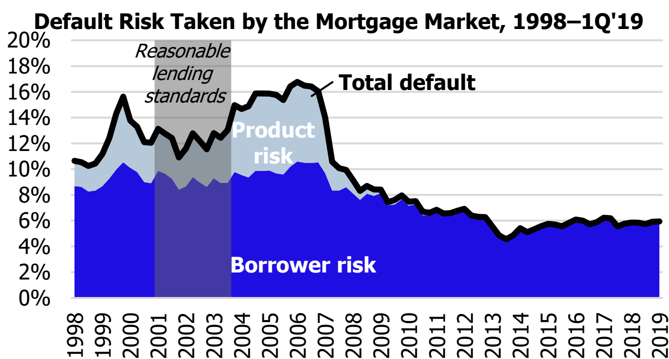
Mortgage Credit Conditions Remain Constrained

During the last housing cycle, loose lending standards encouraged borrowers to take on considerable housing debt. We believe that conservative lending standards defined by the QM rule have decreased mortgage risk but have significantly curtailed credit to many otherwise creditworthy borrowers.

Mortgage lending standards tightened dramatically post-crisis

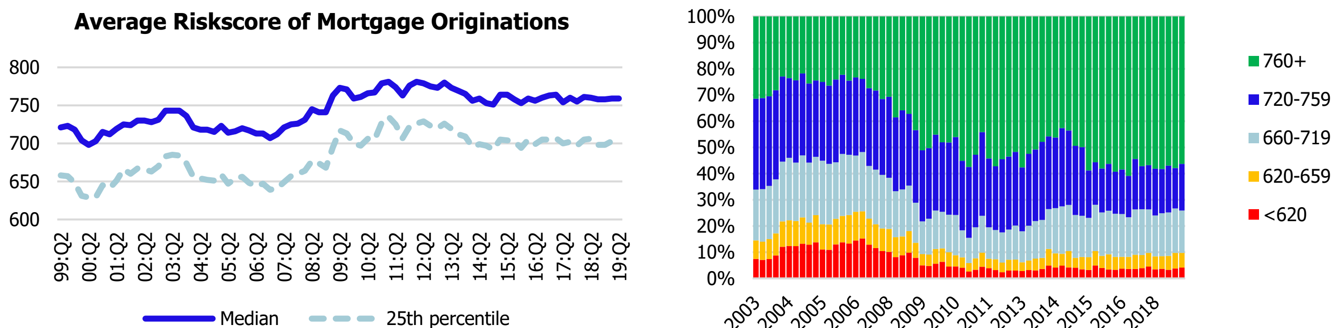
- According to the Urban Institute, the mortgage market is taking less than half as much default risk on new loans today as it took from 2005 to 2007, primarily by eliminating riskier loan products (Alt-A, subprime, etc.).
  - According to the Urban Institute, "If the current default risk was doubled across all channels, risk would still be well within the pre-crisis standard of 12.5 percent from 2001 to 2003 for the whole mortgage market."[26]
- Average credit risk scores are significantly higher today than in the pre-crisis period. According to the NY Fed, median credit scores on mortgages are 750 today vs. 715 in the pre-crisis period (2001-2003).[27]
  - The average FICO score on a GSE loan is currently 740, which is 50 points higher than in 2005 - 2007. Similarly, the average FICO score on a Ginnie Mae loan (primarily FHA and VHA loans) is 30 points higher than pre-crisis.[28]
- Fewer mortgages are being originated to borrowers with sub-660 FICO scores; in 2019 10% of loans were to this cohort, compared to ~20% pre-crisis.[29]

Exhibit 6: Urban Institute Housing Credit Availability Index, 1998-2019



Source: Urban Institute, Housing Credit Availability Index, 1Q'19. Updated July 16, 2019.

Exhibit 7: Average Mortgage Origination Credit Scores Rising, With Fewer Loans to Low Scores



Source: New York Fed Consumer Credit Panel/Equifax, data through 2Q'19. Data from eMBS, CoreLogic, HMDA, IMF, and Urban Institute. Source: New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.

