BY DR. ROBERT L. PHILLIPS

five keys to finding the 'right' price

Profit-based pricing helps lenders find the optimal price.

| SYNOPSIS | By improving their ability to analyze and assess customer transaction history data and use that ability to make future decisions, financial institutions can move past risk-based pricing to profit-based pricing. That allows them to first optimize prices within existing segments, then fine-tune customer segments for even more precise pricing, according to Robert L. Phillips, founder of Nomis Solutions Inc. Such innovative pricing strategies can significantly improve both profits and volume on retail loans, he says.

Bank executives are finding this year to be rife with market volatility, changing customer needs, stricter regulatory guidelines and an intensely competitive environment. Fresh out of ideas on how to attain growth, many turn to headcount reductions and acquisitions. However, there is a much more fruitful way to achieve organic growth and gain a competitive advantage while supporting compliance.

Banks have spent millions of dollars collecting and storing transaction and customer data. They have a tremendous opportunity to use this data to better understand how their customers value their products. Banks can use a profit-based pricing approach to leverage that information to optimally price their loans in order to achieve their desired corporate objectives.

Corporate objectives vary from bank to bank. Some banks are focused on increasing profits and are willing to sacrifice some market share to achieve it. Others are focused on improving their market share but not at the expense of profits. However, the majority would be pleased if they could increase both profits and market share. Profit-based pricing can enable this. For example, one top 10 U.S. bank's home equity lending line of business has increased profits by 15% and volume by 13% using profit-based pricing. On average, banks achieve between 10% and 20% increases in both profits and volume by using profit-based pricing.

In addition to the financial benefits, profit-based pricing provides valuable insights into how price affects customers, product and portfolio performance. Banks can gain enormous value by understanding how price influences demand for loans as a function of characteristics such as loan amounts, loan term, and loan-to-value or by channels such as Internet, call center and branches. Bankers can then use this information to optimize their pricing strategies to enable profit and volume improvement across various market segments and the entire loan portfolio. With a better understanding of their customers, retail bankers in auto finance, mortgage, home equity lending, personal lending and deposits are developing innovative pricing strategies that significantly improve their performance.

In a fall 2006 study of the U.S. home equity lending market, Atlanta-based BenchMark Consulting International interviewed 22 of the top 25 banks and found that all of them believe there is room for improvement in their current pricing practices. Additionally, 73% of respondents planned to improve their pricing process in the next two years and 50% were in the process of evaluating price opti-

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mization solutions to enable a profit-based pricing approach to achieve their business goals. A similar level of interest was shown in a 2006 survey of the top 20 auto lenders in the U.S., also by BenchMark.

setting the right price

Setting the "right" price is an age-old challenge in every industry. Set the price too high and you struggle to sell your goods. Set the price too low and you sell out, but leave money on the table with each deal.

Pricing in financial services is particularly complicated. Unlike traditional retail sales, selling a loan is just the start of a relationship with a customer and it involves built-in uncertainty — at the time a loan is funded, the lender does not know whether or not the borrower will repay early or possibly default. Further complicating matters, lenders are experiencing margin and cost pressure, increased competition for market share from traditional and non-traditional lenders, an aggressive regulatory environment, increased consumer and business credit risk and a highly saturated credit market. All of these factors leave limited opportunities to maintain profitable growth without taking on unacceptable levels of risk.

The most recent innovation in loan pricing was the introduction of risk-based pricing in the early 1980s. Risk-based pricing seemed revolutionary at the time but is really the lending equivalent of cost-based pricing since it focuses entirely on the expected cost to the bank of serving the customer. In particular, it does not take into account what a customer would be willing to pay for its products relative to the competition.

The days when risk-based pricing provided a competitive advantage are now over. In order to compete effectively in today's retail lending environment, each bank needs to understand how different customers value its products and services relative to the competition and to use this information to set the prices that best meet its business goals. One key to gaining this understanding is to estimate the price-elasticity of different customers for different products through different channels.

