Pretium

Residential Credit: Deleveraging and Regulatory Changes Provide Opportunity

November 2019

Key Conclusions and Implications:

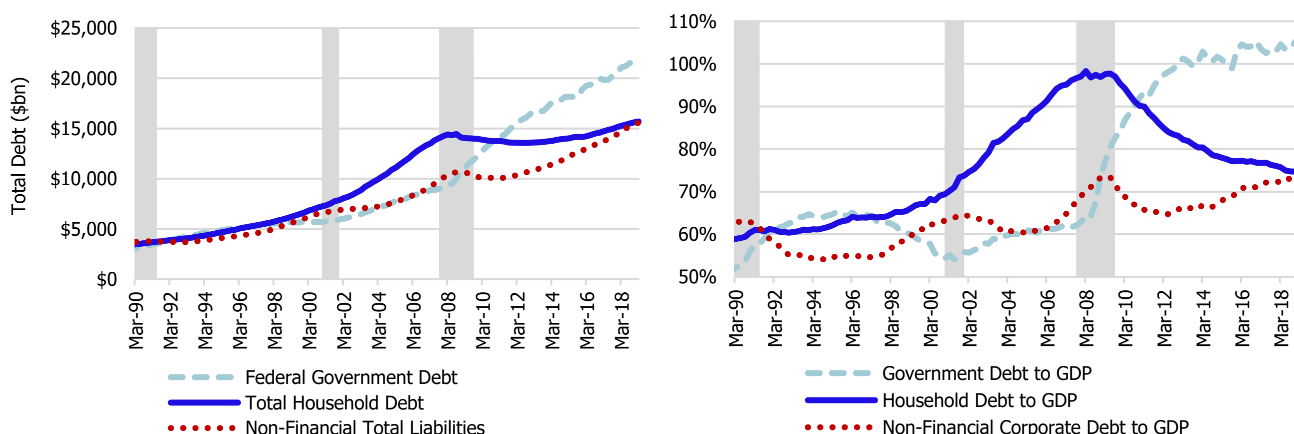
- Over the past 10 years, U.S. households have significantly de-levered and de-risked their balance sheets, standing in sharp contrast to the incremental leverage and risk added by U.S. corporate borrowers and the federal government.
- Leverage in the housing system has declined significantly with the ratio of mortgage debt to GDP declining to 49% today from 74% in 2009. Mortgage debt to GDP is at its lowest since 3Q 2001.[1]
- Housing fundamentals remain strong with vacancy rates at multi-decade lows driven by steady and above-trend demand for housing and a persistent undersupply of new housing.[2]
- Limited credit availability post-crisis has restricted the expansion of mortgage debt as lenders have focused on originating qualified mortgages ("QM").
- Non-QM borrowers, which 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, are especially underserved by the current regulatory framework.
- We believe there is a growing opportunity for private capital to responsibly expand lending to these creditworthy borrowers that may increase based on proposed administrative mortgage finance reforms to reduce the government's footprint in the mortgage market.

Significant Changes in U.S. Debt Since 2008

Since 2008, there has been a significant shift in the components of the debt markets, with the federal government increasing its debt outstanding by 106%, corporations increasing debt by 53%, and households increasing debt by 11%. Within household debt, consumers have reduced mortgage debt by 2% while increasing other consumer debt by 53%.[3]

This shift in the debt burden and balance sheet health of consumers and corporations has important implications for credit risk and origination volumes over the next 1-2 years. In our view, mortgage credit is likely to expand over the next 2-4 years as the housing recovery continues, while the amount of corporate debt is likely to remain flat or contract as a credit default cycle takes shape.

Exhibit 1: Components of U.S. Debt, in Aggregate Dollars (left) and as a % of Nominal GDP (right)



Source: Morgan Stanley, Global Debt Factbook, published August 2019. U.S. Department of Treasury, Federal Debt: Total Public Debt. Federal Reserve, z.1 Financial Accounts of the United States. Bank for International Settlements, Total Credit to Non-Financial Corporations for United States. All data through 1Q'19.

[1] Board of Governors of the Federal Reserve System, Household Debt Service and Financial Obligations Ratios.

[2] U.S. Census Bureau, Housing Vacancies and Homeownership Report, Table 8a, as of 2Q'19.

