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Securitized Credit

Global

ABS Market Insights

Understanding Strategic Defaults

Strategic Defaults are a Growing Concern: Strategic defaults have emerged as a key theme in the context of the ongoing foreclosure crisis in US housing. We define strategic defaults to be defaults on mortgage obligations by borrowers who are a) underwater on their mortgages and b) have other meaningful non-mortgage obligations on which they continue performing. We use borrower level data on the performance of mortgage and non-mortgage obligations to assess the magnitude of strategic defaults and analyze their evolution across vintage, Mark-to-Market LTV and borrower characteristics.

Vintage, Credit Scores and Loan Balances Matter: The incidence of strategic defaults is higher at higher credit scores, more recent vintages and loans with large balances. At low levels of negative equity, strategic defaults are relatively low but they pick up steadily as the degree of negative equity increases.

Collateral Implications of Strategic Defaults: Prime jumbo collateral is the most exposed collateral to potential strategic defaults. This is also the collateral type that benefits the least from loan modification efforts such as HAMP, and is least likely to be eligible for FHA refinancing. In contrast, the incidence of strategic defaults is significantly lower at the subprime end of the credit spectrum with lower credit scores and lower loan balances. Subprime is also the collateral type that has the potential to benefit the most from HAMP and FHA refinancing. This reinforces our thesis that subprime (the last cash flow AAA tranches in particular) offers superior positive convexity potential.

Principal Forgiveness: The focus on principal forgiveness in recent changes to HAMP and the new FHA short-refinance program announced last month gives us hope that policy makers are serious about curbing future strategic defaults.

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Understanding Strategic Defaults

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Strategic defaults – the proclivity of borrowers to default on their mortgage payments when they have the ability to make them – have emerged as a key theme in the context of the ongoing foreclosure crisis in US housing. The focus on principal forgiveness in recent changes to HAMP and FHA refinancing programs (see “Forgive and Forget”, March 29, 2010) is reflective of policymakers’ realization that foreclosure mitigation should focus not only on the ability of borrowers to make mortgage payments, but also on their willingness to do so.

In the context of strategic defaults, research published in academia[1] provides some pointers to the motivation of strategic defaulters. For example, Guiso *et al* observe that while people are unlikely to walk away from their mortgage when the amount of negative equity is small, very little is known about their willingness to walk away when the negative equity becomes large in absolute value. Using survey data to address this gap, they find that relocation costs and other considerations prevent homeowners from defaulting as long as their negative equity does not exceed 10% of the value of their house. Beyond that level, the authors report that borrowers start to default at an increasing pace, reaching 17% of households defaulting strategically when their equity shortfall reaches 50% of the value of their house. The most important barriers to strategic default seem to be moral and social. Ceteris paribus, people who consider it immoral to default are 77% less likely to declare their intention to do so, while people who know someone who defaulted are 82% more likely to declare their intention to do so. Further, they note that the social pressure not to default is weakened when homeowners live in areas with a high frequency of foreclosures or know other people who defaulted strategically.

While strategic defaults have indeed received a lot of attention both in academia as well as in the popular media, a discussion on a precise definition of what constitutes a “strategic default” in a manner that can be used to measure the magnitude of strategic defaults in mortgage pools has received limited attention. With an empirical metric, we can understand the variation in the borrowers’ propensity to strategically default based on key borrower characteristics such as their credit scores, sizes of loan balances and geographies, in addition to negative equity, all of which have obvious valuation implications for non-agency RMBS.

