2009 Topical report series

Experian-Oliver Wyman Market Intelligence Report

Understanding strategic default in mortgages Part I

Experian

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About Experian-Oliver Wyman Market Intelligence Report

Experian and Oliver Wyman have built and analyzed a unique, new data sample from the credit bureau to develop a range of insights on credit markets. These insights can help lenders benchmark their portfolios and determine performance improvement opportunities. The Experian-Oliver Wyman Market Intelligence Report is a one-of-its-kind product that covers the following asset classes:

- Mortgage
- Home equity lines
- Home equity loans
- Auto loans and leases
- Bank cards
- Retail
- Student loans
- Other personal loans

For each asset class, the Market Intelligence Report provides a comprehensive set of metrics, which are segmented by credit score, geography and type of institution. The metrics include:

- Market size
- Product penetration
- Originations
- Delinquency and attrition
- Utilization

The Market Intelligence Report is produced quarterly, and grants subscribers timely access to ongoing trends of the consumer credit industry dating back to 2006, and with vintage-specific trends dating back to 2002. The comprehensive report contains over 400 pages, featuring 1400 charts and tables. The report is provided as an annual subscription.

A subscription to the Market Intelligence Report also provides access to 'Topical reports', which explore hot button issues in consumer credit. This is the first report in the 2009 topical report series, and the first of two reports on strategic default in mortgage.

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Executive summary

There has been a growing amount of media and academic attention on the phenomenon of strategic default – borrowers defaulting on their mortgages only because the value of their home has declined well below their mortgage. Policy-makers and servicers worry that these borrowers, if not identified, will receive a loan modification even though they don't really need one. These borrowers are also utilizing scarce servicer capacity that would be better spent helping those who are truly in distress.

Using a large sample of consumer-level credit bureau data, Experian and Oliver Wyman have developed a method to indicate strategic default, though borrower income is required to verify the result unequivocally. We begin with the premise that strategic defaulters should only be delinquent on their mortgage, and no other credit obligations. We identify borrowers who continued to pay their other credit obligations for 6 months after going 60 days past due on their mortgage. We further restrict our definition to look for borrowers who go straight from current to default on their mortgage. Using this definition, we find that strategic defaulters make up about 18% of all borrowers who went 60 days past due on their mortgage in the fourth quarter of 2008. We estimate that ~588K borrowers strategically defaulted in 2008, a 128% increase over 2007.

If our definition is accurate, we should find more strategic default in geographies such as California and Florida, which have suffered more drastic home price decline than the country in general. We should also find more occurrences among mortgages originated in or after 2006 as these consumers didn't benefit from any home price appreciation and are more likely to be underwater. Our results reinforce the validity of our definition: from 2005 to 2008, the number of strategic defaulters went up by 68 times in California and by 46 times in Florida! The increase in other regions ranges between 3 times and 18 times. Among mortgages originated in 2006, strategic default was 7 times more common than among mortgages originated in 2004. Of course, delinquency was generally higher among 2006 originations, but only by a factor of 4.

Further analysis reveals additional startling trends: About two-thirds of strategic defaulters have only one mortgage, so are most likely walking away from their primary home. And, strategic defaulters are about 50% more prevalent among borrowers who were in the prime and super-prime credit score bands at the time they took their mortgage. Mortgage servicers need to utilize these analyses to identify strategic defaulters so that they can try to convince them to make their mortgage payments rather than offer them a favorable loan modification.

We also found a segment of borrowers which looks similar to strategic defaulters on the surface, but are in actuality, quite different. We call these borrowers 'cash flow managers', as they are seriously delinquent on their mortgage, but continue to pay all their non-mortgage credit obligations on time, and occasionally do make a payment on their mortgage. It turns out that one-third of these borrowers cure on their mortgage within 6 months after serious delinquency. Another one-third of these 'cash flow managers' remain less than 90 days past due in the subsequent 6 months. This group's

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performance is about twice as strong as average. These are the borrowers who are trying hard to remain current, have some financial resources, and would make the best candidates for loan modification offers.

Part 2 of this report provides more details on the different types of mortgage default – strategic, cash flow managers, and distressed defaults. It also includes some initial analysis on attributes that may help predict strategic default behavior at early stages of delinquency, and details loan modification tactics that can be used for these different segments. It also considers the impact of a longer observation window post-mortgage default.

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Background

The ongoing economic downturn has been awash with customers walking away from their homes, driven primarily by 'negative equity', i.e. they owe more on their mortgages than the homes are worth. The American consumer has had a long-held taboo against walking away from the home, and this crisis seems to be eroding that. We define 'strategic default' as default behavior on a mortgage purely out of negative equity considerations, i.e. the borrower has the ability to make monthly payments on his mortgage, but chooses not to do so.

