INSIGHT INTO THE OPTIMAL BLUE MORTGAGE MARKET INDICES

RATE INDEX RESEARCH PAPER

BLACK KNIGHT®

INSIGHT INTO THE OPTIMAL BLUE MORTGAGE MARKET INDICES

ABSTRACT

Black Knight's Optimal Blue Mortgage Market Indices™ or OBMMI™ are uniquely positioned to provide unparalleled transparency into mortgage rates by utilizing observed, realtime lock data from approximately 30% of the market. This data is aggregated daily and split in informative and novel ways, covering not only conventional 30- and 15-year fixed rate indices, but also FHA, USDA, VA, and Jumbo, as well as many Detailed Mortgage Indices of the Conventional 30 group based on Loan-to-Value (LTV) and FICO® credit score. The OBMMI deliver the most complete, frequent, and informative view of the mortgage rate environment based solely on observed, realtime transactions.

INTRODUCTION

Black Knight is pleased to introduce an extensive series of mortgage rate indices. The Optimal Blue Mortgage Market Indices (OBMMI) are a new, rich source of data aggregated from the observed locks of approximately 30% of the mortgage market daily. As the provider of the industry-leading product and pricing engine (PPE) with over 800 customers and supporting over $600 billion in locks annually, we are uniquely positioned to provide the market's most extensive and accurate view of the mortgage rates consumers are paying. There are other indices that exist, however, they are typically less frequent (updated weekly versus daily), less accurate (use survey or rate sheet data rather than actual borrower locked rate), and less timely (published on a week delay rather than a day). The purpose of this piece is to highlight some of the features of the OBMMI, examine some potential use-cases, and highlight some of the features of the series.

One of the unique features of the OBMMI is the fact that they provide the ability to examine the average rates based on LTV[1] and FICO®[2] score characteristics for the conforming[3], conventional[4] 30-year fixed product. This is important because loan-level price adjustments are commonly applied based on these loan attributes. It also has the added benefit of significantly more granularity than any other mortgage rate index available today,

[1] Loan to Value is the loan amount divided by the property value
[2] FICO® score is the Fair Isaac and Company credit score, this is widely used by all major credit rating agencies.
[3] Conforming loans are below the appropriate conforming loan limit, which varies by number of units, county, and loan program.
[4] Conventional mortgages meet all the requirements to be sold to Fannie Mae (FNMA) or Freddie Mac (FHLMC) to be securitized.

allowing much more relevant conclusions to be drawn in personal or targeted research. Increasing market transparency is an ongoing trend and these indices provide a real, timely, unbiased view of the primary mortgage market. They highlight the different rates locked by borrowers across five industry-standard FICO® bands, those with low versus high LTVs, and those who would fall under the conventional umbrella versus those who would utilize another program (FHA[5], USDA[6], VA[7], Jumbo[8]). Providing greater transparency into the impact of credit, LTV, loan program, and term will undoubtedly lead to better research on a personal and policy level.

ABOUT OUR METHODOLOGY

The OBMMI are calculated with a consistent and measured approach. Each index represents the average of applicable rates for the day for loans locked on the Optimal Blue PPE platform by lenders nationwide. To increase the homogeneity of the rates in each index, transactions are limited to purchase and rate/term refinances on owner-occupied, single-family residences, thus eliminating transactions like cash-out refinances and investor properties that typically include significant pricing adjustments. Further, the indices are an aggregation of the actual rates provided to borrowers for rate locks submitted that day, therefore abstracting away from points bought or sold to avoid a two-part (rate and points) index. Our view is that this will provide a consistent approach calculating the index with minimal noise from slight changes in points paid over time.

OVERVIEW OF THE PRIMARY MORTGAGE INDICES

Our Primary Mortgage Indices provide insight into rates for several popular products: 30-year, fixed-rate, conventional conforming loans; 15-year, fixedrate, conventional conforming loans; 30-year, fixed-rate, Government loans (FHA, USDA, VA); and 30-year, fixed-rate, Jumbo loans. These indices not only contribute to the overall picture and transparency of the market but can provide valuable insights. Comparing the 15-year, conforming fixed versus the 30-year, conforming fixed provides some indication of the term premium associated with mortgages and how it changes with economic factors. The conforming 30-year fixed can be compared with the Jumbo, 30-year fixed to get a sense of how the increased liquidity provided by Fannie Mae (FNMA) and Freddie Mac (FHLMC) for conforming loans impacts the rates offered. Finally, comparing rates for government loans against each other and versus the 30-year, conforming fixed leads to insights on the impact of government insurance, sponsorship, and benefits on mortgage rates.

[5] Federal Housing Authority
[6] United States Department of Agriculture
[7] United States Department of Veterans Affairs
[8] Designation for loans above the conforming limits

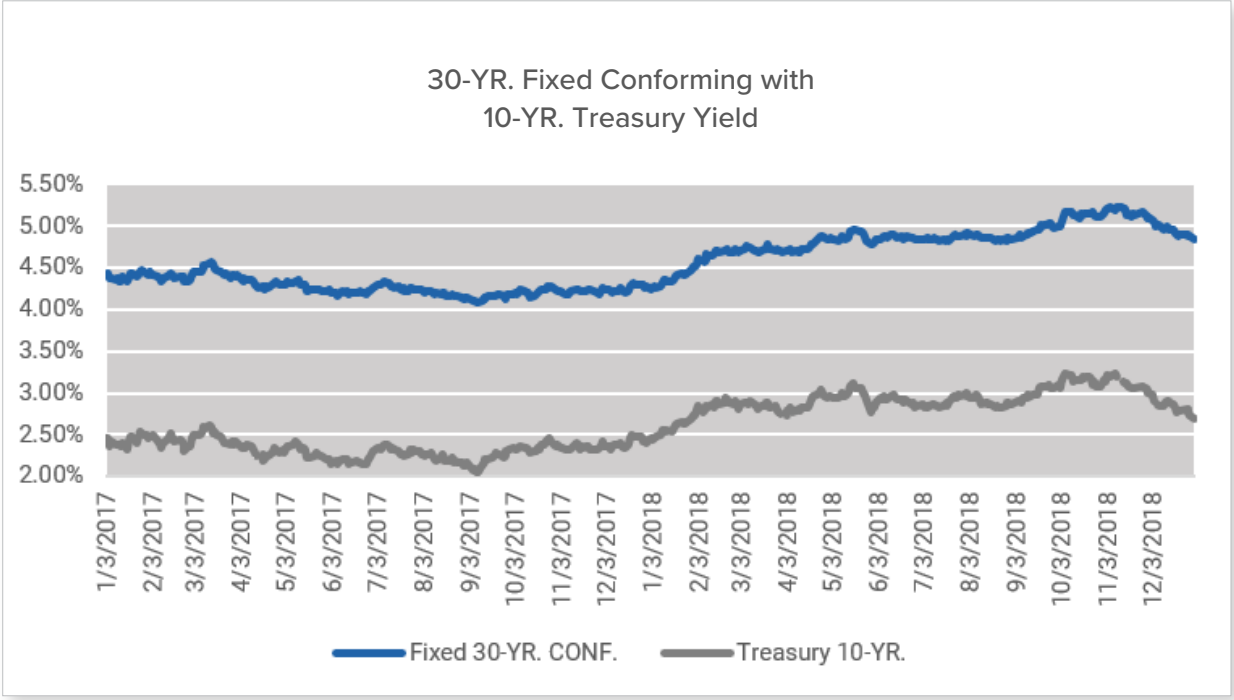
OVERVIEW OF THE DETAILED MORTGAGE INDICES

The Detailed Mortgage Indices are based on 30-year conforming conventional locks and provide a more granular view into the impact on rates of credit score and LTV, two of the most common loan-level pricing adjustments (LLPAs) in the market. For this analysis, we have split LTV into two broad groups: (1) LTVs in excess of 80.0% – loans typically requiring private mortgage insurance (PMI), and (2) LTVs less than or equal to 80.0% – loans that do not typically require PMI. For FICO® credit score, we selected the five bands that are typically used in the industry in assessing LLPAs: (1) below 680, (2) 680-699 (3) 700-719, (4) 720-739 and (5) 740+.

We combined these credit and LTV cuts to develop 10 unique and meaningful indices – each of the five credit bands split into high and low LTVs. Certainly, there are other factors that affect mortgage pricing (e.g. property type, loan purpose, debt to income ratio, and occupancy) and more granular bands that could have been selected, but we feel the OBMMI Detailed Mortgage Indices provide clear insight into the two primary influences on rate while normalizing for other pricing factors as noted above.

Collectively, these Detailed Mortgage Indices of the 30-year, conventional, conforming index provide unique and transparent insight into the impact of credit and LTV on actual rates paid by borrowers.

INDEX PERFORMANCE



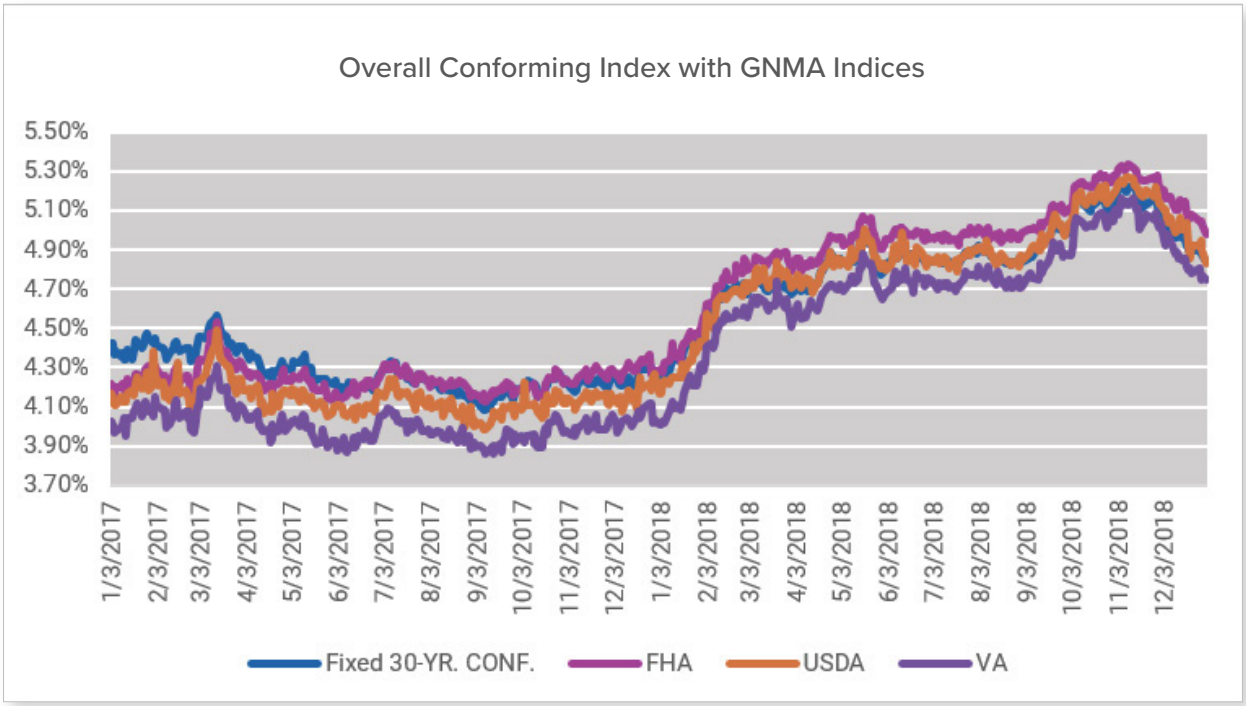
Given the propensity for consumers to pay off 30-year mortgages in 7-8 years, rates in the mortgage market closely track to the 10-year treasury note. As illustrated to the right, the OBMMI 30-year conforming fixed-rate nearly mirrors the 10-year note, with the average gap of 194 basis points over the prior two years. This reflects the premium for increased credit risk and the uncertainty associated with prepayments. Further, the spread has remained relatively consistent over the past 2 years, and while there is some variation it typically has remained around 195 (±15 basis points) basis points.