In this report, we define strategic defaults to be defaults on mortgage obligations by borrowers who are a) underwater on their mortgages and b) have other meaningful non-mortgage obligations on which they continue performing. We use borrower level data on the performance of mortgage and non-mortgage obligations to conclude the following:

- Strategic defaults driven by negative equity in residential mortgages are a significant phenomenon and their incidence varies substantially across vintages, geographies and borrower characteristics.
- The incidence of strategic defaults is higher at higher credit scores, more recent vintages and among loans with large balances. At low levels of negative equity, strategic defaults are relatively low but they pick up steadily as the degree of negative equity increases.
- Prime jumbo collateral is the most exposed collateral to potential strategic defaults. This is also the collateral type that benefits the least from loan modification efforts such as HAMP, and is least likely to be eligible for FHA refinancing.
- In contrast, the incidence of strategic defaults is significantly lower at the subprime end of the credit spectrum with lower credit scores and lower loan balances. Subprime is also the collateral type that has the potential to benefit the most from HAMP and FHA refinancing. This reinforces our thesis that subprime (the last cash flow AAA tranches in particular) offers superior positive convexity potential.
- The focus on principal forgiveness in recent changes to HAMP and the new FHA short-refinance program announced last month gives us hope that policy

[1] See Luigi Guiso, Paula Sapienza and Luizi Zingales “Moral and Social Constraints for Strategic Defaults on Mortgages”, July 2009 for a literature review and analysis based on survey data.

makers are serious about curbing future strategic defaults.

Data and Definitional Considerations

An empirical analysis of strategic defaults under our definition requires borrower level data on the performance of both mortgage and non-mortgage obligations along with borrower characteristics such as credit scores, loan balances, geographic locations and estimated mark-to-market LTVs. We use sample data provided by TransUnion in our analysis. The sample consists of anonymous or depersonalized records from TransUnion's consumer reporting database of 6.5 million borrowers with first lien mortgages originated in 2004 or later. We also emphasize that the credit scores used in this research are TransUnion's Vantage Scores.

We encountered several issues in defining mortgage defaults as strategic. First, we needed to identify borrowers that were current on their non-mortgage payments when they first went delinquent on their mortgage debt. For the purpose of this study, we considered a default to be a strategic default only if borrowers went from current to 30-day, 60-day and 90-day delinquent status in consecutive months without any curing in between or thereafter. In other words, we eliminated borrowers who made full or partial payments at any point after their first missed payment. Even with borrowers who cured their delinquent status and subsequently defaulted, we consider them to have defaulted due to an "inability to make payments" and thus do not consider them to be strategic defaulters.

Second, a borrower must have been underwater on their first lien mortgage to be considered a strategic defaulter. We determined the negative equity status by using zip code/MSA level MTM LTV as measured by the Case-Shiller Index. However, in our experience, this metric is imprecise at the individual property level. With this in mind, we used an MTM LTV cut-off of 80 to define underwater mortgages.

Finally, we have tried to ensure that the non-mortgage obligations were substantial. In other words, we wanted to eliminate cases where payments related to non-mortgage debt obligations were so small that their payment may be treated as being de minimis. In that spirit, we included only borrowers with an outstanding non-mortgage debt balance greater than $10,000.

In Exhibit 1, we describe salient descriptive statistics on the sample data.

Exhibit 1

Data at Glance:

	All	Defaulted	Strategic
Sample Size of borrowers	6,593,818	2,219,647	175,926
LTV at Mortgage Loan Origination			
- Mean	77.0	80.6	80.9
- Median	80.0	80.0	80.0
MTM LTV at first missed Mortgage Payment			
- Mean	88.3	99.8	119.4
- Median	82.5	91.7	112.1
Vantage Score at Origination			
- Mean	743.4	699.0	773.7
- Median	733.0	696.0	771.0
Vantage Score at first missed Mortgage payment			
- Mean	735.9	658.4	800.4
- Median	726.0	644.0	796.0
Loan Balance at Origination			
- Mean	285,353	278,233	342,836
- Median	214,000	230,000	307,000
Vintage			
2004	1,057,672	166,021	5,684
2005	2,238,800	641,869	48,705
2006	2,508,584	1,103,214	91,934
2007	787,470	308,361	29,582
2008	1,292	182	21
State Concentration			
% California	24.3%	27.8%	47.0%
% Florida	10.3%	14.6%	16.2%
% Arizona	3.7%	4.8%	6.7%
% Nevada	2.1%	3.3%	5.9%
% New York	4.0%	3.3%	2.0%

Source: TransUnion, Morgan Stanley Research

As a first cut we note that based on both of the measures of central tendency that we compute (mean and median), at the point of their first missed mortgage payment, strategic defaulters have a higher Mark-to-Market Loan-to-Value (MTM LTV), a higher Vantage Score, and a higher loan balance relative to both the total sample and that of overall defaulters.