Understanding strategic default behavior is very important in the current context, where public policy – and taxpayer dollars – have been focused on reducing foreclosures by offering homeowners loan modifications. Such modifications typically reduce monthly payments and give the borrower a greater incentive for staying in his home. However, a strategic defaulter is not interested in keeping his home and will likely re-default on his modified loan. Hence, loan servicers will be better off by pre-screening these borrowers, and developing tactics that attempt to convince them to change their mind. Finally, if this behavior can be predicted at origination, lenders should underwrite differently.

Research estimates that 14-15 MM homeowners in the US live in homes that have 'negative equity' or 'are underwater'. Of these, roughly half owe more than 125% of the value of their homes[1]. This is a large potential pool of borrowers that could strategically default, though we're not suggesting that all of them will.

Academic research has focused on the social and economic forces behind this behavior, and has tried to size the problem. A study by the Federal Reserve Bank of Boston in 2008 concluded that only 6.4% of borrowers with negative equity end up in foreclosure, based on analysis of ~100K borrowers in Massachusetts who had negative equity in Q4 1991[2]. Home prices in Massachusetts fell by 22.7% between 1988 and 1993, though it is likely that most of the borrowers analyzed did not have as much negative equity as borrowers do currently. The study argues that negative equity is a necessary but not sufficient condition to default on the mortgage, and transaction costs such as sentimental attachment to the home, inertia, moving costs, reputation issues and reduced future access to credit are also important drivers of that decision.

Another study analyzes the moral and social constraints to strategic default, and argues that people in neighborhoods with high foreclosure rates are more likely to default strategically[3]. The authors surveyed a representative sample of US households in December 2008 and March 2009, and asked them if they would walk away from their home in case the mortgage exceeded the value of their home by amounts ranging from

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[1] Source: Deutsche Bank securitization reports, Aug 5, 2009

[2] Foote, C., Gerardi, K., and Willen, P., "Negative Equity and Foreclosure: Theory and Evidence", Federal Reserve Bank of Boston working paper No. 08-3. June 5, 2008

[3] Guiso, L., Sapienza, P., and Zingales, L., "Moral and Social Constraints to Strategic Default on Mortgages". Working paper. June 2009

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$50K to $300K. The survey also asked respondents if they thought it was morally wrong to walk away from the home if they could afford to make the monthly payments. Based on this, the study estimated that 26% of existing defaults are strategic. Strategic default rate ranges from 0% at less than 10% negative equity to 17% at 50% negative equity. People who know a strategic defaulter are 82% more likely to state that they would default strategically, and those who consider it immoral to default are 77% less likely to state their intention of doing so.

While both these studies are insightful, they have shortcomings when it comes to estimating the size of strategic default. The Massachusetts analysis is not representative of current conditions where more than 6 MM borrowers owe more than 125% of their home value. The sizing estimate of the second study is based on primary research and not actual behavior. Our approach addresses these limitations by using credit bureau data on actual performance of millions of borrowers over the 2004-08 time period.

The remainder of this report attempts to answer the following questions:

- How do we identify ‘strategic default’ behavior? How large is it?
- What does this customer segment look like? How is it different from other types of mortgage defaults?
- Can we identify the strategic defaulter early?

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Defining ‘strategic default’ in mortgage

A perfect way of identifying strategic defaulters would require data on consumers’ income, assets and current LTV. While lenders have access to an estimate of current LTV, income and asset information has to be obtained directly from the consumer. We have attempted to use more easily available data from Experian’s credit bureau files to observe behaviors that should be consistent with the consumer having some income and assets. Our definition of ‘strategic default’ is based on a borrower’s payment performance on his mortgage and other non-real estate debt obligations, such as credit cards, student loans, auto loans and other personal loans. A strategic defaulter should only be delinquent on his real estate obligations, and would not want to have his car re-possessed or credit cards frozen. The real estate default will be driven solely by negative equity.

However, without income data, this segment is hard to define. A large segment of customers is delinquent only on their mortgage, but occasionally do make a payment. These customers could be genuinely trying to recover, or just prolonging ‘free rent’ by getting a loan modification or just stay till they are foreclosed upon.

In order to address this challenge, we use an extremely stringent definition of ‘strategic default’. We define such borrowers as those who rolled straight from current to 180+ dpd, while staying current on **all** their non-real estate debt obligations, 6 months after they first went 60 dpd on their mortgage. The fact that they made payments for 8+ months strongly suggests an absence of distress and availability of some form of income. Such borrowers made up 17% of all borrowers who went 60 dpd on their mortgage in 2008.

We also define another segment as ‘cash flow managers’. These borrowers also went delinquent on their mortgage and continued to make payments on **all** their non-real estate debt obligations for 6 months after the mortgage delinquency. However, they made occasional payments on their mortgage as well, which suggests that they were likely to be temporarily distressed. These customers are most likely to cure on the mortgage, as we describe later. Cash flow managers were 21% of all borrowers who went 60 dpd on their mortgage in 2008.