[26] Urban Institute, Housing Credit Availability Index, 1Q'19. Updated July 16, 2019.
[27] New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.
[28] Goldman Sachs, Housing and Mortgage Monitor, June 27, 2019.
[29] New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.

Section 4: Outlook for Housing Finance Reform

In our view, housing reform actions to date and likely future administrative changes will reduce the government's role in mortgage credit and allow private capital to better address underserved borrowers

- In aggregate, we expect the administration will attempt to shrink the role of government-backed mortgage credit by increasing the direct cost of the government guarantee to make private capital more competitive.
- Leveling the playing field should, on balance, allow more private capital to enter residential credit and responsibly expand credit to currently underserved borrowers including self-employed and near-prime borrowers with less access to credit today.
- Importantly, the future of the "QM patch" and potential changes to the QM definition should help determine the types of opportunities available to private capital.

Recent Timeline of Administrative Reform

March 2019

President Trump released a memorandum directing the Secretary of Treasury and Secretary of Housing and Urban Development ("HUD") to "craft administrative and legislative options for housing finance reform."[30] The memorandum followed several other actions taken by the Trump Administration that signaled intentions to reform the housing finance system, including:

- Mark Calabria nominated as Director of the Federal Housing Finance Agency ("FHFA") and confirmed in April 2019.[31]
- Reinstating manual underwriting for FHA loans with FICO scores below 620 and DTIs above 43% and stating that the "FHA will carefully monitor the impact of this change and is preparing to implement additional changes to maintain a better balance of managing risk and fulfilling its mission."[32]

June 2019

The CFBB released a press release noting their intention to let the QM patch expire as planned "in January 2021 or after a short extension."[33] In addition, the release requested for input on modifying the QM definition, potentially increasing the DTI threshold from 43%, and/or changing the income/documentation requirements under Appendix Q.[34]

- According to the CFPB, the QM patch enabled the GSEs to acquire $234bn of high DTI loans, or ~30% of what the GSEs acquired in 2018.[35] Therefore, in our opinion, it is unclear how much change to the status quo the Administration is willing to take to reduce the government's footprint in high DTI conventional lending.

September 2019

The Departments of Treasury and Housing and Urban Development released their respective housing reform proposals, including suggestions for both administrative and legislative changes to the housing finance system.[36]

- The proposals generally seek to level the playing field between private and public capital to reduce the government share of lending, including higher guarantee fees ("g-fees"), larger capital buffers for the GSEs, and a smaller government footprint in non-core markets such as cash out refinancings, investor homes, vacation home loans, and high balance loans.
- Other suggestions include:
  - Propose ending QM patch in January 2021 (in line with CFPB recommendation in June 2019), amend the ATR rules, and offer bright line definition of safe-harbor to replace the patch.
  - Review capital treatment and risk retention rules for private label securitizations ("PLS"), which are more favorable and less restrictive to GSEs than private capital and inhibit the growth of PLS.
  - For both GSE and HUD, increase g-fees and capital reserves to build buffer and more appropriately price risk to level playing field with private capital.
  - Identify higher risk lending, and propose future restrictions on underwriting high DTI, high LTV, risk layering, etc.
  - For FHA, clearly defining litigation risk under the False Claims Act in order to bring banks back into FHA lending to improve counterparty risk.
  - For both, find ways to lower servicing costs for delinquent loans, which have spiked post-crisis.

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[30] https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-reforming-housing-system-help-americans-want-buy-home/.

[31] Housing Wire, "Senate confirms Mark Calabria to lead FHFA, April 4, 2019.

[32] See Wells Fargo, "Forget Technology, FHA Returns to Manual Labor," March 19, 2019, and Evercore-ISI, "An Important Change to FHA Underwriting," March 19, 2019. Wall Street Journal, "FHA Clamps Down on Risky Government-Backed Mortgages," March 25, 2019.

[33] Consumer Financial Protection Bureau. https://files.consumerfinance.gov/f/documents/cfpb_anpr_qualified-mortgage-definition-truth-in-lending-act-reg-z.pdf.

[34] See JP Morgan, "QM patch to expire – but will QM change?" July 26, 2019, or Nomura, "Securitized Products Weekly," July 26, 2019.