30-YR. Conventional Index to 10-YR. Treasury Yield

	Date	Spread
2017	Qtr1	1.97%
	Qtr2	2.00%
	Qtr3	1.96%
	Qtr4	1.86%
2018	Qtr1	1.82%
	Qtr2	1.91%
	Qtr3	1.96%
	Qtr4	2.04%

INSIGHTS ON PRIMARY MORTGAGE INDICES

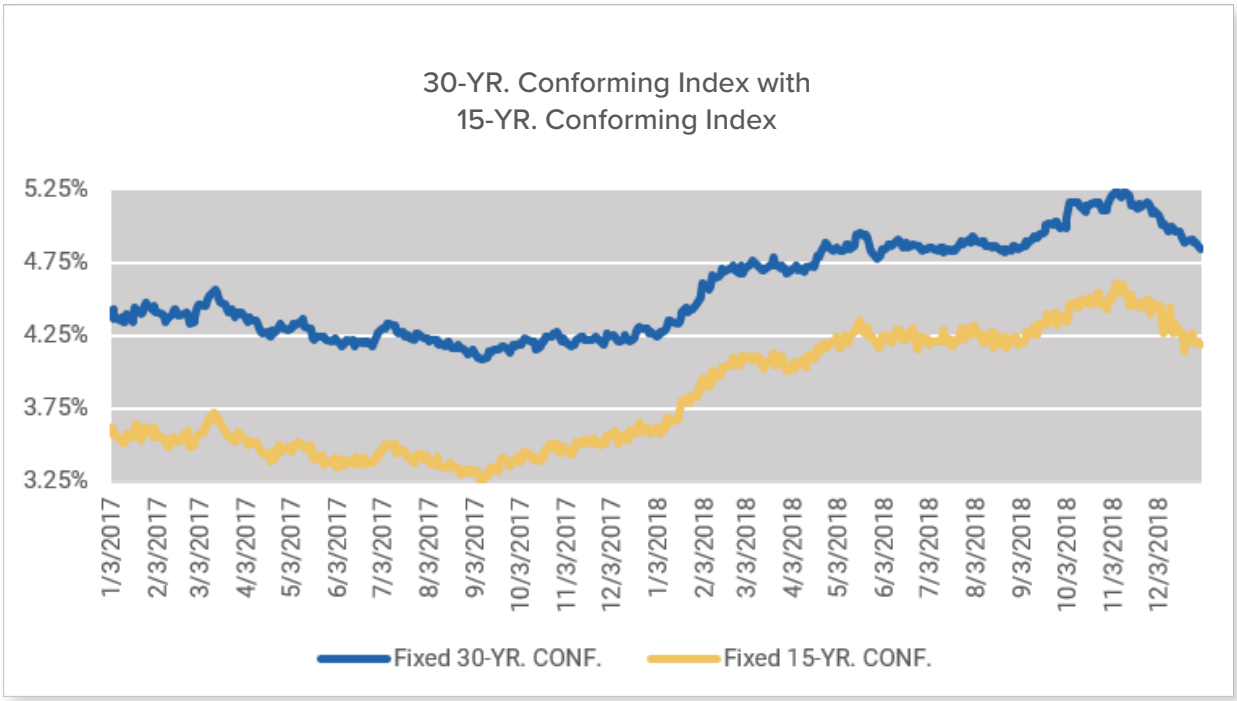
In addition to considering rates on 30-year conforming loans, we have created indices for 15-year conforming, government, and jumbo loan products. This helps to provide a full picture of the market, as well as allowing a more straightforward rate comparison of various programs and options.



The impact of government subsidies, which are designed to assist certain groups of borrowers achieve homeownership, is evident here. The government programs typically allow for higher LTVs and lower credit scores than conventional products. As such, you would expect borrowers in these programs to pay a higher rate, however that is not the case. All three indices track in a very tight range with the 30-year conforming index.

Government – Conventional Spreads				
	Date	FHA	USDA	VA
2017	Qtr1	-0.13%	-0.19%	-0.33%
	Qtr2	-0.05%	-0.14%	-0.29%
	Qtr3	0.02%	-0.10%	-0.24%
	Qtr4	0.03%	-0.09%	-0.23%
2018	Qtr1	0.08%	-0.02%	-0.15%
	Qtr2	0.12%	0.01%	-0.12%
	Qtr3	0.11%	0.01%	-0.11%
	Qtr4	0.13%	0.04%	-0.09%

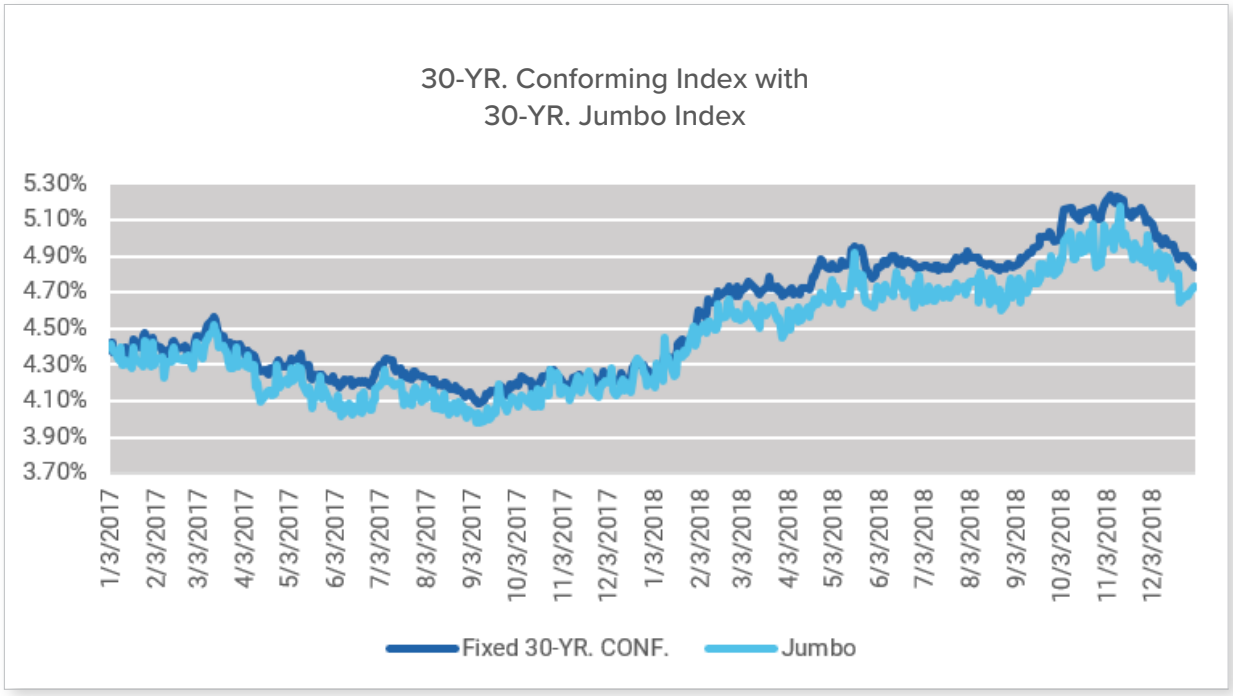
The spreads above are all in relation to the 30-year conforming conventional index. Interestingly, we have seen a significant shift in the spreads between the government programs and the conventional 30-year product. The government programs all had lower average rates in the beginning of 2017, then moved closer to zero and eventually above zero in the case of FHA and USDA. The spreads all moved approximately the same amount (gaining 26 basis points for FHA, 23 for USDA and 24 for VA), likely reflecting market movement of GNMA securities rather than any program changes.



There is a clear term premium here that declines slightly but stays relatively consistent. The increased variability in the 15-year fixed index is due to lower volume as most loans are still 30-year mortgages.

30-YR. Conventional Index to 15-YR. Conventional Index		
	Date	Spread
2017	Qtr1	0.84%
	Qtr2	0.83%
	Qtr3	0.81%
	Qtr4	0.72%
2018	Qtr1	0.64%
	Qtr2	0.63%
	Qtr3	0.63%
	Qtr4	0.66%

The spread between the 30-year conventional index and the 15-year conventional index has been shrinking over the past two years with an approximately 18 basis point change. This is a stark narrowing that coincides with the flattening of the yield curve that has been occurring during this time.



It is noteworthy that there is no apparent premium for jumbo loans compared to the overall index. In fact, jumbo loan pricing is slightly more competitive than conventional loan pricing as detailed in the chart above.

Based on the table to the right, jumbo spreads to the 30-year conventional are getting slightly better as time progresses, moving from a 6-basis point advantage in Q1 2017 to an 18-basis point advantage in Q4 2018. The market clearly sees the tighter credit standards on jumbo loans as a more than adequate trade-off for the increased risk of higher loan amounts. Another factor that may contribute to the relative competitiveness of jumbo pricing is increases in the guarantee fee that Fannie Mae and Freddie Mac charge. According to the FHFA, so called G-Fees have increased from 25 basis points in 2009 to 56 basis points in 2017 (source: FHFA 2010, FHFA 2017).

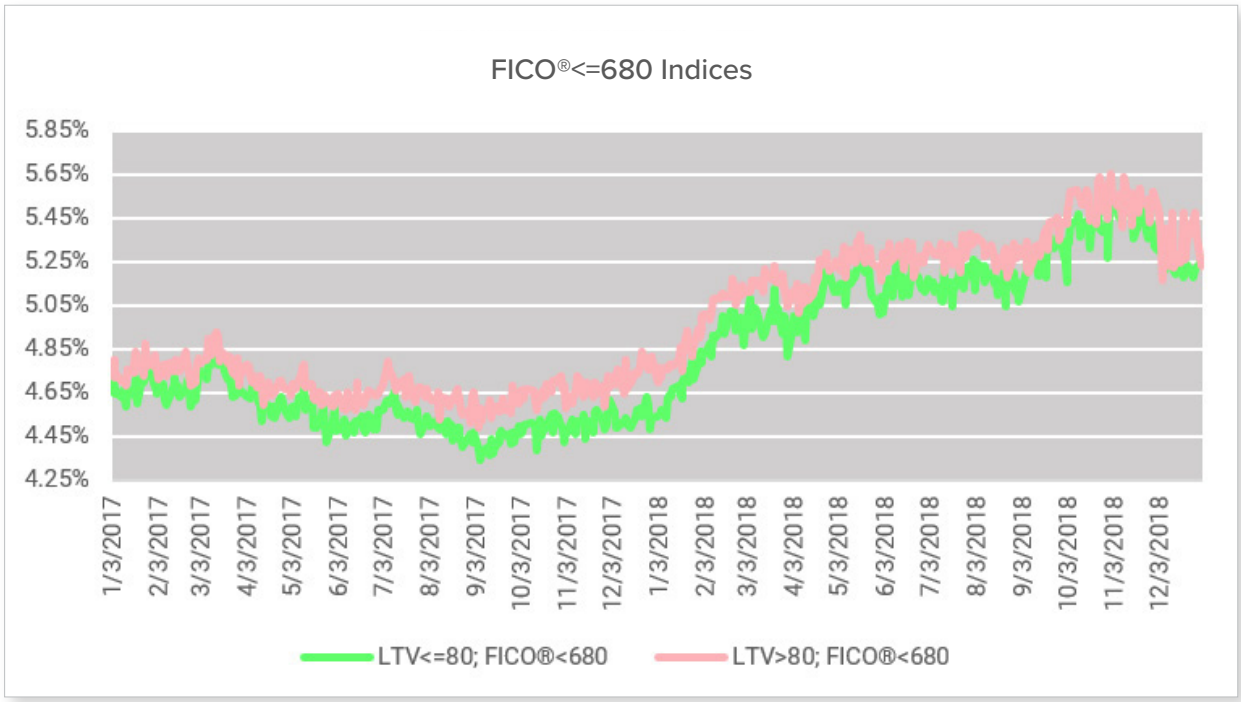
Jumbo Fixed Index to 30-YR. Conventional Index

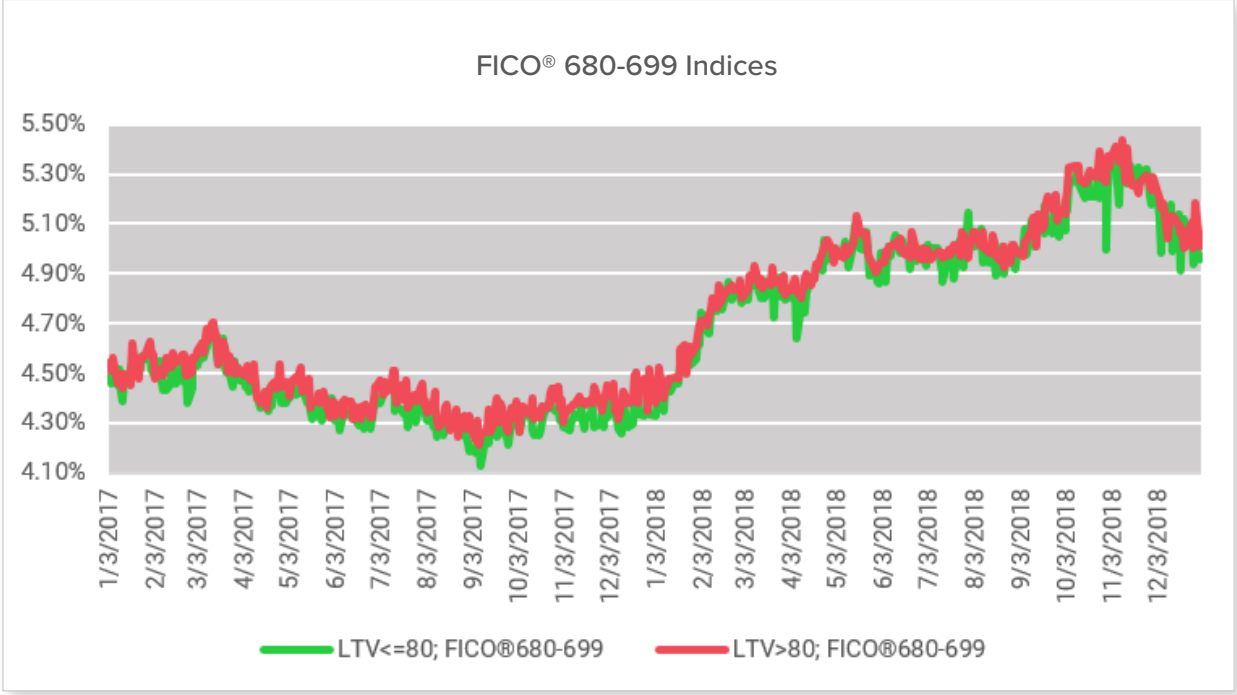
	Date	Spread
2017	Qtr1	-0.06%
	Qtr2	-0.11%
	Qtr3	-0.10%
	Qtr4	-0.05%
2018	Qtr1	-0.10%
	Qtr2	-0.15%
	Qtr3	-0.16%
	Qtr4	-0.18%