Most of the remaining customers seem distressed, as they were delinquent on at least one non-real estate trade within 6 months of the mortgage delinquency. In total, these customers were 51% of all borrowers who went 60 dpd on their mortgage in 2008. A significant portion of these customers also rolled straight from current to 180+ dpd on their mortgage. For the sake of completeness, we also defined two other segments:

- Pay-downs: Paid off mortgage after delinquency (5% of mortgage delinquencies in 2008)
- No non-real estate trades at the time of mortgage delinquency: In the absence of income data, we cannot tell whether these borrowers are strategic defaulters (6% of mortgage delinquencies in 2008)

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Defining 'strategic default' in mortgage

A summary of the definition of these segments is provided in Table 1.

Table 1: Mortgage default segments

Segment	Mortgage delinquency behavior	Non-RE delinquency behavior
Strategic default	Straight roll from current to 180+ dpd	No delinquency 6 months after 60 dpd on mortgage
Cash flow managers	60+ dpd on mortgage; no straight roll	No delinquency 6 months after 60 dpd on mortgage
Distressed default	60+ dpd on mortgage; including straight roll	Delinquent on at least 1 non-RE trade within 6 months after 60 dpd on mortgage
Pay-downs	60+ dpd on mortgage; paid down loan after delinquency	N/A
No non-RE trades	60+ dpd on mortgage	No non-RE trades

As expected, we see a large incidence of strategic default in recent time periods when home prices are much lower. According to the Case-Shiller index, home prices in December 2008 were 28% lower than home prices in March 2006 across the United States, and as much as 41% lower in California. This supports our negative equity hypothesis, as does the fact that this behavior was barely noticeable in 2004. The incidence of cash flow managers has stayed remarkably consistent over time – this again supports our assertion that these are customers who are 'temporarily distressed'. Pay-downs have declined from 38% to 3% – a remarkable yet expected drop, since most of these were likely to be driven by loan refinancing. Distressed borrowers therefore have one less option, reflected in the increase in incidence from 31% in 2004 Q4 to 51% in 2008 Q4. Figure 1 shows this in greater detail.

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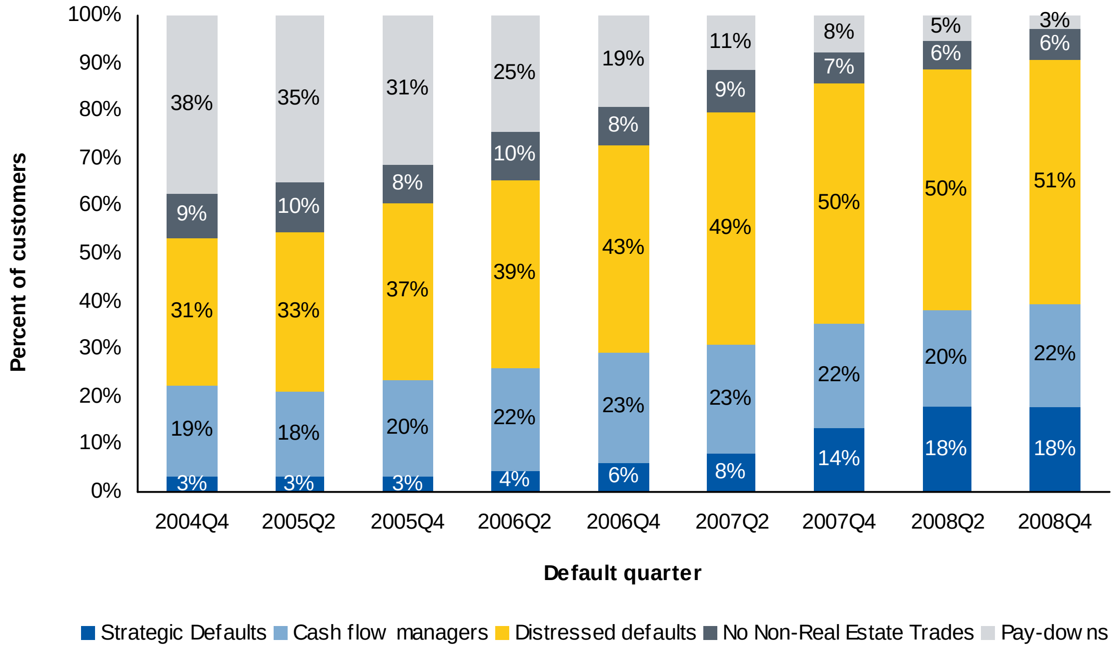
Figure 1: Distribution of mortgage default behavior by quarter of 60 dpd



In terms of absolute numbers, we estimate that ~588K borrowers strategically defaulted on their mortgages in 2008 (i.e. they went 60 dpd at some point in 2008, straight rolled to 180+ dpd and did not default on any of their non-real estate debt obligations for 6 months following the 60 dpd on mortgage. For some of them, the 180+ dpd occurrence may have happened in early 2009). This is a 128% increase over 2007, and the in-year 2008 trajectory suggests that this level of growth is likely to continue in 2009 – the quarter-on-quarter increase was 15-23% (non-annualized).