Higher MTM LTV is as expected, since negative equity is the major motivation for strategic defaulters. However, that strategic defaulters have higher credit scores and larger loan balances is not similarly obvious. We dig deeper in a later section to better understand the behavior of strategic defaulters along these dimensions.

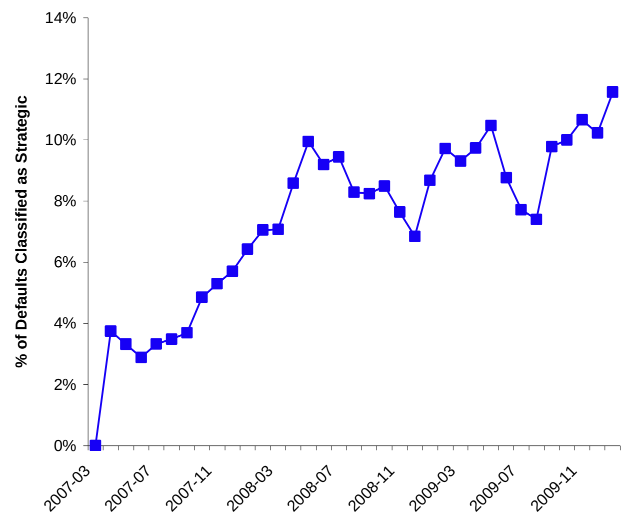
Not surprisingly, California had a high proportion of strategic defaulters. While the state accounted for just over a quarter of all defaults and the borrowers in our sample, it accounted for nearly half of all strategic defaulters. In contrast, in Florida, another state with steep declines in home prices, the proportion of defaulters and strategic defaulters was not significantly different. California is a non-recourse state and Florida is not, which may explain this notable contrast.

Strategic Defaults Over Time: The Trend is Up

In Exhibit 2, we show the growth in defaults that we categorized as strategic (as percentage of total defaults each month) in our sample data. The trend is clearly up, rising from insignificant levels in the middle of 2007 to about 12% of all defaults as of February 2010. Note that the measurement here is at the aggregate level without stratifying the data by vintage and borrower characteristics, which we do in later sections of this report.

Exhibit 2

Strategic Defaults (%) by Month



Source: TransUnion, Morgan Stanley Research

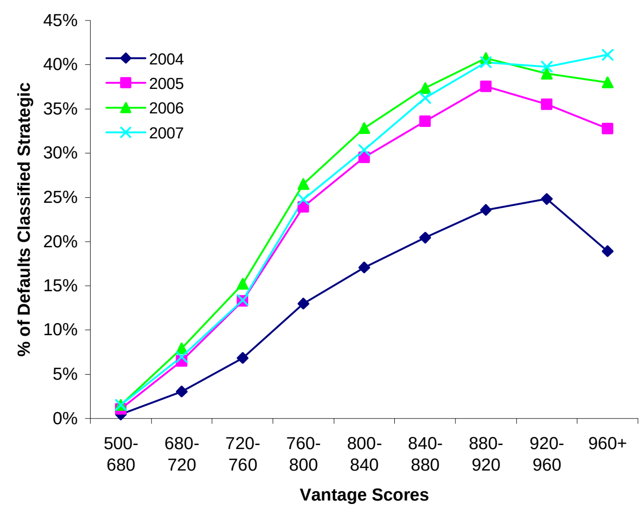
Vintage Effects

In our sample, strategic defaults rose progressively between vintages from 2004 to 2007. Given that home prices peaked during 2006-07 depending on the home price index and geography, incentives for strategic defaults in terms of negative equity were clearly higher in later vintage originations in our data.

