



Comptroller of the Currency
Administrator of National Banks

US Department of the Treasury

OCC Fair Lending Conference 2008

Statistical Analysis and Modeling for Risk Assessment

Bank Examiner Perspective

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The opinions expressed in this paper reflect those of the authors only and do not necessarily reflect those of the Office of the Comptroller of the Currency or the Treasury Department.

ENSURING A SAFE AND SOUND
NATIONAL BANKING SYSTEM
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OCC Bank Examiner Perspective

- Sharon Decker - Moderator
- John Gilliam – Dawning of New Age
- Daphne Whistler – Midsized Banks
- Mattie Trice – Large Banks
- Rick Saillard – Fair Lending Risk Assessments

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The Dawning Of A New Age

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The Dawning Of A New Age

- **The Summer of 1993**
 - Interim Fair Lending Procedures
 - Comparative File Review
 - Doublewide Columnar Pads
 - Manual Match File Comparison
 - Phone applicants
 - Examining Bulletin 93-3
 - First Case of Pricing Discrimination



The Dawning Of A New Age

- **1993 – Examined the largest mortgage operations supervised by the OCC.**
 - Sample 5X White Approved Files for Each Minority Decline File
 - Sample of 2000 Files
 - 20 Examiners for Six Weeks
 - Create a Custom Database – Capture 120 Variables Based on Underwriter Interview including HMDA data
 - Relational Database Software Tool – dbase



The Dawning Of A New Age

- **1994 – OCC Economists Test First Regression Model**
- **1995 – The Return: Large Banks the Second Time Around**
 - Regression Model Based on Custom Database
 - Six Examiners for Six Weeks - Paradox Database
 - Still Manually Captured Database from Credit Files
 - Model Isolated Matched File Comparisons
 - Assess Validity of Bank Model Methodology



The Dawning Of A New Age

- **2000 - OCC Fair Lending Screening Process Implemented**
 - Identifies High-Risk Banks for Exams
 - Allows for More Efficient Use of Resources
- **2001 Regression Model Based on Database Extract**
 - Validate Database through a review of 500 files.
 - Six Examiners for Five Weeks – Access Database



The Dawning Of A New Age

- **2004 – Primary Target Underwriting & Secondary Target Pricing**
 - HMDA Captures Limited Pricing Variables
 - Subprime Delivery Channel – 45,000 records covering 9 months
 - Limited Product Mix – Fixed Rate 30 & 15 and ARM 2/28 & 3/27
 - Pricing Changes – Quarterly/Monthly
 - Matrix Pricing: Credit Score, LTV, & Mortgage History
 - Geographic & Loan Size Impact on Pricing



The Dawning Of A New Age

- **2007 – First Full Year Review**
 - Prime Delivery Channel – 500,000 records
 - Six Examiners for Four Weeks – Access Database
 - Retail and Wholesale
 - More Extensive Product Mix – Full Doc, Ltd Doc, & No Doc; Fixed vs ARM; and Interest Only
 - Frequency of Pricing Changes – Daily: Work with RAD to group pricing changes
 - Geographic Pricing
 - Loan Size
 - First Assessment of Bank's Model and Test Results



The Dawning Of A New Age

- **2008 – Next Step**
 - Bank wide Fair Lending Risk Assessment
 - Validation of Bank's Model through Replication



The Dawning Of A New Age

Evolution

- Column Pads of Paper to Database Software to Sophisticated Regression Models
- 600 to 120 Examiner Days
- 2,000 files to 500,000 records
- Moving to Leveraging Off of Bank Analysis

OCC Bank Examiner Perspective

Midsize Banks

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Midsize Bank Supervision

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Midsize Banks – Overview

- Midsize Bank Companies
 - \$17 billion average asset size
 - Interstate/regional operations
- Risk Analysis Division (RAD) Assistance
 - Used in 25% of companies to date
 - Benefits:
 - › greater efficiency
 - › higher quality exams
 - Limitations:
 - › availability of “other” e-data, but evolving
 - › lower-volume focal points



Midsize Banks – Fair Lending Supervision

- Risk Assessment
 - During each supervisory cycle
 - Comprehensive – various risk factors, loan products
 - Initiate exams/other activities based on risk profile
- Screening Process
 - Supplements risk assessment
 - Primarily based on HMDA products
 - Identifies disparities, outliers compared to other national banks
 - Examination required