Consistent with our earlier finding, we also see more strategic default among loans from recent vintages. Comparing vintages controls for income distress to a large extent, but not for decline in home prices. So while mortgage delinquencies in the 2006 vintage were more than 300% higher as compared to the 2004 vintage, strategic defaults were almost 600% higher (Figure 2). Cash flow managers and distressed defaults grew in line, and pay-downs showed materially lower growth, as expected.

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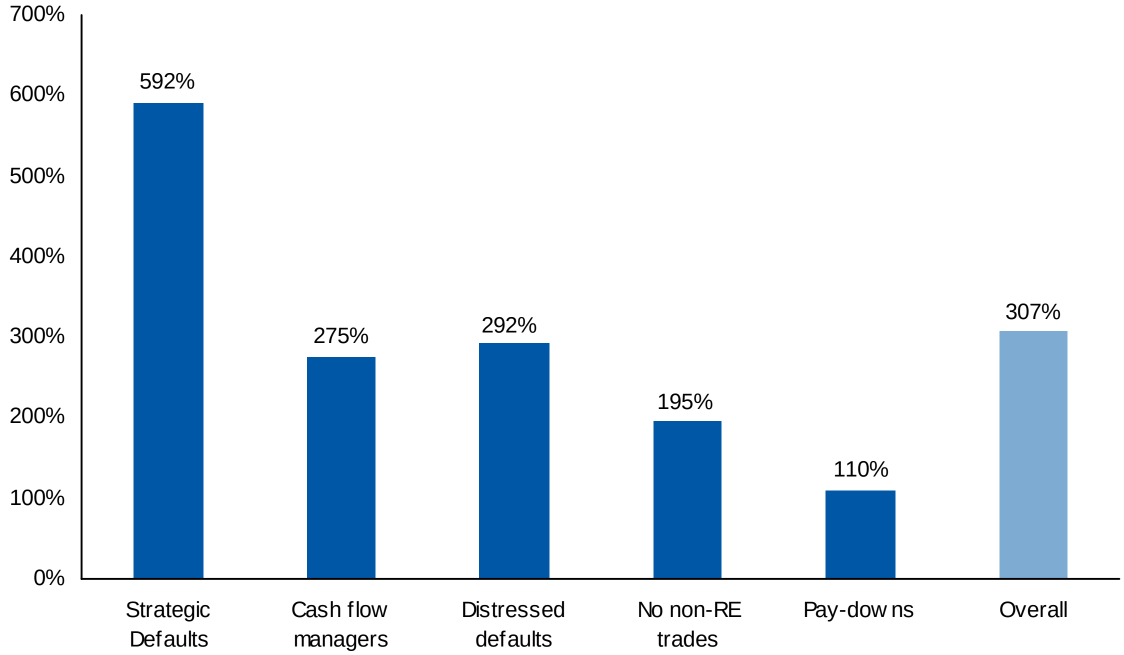
Figure 2: Vintage differences by segment
2006 vs. 2004 vintages



Additionally, we should see higher incidence of strategic default in geographies like California and Florida which suffered a high decline in home prices, but not equivalently higher unemployment. Figure 3 shows this to be the case – strategic defaults in California were *68 times higher* in 2008 as compared to 2005. Over the same time period, strategic defaults increased by a much lower factor of 9 for the country as a whole. Unemployment in California increased at only twice the national average between December 2005 and September 2008 (unemployment leads delinquencies), which is clearly insufficient to explain the difference in strategic default growth in California vs. the rest of the country. Cash flow managers and distressed defaults increased too, but by much lower factors, and closer in line with overall growth in delinquencies. These segments should be less affected by negative equity; hence we would expect them to keep pace with the overall increase in delinquencies, which seems to be the case. Florida shows a similar trend, though slightly lower in magnitude.