In Exhibit 3, we look at strategic defaults as a percentage of total defaults over time and across vintage over different Vantage Score buckets. The lines in this chart represent the proportion of defaults in each Vantage Score bucket that we characterize as being strategic. Two points are worth noting here. First, across the range of Vantage Scores, vintages that are more recent have a higher strategic default experience. The 2004 vintage has less than half the proportion of strategic defaults across the spectrum of Vantage Scores compared to the 2007 vintage. Second and more notable, is that the percentage of defaults that are strategic increase with Vantage Scores. Except at the very high end of the credit spectrum, this relationship holds across vintages.

Exhibit 3

Strategic Defaults Across Vintages:
Higher Strategic Defaults at Higher Vantage Scores



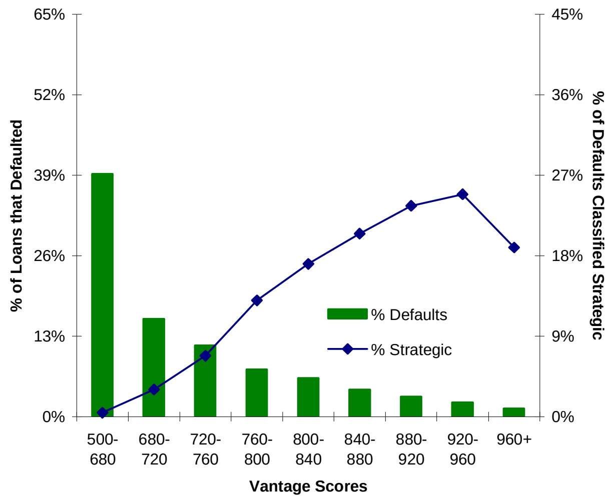
Source: TransUnion, Morgan Stanley Research

To dig into the vintage effects and their interaction with Vantage Scores, in Exhibits 4 and 5, we show both total and strategic defaults across the spectrum of credit scores[2]. We picked 2004 and 2007 vintages to highlight the contrast between the two. The bars in both of these exhibits show the percentage of loans in the respective credit score bucket that have defaulted and the points on the line chart show the percentage of defaults in the respective credit score bucket that we have categorized as being strategic defaults.

[2] In this context, the credit scores we refer to are Vantage Scores measured at first missed mortgage payment.

Exhibit 4

Total Defaults and Strategic Defaults: 2004 Vintage



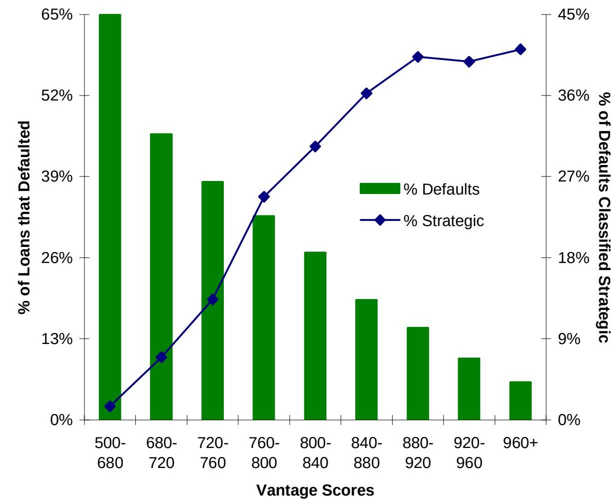
Source: TransUnion, Morgan Stanley Research

In both vintages, the highest proportion of total defaults is in the lowest Vantage Score bucket (<680), which is not surprising – it merely confirms that borrowers with lower credit scores do indeed default more frequently than those with higher credit scores. The main difference between the two vintages in this regard is that of magnitude. Just under 40% of borrowers at the low end of the credit score spectrum defaulted in 2004 compared to about 65% in 2007, reflecting both the deterioration in lending standards as well as the fact that the 2004 vintage had the benefit of positive home price appreciation while the 2007 vintage did not.

On the other hand, strategic defaults exhibit a reverse phenomenon. While total default percentages drop as credit scores increase, strategic default percentages in each credit score bucket rise steadily as credit scores increase, dipping a bit only at the highest end of the credit spectrum[3]. In the 2007 vintage, over 40% of all defaults in the 880+ vantage score buckets were strategic.