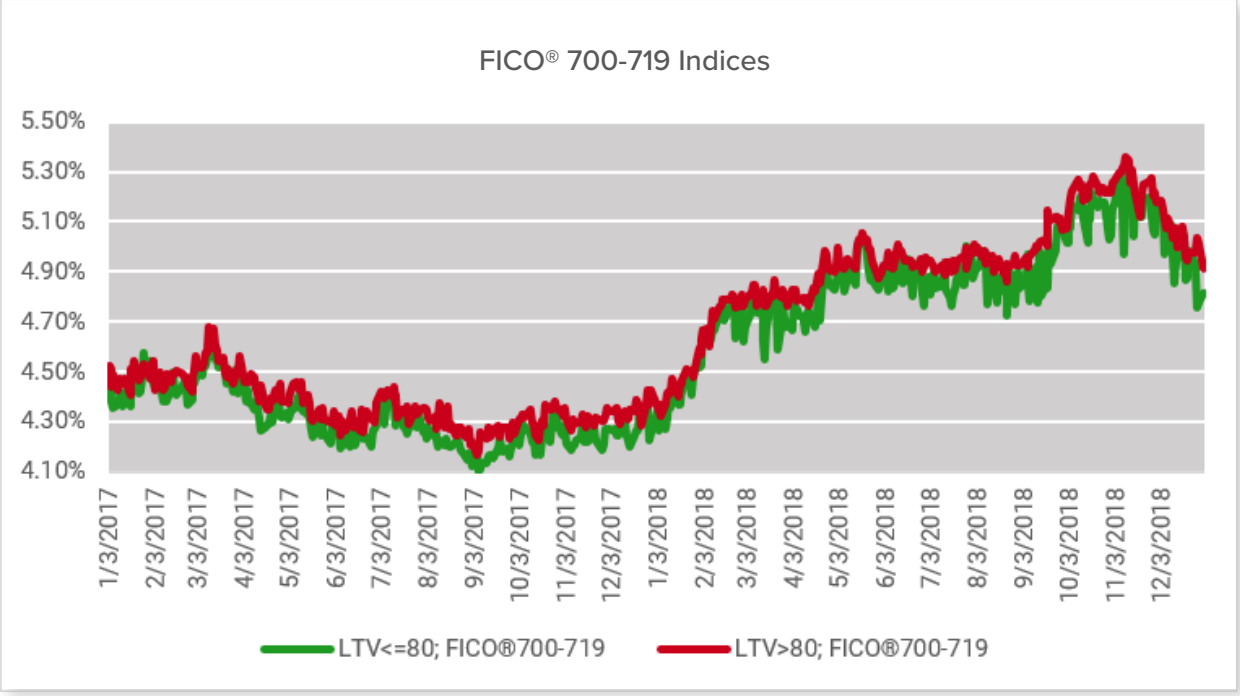
INSIGHTS ON DETAILED MORTGAGE INDICES

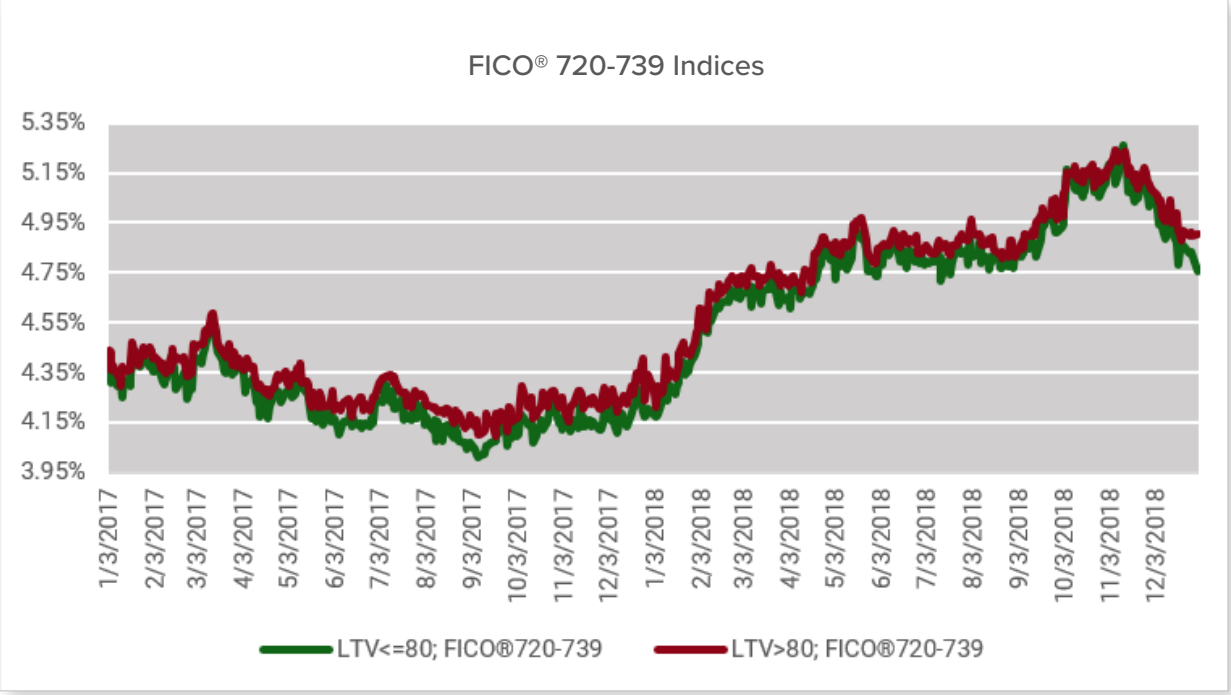
Looking at the rate differences, we can see approximately how much moving from one FICO® or LTV band to another is likely to affect the rate. Let's start with looking at the impact of LTV on each credit score band.

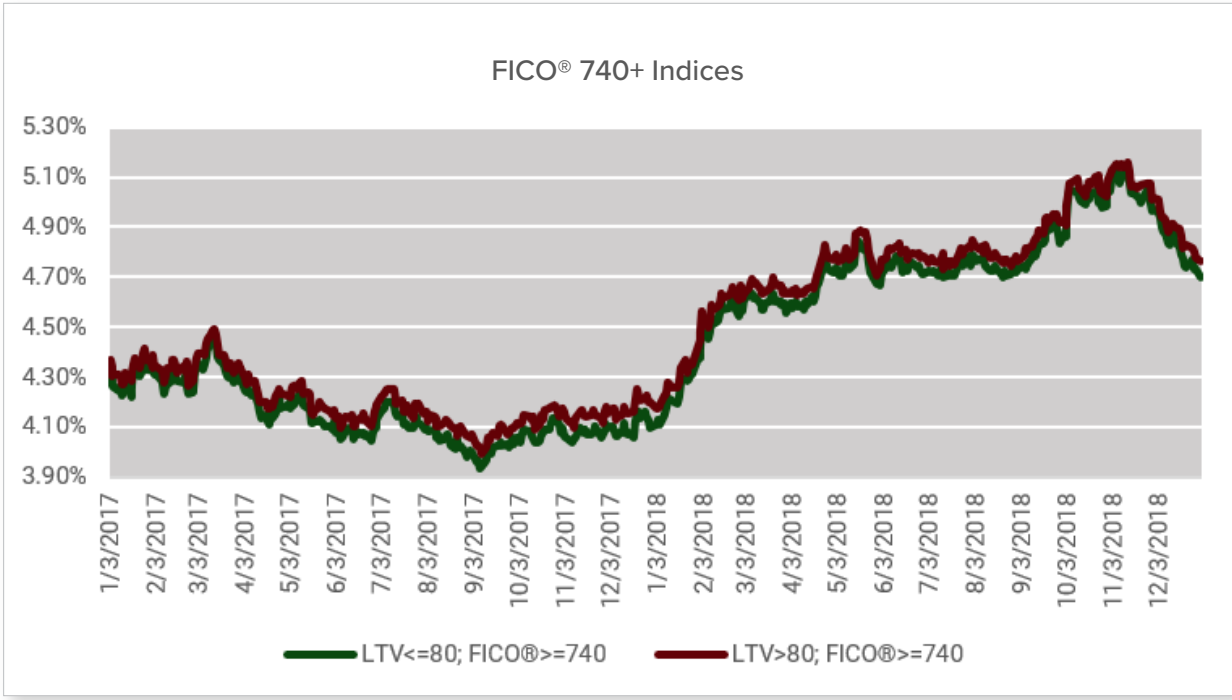
The graphs below show rates with FICO® score band held constant.









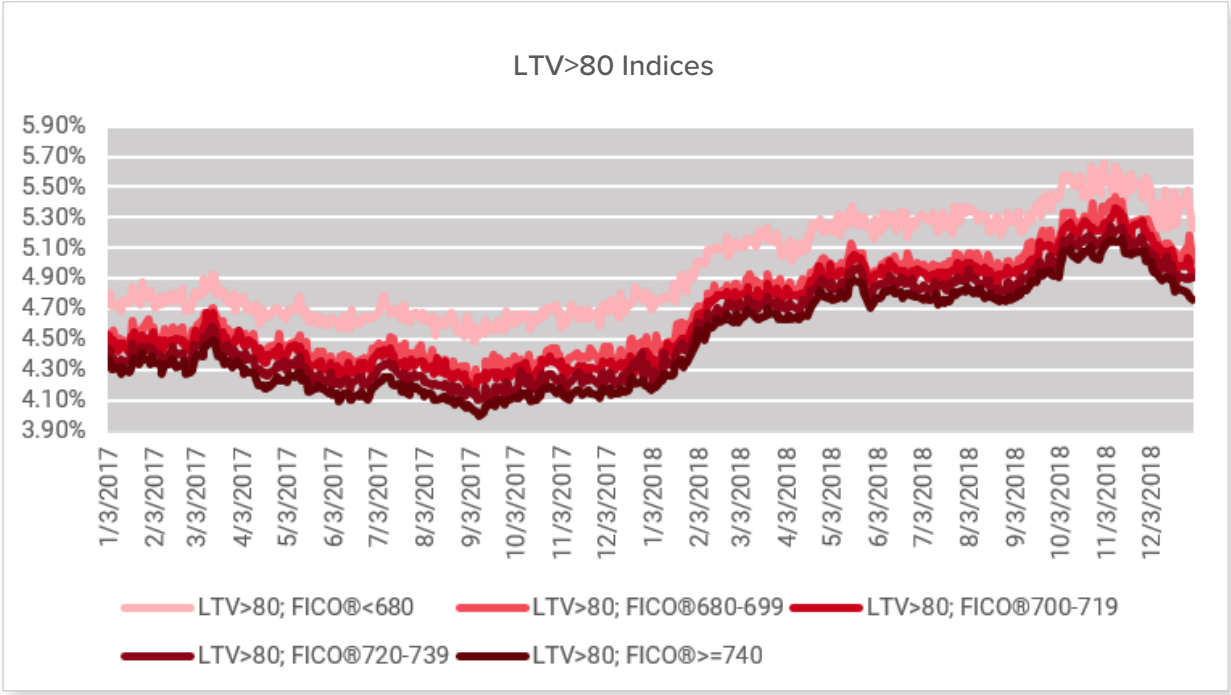


Rate Spreads by Credit Band, Averaged Over Time						
		Spread (LTV>80-LTV<=80)				
	Date	FICO® < 680	FICO® 680-699	FICO® 700-719	FICO® 720-739	FICO® >= 740
2017	Qtr1	0.09%	0.03%	0.04%	0.05%	0.04%
	Qtr2	0.10%	0.04%	0.07%	0.06%	0.05%
	Qtr3	0.14%	0.05%	0.07%	0.08%	0.06%
	Qtr4	0.17%	0.06%	0.07%	0.08%	0.07%
2018	Qtr1	0.16%	0.03%	0.06%	0.06%	0.05%
	Qtr2	0.11%	0.02%	0.07%	0.05%	0.05%
	Qtr3	0.12%	0.02%	0.08%	0.06%	0.05%
	Qtr4	0.10%	0.04%	0.09%	0.05%	0.05%

The charts and table above show that the effect of LTV on rate is greatest for the lowest FICO® band, where it ranges from 9 to 17 basis points between the LTV bands. The rate spread based on LTV for the other credit score bands are quite consistent and similar, varying between 3 and 6 basis points. This speaks to the value the market places in the credit protection afforded by mortgage insurance and the relationship between relative LTV compression near 80% (the OBMMI LTV cutoff) and LLPA values.