The good news is that banks have invested in customer relationship management (CRM) systems and other technology to collect and store data about their customers. Banks also have information about individuals who applied for a loan and were accepted by the bank, but did not take the loan. When this information is combined with other market and credit bureau data, banks are in a unique position to fine-tune customer segments and calculate various product and price demand elasticities in relation to competing banks' services. This becomes the key to setting more effective prices that help achieve corporate objectives and result in peak performance.

Below are five of the key lessons of profit-based pricing that we have learned from our work with retail banks and finance companies.

MICHAEL MAES PHOTOGRAPHY FOR *BAI'S BANKING STRATEGIES*

one: UNDERSTAND THE INCREMENTAL PROFITABILITY OF EVERY POTENTIAL TRANSACTION

Profit-based pricing requires understanding the effects of all elements of price — whether it be APR, points or a fee — on the profitability of a particular loan. Currently, banks can often calculate the expected profitability of a portfolio of loans but do not know the incremental contribution of any one specific loan.

There are two major reasons why incremental loan profitability is often calculated incorrectly. The first is that fixed costs are often allocated inappropriately to individual loans. When a pricing decision is made, the profitability of a loan needs to be evaluated on an incremental basis. The appropriate question is: what is the difference in total corporate costs if this loan funds compared to not funding? Fixed costs such as overhead, information technology and management salaries should not be included when the pricing decision for an individual loan is being evaluated. Even most marketing and acquisition costs should be considered as fixed from a pricing point of view, since they are "sunk" at the point at which price is quoted to an individual lender. However, broker commissions and other dealer or broker fees are part of the incremental costs.

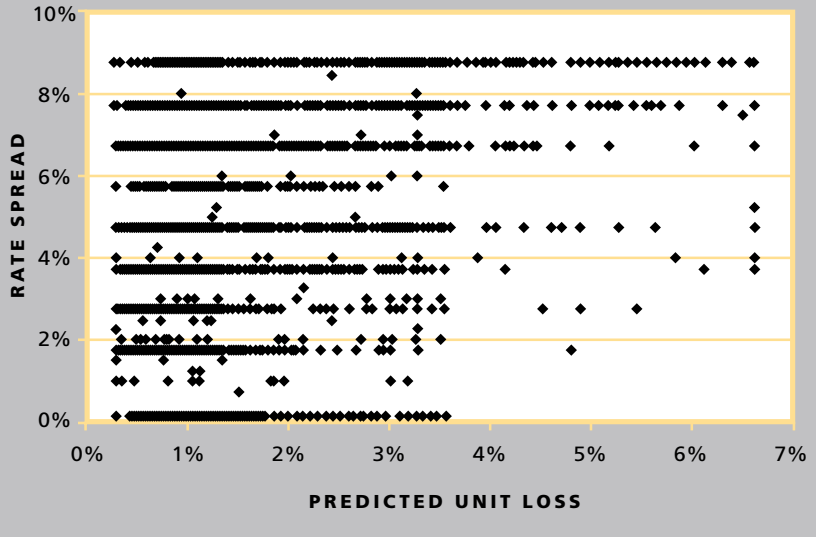
The second difficulty in calculating incremental loan profitability is the need to understand and model future customer behavior in order to calculate the expected incremental profitability of an individual loan. This includes pre-payment behavior as well as default risk (and expected loss in the event of default). For credit lines, calculating incremental profitability requires an estimation of expected utilization patterns over time. One small business lender learned that approximately 20% of its customers stopped utilizing their line after one year. Furthermore, this number depended on the APR associated with the line — the higher the APR, the more customers stopped utilizing their line. This turned out to be an important consideration in calculating the initial APR.

Of course, pre-payment behavior, utilization and default risk only need to be modeled if a prospective loan is to be carried on the balance sheet. If the loan is to be securitized and sold, then the appropriate profitability calculation is to determine the expected difference in sales revenue between a securitized portfolio that includes the loan and one that does not.

