

CALLING IT RIGHT ON COLLECTIONS

It's that time in the economic cycle again – banks are worrying about collections and bad credits. Today, the focus is on subprime mortgage collections. Tomorrow the concern is likely to extend across the retail credit spectrum and product range. Even optimists about the global economy can expect collections to be a big topic in banking for at least the next two years or so.

We think that banks have a real chance in 2008 to improve collections by building models specially adapted to predict the behavior of delinquent credits.

But are bank collections programs up to the job? Many programs are run efficiently in terms of minimizing costs and using new technologies to push up call and 'contact' rates. Most programs, however, struggle to focus resources on the interventions that have the most impact and to balance the dollar costs of the call with its dollar benefits (eg, reducing losses).

We think that banks have a real chance to improve collections by building models specially adapted to predict the behavior of delinquent credits. Almost all banks presently use risk scoring models to distinguish between 'good' and 'bad' borrowers, however these scores are not tailored to delinquent borrowers. These new delinquency models would complement, and in some ways outperform, the existing general scoring models that banks presently use.

The new models could be used to:

- improve management information by making better predictions about the number and type of customers who will move from 'over the limit' to 30 days past due (DPD), to 60DPD, and into default.
- prioritize resources in terms of the most effective number and spacing of calls for each customer segment, and

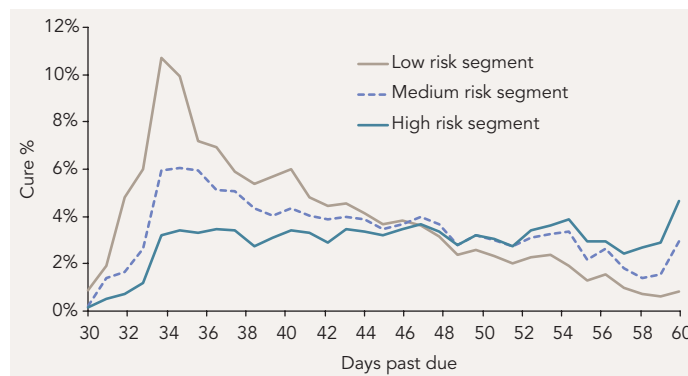
the most effective medium (eg, call versus direct mail) and call content (eg, reminder versus payment plan).

- optimize collections by comparing dollar call costs to their predicted dollar benefits, eg, in terms of reductions in expected loss.

This kind of analysis is not costly in terms of bank resources, and can be based on either historical account data – our focus in this article – or on 'live' data from a small sample of customers. The results can be used to cut collections center costs or to reallocate collections resources to reduce credit losses. One recent client was able to cut costs by around 50-60 basis points of the total assets in their credit card portfolio.

Figure 1 uses illustrative data to set out one of the insights gained from this kind of analysis, with reference to credit card collections from 30DPD customers. Each line represents a different risk segment of these customers, defined in terms of the risk that they will move on to the next stage of delinquency (ie, 'roll' rather than 'cure').

Figure 1: Cure/stabilize rates by day and risk segment



We can see that the risk segments behave quite differently to each other. For example, a marked peak of low-risk borrowers makes payments early in the 30-day cycle; high-risk borrowers show no such behavior. Bankers traditionally

assume that all past due customers should be called sooner rather than later. But does it make sense for the firm to treat low- and high-risk borrowers with the same priority, especially when low-risk customers are going to get back on track anyway later in the month?

MAKING CONNECTIONS

As the risk segmentation in Figure 1 implies, 'past due' customers are not created equal. Some 30DPD customers are much more likely to carry on to become 60DPD, and eventually to default, than are others.

This is important because, by definition, riskier customers default more often, exhibit lower recovery values and, our research shows, respond quite differently to interventions.

The first thing that a bank must do, therefore, is to define segments of customers in terms of their risk, so that the bank can conduct Figure 1-style modeling. This means building specialized scoring models, based on the bank's historical account records, that link observable customer attributes (eg, past customer behavior, credit balance, FICO score) to the customer's chance of continuing to fail to make payments and eventually defaulting.

Statistical techniques such as regression analysis can be used to identify and weight the key credit inputs for these models; fewer than 40 inputs are necessary, in our experience.

However, the bank will need a series of models at each cycle stage to determine the likelihood that the borrower will move on to the next cycle stage in delinquency or, eventually, default (Figure 2).

In themselves, these models provide useful management and reporting information about how many 30DPD customers will become 60DPD and enter charge-off – the results are more impressive than most banks' existing internal scoring models.

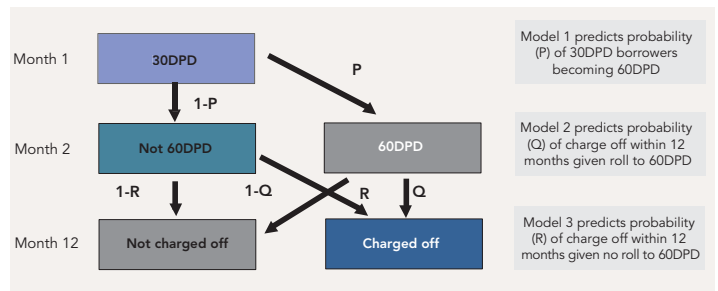
More ambitiously, with the risk models in place, the bank can explore what happens when various actions (eg, a reminder call) are applied to a given risk

segment at a given point in the cycle, and can then compare the outcome to the:

- base case, when no remedial actions are taken at all
- outcome for the same action, applied to different customer segments
- outcome for the same action, applied at a different point in the collections cycle
- and so on.