The GSEs have set LLPAs such that for all but the lowest credit score bands there is a peak at LTV values between 75.05-80.0%, then a drop in the LLPA before peaking again at LTV values between 95-01-97.0%. To avoid mortgage insurance, there is considerably higher mortgage volume at 80.0% and just below, than there is at lower LTVs, say below 70%. In the OBMMI higher LTV band, there is relatively less mortgage volume at the highest LTVs given the attractiveness of government programs like FHA, VA and USDA. Thus, the lower LTV band tends toward the higher LLPAs in the range and the higher LTV band tends toward the lower LLPAs in the range. The overall result is a relative compression of the rates to closer values than one might expect.

The graphs below show how the average rates change with LTV held constant.



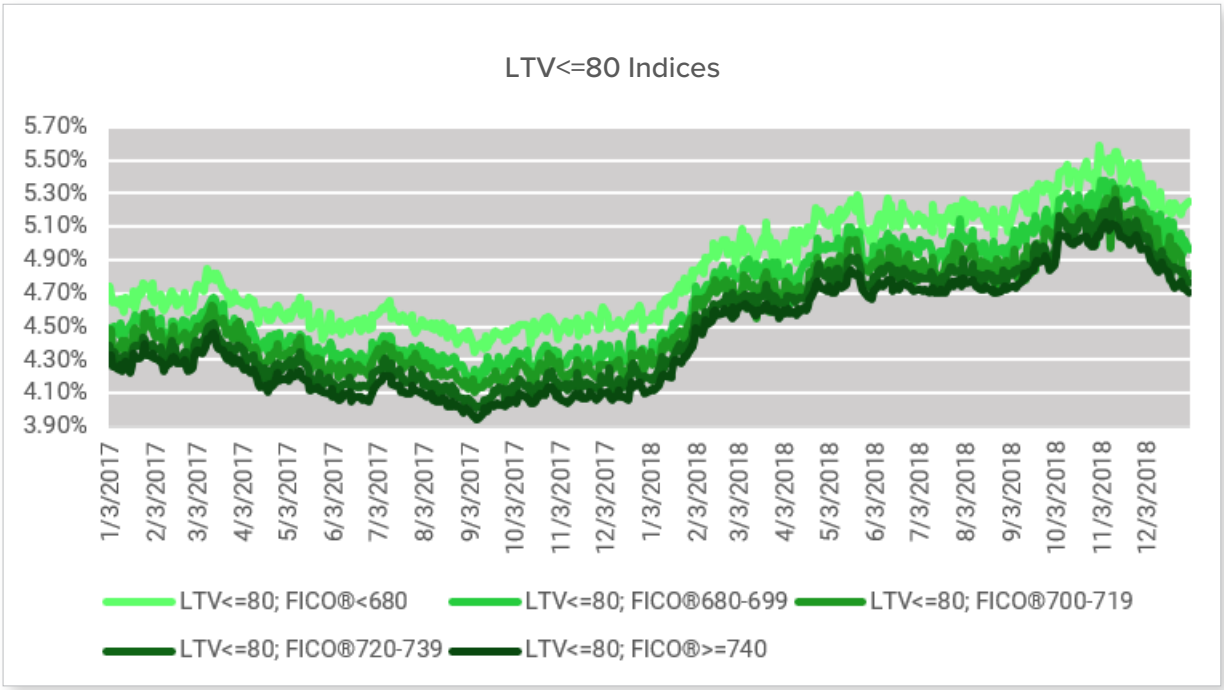
For the LTV>80 indices, it is evident that rates are dropping as FICO® score improves, but by how much and is it consistent from band to band?

Rate Spreads by LTV>80, Averaged Over Time

		Spread (FICO® band-next highest FICO® band)			
	Date	FICO® < 680	FICO® 680-699	FICO® 700-719	FICO® 720-739
2017	Qtr1	0.22%	0.05%	0.08%	0.07%
	Qtr2	0.24%	0.05%	0.09%	0.08%
	Qtr3	0.27%	0.05%	0.09%	0.09%
	Qtr4	0.30%	0.06%	0.08%	0.09%
2018	Qtr1	0.29%	0.06%	0.08%	0.07%
	Qtr2	0.27%	0.05%	0.08%	0.08%
	Qtr3	0.28%	0.06%	0.08%	0.07%
	Qtr4	0.23%	0.06%	0.09%	0.08%

The spread between most of the FICO® bands in the LTV>80 group is relatively consistent over time. The exception to this is the spread between the FICO®<680 and FICO® 680-699, which is two to three times wider than the other spreads.

This demonstrates the market's low appetite for conventional loans with lower credit scores. For the other three groups, the relation between the bands is quite stable, fluctuating between 5 and 9 basis points across the board. All of this is consistent with the LLPAs required by Fannie Mae and Freddie Mac across LTV and credit score bands.



The above chart shows a similar trend to the prior chart with rates increasing as the credit score decreases for lower LTV loans, but with greater volatility and a narrowed gap for those with credit scores below 680. The volatility could be explained by fewer data points for consumers with low credit scores and low LTVs.

Rate Spreads by LTV<=80, Averaged Over Time

		Spread (FICO band-next highest FICO band)			
	Date	FICO® < 680	FICO® 680-699	FICO® 700-719	FICO® 720-739
2017	Qtr1	0.17%	0.06%	0.09%	0.06%
	Qtr2	0.18%	0.08%	0.08%	0.07%
	Qtr3	0.18%	0.07%	0.10%	0.07%
	Qtr4	0.19%	0.07%	0.09%	0.07%
2018	Qtr1	0.16%	0.09%	0.08%	0.07%
	Qtr2	0.18%	0.10%	0.06%	0.07%
	Qtr3	0.18%	0.12%	0.06%	0.07%
	Qtr4	0.17%	0.11%	0.05%	0.07%

The spreads for the LTV<=80 are very consistent over time. For the FICO®<680, the spread is between 12 and 15 basis points. The spreads for the other bands are between 6 and 10 basis points.

CONCLUSIONS

With the wealth of data available, we are able to create and maintain an informative set of indices that allow interested parties to go much deeper than the survey-based methodology that is currently available. The fact that these indices are updated daily and are based on observed locks made the previous day, promotes transparency in the mortgage market. The unique credit and LTV specific Detailed Mortgage Indices allow further analysis and targeted inquiry. The OBMMI is the most robust set of indices available, not only with the widest range of index offerings but the indices themselves are constructed based on observations of approximately 30% of the nationwide mortgage market. This step toward greater understanding and transparency of the mortgage market can help inform lenders, borrowers, and policy makers for years to come.

CITATIONS

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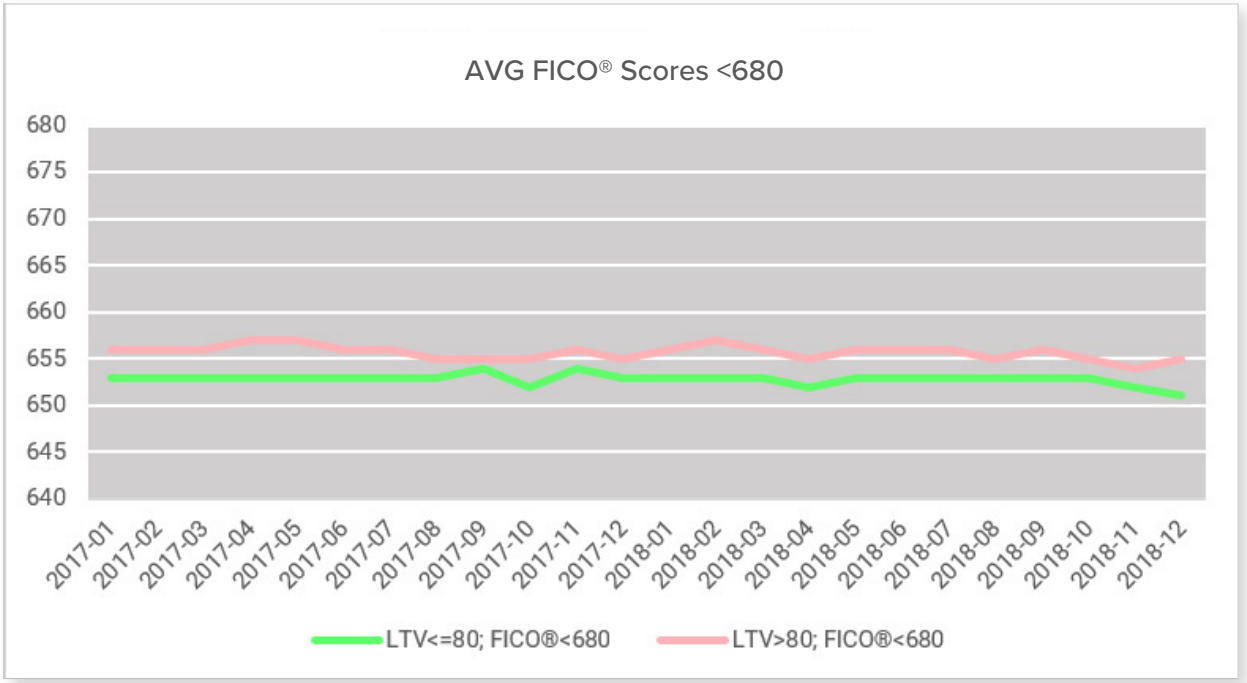
APPENDIX

Make-Up of the Indices

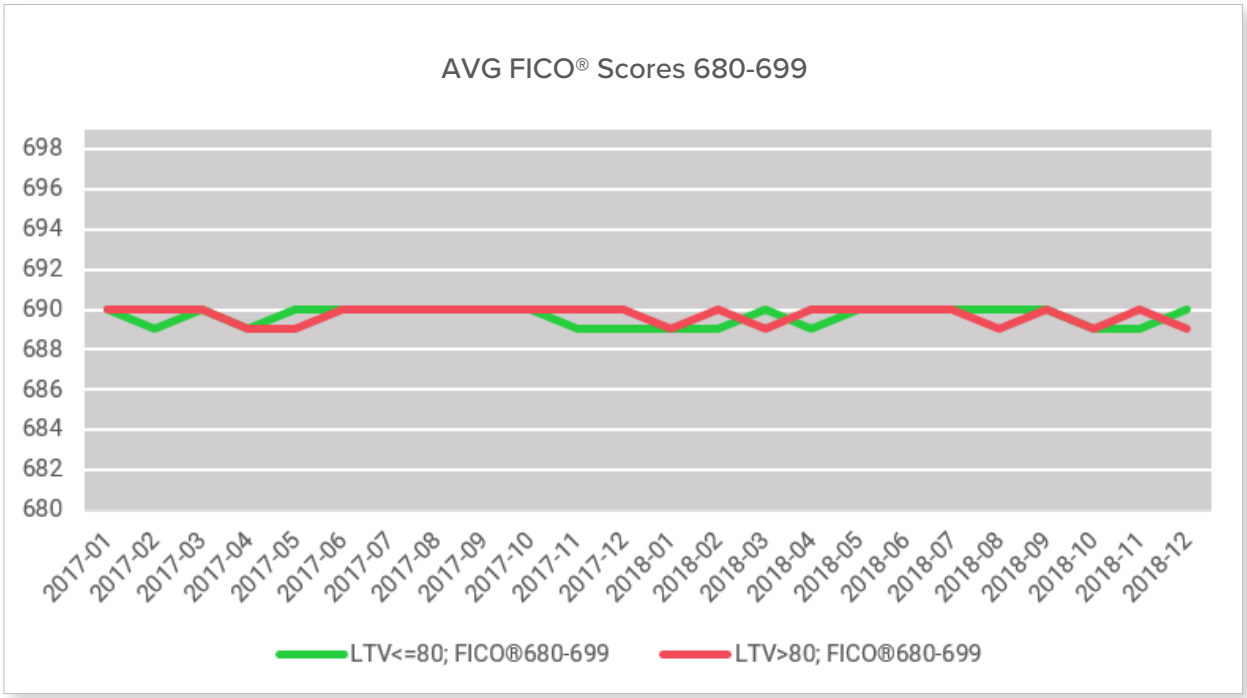
The indices are relatively self-explanatory; however, it can be informative to have some understanding of what makes up the Detailed Mortgage Indices. This is particularly important because mortgages are not homogeneous, so understanding what makes up the indices will aide in the use of them. A brief examination of the LTV, which helps define the Detailed Mortgage Indices, as well as loan amount and purchase percent, allow for a much fuller understanding of the Detailed Mortgage Indices and how they compare to each other.