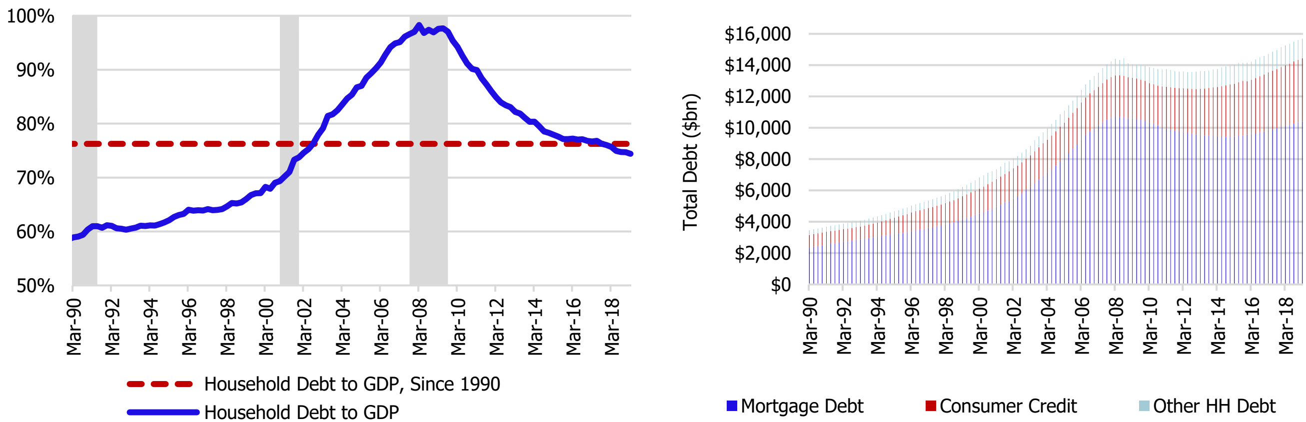
[3] U.S. Department of Treasury, Federal Debt: Total Public Debt. Federal Reserve, z.1 Financial Accounts of the United States. Bank for International Settlements, Total Credit to Non-Financial Corporations for United States. Nominal GDP from Bureau of Economic Analysis. All data through 1Q'19.

Significant Deleveraging of Household Balance Sheets and of the Housing Market

Household Debt; +11% Since 2008

- Since 2008, household debt (includes mortgages and consumer credit) increased by $1.6tn,however, as a proportion of GDP household debt has fallen to 74% from 97%.[4]
- Most of the expansion in household debt occurred in consumer credit (includes autos, credit cards, student loans). Consumer related debt increased by $1.4tn from 2008 to 2019, in contrast to a contraction in mortgage debt outstanding of $200bn.

Exhibit 2: U.S. Household Debt to GDP (left) and in absolute dollars (right)

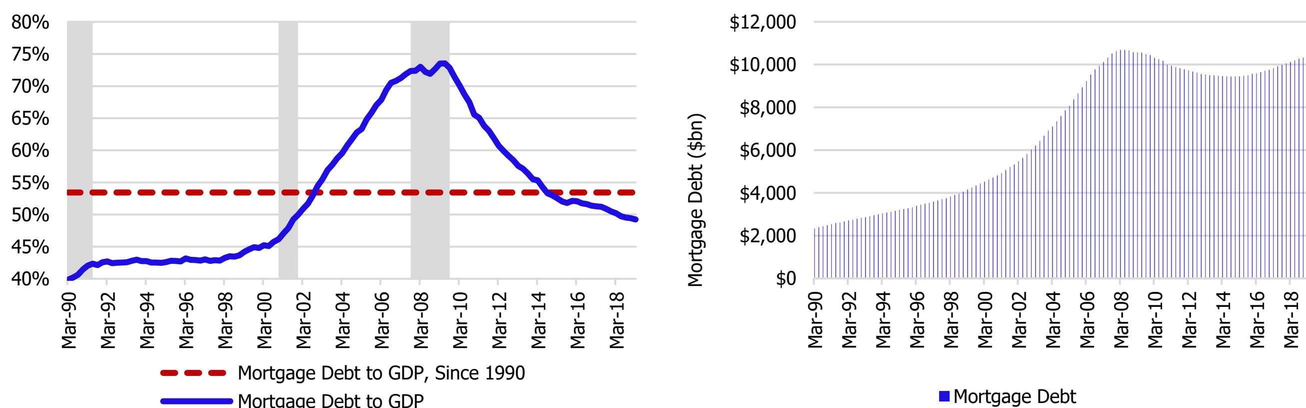


Source: Federal Reserve, z.1 Financial Accounts of the United States. Households and nonprofit organizations; home mortgages; liability, Level, Billions of Dollars, Quarterly, Seasonally Adjusted. Households and nonprofit organizations; consumer credit; liability, Level, Billions of Dollars, Quarterly, Seasonally Adjusted. Nominal GDP from Bureau of Economic Analysis . All data through 1Q'19.