Midsize Bank A – Risk Assessment

- Background
 - Screening Process
 - › outliers compared to other national banks
 - › 2 focal points identified as high risk
 - “Other” e-Data NOT Available
- RAD Assistance
 - Targeting Analysis
 - › outliers within bank’s own data
 - › HMDA-only data
 - › underwriting and pricing statistics
 - › 2 additional focal points identified as high risk



Midsize Bank B – Pricing Exam

- Background
 - Screening Process
 - › 2 focal points identified as high risk
 - “Other” e-Data available
- RAD Assistance
 - Targeting Analysis
 - › HMDA + “other” data
 - › 1 focal point/1 channel causing disparity
 - File Selection for Manual Review
 - › similarly-situated borrowers



Midsize Bank C – Underwriting Exam

- Background
 - Screening Process
 - › 9 focal points identified as high risk
 - Limited Supervisory History
 - › company new to national banking system
 - › 1st fair lending examination
 - High Volume HMDA Data
 - “Other” e-Data Available



Midsize Bank C – Underwriting (cont'd)

- RAD Assistance
 - Data Cleaning
 - Targeting Analysis
 - › HMDA + “other” data
 - › 2 focal points/certain channels remained
 - Review of Underwriting Policies
 - › underwriter interview
 - › products/channels within focal points
 - Statistical Modeling
 - › additional underwriting factors
 - › specific products within 2 focal points remained
 - File Selection for Manual Review
 - › similarly-situated applicants



Midsize Banks – Summary

- Increasing use of statistical analysis/modeling
- Partnership with RAD
- Greater efficiency/higher quality examinations
- Future use
 - validate statistical-based, bank self-evaluation programs
 - understand vendor statistical-based products/services
 - evaluate non-HMDA loan products

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Internal Modeling Program Large Banks

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Internal Modeling Program – Large Banks

- **Large Banks – Examination Perspective**
 - Key Observations about OCC Fair Lending Examinations as a Large Banks Grow
 - Benefits of an Integrated Examination
 - Other Benefits and Lessons Learned
 - Pioneer Experience
 - New and Expanding Territory
 - An Examiner's View



Internal Modeling Program – Large Banks

- **Key Observations about OCC Fair Lending Examinations as a Large Banks Grow**
 - Overview Pre-1996
 - Examinations 1996 – 2008
- **Benefits of an Integrated Examination**
 - Field Examiners with Risk Analysis Division Support
 - Population Coverage
 - Bank Self-Evaluation Program
 - Industry Sessions/White Papers



Internal Modeling Program – Large Banks

- Other Benefits and Lessons Learned (+/-)
 - Specialists
 - Reasonableness Factor
 - Terminology



Internal Modeling Program – Large Banks

- **The Pioneer Experience of a LB**
 - To share or not (Don't Ask/Don't Tell)
 - Mystery Shopping
 - Comparable Analyses
 - Ongoing Communications
 - Ongoing Supervision
 - Due Diligence Program (Mergers/Acquisitions)
 - Facilitate Responses to Public Info
 - Streamline Examinations



Internal Modeling Program – Large Banks

- **New and Expanding Territory**
 - **HMDA + /+**
 - **Geographic Footprint**
 - **Pricing**
 - **Advisory Letter 2003-3 (Brokers)**



Internal Modeling Program – Large Banks

- **An Examiner's View**
 - ***Thousands of Applications***
 - ***Best Practices/Information Sharing***

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Fair Lending Risk Assessments – Large Banks

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Fair Lending Risk Assessments – Background

- OCC has used risk-based supervision since 1996.
- Examiners have performed Compliance Risk Assessments since start of risk-based supervision.
- Separate BSA/AML Risk Assessments started about 6 years ago & OCC asked banks to do the same.
- Banks formalizing & enhancing Compliance Risk Assessments 3 – 4 years ago
- Examiners now required to perform separate Fair Lending Risk Assessments to increase the depth and effectiveness of the assessment.