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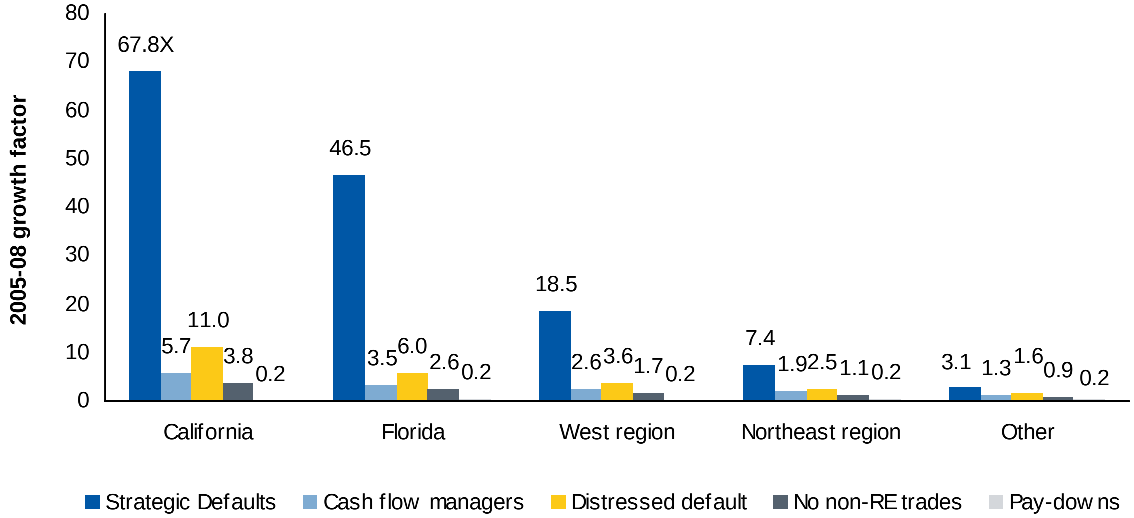
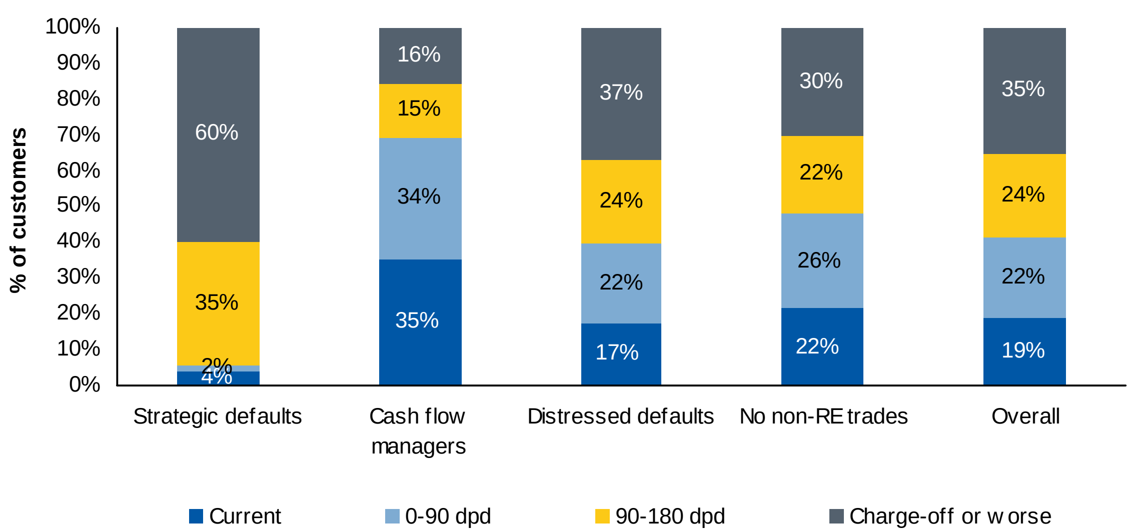
Figure 3: Growth in mortgage delinquency by segment and geography 2008 vs. 2005



Finally, consistent with their definition, strategic defaulters are more likely to charge-off on their mortgage as compared to other segments. As shown in Figure 4, 95% of strategic defaulters had charged off or were in late-stage delinquency, 6 months post-60 dpd. The remaining 5% are potentially the beneficiaries of a loan modification or have re-defaulted on a loss mitigation action. Additionally, ~70% of cash flow managers cure or don't get materially worse; even those who eventually charged off made at least one payment. This is consistent with behavior we would expect of this segment – trying to get their finances back on track, and with clear intention to keep possession of their home.

Figure 4: Status of mortgage trade 6 months post-default 2008 mortgage defaults



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Characteristics of strategic defaulters

During early-stage mortgage delinquency, strategic defaulters and cash flow managers look very similar – both are delinquent on their mortgage and are not delinquent on any other trades. However, it is critical to distinguish between these segments at that point since cash flow managers are more likely to cure and will benefit from a loan mod. Strategic defaulters, on the other hand, are most likely to charge-off and a loan mod will result in wasted effort and unnecessary cost.

While comprehensively identifying elements that can predict strategic default is beyond the scope of this report, we've analyzed certain characteristics that may be used as predictive attributes. These include:

- Number of first mortgages (as a proxy for identifying investors)
- Origination VantageScore
- Home equity line default behavior
- Origination mortgage balance

In addition, current LTV should be a good predictor, consistent with our hypothesis. Additional characteristics will be analyzed in Part 2 of this report.

a) Number of first mortgages

As expected, customers with multiple first mortgages, i.e. investors, show higher incidence of strategic default (see Figure 5). The presence of multiple first mortgages – while a sign of greater wealth and hence ability to pay – also increases the likelihood that one or more of them is for an investment property. If a borrower is underwater on an investor property, he is more likely to default on it and continue to fulfill his other obligations, including the first mortgage on his primary residence. Consistent with this hypothesis, we find that of customers with multiple first mortgages, 80% stay current on at least one of them, which is likely to be the one on their primary residence.