Mortgage Debt; -2% Since 2008

- Since 2008, mortgage debt, including first mortgages and home equity lines of credit, has contracted by $200bn.
- As a percentage of GDP, however, mortgage debt has fallen to 49%, below the pre-crisis peak of 74%, and below the thirty-year average of 53%.[5]

Exhibit 3: U.S. Mortgage Debt to GDP (left) and in absolute dollars (right)



Source: Federal Reserve, z.1 Financial Accounts of the United States. Households and nonprofit organizations; home mortgages; liability, Level, Billions of Dollars, Quarterly, Seasonally Adjusted. Nominal GDP from Bureau of Economic Analysis. All data through 1Q'19.

[4] Federal Reserve, z.1 Financial Accounts of the United States. Households and nonprofit organizations; home mortgages; liability, Level, Billions of Dollars, Quarterly, Seasonally Adjusted. Households and nonprofit organizations; consumer credit; liability, Level, Billions of Dollars, Quarterly, Seasonally Adjusted. Nominal GDP from Bureau of Economic Analysis . All data through 1Q'19.

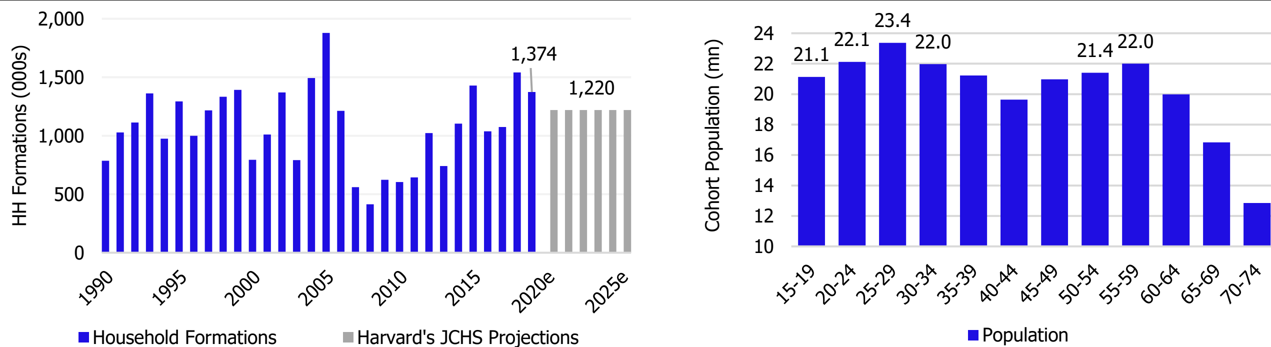
[5] Federal Reserve, z.1 Financial Accounts of the United States. Households and nonprofit organizations; home mortgages; liability, Level, Billions of Dollars, Quarterly, Seasonally Adjusted. Nominal GDP from Bureau of Economic Analysis. All data through 1Q'19.

Housing Market Fundamentals Provide Healthy Backdrop to Mortgage Credit

In 2019, U.S. residential market fundamentals have continued to tighten, driven by steady and above-trend demand for housing and a persistent undersupply of new housing.

- Household formation activity remains healthy; the U.S. added 1.37mn households in the first three quarters of 2019 relative to the same period in 2018, which follows a net gain of 1.54mn households in full-year 2018. Demographic shifts (notably the ageing of the Millennial generation) and a healthy labor market support above-trend household formation activity.[6]
- Housing demand exceeded supply by more than 200,000 units during the first three quarters of 2019, following undersupply of 400,000 units in 2018. Over the past five years, demand has exceeded growth in housing inventory by ~1.4mn units.[7]
- In contrast, housing supply is below what is needed to support new demand and replace obsolete units. Starts of single- and multifamily units have plateaued in the ~1.25mn annual range and have not increased meaningfully since 2015 (<3% CAGR from 2015-2019).[8]

