

## XVII. SENSITIVITY TO MARKET RISK

Sensitivity to market risk is generally described as the degree to which changes in interest rates, foreign exchange rates, commodity prices, or equity prices can adversely affect earnings and/or capital. Market risk for a bank involved in credit card lending frequently reflects capital and earnings exposures that stem from changes in interest rates. These lenders sometimes exhibit rapid loan growth, a lessening or low reliance on core deposits, or high volumes of residual interests in credit card securitizations, any of which often signal potential elevation of the interest rate risk (IRR) profile. Management is responsible for understanding the nature and level of IRR being taken by the bank, including from credit card lending activities, and how that risk fits within the bank's overall business strategies. The adequacy and effectiveness of the IRR management process and the level of IRR exposure are also critical factors in evaluating capital and earnings.

A well-managed bank considers both earnings and economic perspectives when assessing the full scope of IRR exposure. Changes in interest rates affect earnings by changing net interest income and the level of other interest-sensitive income and operating expenses. The impact on earnings is important because reduced earnings or outright losses can adversely affect a bank's liquidity and capital adequacy.

Changes in interest rates also affect the underlying economic value of the bank's assets, liabilities, and off-balance sheet instruments because the present value of future cash flows and in some cases, the cash flows themselves, change when interest rates change. The combined effect of the changes to these present values reflects the change in the bank's underlying economic value. An adverse change in the economic value of equity can signal future earnings and capital problems. It can also affect the liquidity of assets because the cost of selling depreciated assets to meet liquidity needs or to access market-based funding may be prohibitive.

### JOINT AGENCY POLICY STATEMENT ON INTEREST RATE RISK

In 1996, the *Joint Agency Policy Statement on Interest Rate Risk* (IRR Policy Statement) became effective. All banks, including those engaged in credit card activities, are expected to follow its guidelines. The IRR Policy Statement identifies key elements of sound interest rate risk management and describes prudent principles and practices for each of the key elements. It emphasizes the importance of adequate management oversight and of a comprehensive risk management process. It also describes the critical factors affecting the evaluation of a bank's interest rate risk when making a determination of capital adequacy. Each bank is unique, and bank management is responsible for identifying the significant IRR risks in its bank and developing a methodology which adequately captures the risks. Some potential considerations specific to credit cards are discussed in the remainder of this chapter but are not exhaustive.

### IRR CONSIDERATIONS SPECIFIC TO CREDIT CARD LENDING

As stated in the IRR Policy Statement, measurement systems for evaluating the effect of changing rates on earnings may focus on either net interest income or net income. Banks with significant non-interest income that is sensitive to changing rates generally focus special attention on net income whereas banks with the preponderance of income derived from interest-sensitive credit card yields net of interest-sensitive funding costs generally focus on net interest income. Increased use of variable-rate pricing on credit cards and the wide spreads usually realized by the card programs typically provide some flexibility in absorbing risk.

Interest income derived from credit card portfolios is sensitive to changes in market interest rates. Management normally considers the variety of pricing programs offered and the impact of competition in its IRR analysis. Intense competition often leads to pricing campaigns that are aimed at attaining market share and that can create margin compression.

Interest expenses borne by banks to fund credit card portfolios are also sensitive to changes in interest rates. As discussed in the Liquidity chapter, funding for credit card portfolios frequently takes the form of wholesale funds rather than core deposits. Typically, wholesale funds, such as brokered deposits and borrowings, are very sensitive to interest rates.

Interest rate mismatches occur when credit card receivables, whether fixed or variable, mature or re-price at different intervals than the funding liabilities. This situation often results from the bank's interest-bearing liabilities, such as borrowed funds, re-pricing daily or weekly, while its credit card receivables re-price less frequently. Interest rate risk mismatches may be exacerbated by management's hesitation to raise interest rates on fixed-rate credit card receivables<sup>11</sup>, which in theory can be changed, but seldom are. The effect of mismatched funding in re-pricing positions can have a dramatic effect on a bank's interest rate margin, particularly in shorter-term positions.

Exhibit C illustrates how mismatch risk manifests itself as a reduction of net interest income and the ROA. It assumes that the average funding cost, tied an index, rises 50 basis points from 8.0 percent in month one to 8.5 percent in month two and that the average monthly interest rate on the credit card portfolio remains fixed at 14.4 percent. If a bank had \$1 billion in credit card receivables, net interest income would have declined in the second month by \$400,000  $([0.53 \text{ percent} - 0.49 \text{ percent}] \times \$1 \text{ billion})$  as a result of mismatch mix.

#### Exhibit C

	Month 1	Month 2
<b>INTEREST INCOME:</b>		
Average Monthly Interest Rate Charged to Cardholders (14.4 % / 12)	1.20 %	1.20 %
<b>INTEREST EXPENSE:</b>		
Average Monthly Interest Rate on Funding		
Month 1 = (8.0 % / 12)	0.67 %	
Month 2 = (8.5 % / 12)		0.71 %
<b>NET INTEREST INCOME:</b>	0.53 %	0.49 %
<b>NONINTEREST INCOME:</b>		
Average Monthly Fees (1.8 % / 12)	0.15 %	0.15 %
<b>NONINTEREST EXPENSE:</b>		
Average Monthly Charge-Off Rate (4.0 % / 12)	0.33 %	0.33 %
Average Monthly Servicing Fee (2.0 % / 12)	0.17 %	0.17 %
<b>NET INCOME ON CREDIT CARD PORTFOLIO</b>	0.18 %	0.14 %

Basis risk occurs when the re-pricing of floating-rate credit card receivables is tied to a different index than the funding liabilities. As an example, basis risk could occur if funding costs are based on 3-month LIBOR but variable-rate pricing structures on the card accounts are tied to a different market rate that may not move with LIBOR.