However, strategic default is not limited to investors. 64% of all strategic defaulters had one mortgage only, implying that they were walking away from their primary residence.

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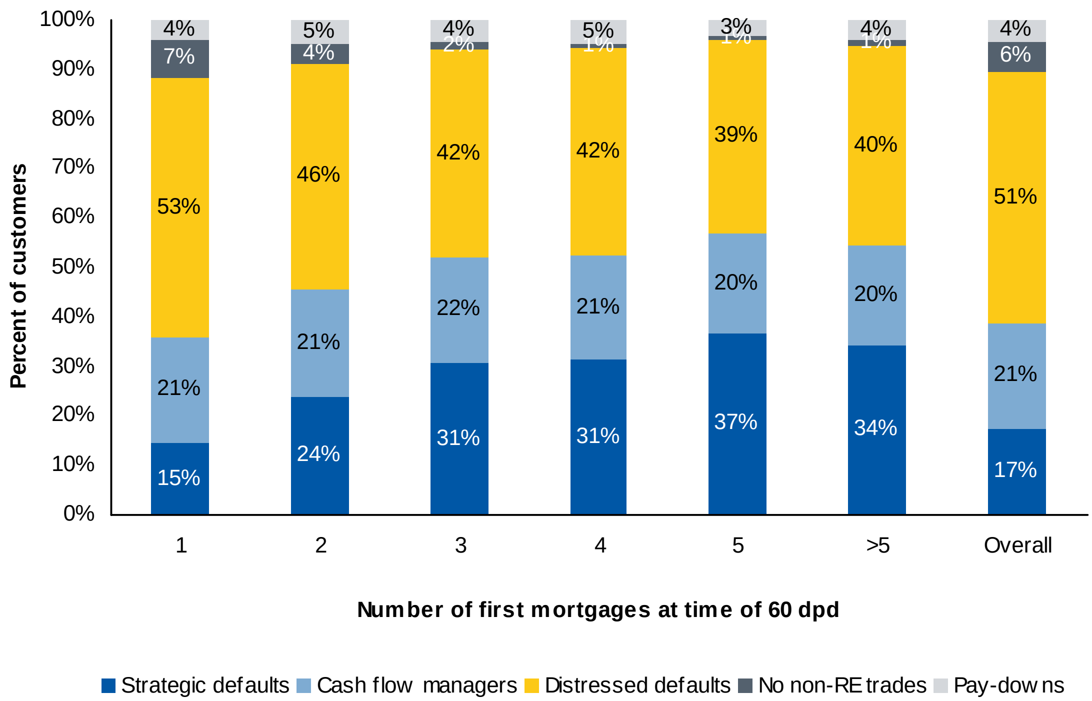
Characteristics of strategic defaulters

Figure 5: Distribution of 2008 mortgage default behavior by number of first mortgages



b) Origination VantageScore

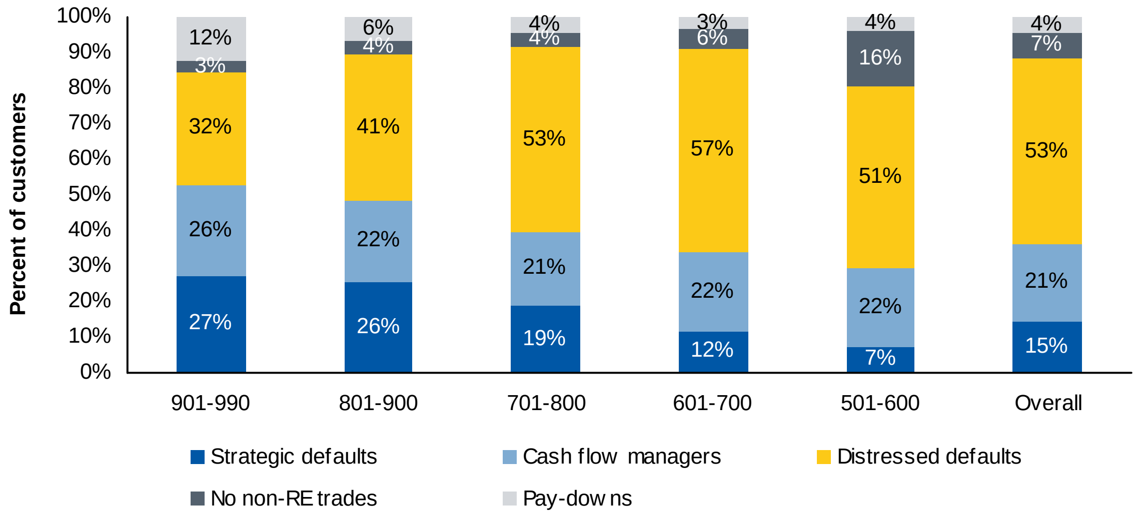
Remarkably, more credit-worthy borrowers are more likely to be strategic defaulters, though they have lower default rates overall. For example, customers with VantageScore between 901 and 990 (super-prime) had 30% of all mortgage trades at the end of 2008, but accounted for only 3% of all mortgage defaults in 2008[4]. However, 27% of these defaulters were strategic, as compared to 15% for the overall population (Figure 6). This is after excluding investors, since they're likely to be more credit-worthy and hence may bias the sample.