Exhibit 4: Above -Average Housing Demand Driven by Population Shifts

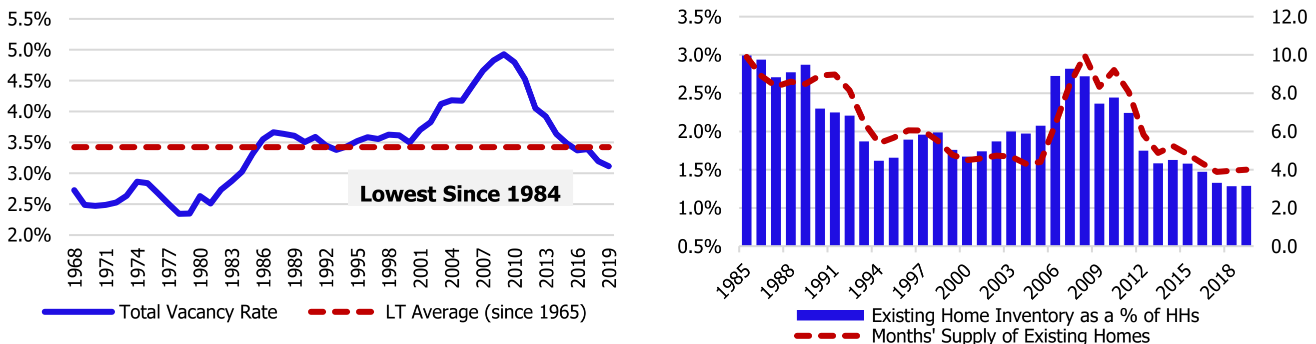


Source: New York Fed Consumer Credit Panel/Equifax, data through 3Q'19. Population from U.S. Census, Population Estimates by Age and Sex, 2017 annual data. Headship rates from U.S. Census Bureau Homeownership and Vacancy Survey, 2017 annual data.

An undersupply of housing has led to historically low availability rates of for-sale and for-rent housing, constraining consumer housing choice

- The vacancy rate of for-sale and for-rent housing is 3.1%, the lowest level since 1984.[9]
- Existing home inventory levels have averaged 1.58mn in 2019, or 1.3% of housing stock (40% below the long-term inventory to total stock ratio).[10] Similarly, months' supply of existing homes averaged 4.0 months in 2019, in-line with 2018 but well below the long-term average of 6.5 months.[11]

Exhibit 5: Housing Vacancy Rates and For-Sale Inventory Levels At/Near Multi-Decade Lows



Source: New York Fed Consumer Credit Panel/Equifax, data through 2Q'19. National Association of Realtors, Existing Home Sales, through Sept. 2019.

[6] U.S. Census Bureau, Current Population Survey/Housing Vacancy Survey, Table 13a. Monthly Household Estimates, September 30, 2019. U.S. Bureau of Labor Statistics, All Employees: Total Nonfarm Payrolls, September 2019.

[7] U.S. Census Bureau, Housing Vacancies and Homeownership Report, Table 8a, as of 3Q'19.

[8] U.S. Census Bureau and U.S. Department of Housing and Urban Development, New Residential Construction, New Privately-Owned Housing Units Started, through September 2019.

[9] U.S. Census Bureau, Current Population Survey/Housing Vacancy Survey, Table 7 and Table8a. Estimates of the Total Housing Inventory for the United States, October 29, 2019.

[10] National Association of Realtors, Existing Home Sales: Housing Inventory, September 2019.

[11] National Association of Realtors, Existing Home Sales: Months' Supply, September 2019.

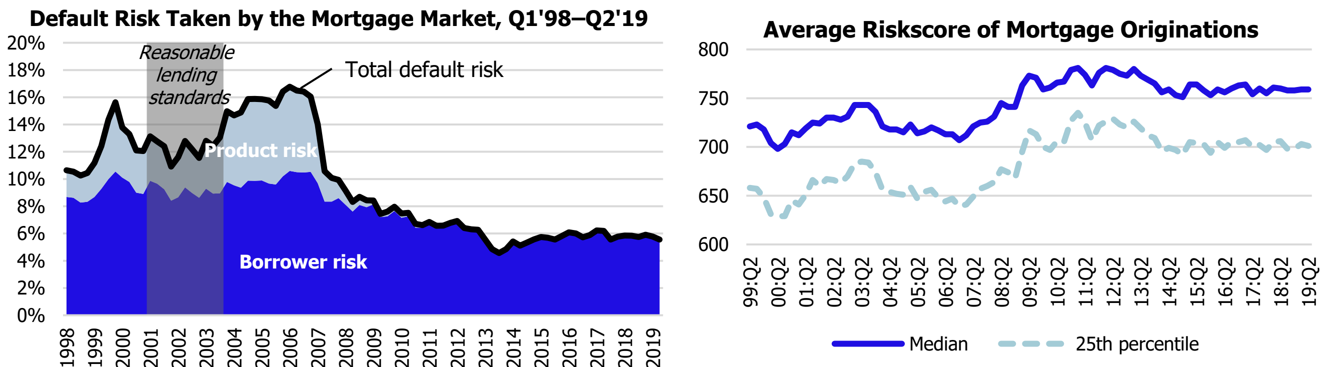
Tight Mortgage Credit Has Prevented an Expansion in Household Debt