[35] Consumer Financial Protection Bureau. https://files.consumerfinance.gov/f/documents/cfpb_anpr_qualified-mortgage-definition-truth-in-lending-act-reg-z.pdf.

[36] U.S. Department of the Treasury, "Housing Reform Plan, Pursuant to the Presidential Memorandum Issued March 27, 2019", September 2019. Note: Items listed in the order in which they appear in the Appendix of the report.

Administrative Reform Could Impact A Meaningful Amount of GSE Share

- By shrinking the government footprint in the mortgage market, housing finance reform could provide additional opportunities for private capital especially in high-DTI loans and non-core GSE markets.
- Zelman estimates that today approximately 10% of the purchase market relies on the QM patch and receives GSE-backed financing on a loan with DTI above 43%.
  - Without the QM patch, FHA-guaranteed loans would be an attractive option for high LTV and low credit score borrowers who fit the loan limit guidelines in their respective areas.

Private capital would also be well-positioned to fill the void left in the investor loan, second-home mortgage, cash-out refinancing, or high-balance loan market if the GSEs pulled back their presence from those non-core markets.

- A recent Urban Institute analysis examined the proportion of GSE lending which may be impacted by a shrinking of the GSEs footprint in 'non-core' origination. They estimate that 34% of GSE production in 2019 was in high balance loans, cash-out refinancings, investor loans, and second homes. [37]

Exhibit 8: Potential Contraction of GSE Footprint

Potential Contraction of GSE Footprint	2013	2014	2015	2016	2017	2018	2019
% of UPB over conforming limits	7.1%	9.3%	10.1%	10.1%	9.9%	7.8%	7.1%
UPB at or under conforming limits							
% cash-out refis	15.2%	15.3%	18.3%	20.5%	19.8%	17.6%	16.9%
% investor homes	7.7%	6.8%	6.0%	6.1%	7.1%	6.0%	4.5%
% second homes	3.8%	3.5%	3.2%	2.9%	3.4%	3.8%	3.8%
% cash-out & investor home	1.0%	1.4%	1.5%	1.7%	2.0%	1.0%	1.4%
% cash-out & second home	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Potential footprint contraction if high balance, cash-out refis, investor and second homes were eliminated	35.2%	36.6%	39.4%	41.6%	42.5%	36.5%	34.0%

Source: Urban Institute, "The Trump Administration's Perplexing Plans for Fannie and Freddie," October 2019.

- According to Barclays research, in 2018 the GSEs originated $340bn of high DTI loans (over 43% DTI), investor loans, conventional jumbo loans, and second home loans. [38]
  - Regulatory changes (especially to DTI maximums and g-fees for non-core borrowing) could lead a significant share of these loans into the private markets (private label securitization or bank balance sheets).

Exhibit 9: 31% of Agency Fixed Rate Lending Was in Areas Where the GSEs are Likely to Pull Back

Source: Data reflects original loan balances of fixed-rate securities originated in 2018. Source: CPRCDR; Annaly; Barclays Research. Accessed from Barclays Research, "GSE Reform: Unfinished Business" published June 26, 2019.

[37] Urban Institute, "The Trump Administration's Perplexing Plans for Fannie and Freddie," October 2019.

[38] Barclays Research, "GSE Reform: Unfinished Business" published June 26, 2019.

Section 5: Potential Size of Non-QM

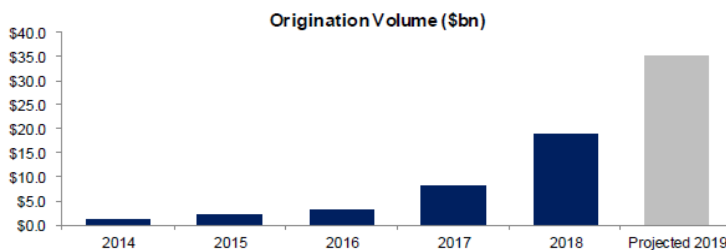
Private market opportunity to expand credit to underserved borrowers

We expect private capital to greatly expand its role in residential lending over the next several years due to the current demand for these loans as well as future opportunity should federal mortgage finance reform narrows the government's role housing finance.