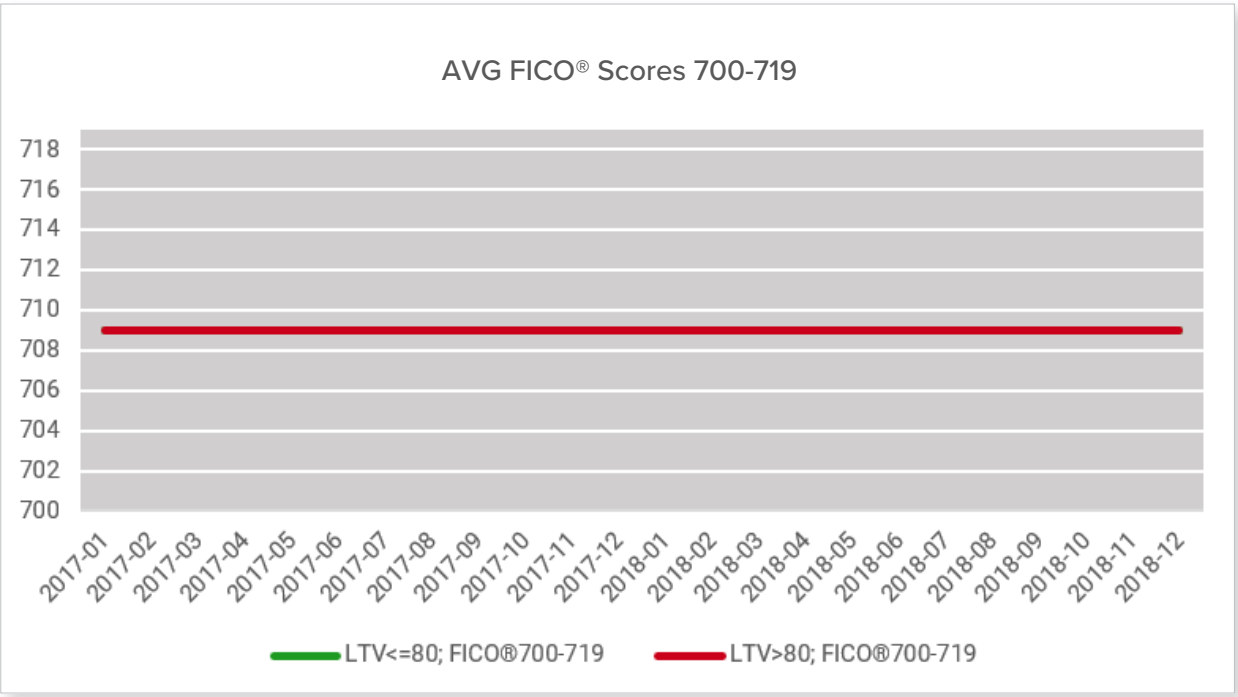
FICO® Score Insights

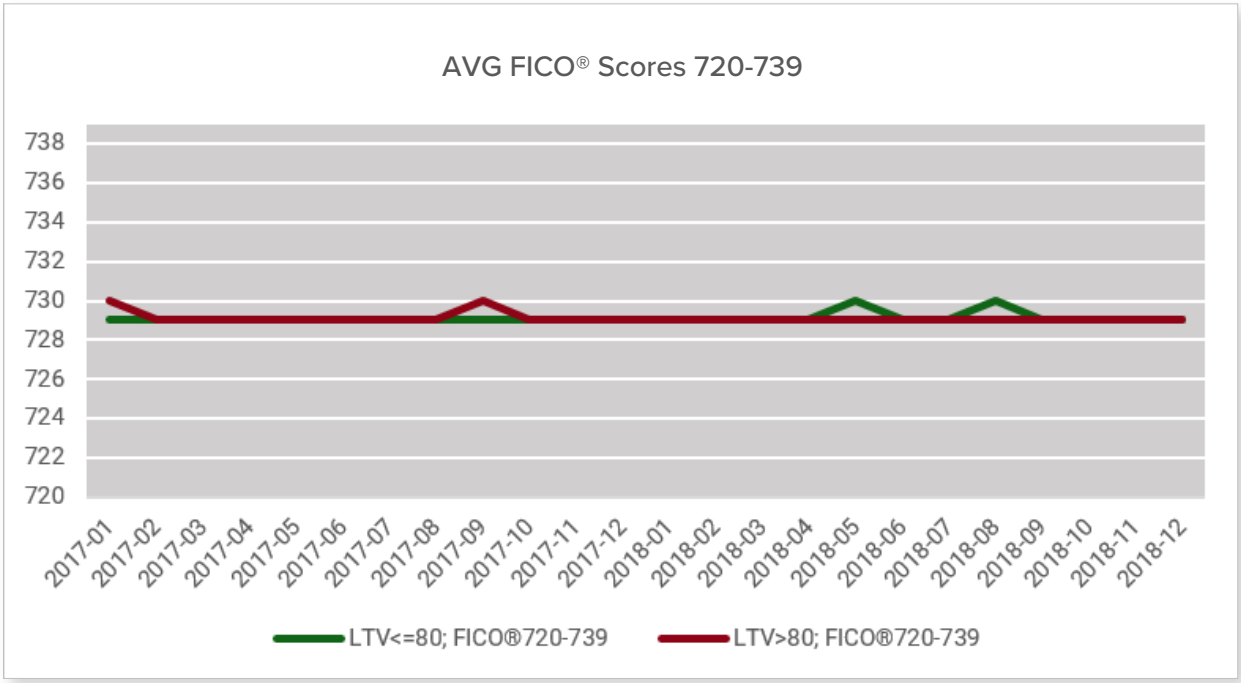
Having already controlled for the FICO® band, it is not unsurprising that there is little variation on the FICO® score by LTV within the bands. However, there is divergence in the highest FICO® score band that is not captured in the other bands because of the artificially introduced caps and floors.

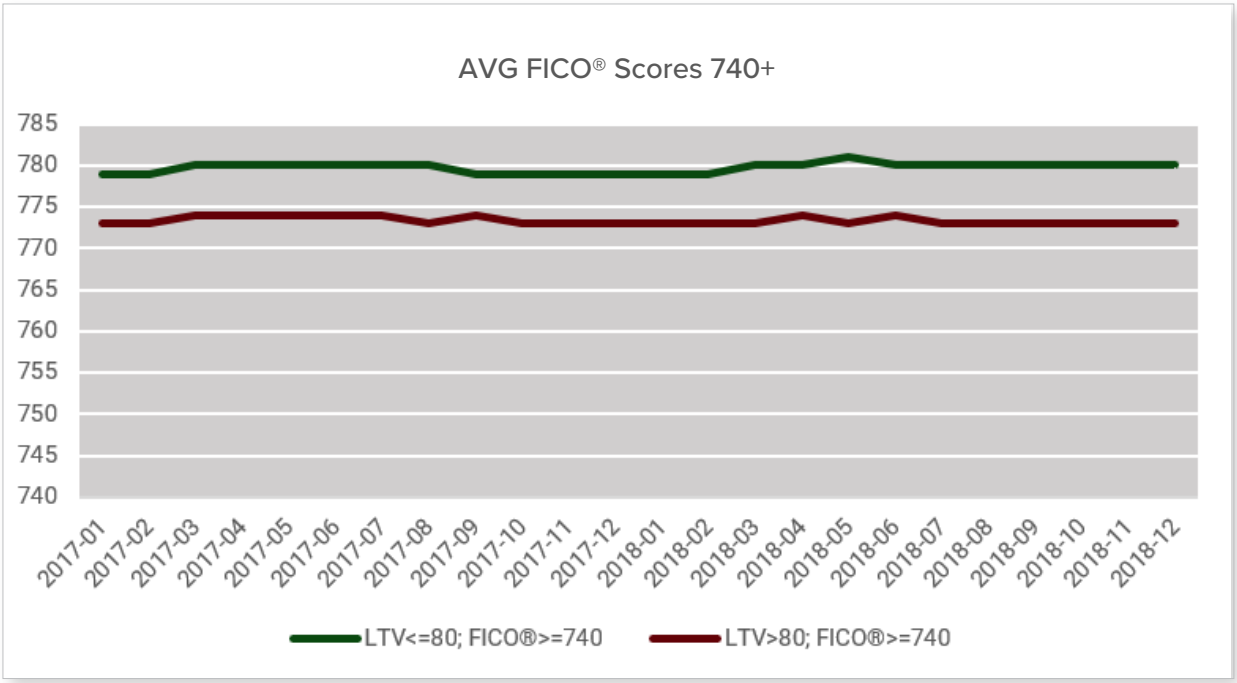


There are few borrowers on the extremely low end of the FICO® range, which pushes the average FICO® scores for the FICO®<680 indices to be very similar. The FICO® 680-699, 700-719, and 720-739 bands also have a very similar average FICO® score, largely due to the compressed range.



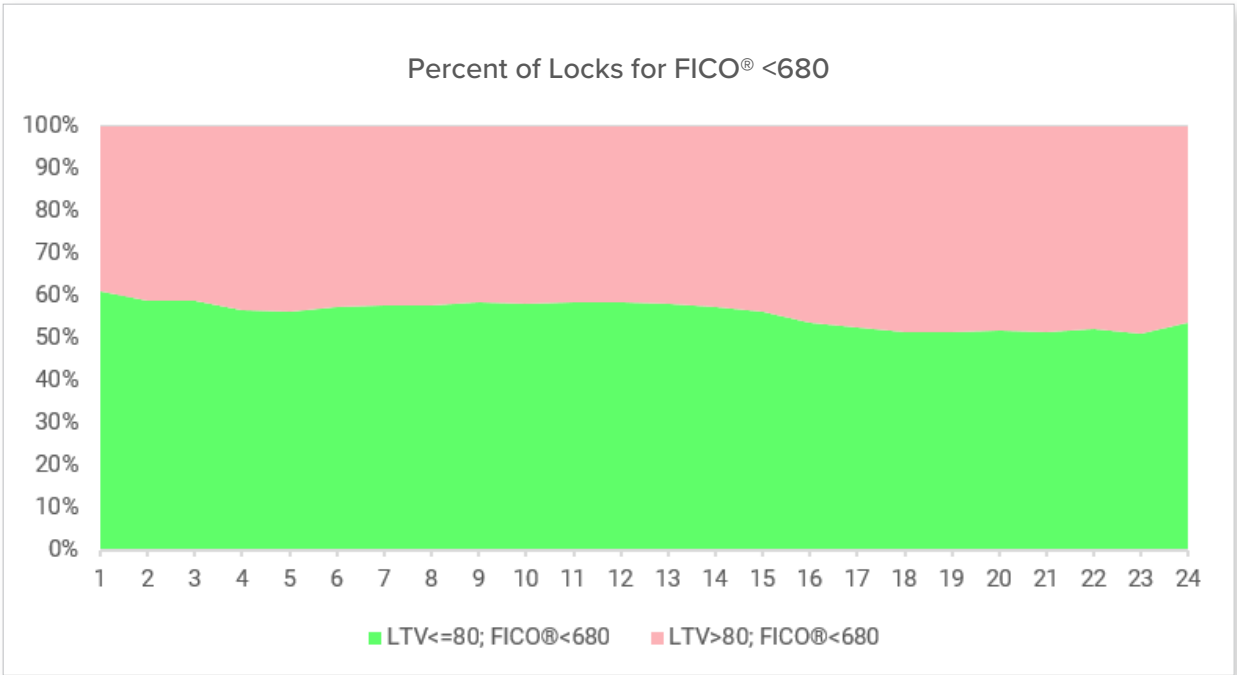




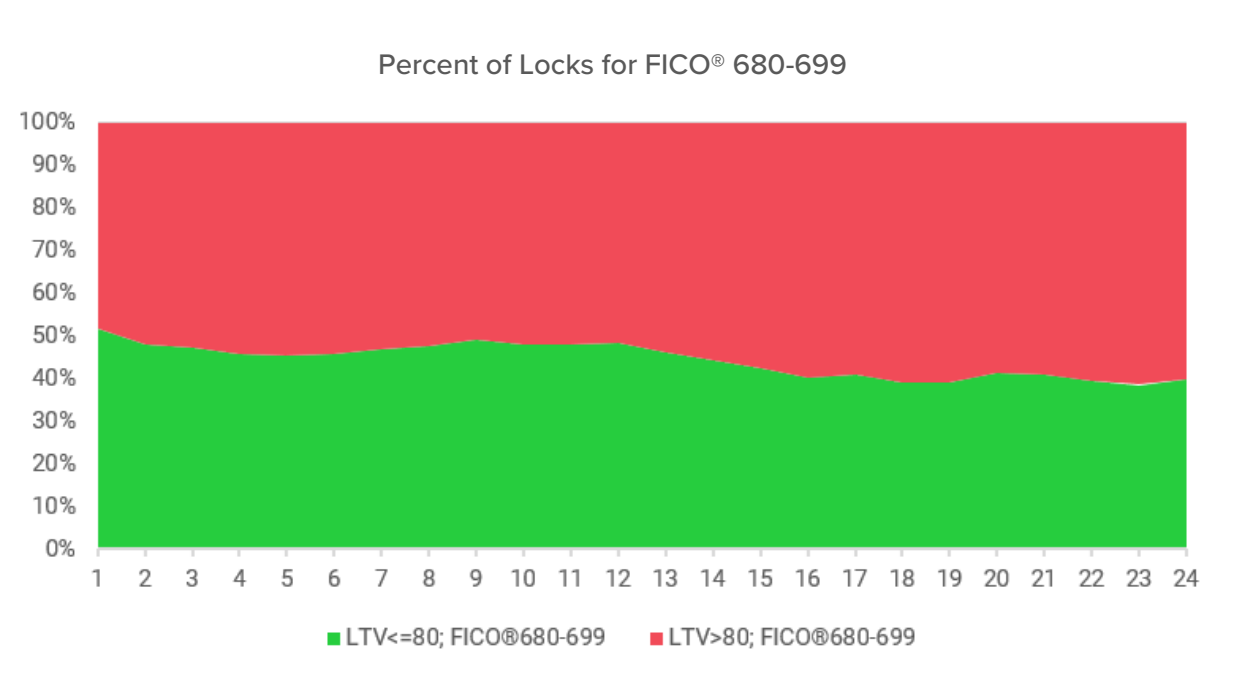


The FICO®>=740 indices break from the observed trend, and there is a clear difference between the LTV>80 and LTV<=80 bands. In this case, the LTV<=80 has a higher FICO® at around 780, compared to the LTV>80 which is approximately 775. In contrast to the lowest credit score band (<680) that also has a wider range, credit scores in this highest credit score band are more evenly spread across the 110-point range. This tends to magnify the gap when comparing across the LTV bands as compared to the tight 20-point ranges of the intermediate credit score bands.