Note that we're considering VantageScore at the time of origination, so this conclusion has potential implications for underwriting, in that credit-worthy borrowers are more likely to make the financially strategic decision of walking away from an underwater home. That said, a very small percentage of these high credit score borrowers are likely to default, and only in a severe environment as we are facing now. More work needs to be done to analyze whether the propensity to strategically default can be predicted independently from credit quality at the point of origination.

[4] Source: Experian-Oliver Wyman Market Intelligence Report Q2 2009

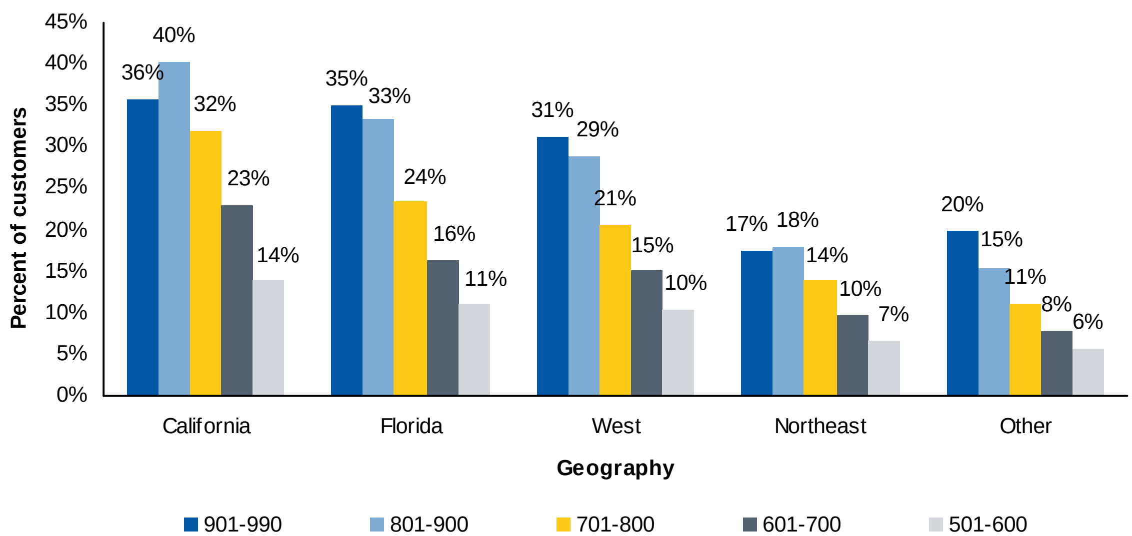
Characteristics of strategic defaulters

Figure 6: Distribution of 2008 mortgage default behavior by VantageScore bands (customers with 1 mortgage only)



Additionally, even though the higher VantageScore bands are concentrated in geographies such as California and Florida (which we have shown as having a higher incidence of strategic default), this trend holds within these specific geographies too (Figure 7)

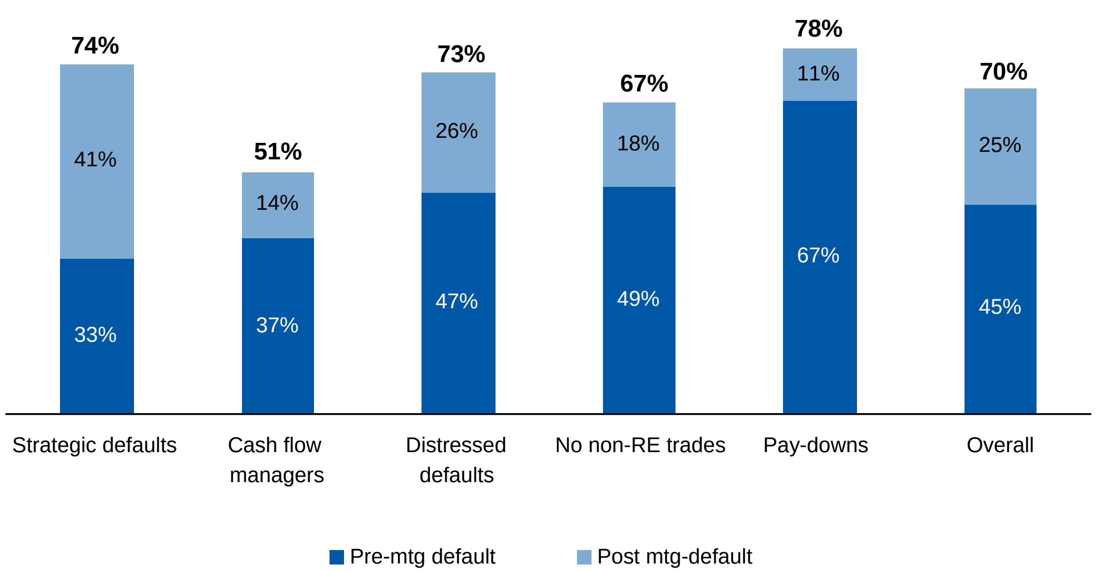
Figure 7: Incidence of strategic default by geography and VantageScore bands (customers with 1 mortgage only)