Fair Lending Risk Assessments – Background

7-25-07 OCC Testimony

Hearing on Fair Lending Supervision by House Committee on Financial Services

10-24-07 OCC Testimony

Hearing on OCC's Fair Lending and CRA Exam Processes - Committee on Oversight and Government Reform of the House

The foundation of the OCC's supervisory process is the detailed, core knowledge that examiners develop and maintain about each bank's organizational structureand level of risk.

The OCC's examination guidance directs examiners to consider fair lending risk including the nature, scope, and volume of the bank's activities, the quality of the bank's risk management systems



Guidance to Examiners

- A comprehensive fair lending risk assessment is the cornerstone of developing an effective risk-based supervisory strategy.
- The first step in performing a FL risk assessment is determining which areas of the bank have FL exposure - any part of the bank extending credit to consumers or businesses.
- Assessment must be documented and address all relevant areas of the bank and all pertinent risk factors. The Comptroller's Handbook, Fair Lending Examination Procedures provides guidance on factors to be considered.



Components of a Fair Lending Risk Assessment

- Background
- Risk Factors
- Compliance Program Risk Indicators
- Fair Lending Controls
- Summary of Assessment

It is recommended that separate assessments be performed for each relevant business unit.



Components of a Fair Lending Risk Assessment

Background - Information to provide insight in to the bank's strategic focus, the scope of its operations and what supervisory activities have been previously conducted

- Loan products offered by bank
- Volume of lending by product or type to gauge significance of each to the bank overall
- Distribution channels used
- Scope and timing of previous supervisory activities
- Previous examination findings



Components of a Fair Lending Risk Assessment

Risk Factors - Factors that contribute to the level of fair lending risk

- Distribution Channels: (direct versus wholesale - brokers, correspondents, the use of subsidiaries, etc.)
- Underwriting Processes: (centralized, decentralized, delegated, referral processes between lending areas, etc.)
- Credit Decision: (judgmental, credit scoring or a combination)
- Pricing Process: (flexibility in pricing, risk based, overages, discounts)
- Marketing Practices: (demographic/income/geographic targeting practices)
- Compensation: (internal or external incentive programs)
- Collection Practices: (loan modification, renewal, foreclosure volumes/patterns)



Components of a Fair Lending Risk Assessment

Compliance Program Risk Indicators – Information that may provide insight in to the level of fair lending risk

- Record of compliance and results of previous supervisory activities
- Presence and degree of denial or rate spread disparities or patterns of unequal penetration of minority areas
- Consumer Complaints: (Complaints involving illegal discrimination, unfair or deceptive practices, predatory or abusive practices, etc.)
- Litigation
- Bank Identified Issues: (internal audits, self assessments, quality assurance processes)
- CRA Protests
- Demographics of trade area



Components of a Fair Lending Risk Assessment

Fair Lending Controls - Identify and discuss the scope and effectiveness of bank fair lending controls and the extent that they offset the bank's fair lending risks.

- Detective Controls / Fair Lending Monitoring: (i.e.; self-evaluations - regression analysis, comparative file reviews, statistical analysis, self-testing)
- Policies
- Programs: (i.e., risk assessments, second review programs)
- Procedures and Practices: (degree they address fair lending requirements and controls)
- Limits / Standards: (i.e., overage and underage limits, compensation limits for third-parties)
- Training: (quality, frequency, relevance to employee's job)



Components of a Fair Lending Risk Assessment

Fair Lending Controls (continued)

- Personnel: (experience, adequacy of staffing, bank employee versus outsourced or use of agents)
- Management Information Systems/Reporting: (monitoring of risk indicators, the results of internal reviews and corrective action)
- Quality Assurance Reviews: (scope, frequency, quality of work, appropriateness of corrective action, reporting of results)
- Compliance Reviews
- Audit
- Steering Controls



Components of a Fair Lending Risk Assessment

Summary of Analysis

- To what extent do the bank's controls offset the fair lending risks.
- Conclude on the aggregate level of risk.
- What are potential focal points for upcoming examinations?
- What is the recommended supervisory strategy and why is it appropriate?



Implications for Banks

- Banks also need to have a comprehensive understanding of the sources of their fair lending risk and the effectiveness of their controls.
- A comprehensive risk assessment ensures management is informed of the risks the bank is assuming in its lending activities.
- Assessments need to be documented.
- Independent testing is needed to ensure the controls are working as envisioned and that, overall, the assessment is accurate.