Understanding the incremental profitability of different types of loans through different channels to different customer types can be an eye-opening exercise in itself. One bank found that the average loan sold through a particular broker channel had a negative incremental contribution due to a combination of high broker fees and small loans. Simply by closing the channel, the bank saved millions of dollars in lost profit every year.

Rate Spread as a Function of Predicted Unit Loss

This chart shows the rate spread offered for all approved auto loans over a year plotted against forecasted unit loss rates at the time of approval for a lender. Two things are notable. First, the lender offered a wide range of spreads. Secondly, these spreads are not perfectly correlated with expected loss, which shows that the lender was not strictly following a risk-based pricing policy.



Source: Nomis Solutions Inc., San Bruno, Calif.

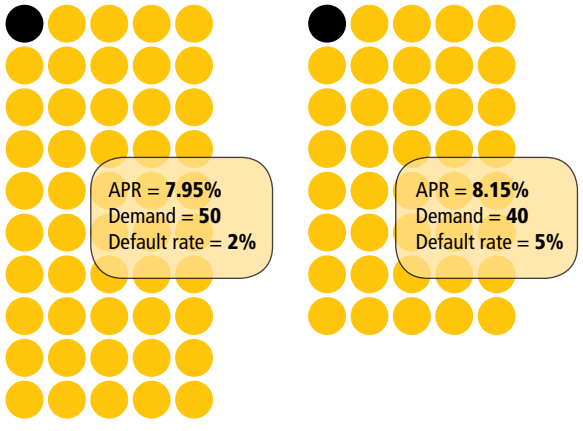
two: YOU MAY HAVE MORE VARIATION IN YOUR PRICING THAN YOU THINK

In most cases, we find that banks often have more historical variation in their prices than they realize (see chart, "Rate Spread as a Function of Predicted Unit Loss," page 3). For banks considering profit-based pricing, this can be good news: examining how different types of customers responded to price variations in the past can be a powerful way to estimate demand elasticity.

The purpose of profit-based pricing is not to eliminate price variation, but to make sure that it is managed to best meet corporate goals. However, determining the right price is only part of what is needed to realize the benefits. Scrutinizing and controlling the variation of price overrides and discretionary pricing at the branch level can lead to a significant improvement in profitability itself. Banks often lose control over pricing due to uncontrolled or weakly-controlled discretion applied at the branch level. One way to control pricing is to provide branch lenders a recommended band around the optimal price for each potential deal. This allows discretion at the local level while still ensuring that the final prices are tailored to the market and meet corporate goals.

Adverse Selection in Credit Pricing

In this illustration, each circle represents a funded loan. The blackened circle represents a loan that will default. When the loan is priced at 7.95%, the bank will fund 50 loans of which one will default, a default rate of 2%. If the rate is raised to 8.15%, the bank will lose 10 loans and only fund 40 loans. Since good credit customers are more price-sensitive, it is highly likely that the defaulter will still fund. This means that the default rate will increase to 2.5%. This is the phenomenon underlying adverse selection in consumer credit pricing.



Source: Nomis Solutions Inc., San Bruno, Calif.

three: ADVERSE SELECTION CAN BE IMPORTANT IN CREDIT PRICING

Raising the price of a credit product will reduce demand for that product and lowering the price will increase demand. In this way, the market for credit is the same as for every other consumer market. However, credit markets are fundamentally different from other markets in one key aspect: increasing the price of a credit product will not only reduce demand, it will also reduce the average credit quality of the customers who fund. The converse is also true: reducing the cost will increase the average credit quality. This phenomenon, which is unique to credit markets and insurance, is known as adverse selection (see chart, "Adverse Selection in Credit Pricing," this page).

The fundamental cause of adverse selection is the fact that customers who are more likely to default tend to be less price-sensitive than customers who will not default. The reason for this is that customers who are more likely to default often have fewer lending alternatives and are therefore less-price sensitive. Poorer credit-quality customers may also be less price-sensitive because they are less sophisticated shoppers or less adept at managing their personal finances. As the price of a loan rises, customers with good credit quality drop away more quickly than poor credit quality customers. As a result, the default rate increases with price. Conversely, as price is lowered, the additional customers that are attracted will, in general, have a lower default rate.