We estimate that non-QM volumes are likely to expand towards, and likely beyond, $100bn annually.

- The non-QM market is expected to exceed $35bn in 2019, having more than doubled each of the past 3 years.[39]
  - There remains significant demand from self-employed borrowers, investors, and those with recent credit events to support an increase of the current run rate.
- Further, we expect a shrinking of the government footprint in high DTI, high balance conforming, second homes, high DTI, and/or investor properties will increase the number of prospective loans which will go to the private market.
  - As noted on page 10, the analyses from Barclays and Urban show that between 30-34% of recent GSE production has come from these loan categories, with private markets well positioned to capture volume if the government reduces its footprint.[40]

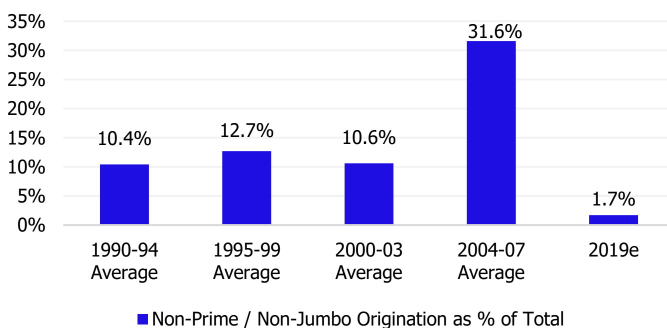
Exhibit 10: Non-QM Volumes ~$35bn in 2019, and Growing Quickly



Source: Inside Mortgage Finance, HMDA, Zelman & Associates analysis

- For historical context, pre-crisis expanded prime lending totaled $247bn per year between 2000-2003, or 11% of originations, illustrating the potential growth as non-QM lending channels expand.
  - From 1990-2003, non-jumbo / non-prime originations averaged ~11% of total originations.[41]
  - Non-jumbo, non-QM originations are expected to total under 2% of estimated 2019 mortgage production.
  - Zelman estimates the potential size of the market opportunity at ~$200bn/yr or 10% of the total market.[42]

Exhibit 11: Historical Expanded Credit Volume ($bn)



Source: Deephaven Mortgage analysis. Inside Mortgage Finance, HMDA, Zelman & Associates analysis, Deephaven Mortgage analysis. Nomura Securitized Product Research, As of December 31, 2018. Total origination actuals and forecasts from the Mortgage Bankers Association through November 20, 2019.

[39] Nomura Securitized Product Research, As of December 31, 2018.

[40] Urban Institute, "The Trump Administration's Perplexing Plans for Fannie and Freddie," October 2019. Barclays Research, "GSE Reform: Unfinished Business" published June 26, 2019.

[41] Inside Mortgage Finance, HMDA, Zelman & Associates analysis, Deephaven Mortgage analysis. Nomura Securitized Product Research, As of December 31, 2018. Total origination actuals and forecasts from the Mortgage Bankers Association through November 20, 2019.

[42] Zelman and Associates, "A Deep Dive on Non-QM Lending," October 1, 2019.

Section 6: Non-QM Underwriting

Conservative underwriting by non-QM lenders clear in loan-level metrics

- The non-QM sector includes a wide set of products that span the credit spectrum.
  - However, non-QM credit standards generally account for risk-layering with additional restrictions on lower credit borrowers, resulting in strong loan-level credit metrics.
  - More broadly, non-QM securitization data illustrates that the credit profile of loans originated since 2015 have been of comparable quality to early Alt-A lending and far better than subprime originations.

- According to a Morgan Stanley analysis, the average non-QM loan originated in 2015-2018 had an LTV of 76% and FICO over 700, and only 18% were cash out refinancings.[43]
  - As the table below illustrates (Exhibit 12), these metrics are in-line with legacy Alt-A loans and much better quality than legacy subprime.