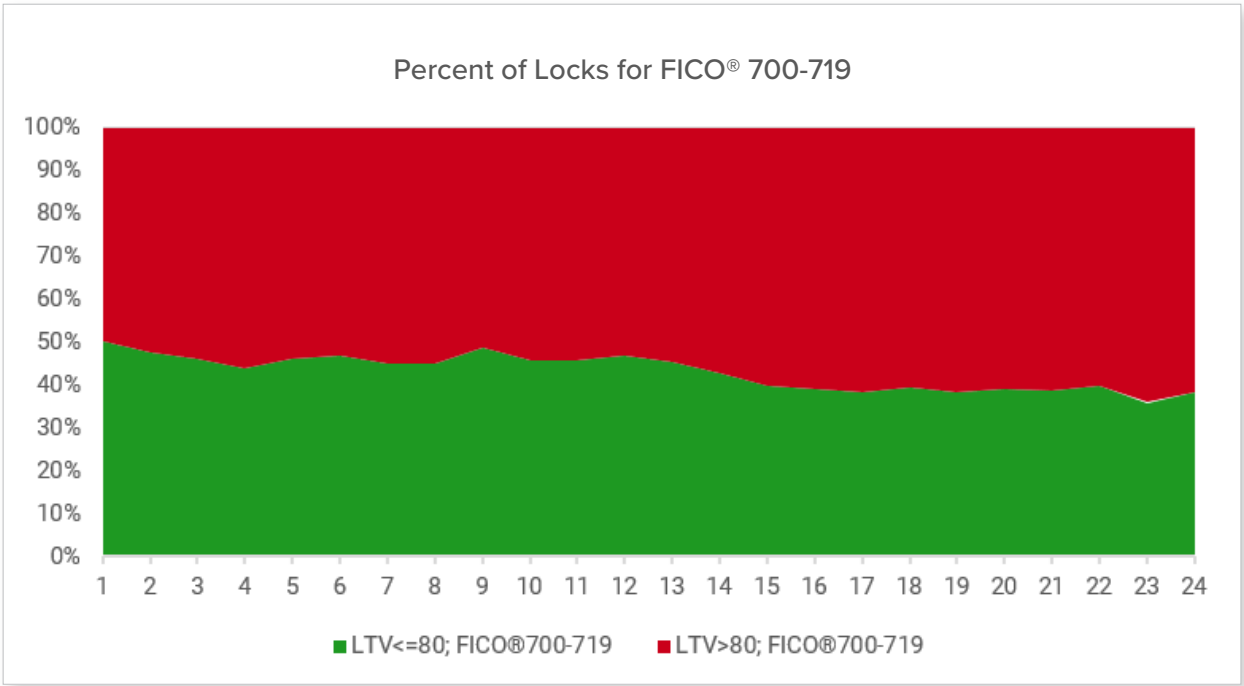
FICO® VOLUME INSIGHTS



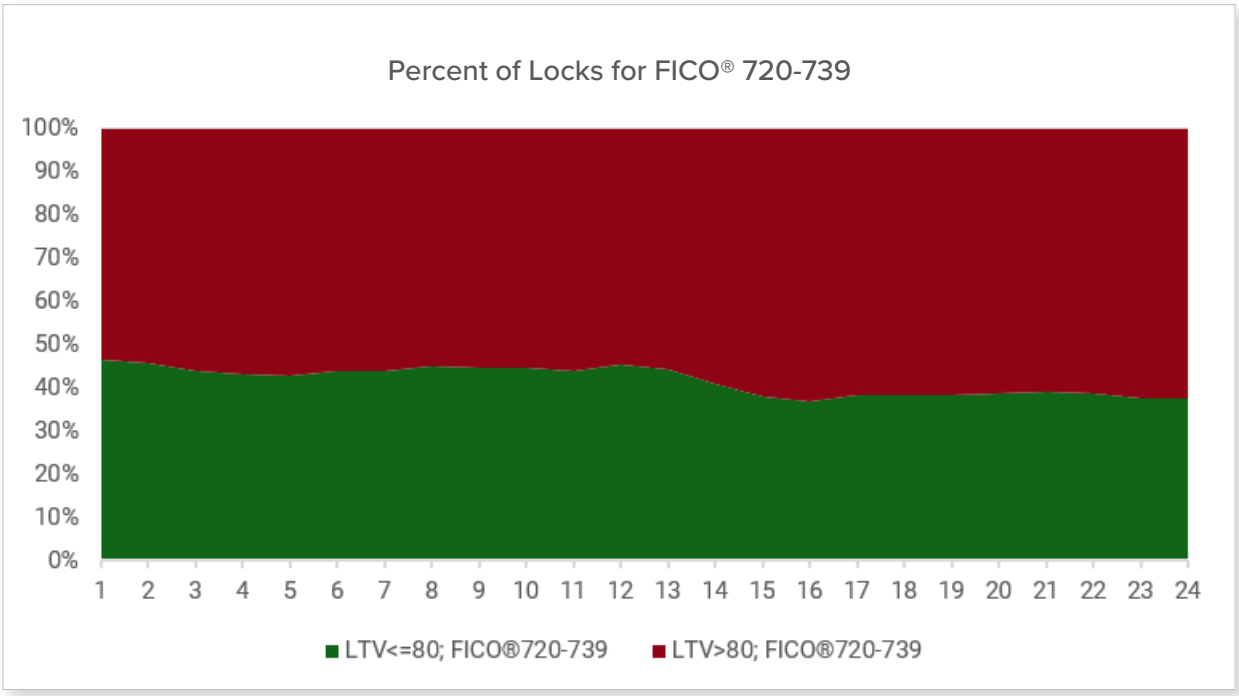
For the FICO®<680 indices, the percent of locks is relatively even, with the LTV<=80 generally accounting for between 55% and 60% of the total volume.



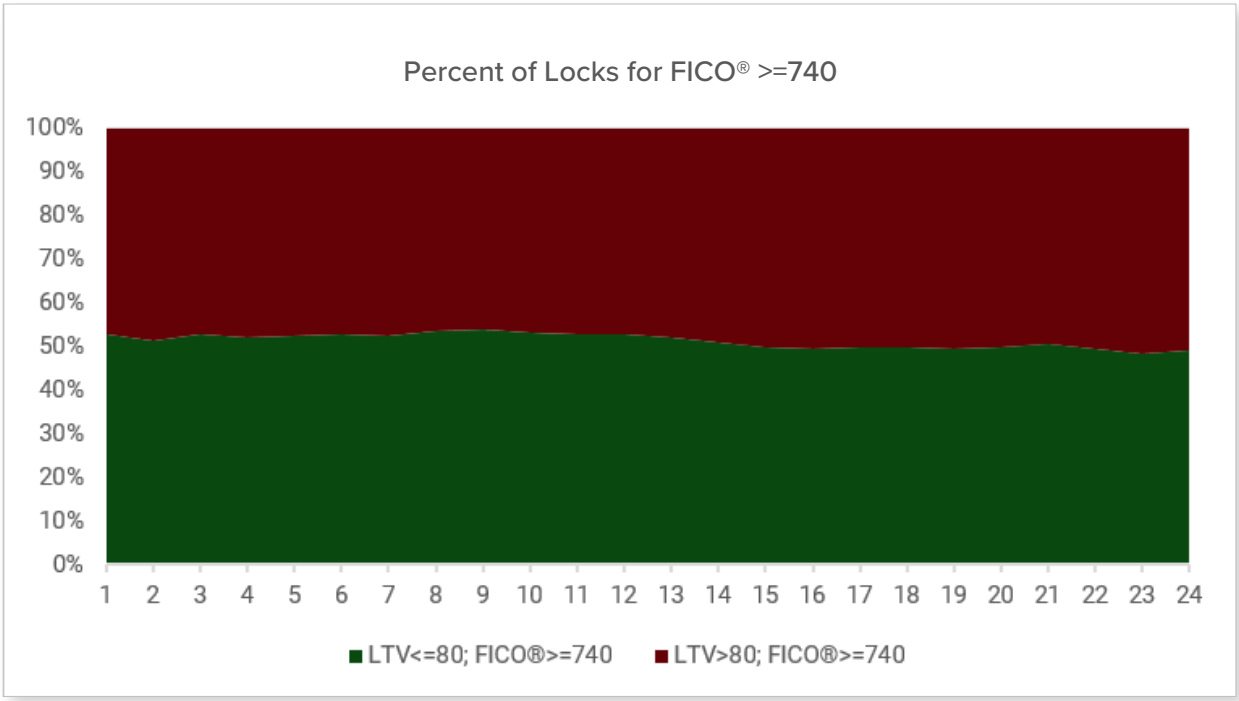
For the FICO® 680-699 indices, the percent of locks is more skewed toward high LTV, with the LTV>80 generally accounting for between 50% and 60% of the total volume.



For the FICO® 700-719 indices, the percent of locks continues to be skewed toward high LTV, with the LTV>80 generally accounting for between 50% and 60% of the total volume.



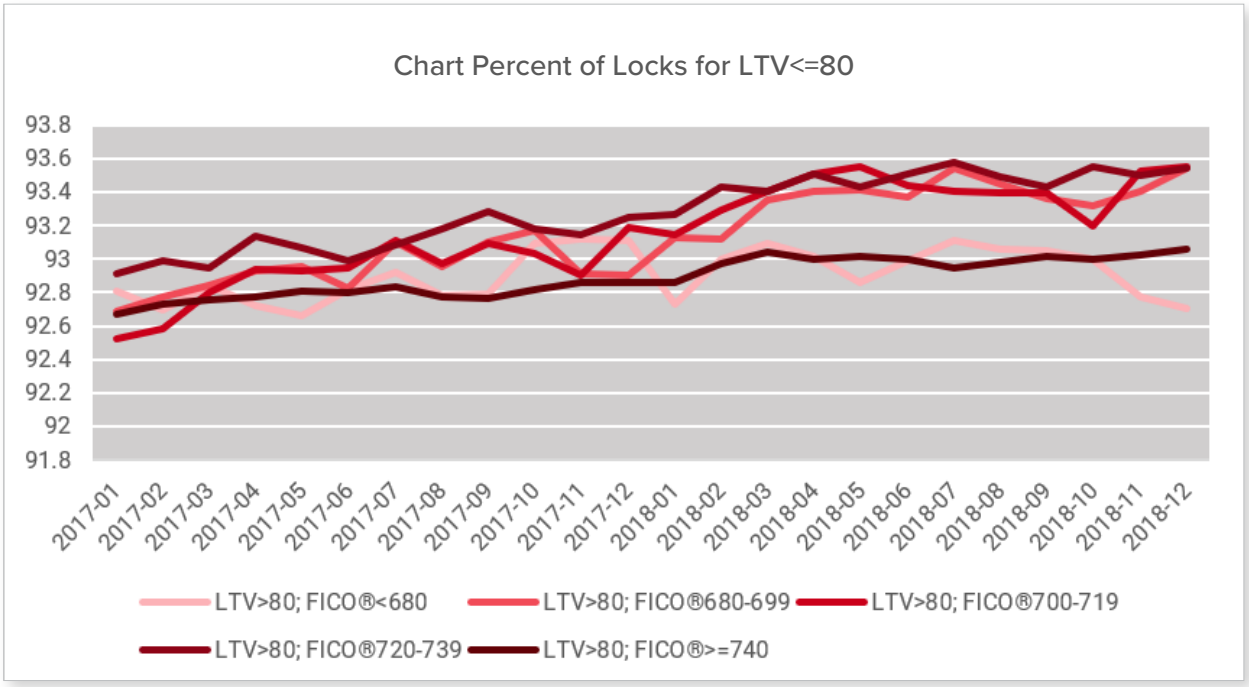
For the FICO® 720-739 indices, the percent of locks continues to be skewed toward high LTV, with the LTV>80 generally accounting for between 60% and 70% of the total volume.