During the last housing cycle, loose lending standards encouraged record-high homeownership rates and encouraged riskier borrowers (and borrowers in general) to take on considerable housing debt. We believe that conservative lending standards post-crisis have decreased risk present in the mortgage market but have also curtailed credit available to many otherwise historically creditworthy borrowers.

Mortgage lending standards tightened dramatically post-crisis.

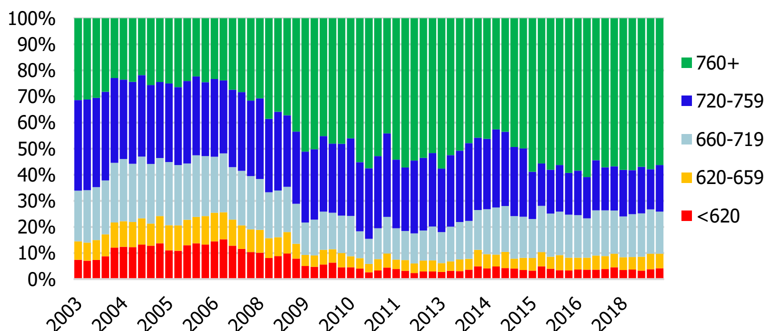
- According to the Urban Institute, the mortgage market is taking less than half as much default risk on new loans today as it took from 2005 to 2007, primarily by eliminating riskier loan products (Alt-A, subprime, etc.). [12]
  - According to the Urban Institute, "If the current default risk was doubled 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."
- Average credit risk scores are significantly higher today than in the pre-crisis period. According to the New York Federal Reserve, median credit scores on mortgages are 750 today compared to 715 in the pre-crisis period (2001 to 2003).[13]
  - The average FICO score on a GSE loan is currently 740, 50 points higher than the period from 2005 to 2007. Similarly, the average FICO score on a Ginnie Mae loan (primarily FHA and VHA loans) is 30 points higher than pre-crisis.[14]
- Few mortgages are being originated to borrowers with sub-660 FICO scores; in 2019, only 10% of loans were to this cohort, compared to ~20% pre-crisis.[15]

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



Source: Urban Institute, Housing Credit Availability Index, 2Q'19. Updated October 25, 2019. Data from eMBS, CoreLogic, HMDA, IMF, and Urban Institute.
Source: New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.

Exhibit 7: Mortgage Originations by Credit Score



Source: New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.

[12] Urban Institute, Housing Credit Availability Index, 2Q'19. Updated October 25, 2019.
[13] New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.
[14] Goldman Sachs, Housing and Mortgage Monitor, June 27, 2019.
[15] New York Fed Consumer Credit Panel/Equifax, data through 2Q'19.

QM Rules Disadvantage Self-Employed and Near-Prime Borrowers

The QM rule was intended to ensure safer borrowing conditions for consumers, but in practice excludes large groups of creditworthy borrowers who fall outside the proscribed QM definition from accessing mortgage credit.

- Borrowers who utilize non-QM loans typically have a documentation, credit, or DTI feature in their loan which, by definition, makes that loan non-QM. 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."[16]
  - Many of these loans are expanded prime, near prime, or investor loans.
  - 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.
  - These loans have limited additional credit risk but fall outside of the QM definition primarily due to nontraditional documentation, but also higher DTI levels or past credit events.

What is the QM Rule and QM Patch?