Adverse selection is a real phenomenon that needs to be accounted for explicitly in setting prices for most lenders. Optimizing APRs without controlling for adverse selection will result in rates that are too high and may lead to unanticipated losses down the line. It is particularly important to consider adverse selection in subprime markets, where the fraction of loans that are anticipated to default is already high. In these cases, small percentage changes in the probability of default can lead to large changes in portfolio losses.

four: UNDERSTAND YOUR SALES PROCESS AND WHERE CUSTOMERS ARE RESPONDING TO PRICES

Pricing processes vary across credit products. The process by which APRs are set and communicated are very different between mortgages and student loans, for example. The pricing process can even differ for the same product being sold through different channels. Before prices can be optimized, it is critical to understand who is really making the decision about taking the loan, how prices are presented to them and what price they use as part of their decision whether or not to accept the loan.

For example, indirect auto-lending in the U.S. is a two-step process (see chart, "Typical Indirect Auto Lending Process," this page). Since dealers decide which lender will get a deal, they are the real customers. Typically, dealers use rate sheets to decide to which lenders to send an application. Each lender then decides whether to approve or reject the application. After approving an application, a lender may offer a different rate than that shown on the rate sheet. For some auto lenders, the final buy rate offered to the dealer differs from the rate-sheet rate more than half the time. If the dealer has approvals from multiple lenders, he or she decides which lender gets the business.

Demand elasticity at both decision points needs to be calculated in order to determine the right combination of rates and terms to offer. Profit-based pricing quantifies the demand elasticity for each dealer/customer/product/term combination and uses this information to determine the right rates to offer at both points to achieve performance targets.

By contrast, home equity lending is primarily a direct market with a single-stage pricing process. In this case, banks determine what rates they will offer and customers determine from which bank, if any, they will borrow. In this case, only a single price elasticity needs to be calculated.

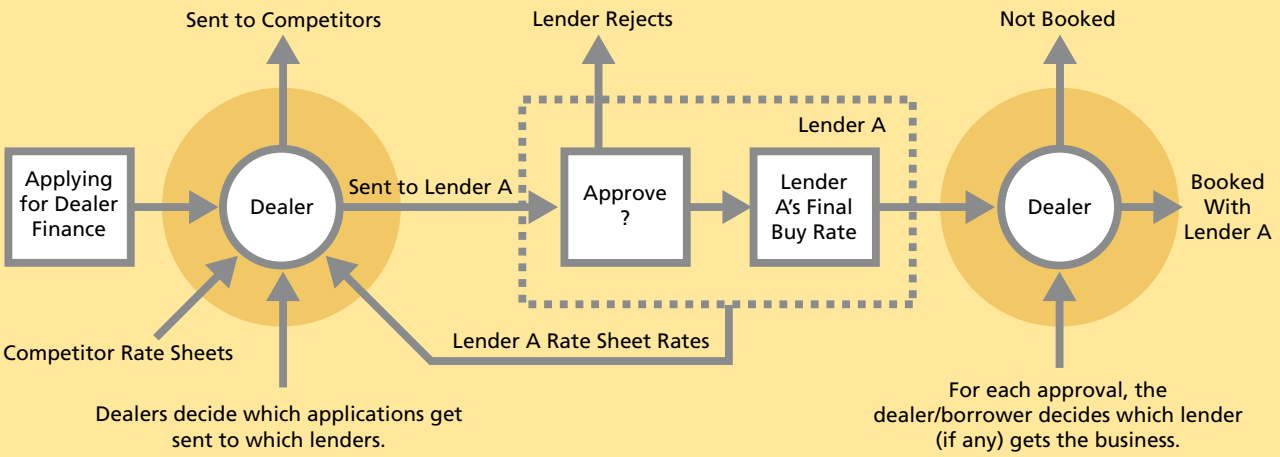
Home equity lending and indirect auto lending are only two examples of the different price decision and price distribution processes to be found in consumer credit markets. Other credit products such as mortgage, student lending, and credit cards are priced using very different processes. The larger point is that profit-based pricing needs to be tailored specifically to the realities of the pricing process within each organization.