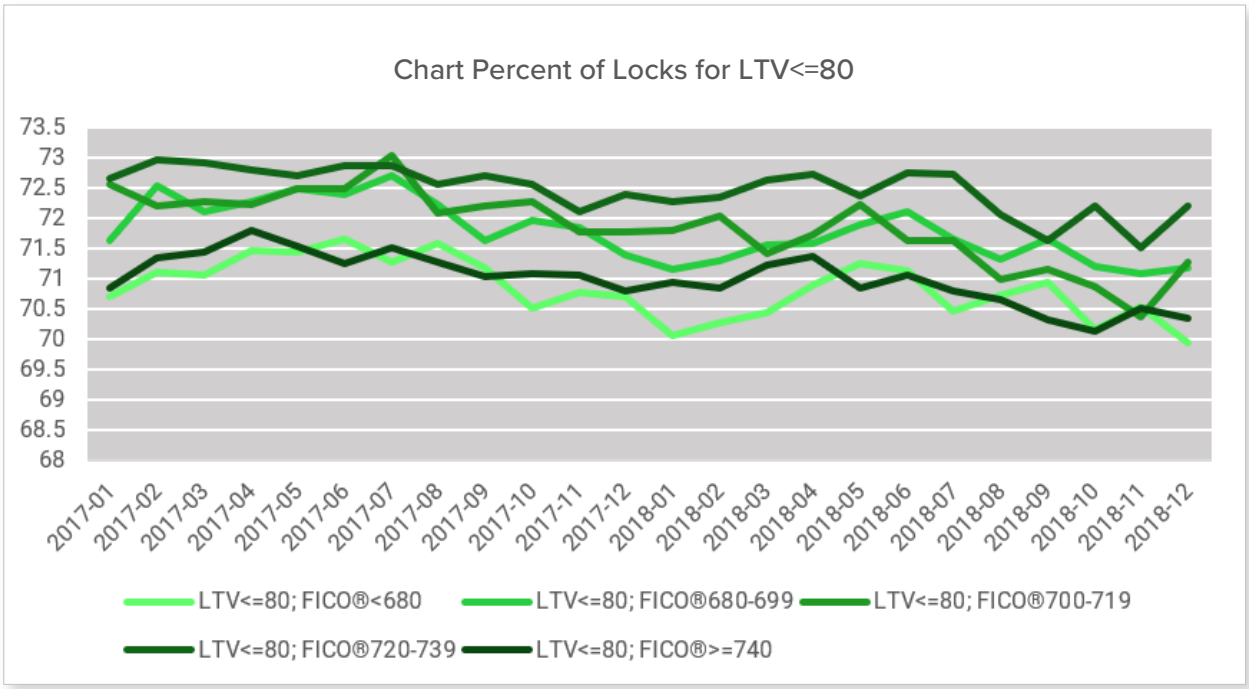


For the FICO®>=740 indices, the percent of locks is relatively even, with the LTV>80 generally accounting for between 47% and 52% of the total volume.

LTV INSIGHTS

Understanding how LTV varies across the Detailed Mortgage Indices furthers the understanding of the rate make-up. The next two figures show the variation in LTV by FICO® band for a given LTV band.

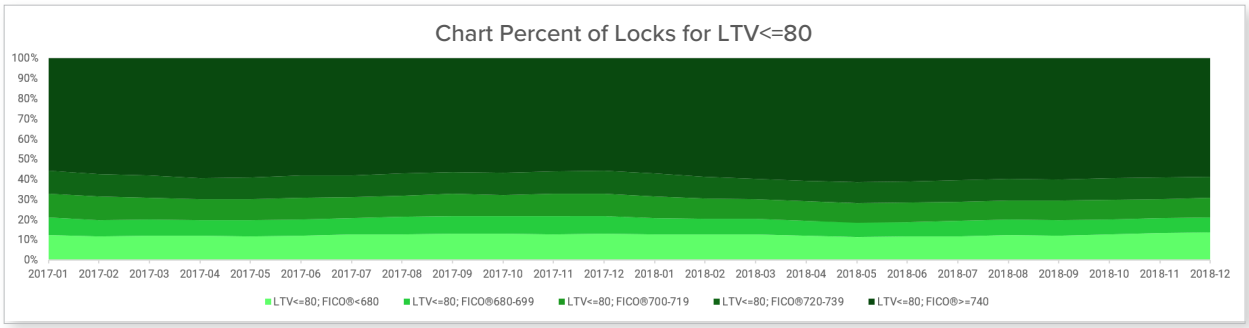




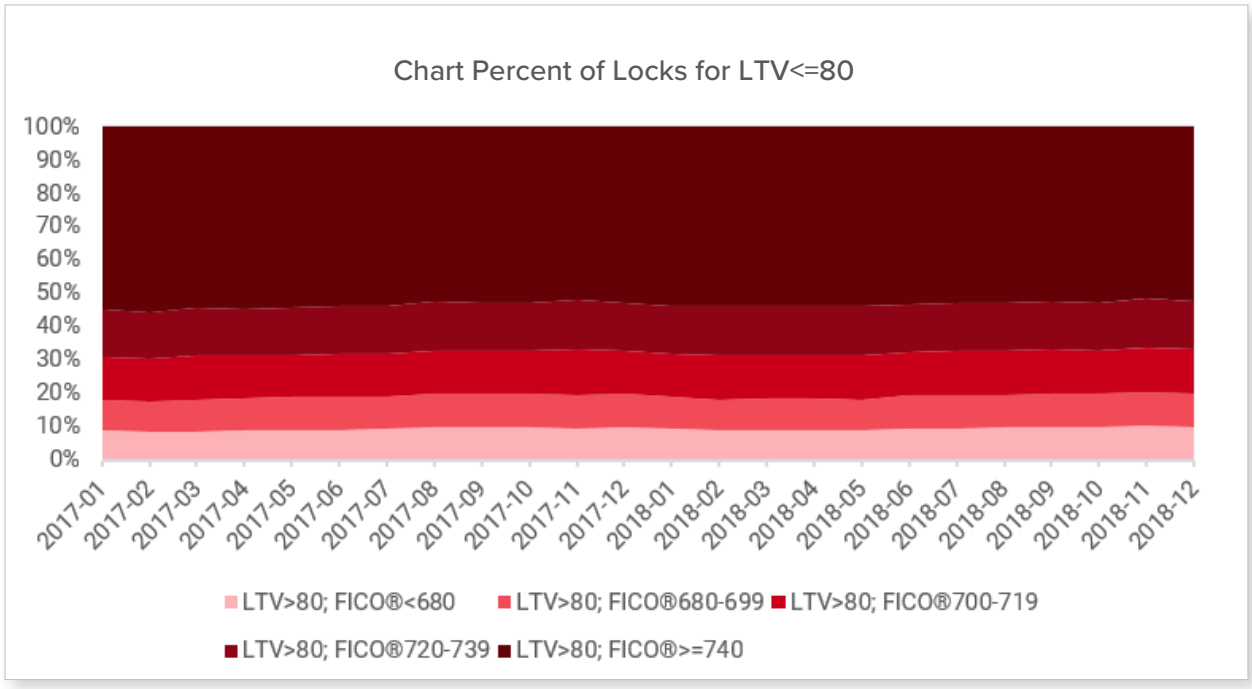
For LTV >80, the two extreme FICO® bands (<680 and >=740) have a noticeably lower average LTV than the middle bands. On the low side of FICO® bands, the borrower may be required to make a larger down payment to compensate for less-than-ideal credit; on the high side, the borrower is likely to possess better financials and therefore not be requesting as much credit.

LTV VOLUME INSIGHTS

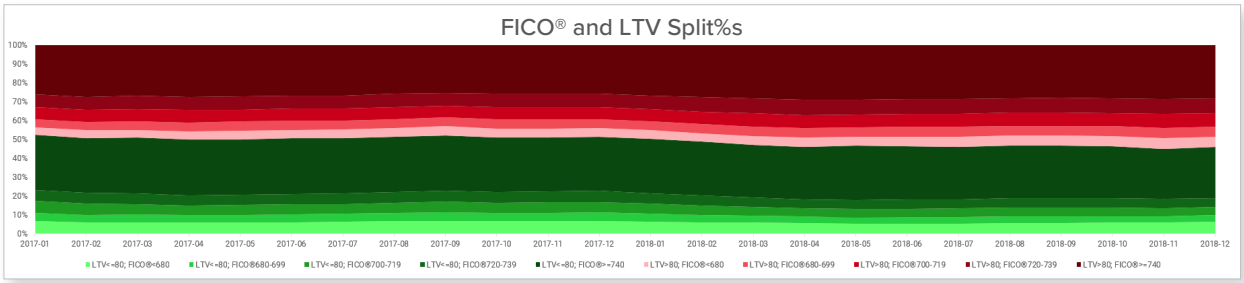
Below the relative number of locks is represented for each LTV band and for the entire conventional conforming population.



The greatest percent of locks are in the FICO®>=740 range at nearly 55% of the population, with the FICO®<680 and 680-699 being the smallest between 8% and 10%, while the 700-719 and 720-739 account for between 13% and 15% each.



Similarly, here the FICO®>740 accounts for 56%-61% of the overall volume, FICO®<680 accounts for approximately 12%, 680-699 for approximately 7%-9%, and each of the 700-719 and 720-739 between 9% and 12% each.

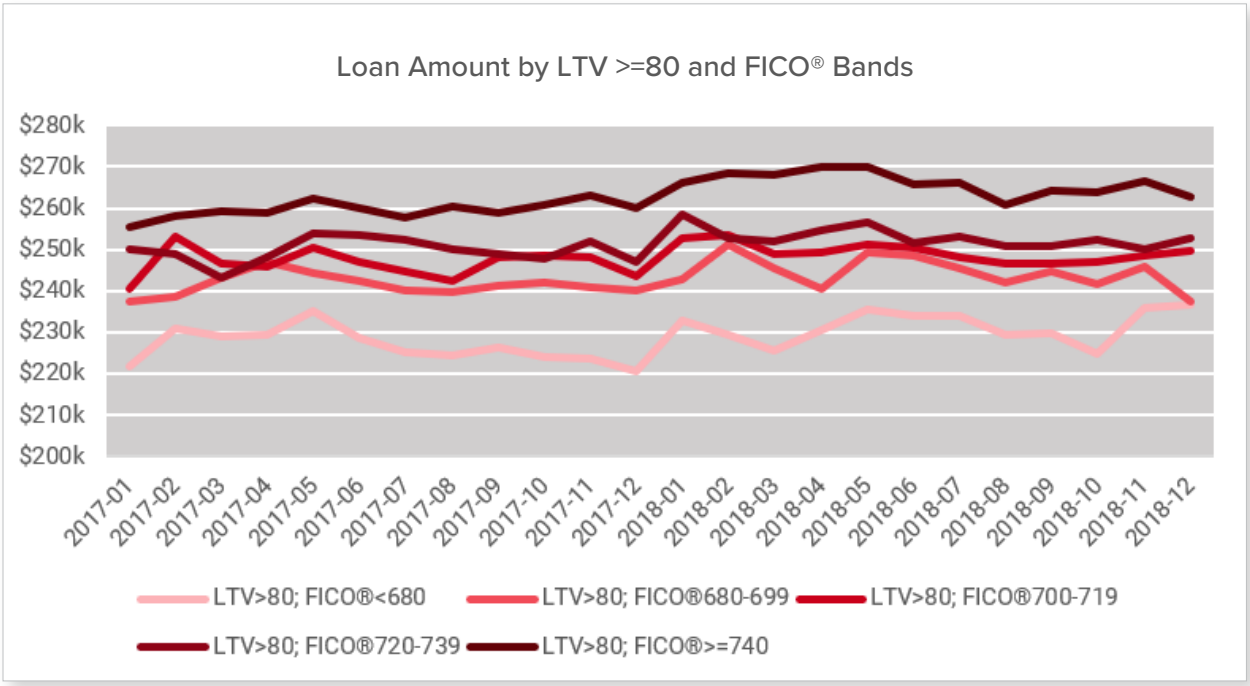


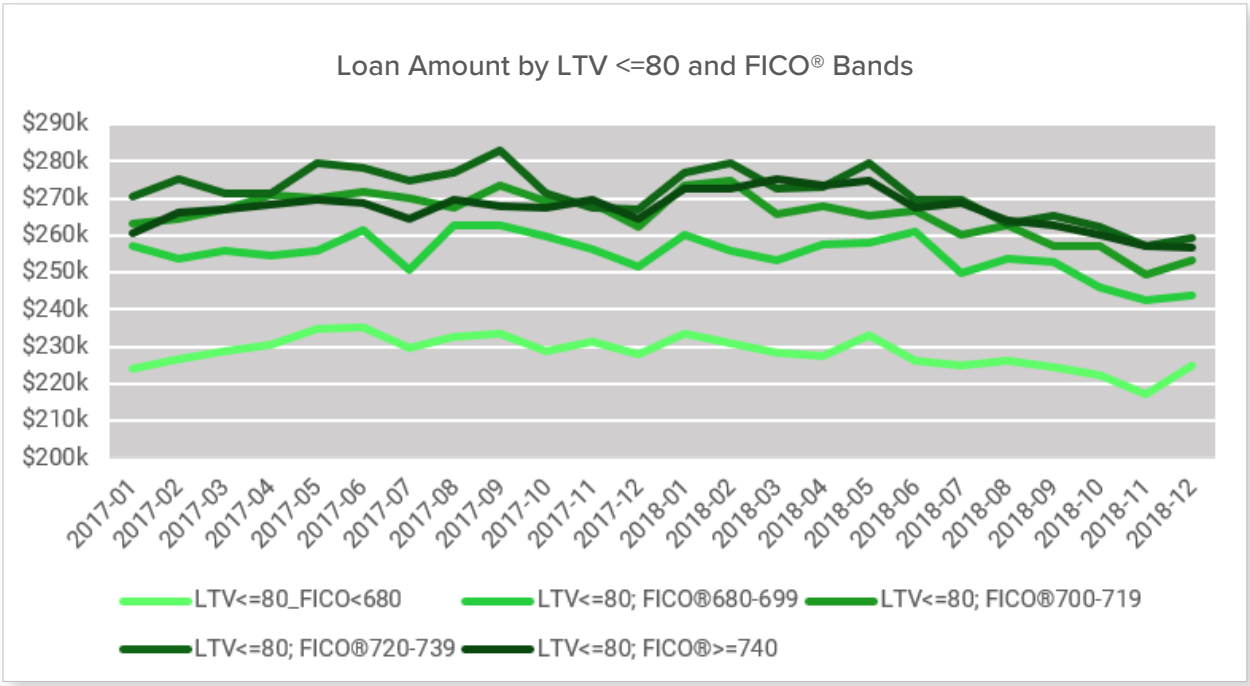
For the entire volume breakdown of the Detailed Mortgage Indices some basic observations stand out. First is that the LTV>80 accounts for most of the locks.