Exhibit 12: Non-QM Credit Characteristics relative to pre-crisis Alt-A and Subprime

Securitization Collateral Comparison												
	Loan Characteristics								ARM Resets			
Shelf / Vintage	Avg. Balance	WA FICO	% FICO < 620	WA LTV	% Fixed	% ARM	% Owner Occ	% Cash out Refi	2Yr Reset	3Yr Reset	5Yr Reset	7Yr Reset
Legacy Subprime												
2005	$178,528	626	45.0%	81%	16%	79%	94%	54%	82%	16%	2%	0%
2006	$187,149	626	45.0%	81%	16%	59%	93%	51%	84%	12%	3%	0%
2007	$196,127	625	46.0%	82%	21%	43%	93%	58%	74%	17%	7%	0%
Legacy Alt-A												
2006	$286,369	709	1.0%	74%	27%	54%	80%	30%	6%	9%	56%	13%
2007	$337,898	711	1.0%	75%	28%	49%	80%	34%	1%	5%	67%	14%
Non_QM												
2015-2018	$395,210	702	6.0%	76%	30%	70%	86%	18%	0%	3%	83%	14%

Source: Morgan Stanley, "The Fast & The Fascinating Non-QM Market," January 18, 2019.

More Robust Underwriting Improves Loan Quality

- Post-crisis, the mortgage industry addressed several qualitative, structural deficiencies in the pre-crisis origination process which led to weaker loan quality.
- We believe improvement in reps and warranties, appraisal independence, fraud prevention, and other aspect of origination and underwriting have greatly improved the quality of post-crisis non-Agency origination. These differences are separate but important from improved collateral characteristics which are easier to quantify.[44]

Exhibit 13: Origination and Underwriting Improvements Post-Crisis

Housing Crisis Problem	Industry Solution
Income and Employment Fraud	– No longer accept "stated" income – Employment verification immediately prior to close
Appraisal Quality	– Appraisal independence standards – Improved third party valuation tools
Undisclosed Debts	– Gap credit reports – Mortgage Electronic Registration Systems (MERS) searches
Mortgages Used by Consumers as Cash Management Products	– No short teaser ARMs or negative amortization – ARMs qualified off fully-indexed rate if higher – Today's IO's underwritten as if a fully-amortizing loan
Loan Underwriter Quality	– Improved fraud prevention tools – Nationwide Multistate Licensing System (NMLS) – Loan officer compensation

Source: Deephaven Mortgage. Morgan Stanley, "Non-QM: We're Not in Legacy Anymore," October 11, 2019.

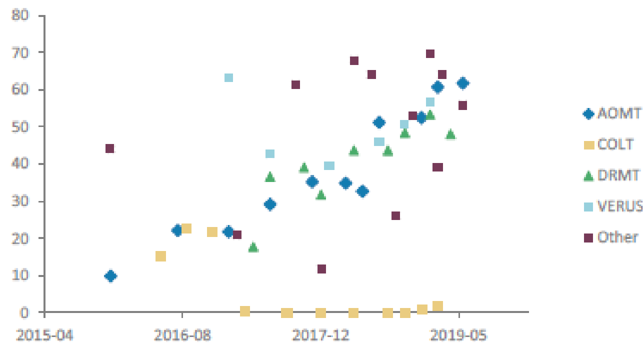
[43] Morgan Stanley, "The Fast & The Fascinating Non-QM Market", January 18, 2019.

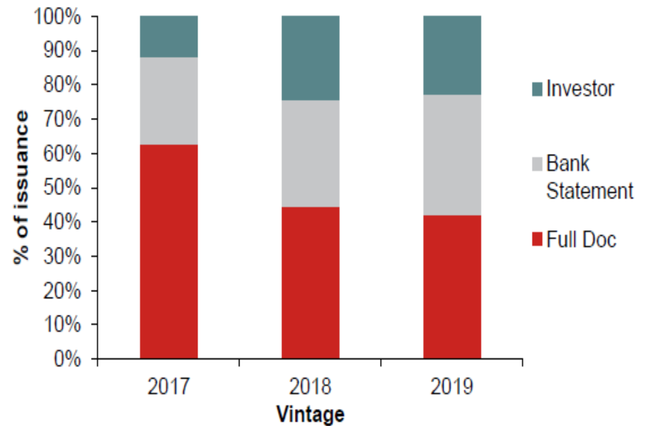
[44] Morgan Stanley, "Non-QM: We're Not in Legacy Anymore," October 11, 2019