five: UNDERSTAND THE TRADE-OFFS YOU FACE IN SETTING YOUR PRICES

Financial services companies — like most companies — want to maximize both revenue and profit. But, all things being equal, these are competing goals. Management

Typical Indirect Auto Lending Process

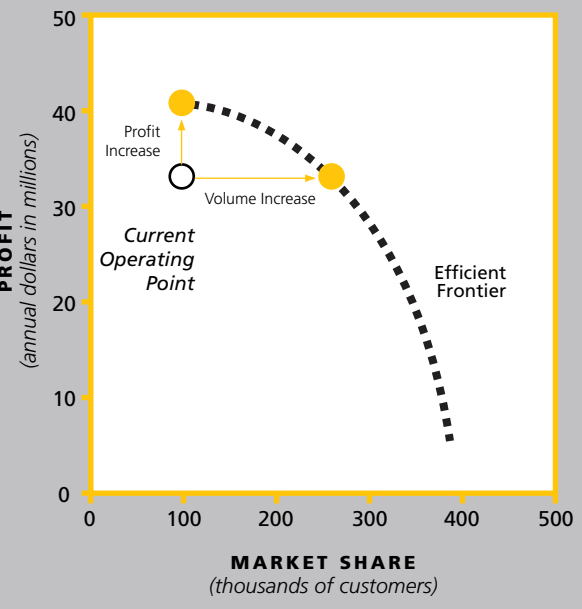
Indirect auto lending includes two important decisions on the part of a dealer: 1) which applications will be submitted to which lenders, and 2) which lender ultimately gets to fund the loan. These two decisions are part of an end-to-end lending process involving both the dealer and the lenders, as shown in this schematic.



Source: Nomis Solutions Inc., San Bruno, Calif.

The Efficient Frontier for Pricing

This chart, taken from an actual lender, shows the efficient frontier, which illustrates the tradeoffs between profit and market share (or total revenue) as well as the current operating point. This lender has the opportunity to increase profit while holding volume constant, increase volume while holding profit constant or to increase both. While the efficient frontier shown here illustrates the tradeoff between revenue and profit for a bank, an efficient frontier can be calculated for any two metrics such as profit and risk or revenue and expected loss.



Source: Nomis Solutions Inc., San Bruno, Calif.

needs a way to understand the trade-offs between these two goals and to choose the point that best reflects their strategic goals in different markets. In some markets, a company may wish to expand lending volume at the expense of profit. In other markets, a company may wish to increase profit, even if it means reducing volume. Finally, in some markets, it may be possible to increase both profit and volume.

Profit-based pricing needs to provide managers with a tool for understanding the trade-offs they face between profit and volume in each of their markets. One powerful way of illustrating the trade-off between pricing and volume is the so-called "efficient frontier." For a particular set of market conditions and competitive prices, the efficient frontier illustrates all of the combinations of profit and revenue that a bank can achieve.

Prior to instituting profit-based pricing, banks are almost always inside the efficient frontier — that is, they have the opportunity to improve both profit and volume. By adjusting prices for different products to different customer segments through different channels, banks can move from their current operating point to the efficient frontier (see chart, "The Efficient Frontier for Pricing," this page). A bank that is optimizing its prices will be operating on the efficient frontier — that is, it will be simultaneously maximizing its revenue and its profit given the opportunities available to it in the market. ⊕

Dr. Phillips is founder, chief science officer and vice president of research and development at San Bruno, Calif.-based Nomis Solutions Inc. and author of the book Pricing and Revenue Optimization.

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