The second is that the FICO® >740 Detailed Mortgage Indices are the two largest by far, together accounting for more than 50% of the total locks. This reflects the high level of lending to highly credit worthy borrowers and the fact that the FICO® >740 range is wider than the intermediate bands.

LOAN AMOUNT INSIGHTS

As expected, those with better credit tend to purchase more expensive homes, therefore taking out larger loans. It is useful here to look by LTV band because the LTV also influences the loan amount (along with the value of the property). This variation in LTV, as well as geographic home values likely explains some of the overlap or non-monotonicity in loan amount.

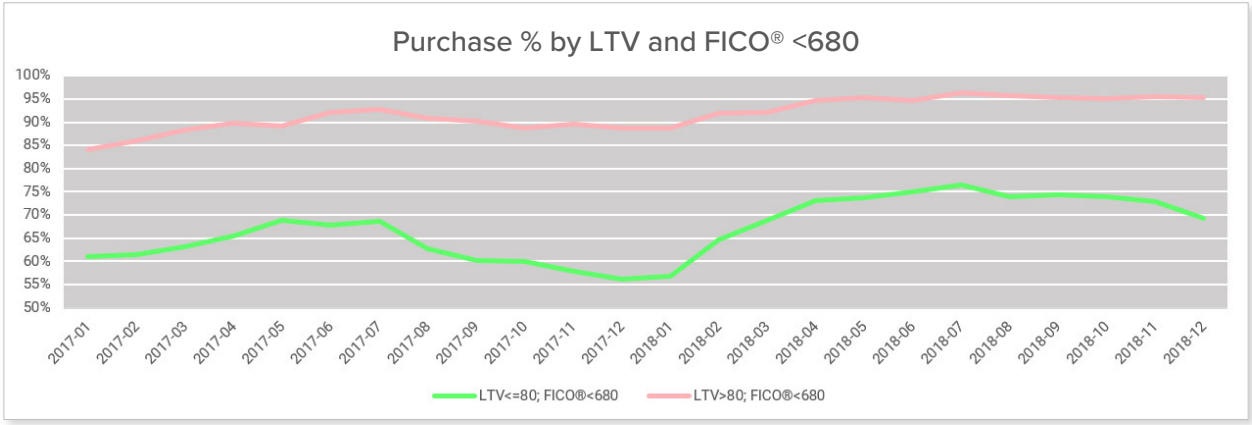


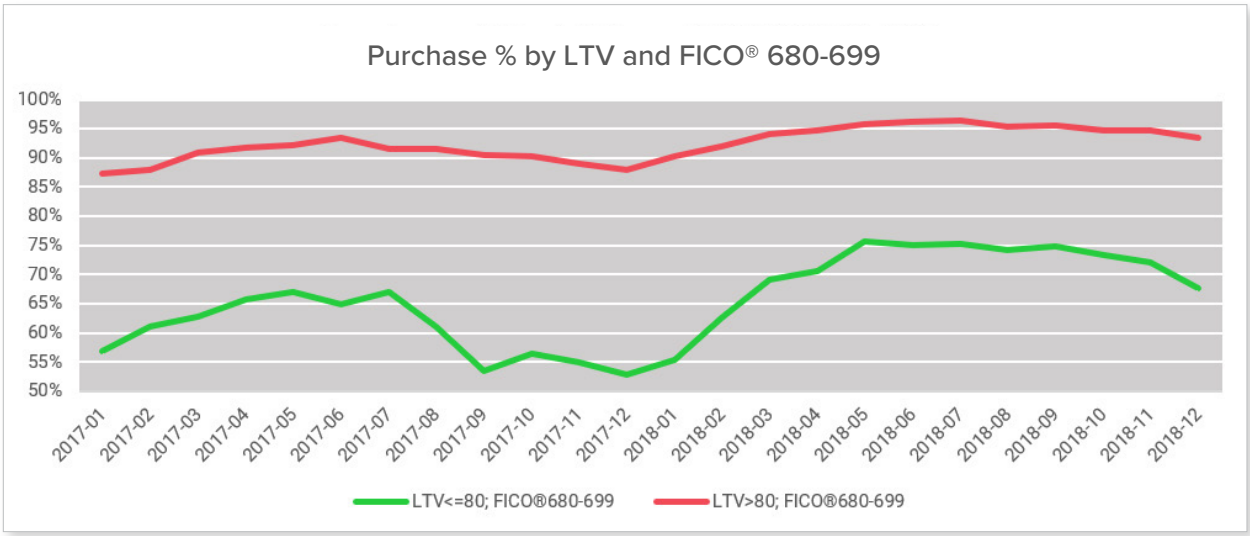


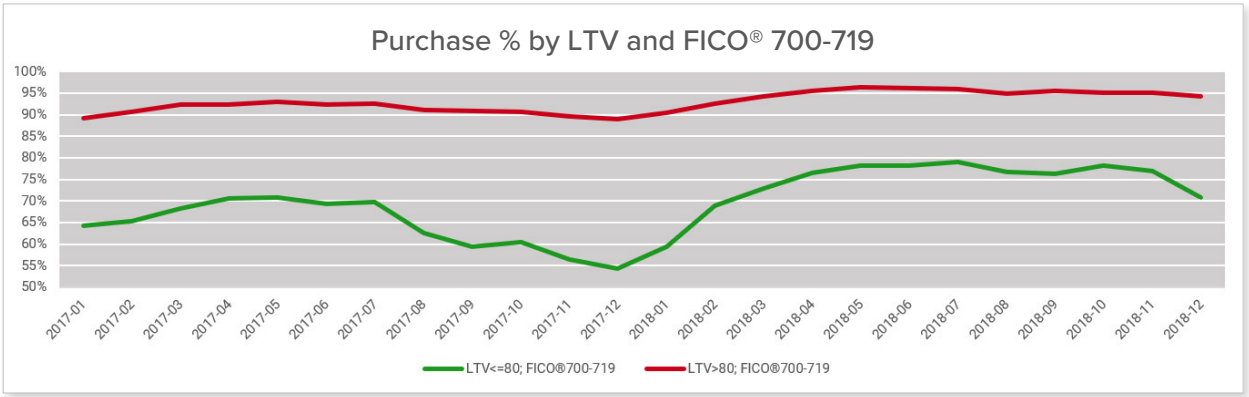
The loan amounts for the LTV>80 are slightly lower than those with LTV<=80 and the average loan amounts tend to increase as the FICO® band increases. This trend is clearer for the high LTV segments.

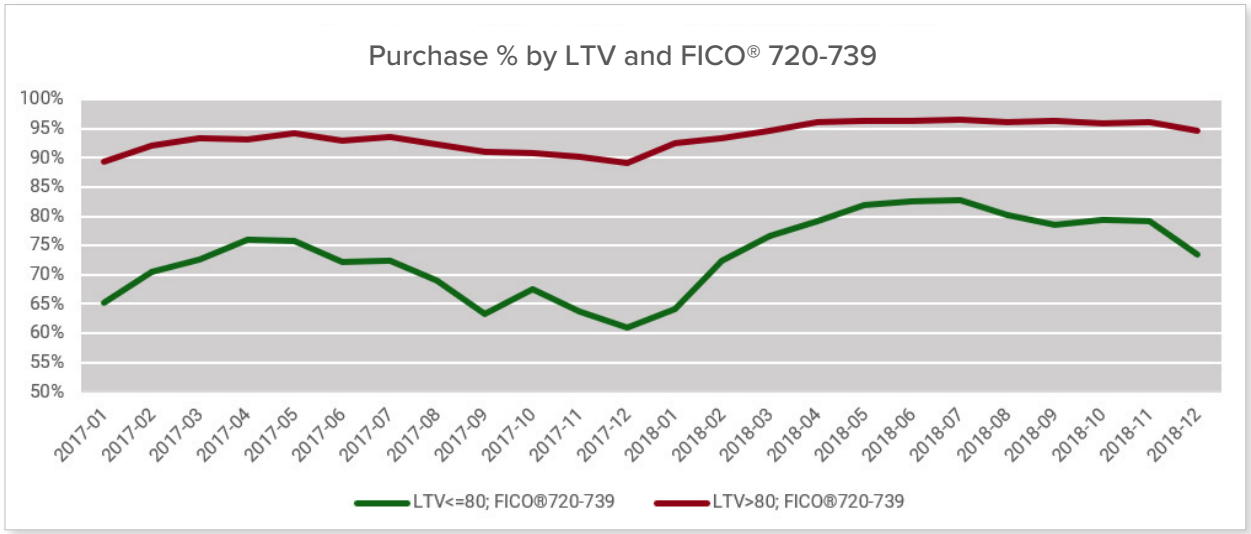
VOLUME INSIGHTS

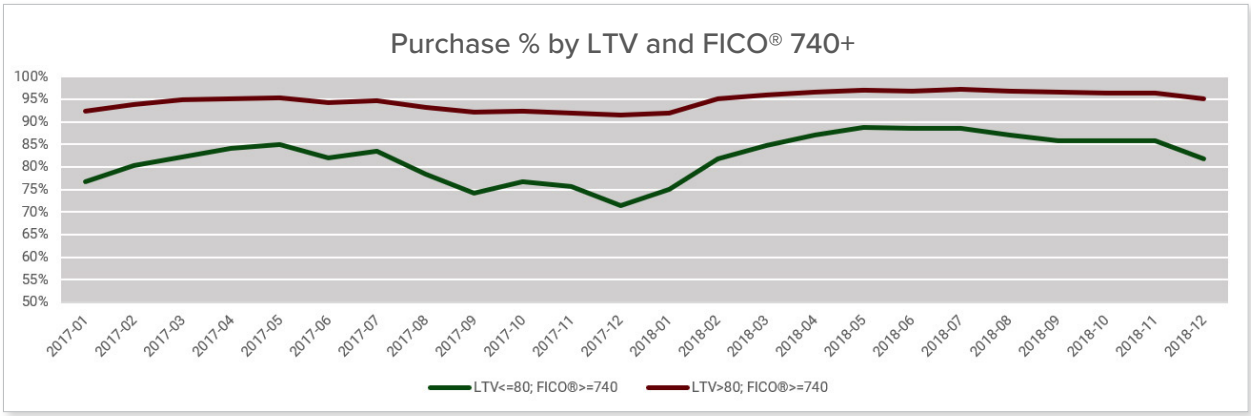
The relative volume of loans in each group is also very illuminating. For conventional loans, on average approximately 53% of the locks made with LTV>80 had FICO® scores in the >=740 range and approximately 59% of the locks made with LTV<=80 had FICO® scores in the >=740 range. This illustrates that a stark majority of conventional loans are made to those with strong credit scores. There are some mitigating factors here, for instance those with lesser credit scores are probably more likely to explore GNMA products (particularly FHA). Also interesting is that approximately 51% of conventional locks have an LTV>80, implying that many of these high credit borrowers are leveraging their credit, and undertaking the additional cost of primary mortgage insurance in order to purchase or refinance their home. It is important to recall that cash-out refinances are excluded.











The purchase percent is much higher for the high LTV index. This could imply that it is much easier to build-up and maintain equity than it is to save for a down payment>=20%, particularly when equity increases through home appreciation. On the other hand, it may be difficult or expensive to refinance with <20% equity. For the LTV<=80 index, there is some seasonality evident, but the purchase percent has increased recently as rates have done the same.