Non-QM Underwriters Avoiding Risk Layering

- One of the issues with legacy subprime underwriting was risk layering, whereby several product features / risky attributes of loans combined to greatly increase the overall risk of the mortgage.[45]
  - This is not occurring in the current non-QM market; as the percentage of loans using non-standard documentation increases, lenders are increasing their FICO requirements and taking lower LTV exposure.[46]

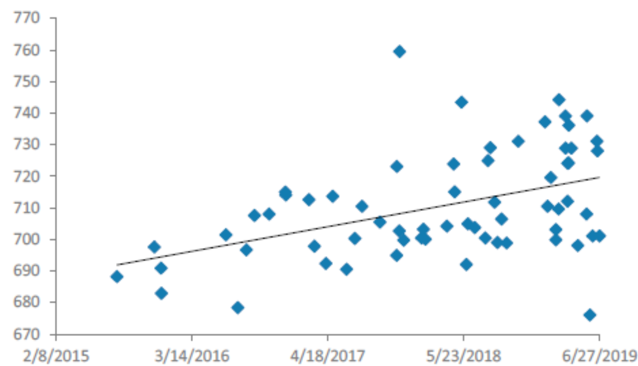
Exhibit 14: Alternative Documentation Continues to Increase…

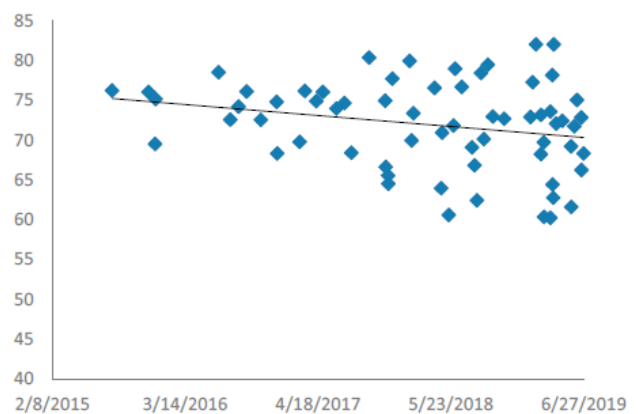




Source: LoanPerformance, Bloomberg, Intex, Morgan Stanley, "CRT and Non-QM: Resi Review of 1H19", July 25, 2019. Nomura Non-QM Overview Symposium, September 2019

Exhibit 15: …But Weighted Average FICOs and LTVs are Improving Concurrently



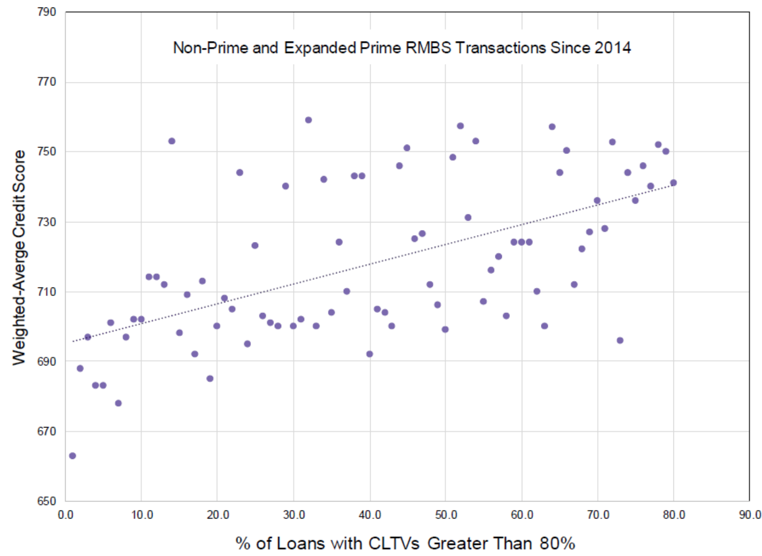


Source: LoanPerformance, Bloomberg, Intex, Morgan Stanley, "CRT and Non-QM: Resi Review of 1H19", July 25, 2019.