c) Home equity line default behavior

Strategic defaulters are more likely to stay current on their home equity lines prior to mortgage default. After controlling for the investor effect (an investor may not default on the home equity line tied to their primary residence but default on the first mortgage on their investor property), we find that less than 45% of strategic defaulters who went delinquent on their HELOC did so before they went delinquent on their mortgage, as compared to 64% for the overall population (see Figure 8). A borrower in distress would likely default on the HELOC before the first mortgage, in the hope of salvaging the home. Fewer strategic defaulters show this behavior, implying that they're potentially waiting to draw down their line even more. This is further evidence of strategic default behavior.

Figure 8: Home equity line default behavior of 2008 mortgage defaults (customers with one mortgage only)
% of customers



d) Origination mortgage balance

Customers with higher mortgage origination balance are more likely to be strategic defaults, even after controlling for geography, VantageScore and number of first mortgages. This result is intuitive because otherwise good customers would have a greater incentive to walk away from their mortgage if the dollar amount of the "loss", or difference between their mortgage balance and home value, they are facing is higher. Additionally, higher mortgage origination balances are likely to be correlated with higher LTVs, which is the key driver of strategic default.

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Implications

Strategic defaults are likely to take advantage of loan modification programs, and try and stay in their home for as long as possible while making as few payments as possible. They should have a high propensity to re-default, and design of a loan modification program should attempt to limit such abuse. Servicers should develop screening algorithms for such borrowers, based on analysis of characteristics that can predict this behavior as early as possible.

Cash flow managers, on the other hand, should be key targets of loan modification programs. They are likely to be in temporary distress, and may also have financial resources which allow them to continue to pay their non-mortgage obligations. This clearly demonstrates willingness to pay, and a loan modification that makes their mortgage payments more affordable is likely to be very effective.

Distressed defaulters will likely require more aggressive modifications and help managing finances. They're likely to have been recently unemployed or be facing some other form of distress. Modifications for these borrowers will require aggressive reductions in monthly payments and even that may not be sufficient to prevent re-default.

These customer segments raise some interesting questions for non-real estate lenders too. For example, if a credit card issuer knew that a particular customer was a strategic defaulter, should they reduce the customer's line on his card based on the mortgage default? In addition to unemployment or some other form of income distress, under what conditions will these customers default on their card? In today's environment, all card issuers are devoting a lot of time and energy on such pre-delinquency actions, and they need to determine the best course of action for each of these segments.

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Additional analysis

We recommend that loan servicers and investors replicate and extend this analysis on their own portfolios. They should use current LTV data for a more accurate read on whether the borrower has negative equity. They should also use income data collected during the collections process, and use that to validate the definition we have proposed. Experian and Oliver Wyman have developed a comprehensive methodology for identifying these segments after incorporating this additional data, which can be implemented in as little as 3-4 weeks. Standard credit bureau archives and attributes are not designed for the type of analysis we have described in this paper. Experian and Oliver Wyman jointly designed a custom dataset starting with “raw” or trade-level consumer data. Now that the design work has already been done, datasets matching particular portfolios can be appended more easily. This dataset can then be used to identify attributes which predict strategic default, culminating in scores that can be used in loan modification decisions.

Subsequently, servicers should develop strategies and offers for convincing strategic defaulters to change their mind, e.g. equity risk-sharing arrangements. A carrot-and-stick approach may also work well, e.g. borrower agrees to provide a deed in lieu of foreclosure in case he re-defaults on the modified loan.

Part 2 of this report will attempt to burrow deeper into this problem, and address the following issues:

- Additional characteristics of the strategic defaulter, cash flow manager and distressed default segments, e.g. differences in behavior on credit card and auto trades
- Initial analysis on how to predict strategic default in early stages of delinquency
- Will our conclusions change if we consider a longer performance window post-mortgage default, say, 12 months instead of 6?

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