Exhibit 5

Total Defaults and Strategic Defaults: 2007 Vintage



Source: TransUnion, Morgan Stanley Research

MTM LTV and Strategic Defaults

The survey work in academic research that we cited earlier suggests a connection between the extent of negative equity and the propensity for strategic defaults. We use both MTM LTV as well as MTM CLTV[4] to estimate the extent of negative equity at the first missed mortgage payment.

In Exhibit 6, we investigate these effects using the MTM CLTV metric for the 2006 vintage (the analysis is comparable with MTM LTV as well as for other vintages).

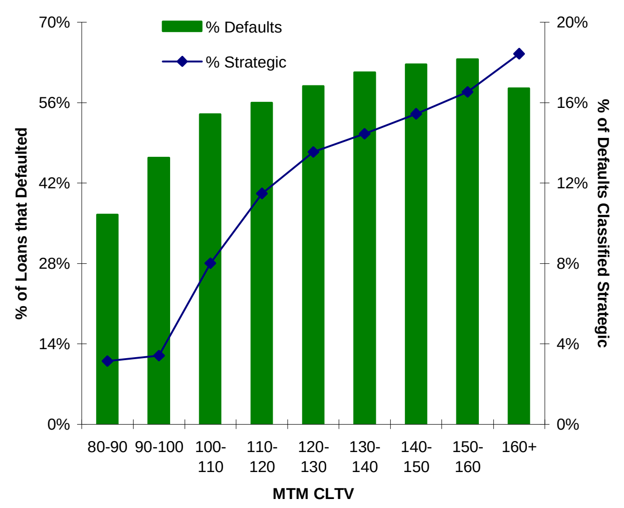
Our data confirms the findings of the survey results of Guiso *et al* that at low levels of negative equity, strategic defaults are relatively low. They pick up steadily as the degree of negative equity rises. We think it is worth noting that total defaults are relatively more evenly spread out across different MTM CLTV buckets, especially beyond the lower end of the negative equity spectrum. In each bucket above 100 MTM CLTV, the proportion of total defaults is roughly around 50%. This suggests that the "ability to pay" as a reason to default is strong across the different MTM CLTV buckets.

[3] Borrowers with very high Vantage Scores (960+), tend to be very protective of their high credit scores.

[4] MTM CLTV refers to combined mark-to-market LTV of first and second lien mortgages. We calculate CLTV by matching second liens using Data Quick.

Exhibit 6

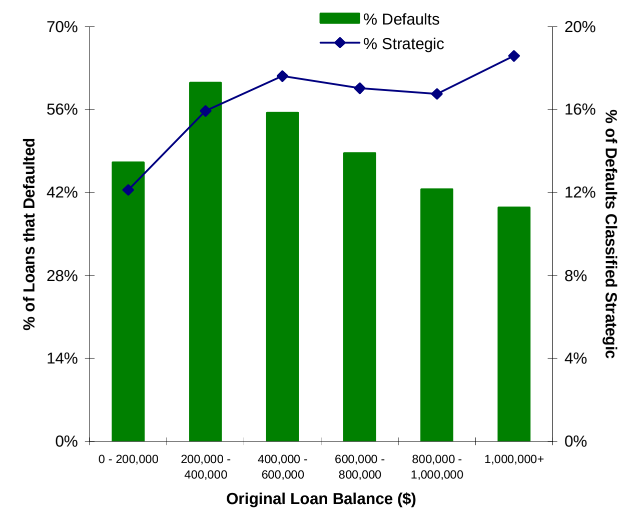
MTM CLTV at First Missed Mortgage Payment (2006 Vintage)



Source: TransUnion, Loan Performance, DataQuick and Morgan Stanley Research

Exhibit 7

Strategic Defaults and Original Loan Balance (Loans with MTM LTV of 120 – 160)



Source: TransUnion, Loan Performance and Morgan Stanley Research

Strategic Defaults and Loan Balance

We also investigate the effects of loan balance on strategic defaults. We have already seen the link between higher credit scores and higher propensity for strategic defaults, and in this context, exploring links between loan balance and strategic defaults in our data helps us to more narrowly focus our attention on prime jumbo mortgages as the collateral type with the most exposure to the consequences of strategic defaults.