[45] Research Institute for Housing America, "Managing Mortgage Product Development Risk," August 2017.

[46] LoanPerformance, Bloomberg, Intex, Morgan Stanley, "CRT and Non-QM: Resi Review of 1H19", July 25, 2019. Nomura Non-QM Overview Symposium, September 2019.

Exhibit 16: Higher Credit Scores for Deals with Higher LTV Loans



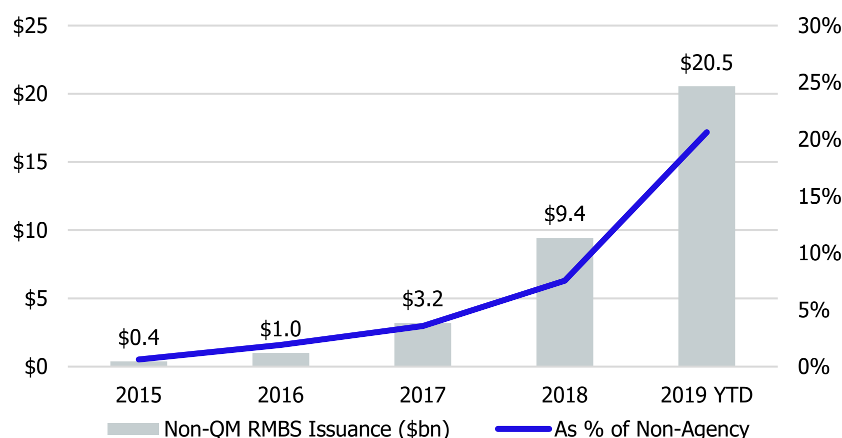
Source: KBRA, Zelman & Associates analysis.

Section 7: Non-QM Financing Markets

Size and Breadth of Debt Capital Providers Continue to Expand to Support Private Market Growth

- Year to date in 2019, non-QM originators have issued $20.5bn of non-QM securitizations, which is more than 2x the full year 2018 level and 6x the full year 2017 level.[47]
  - This origination totaled 20% of non-agency origination, up from 8% in 2018.

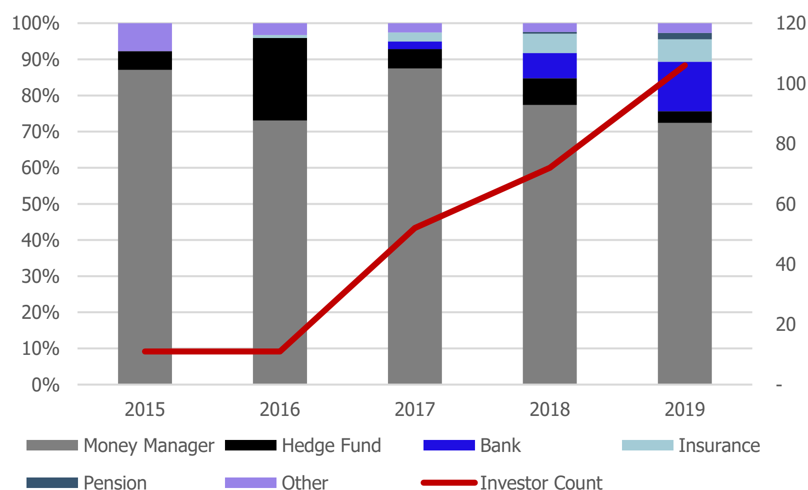
Exhibit 17: Non-QM Securitizations



Source: Bank of America, "Securitized Products Strategy, Securitization Weekly", November 4, 2019

- Over the past 5 years, there has been a broad expansion of the number and variety of lenders investing in non-QM deals.
  - According to Nomura, in 2019 there were almost 100 different investors in non-QM securitization deals, compared with just over 70 in 2018 and 50 in 2017.[48]
  - Further, there has been notable growth in the amount of lending by banks, insurance companies, and pension funds.

Exhibit 18: Non-QM Investor Involvement Over Time



Source: Nomura Non-QM Symposium, September 2019.

[47] Bank of America, "Securitized Products Strategy, Securitization Weekly", November 4, 2019.
[48] Nomura Non-QM Symposium, September 2019.

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