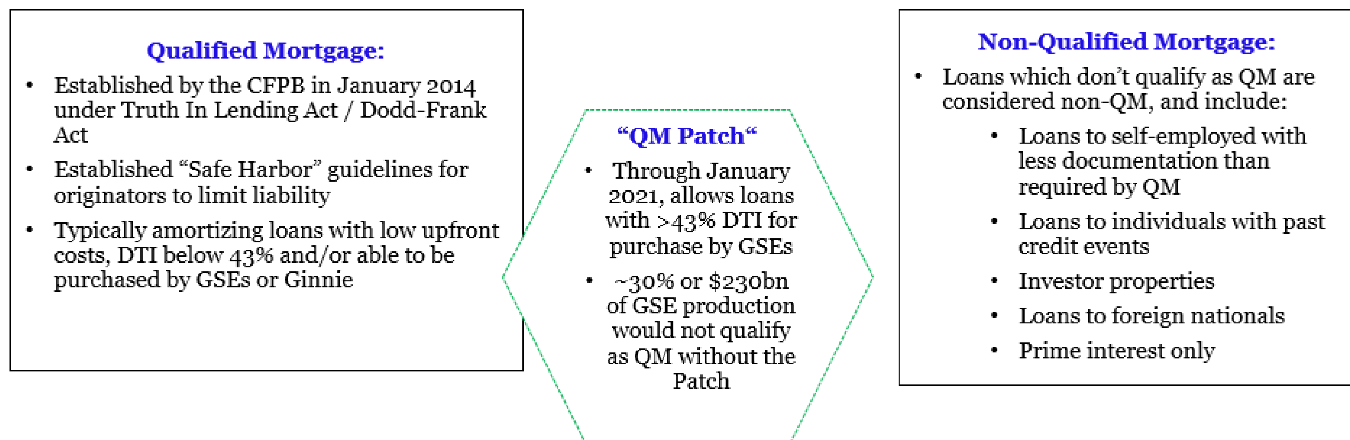
The QM definition was set by the CFPB in January 2013 to codify the requirement in the Dodd-Frank Reform and Truth in Lending Acts that lenders use reasonable and good faith determinations that borrowers can repay loans.[17]

- A Qualified Mortgage meets the following criteria: has a term of 30 years or less, has points and fees below 3% of the loan amount, and is not negative amortizing, interest-only, or subject to balloon payments.
- A Qualified Mortgage must also include one of the following: borrowers' monthly debt-to-income ("DTI") is 43% or less as underwritten to Appendix Q; the loan is eligible for purchase by Fannie/Freddie, or insured by FHA, VA, or the USDA; or if held in portfolio, must be originated by insured depositories with less than $10bn of total assets.

- Meeting the QM definition offers safe haven for originators; i.e. rules to define liability for originators.
  - Mortgages that meet QM are presumed to comply with the ability-to-repay rule.
  - If the mortgage also has an APR less than 150bp above the Average Prime Offered Rate the loan has safe harbor.

- In January 2014, the CFPB issued a rule to exempt mortgages from the 43% DTI cap, if they would otherwise qualify for purchase by Fannie and Freddie
- This exception, commonly referred to as the 'QM Patch,' is due to expire in January 2021 or earlier if the GSEs leave conservatorship.

Exhibit 8: Qualified Mortgage Definition



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.

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

[17] 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.

Private market opportunity to expand credit to underserved borrowers

We expect private capital to expand its role in residential lending, especially for non-QM borrowers, due to the constraints of the qualified mortgage definition and the increasing likelihood that federal mortgage finance reform narrows the government's role in housing finance.

The non-QM market is growing at a healthy rate:

- Zelman and Associates estimates that non-agency lending accounted for ~3% of mortgage production in 2018, compared to 10% of purchase origination pre-crisis.[18]
- Non-QM is the fastest growing segment of the non-agency mortgage market. Bank of America projects non-QM securitizations of $20.8bn in 2019, which is more than twice the volume in 2018 ($9.4bn).[19]

Deephaven Mortgage is one of the largest non-QM originators in the U.S. In Exhibit 9 we illustrate Deephaven's 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 725 and LTV below 75%.
  - 67% of these borrowers were self-employed and used bank statements, rather than W-2s, to document 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%.[20]

Exhibit 9: Deephaven Non-QM Production (TTM through 3Q 2019) [21]

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%

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

[19] Bank of America, Securitized Products Strategy, November 4, 2019.

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

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

Non-QM Loans Comparable to Alt-A, Not Subprime

- 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 restriction 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%, FICO over 700, and only 18% were cash out refi's.[22]
  - As the table below illustrates (Exhibit 10), these metrics are in-line with legacy Alt-A loans and much better quality than legacy subprime.

Exhibit 10: 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.

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

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