Given that strategic defaults pick up significantly at higher MTM LTV levels, we examine the relationships between strategic defaults and loan balances in a relatively narrow range of MTM LTV, focusing specifically on the 120-160 MTM LTV bucket (Exhibit 7).

We find that the percentage of strategic defaults increases with loan balances for loans in the 120-160 MTM LTV bucket, and the percentage of total defaults decreases as loan balances increases. While the increase in strategic defaults and higher loan balances in our data is not as dramatic as with strategic defaults and higher credit scores, the trend is nevertheless worth noting.

Implications to Collateral Valuation

The Prime Jumbo Problem: Our results show that prime jumbo collateral has the potential to be the most exposed to strategic defaults. The propensity to strategically default is clearly higher in the 2006 and 2007 vintages, where at the jumbo end of the credit spectrum strategic defaults could account for over 40% of total defaults. This is also the collateral type that benefits the least from loan modification efforts such as HAMP, and is the least likely to be eligible for FHA refinancing.

The Case for Subprime Gets Stronger: In contrast, the incidence of strategic defaults seems significantly lower at lower credit scores and lower loan balances. Subprime is also the collateral type that has the potential to benefit the most from HAMP and FHA refinancing. In this sense, we reinforce our thesis that subprime (the last cash flow AAA tranches in particular) offers superior positive convexity potential.

Principal Forgiveness and Strategic Defaults

Against this background of strategic defaults, the focus on principal forgiveness in recent changes to HAMP and the new FHA short-refinance program announced last month gives us hope that policy makers are serious about curbing future strategic defaults. As we have discussed elsewhere, (“Forgive and Forget”, March 29, 2010), the FHA program in particular directly targets homeowners who are both current on their payments and underwater on their mortgages – the most likely group of borrowers who may strategically default. By forgiving first-lien principal down to a 97.75% LTV on the mark-to-market value of the home, a short-refinance would provide some equity back to the borrower and take them from a negative to a positive equity position. If the borrower also has a second lien on the home, the program would allow a reduction in CLTV to 115% of the mark-to-market home value.

As an example, suppose a borrower current on her payments has a 145 mark-to-market LTV on a first lien loan originated in 2006, and no second lien. If she were short-refinanced through the FHA program, her LTV would be reduced to 97.75%. Based on our findings, this would reduce her probability of strategically defaulting by about half, from roughly 16% to 8%. That is a significant reduction, especially if we consider the other positive incentives to keep paying at the lower LTV, including what would likely be a significant reduction in monthly payment.

A few caveats are in order, some of which may significantly limit the potential impact of the FHA program to prevent strategic defaults. First, on the investor call with the FHA last month, they stressed that this program will be *de minimis* relative to overall FHA lending. If they hold true to this statement, the impact for refinanced borrowers should remain positive, though muted in aggregate. Second, we think that there will be an LTV “sweet spot” for participation in this program, which excludes very high LTVs. If this occurs, many borrowers with LTVs approaching or exceeding 200 will probably not be short-refinanced, leaving the borrowers with the highest probability of strategic default in mortgage pools. Finally, the program requires the existing first lien holder to recognize a loss on loans that are still performing. While securitized trusts may have a large incentive to do this given where collateral is currently valued, banks may reluctant to forgive principal on current loans if there are no reserves held against performing loans.

Conclusion

Strategic defaults driven by negative equity in residential mortgages are a significant phenomenon. The fact that the probability of such defaults increases with a direct relationship to negative equity, credit score and loan balance, suggests that understanding their magnitude and key drivers will be critical to the evaluation of mortgage securities, particularly as it relates to differences between collateral types. While we hope that new government programs will help to moderate the number of future strategic defaults, it is apparent from the analysis in this report that there is much work to be done.

We acknowledge the contribution of Surya Kumar Saripella to this report.

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