The quickest way to understand the effect of different interventions is to layer historical call information on top of the risk segmentation. Compared to the non-intervention base case, how much did the intervention improve payment behavior in terms of customers curing, rolling or charging off?

Figure 2: Risk models predict outcomes at each cycle stage



Most retail banks have enormous amounts of historical account information that they can use for this kind of analysis, though there are traps for the unwary in terms of selecting and treating data.

This level of analysis underpins Figure 1. However, to conduct a true cost/benefit analysis we also need to attach dollar costs and dollar benefits to the predicted outcomes. This is because higher risk, higher balance customers can absorb a much more costly rate of intervention – providing it makes a difference – than can low-risk, low-balance customers.

CALLING COLLECT

It's easiest to think through the cost/benefit analysis in three steps:

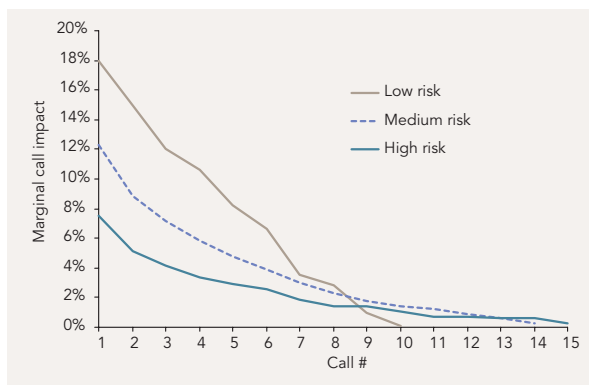
- **Step 1:** The bank works out the economic implications of the borrower moving along each stage of the collections cycle laid out in Figure 2 (eg, cure vs roll, roll vs default). In the

case of credit card collections, the costs of a negative move are made up of any increase in the probability of default, the likely charge-off amount (largely driven by the balance of the account), work-out costs, and loss in interchange.

- **Step 2:** We also need to factor in the benefits of a positive change (eg, moving from 30DPD to normal payment behavior), in terms of improved expected interest and fees payment. This can be estimated from the historical account information associated with 30DPD borrowers.
- **Step 3:** The bank then measures the marginal cost of an intervention, such as the cost of an outbound call. The marginal cost of a call depends partly on the variable expenses of the relevant collections unit (eg, the 30DPD unit). This requires some detailed activity-based analysis of staffing costs (eg, salary, benefits, turnover costs) and productivity (eg, the number of calls made).

The bank can now model interventions in terms of both their effect on payment behavior, and their dollar costs and benefits.

Figure 3: What difference does a further call make to the baseline cure rate?



GETTING CUT-OFF

The precise results of any analysis naturally vary considerably between banks, but the following examples highlight the kind of finding our clients have acted on:

- **Optimal call timing depends upon risk.** Figure 1 is an example of this kind of finding: we mentioned that it may not be worth calling low-risk borrowers

early in the cycle – some people are just habitual late payers, not big credit risks. Our research indicates that it can also be worth concentrating calls to high-risk borrowers in the last week of the cycle. This accords with most bankers’ intuition: stressed borrowers are most easily swayed toward the right decision when they are called within a few days of a deadline, rather than at an earlier point in the collections cycle.

Banks need to plan how to handle the coming onslaught of delinquencies and collection calls.

- **At the extreme, risk costs make decision-making simple.** Optimizing collections isn’t always a matter of striking a fine balance. Our research can show that the net cost of failing to cure some very low-risk borrowers is so low that it makes no sense to call these borrowers at all. Conversely, the net cost for some high-risk borrowers is so high that calling is warranted regardless.
- **The medium matters as much as the message.** Our techniques can compare the effect on each risk segment of different kinds of interventions such as reminder calls, calls offering various payment plans, automated calls, direct mail, email and reminders using text messages. Automated calls, for example, tend to work best for low-risk customers.
- **Understand the law of diminishing returns.** After a certain number of calls, additional calls make little impact on payment behavior. But as we can see in Figure 3, it’s important to understand exactly where this cut-off lies and how it varies according to risk segment. Figure 3-style results must be viewed through the prism of a true cost/benefit analysis. Making numerous additional calls with a low marginal success rate to a low-risk customer rarely makes sense, but a high-risk customer is a different matter.

This last point underscores the true value of our approach. Banks can replace intuitive rules of thumb with a series of quantitative algorithms that optimize their collections activities.

For example, a Figure 1-style analysis might tell the bank that low-risk borrowers should not be called until the third week of their cycle. At this point, if the borrower has not cured, Figure 3 might suggest that this borrower should be called up to 10 times – provided the cost of the call is outweighed by the expected change in loss.

CONCLUSION

Banks need to plan how to handle the coming onslaught of delinquencies and collection calls. We think the best way to do this is by measuring the costs and benefits of interventions with different customer risk segments and then formulating clear, objective rules based on the bank's own data.

While most banks will use these rules to improve management's tactical decisions, formal algorithms can also be developed from the models to help direct call center activities, eg, queuing accounts for collection agents.

The approach can also be extended 'forward' in the collections cycle to optimize interventions with customers who are over the credit limit, but not yet overdue on payments, or who show other forms of behavior that attract attention.

As well as driving down credit losses and cutting collections costs in the short term, the approach therefore offers many strategic competitive advantages in terms of identifying problematic customer segments, improving underwriting decisions, pricing for risk and reducing economic capital requirements.

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