Non-interest income and expenses for credit card activities can also be sensitive to interest rate changes. Depending on the fee type, credit card fees can be thought of as adjustments to the yield on the card portfolio or as non-interest income. Thus, changes in cardholder behavioral patterns and management's fee waiver practices will affect net income, and potentially net

<sup>11</sup> A fixed interest rate can only change if the bank properly notifies cardholders via an amended cardholder agreement.

interest income. Cardholder behavior is discussed next and can be substantially influenced by changes in interest rates, even if the rate change is not specific to cardholders' credit card accounts with the bank.

## Consumer Behavior

As spoken to in the IRR Policy Statement, assumptions about customer behavior must be reasonable and consistent with each rate scenario evaluated. Although it may not be an interest rate risk exposure in the traditional sense, changes in cardholders' behavior due to interest rate changes could have a detrimental impact on asset quality and earnings, especially when the cardholder base is largely subprime. With banks expected to structure minimum payments to reasonably amortize the debt, rises in interest rates could increase the required minimum payment for cardholders when the account is variable-rate in nature. In addition, a rise in interest rates could tighten the cardholders' ability to repay all debts (whether at the bank or otherwise). As the rates rise, cardholders may be inclined to re-prioritize payments. If a cardholder has a fixed-rate card account and his or her other variable-rate debt begins to carry higher interest rates, the cardholder might prioritize payments to favor the variable-rate debt. Conversely, as interest rates fall, if a cardholder has a variable-rate card account but other debt at a higher, fixed-rate, the customer may prioritize to pay off the higher, fixed-rate debt first. Consumer behaviors such as these are difficult to measure and could be exacerbated because consumers frequently place less emphasis on repaying unsecured debts than on home and automobile debt.

## Minimum Payment Considerations

Depending on the minimum payment method used, potential risk could increase as a result of shifting the payment allocation from principal to interest, thus extending the amortization period. For example, if the minimum payment method is based only on a flat percentage of the balance, the credit card accounts could become subject to limited re-pricing opportunities. If the assigned interest rates get too high (such as under certain penalty-pricing scenarios), whether the bank is meeting reasonable amortization guidelines could come into question when the increased interest charges take up a higher and higher portion of the minimum payment. If management does not intend to change its flat percentage minimum payment structure, it may have no choice but to not raise the interest rate on the card in order to maintain a reasonable amortization period.

## Contractual Interest Rate Ceilings And Floors For Adjustable-Rate Items

The IRR Policy Statement notes that information included in the measurement system generally includes contractual interest rate ceilings and floors for adjustable-rate items. In certain situations, a bank could have a high volume of adjustable-rate credit card loans that are indexed at or below the set floor rate. Consequently, when interest rates rise, funding costs might adjust immediately whereas pricing on those card accounts where the rate is already below the floor may not change or may not change to the degree that funding costs change.

## Securitization Considerations

If applicable, examiners should look for evidence that the bank's risk sensitivity analysis considers securitizations. Interest rates are important inputs in choosing discount rates<sup>12</sup> for valuing residual interests, which could be sizeable balance sheet components, and rate changes could substantially affect the carrying values. The Risk Management Credit Card Securitization Manual discusses valuing residual interests and stressing the **excess spread** and Interest Only (IO) strip.

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<sup>12</sup> Discount rate as used here differs from the term that is used in the Merchant Processing chapter and the glossary. Discount rates for valuing residual interests are discussed in the Risk Management Credit Card Securitization Manual.

## Hedging Strategies And Products

Complex, illiquid hedging strategies or products can impact a bank's IRR position. However, they are beyond the scope of this manual due to their potential complexity. Examiners may need to call on capital markets specialists when such activities are encountered.

### SUMMARY OF EXAMINATION GOALS – SENSITIVITY TO MARKET RISK

Examiners determine the level of sensitivity to market risk posed by the bank's credit card operations and incorporate that determination into the overall assessment of the bank's sensitivity to market risk. They also determine the impact on capital and earnings. Examiners should consider guidance within the IRR Policy Statement and the Risk Management Manual of Examination Policies and should review data in the UBPR and produced by the Interest Rate Risk Standard Analysis (IRRSA). Procedural analysis generally includes:

- Reviewing the bank's rate sensitivity policies.
- Identifying the bank's acceptable risk tolerance levels.
- Assessing the bank's rate sensitivity risk measurement system and management reports. The assessment should:
  - Identify whether the system is commensurate with the bank's size and complexity, including any credit card programs offered
  - Evaluate whether inputs regarding the card portfolio and associated funding sources are accurate and reasonable.
  - Determine whether outputs are reviewed and understood by management.
  - Determine the frequency of use and reviews.
- Identifying whether there are any recent or planned changes in strategic direction as related to credit card activities and what rate sensitivity risk implications would be associated with those changes.
- Identifying characteristics of the credit card program and the cardholder base that could impact rate sensitivity and how those characteristics are actually impacting rate sensitivity. Examples include interest-rate floors or caps on variable-rate accounts and subprime customer bases.
- Determining balance sheet components specific to credit card activities. For example, the proportions of variable- and fixed-rate receivables, the size of residual interests from credit card securitizations, and so forth.
- Considering the level of protection provided by earnings and capital.
- Reviewing the bank's audits of the rate sensitivity area and identifying management's actions to address any deficiencies named in those audits.