



ENHANCING FAIR LENDING RISK ASSESSMENT

USING REGRESSION ANALYSIS

MARCH 2011

Over the past 18 months, many new lenders have acted to assess Fair Lending risk through enhanced data analysis. At the highest level, this has meant using regression analysis.

THE COST OF FAIR LENDING FAILURES

Lenders have compelling reasons to improve their ability to assess Fair Lending risk. During 2010, the Federal Trade Commission obtained a settlement with Golden Empire Mortgage, Inc. and the Office of Thrift Supervision / Department of Justice obtained a consent order with AIG (i.e., AIG Federal Savings Bank and Wilmington Finance, Inc.). In both cases, the lenders were penalized for their failure to recognize ethnic or racial disparities in mortgage pricing and to take appropriate corrective action. Although built on previous judgments against other lenders, each case represents heightened scrutiny of Fair Lending performance. Golden Empire is the latest word from the FTC, and AIG is the most current decision on lender responsibility for broker activity.

The cost of these failures was direct and steep. In both cases, the lenders were enjoined from further discrimination, and both were required to make improvements in policies and procedures and to train employees. However, the headlines grabbing attention are that

- Golden Empire was required to pay \$1.5 million to compensate overcharged Hispanic borrowers; and
- AIG FSB and WFI were required to pay \$6.1 million into a settlement fund that would compensate aggrieved African-American borrowers and to pay up to \$1.0 million for consumer education.

REGRESSION ANALYSIS IDENTIFIES RISK

For lenders with substantial mortgage lending volume, regression analysis is the best solution for assessing risk. Regression analysis is a method of determining whether race or another prohibited basis is a significant factor in pricing or underwriting decisions, while holding constant variables such as credit scores, LTVs, and many other factors associated with the lending process. Using regression analysis correctly, lenders can see risk more clearly than other statistical tools and estimate the magnitude of that risk more precisely.

Regression analysis is not a simple tool to employ, however. It is most effective when used to evaluate groups of loans or applications that follow the lender’s business model. Gaining an understanding of that model, recognizing how the data reflect it, and making good decisions about how to use and organize data in the optimal representation of that model are each challenging processes. All situations call for careful model development and testing.

REGRESSION ANALYSIS IN FAIR LENDING COMPLIANCE

In this ADI Adviser Brief, we provide three examples that draw from the wide range of lenders we serve to highlight some of the objectives they have wanted to achieve.

Creating Data Analysis Capability

Client A’s objective was to create a Fair Lending compliance program with robust data analysis capability at its core. Examiners told the bank it had reached lending volume that warranted increased sophistication in all facets of Fair Lending compliance. In terms of data analysis, however, this client had to move from doing almost none, to using relatively simple disparity testing, to regression analysis. ADI worked with Client A to –

- Conduct Regression Analyses for Pricing and Underwriting on the large customer groups in its business model, identifying areas of significant Fair Lending risk and specific loans and applications identified as “high risk;”
- Measure key disparities for prohibited basis groups where the business model produced low lending volume, again identifying areas of risk and specific loans to review; and
- Set up and conduct comparative file reviews on high risk loans or applications.

Summary Table of Three Lenders’ Attributes

Client	Institution Type	Originations Per Year	Geographic Focus	Marketing Channels	Product Diversity
A	Bank	5,000 – 10,000	Small Region	<ul style="list-style-type: none"> ○ Retail Branches ○ Call Center 	<ul style="list-style-type: none"> ○ Conventional ○ FHA/VA
B	Independent Mortgage Lender	10,000 – 15,000	Multi-Region	<ul style="list-style-type: none"> ○ Retail Branches 	<ul style="list-style-type: none"> ○ Conventional ○ FHA/VA
C	Bank Affiliate	75,000+	National	<ul style="list-style-type: none"> ○ Retail Branches ○ Call Center ○ Brokers 	<ul style="list-style-type: none"> ○ Conventional ○ Government – i.e., FHA, VA ○ Jumbo

Understanding an Uncommon Customer Base

Client B’s objective was similar, but it presented a different challenge in that it started from a more advanced position and had a somewhat unusual customer base. Client B was already monitoring overages/underages; it was performing disparity calculations; and it was doing comparative file reviews. It had no experience with regression analysis, though, and adding this new level of analysis was a significant

new step. This analysis had to take into account all of the variables common to most lenders, as well as new variables that addressed its particular customer base, borrowers who were usually prior customers of a non-financial parent company. While gaining a full understanding of the business model is essential in working with every client, this situation demonstrated the importance of never assuming that different clients have the same model. ADI spent numerous hours understanding the business, its customers, and data, to learn how they would best be represented in regression models. The results were presented and smoothly integrated with ongoing file reviews, which the client then completed.

Improving Risk Mitigation

In contrast to Clients A and B, Client C's objective was more ambitious. This bank affiliate had experience with regression analysis, but it wanted to go beyond the standard approach of identifying areas of risk at the company level. Client C was focused on identifying risk at all levels of the organization to facilitate targeting its mitigation and remediation efforts. The challenge was to give Client C coherence and consistency in risk identification from the largest to the smallest segments of the business. ADI did this by mapping company level results to the smallest business units and to individual lenders. Multiple, robust models at the company level and further analysis of predicted outcomes were the key to meeting this client's objective. Client C had a clear path to improved risk management through policy and procedural changes, training and coaching, or more aggressive responses. This effort also enabled Client C to pursue remediation, if needed, with more precise targeting of those strategies.

In each of these analyses, ADI used its experience and expertise in Fair Lending compliance to develop the strategies each client needed to establish regression analysis as the central analytic tool, while integrating it with the Fair Lending Compliance Program. In all cases, regression analysis became an integral component of the Fair Lending Compliance Program, and gave each lender analytic capabilities commensurate with the risks they faced. In each engagement, SPSS and RATA Associates' Comply™ Fair Lending were essential software tools.

About ADI: ADI has completed many data analysis projects involving regression analysis. Fair Lending compliance is one of our areas of specialization, and we provide comprehensive Fair Lending services to our clients. Of course, Fair Lending is not the only area in which financial institutions must assess risk, and not the only application for sophisticated statistical analysis. Future ADI Adviser Briefs will discuss our work in these other areas. ADI is based in Fairfax, Virginia. For more information, please contact Mike Mitchell at 703.836.1517 or mmitchell@adiconsulting.com.