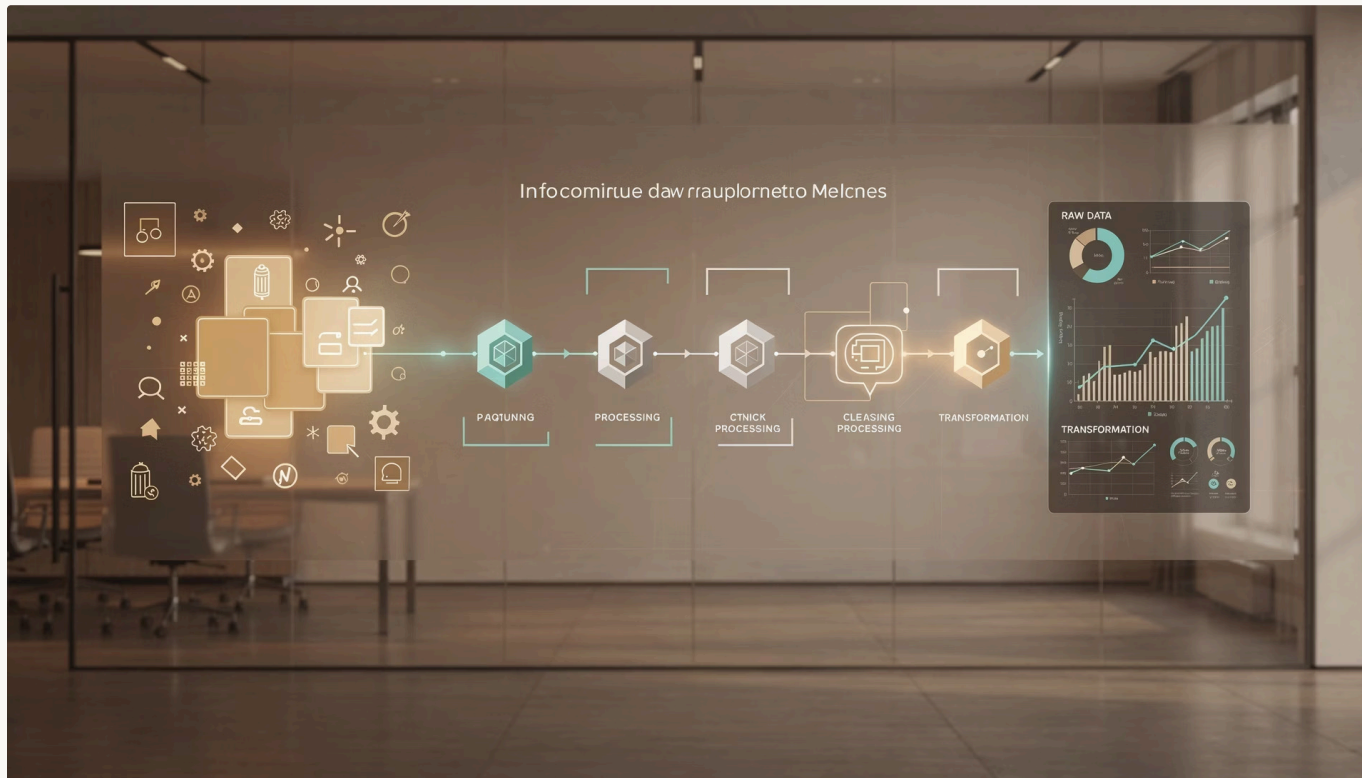# Lending Club Loan Report

Transforming raw loan data into actionable intelligence through comprehensive analysis. This report validates risk models, identifies growth drivers, and provides strategic insights for portfolio optimization.

Executive Summary

This report details the end-to-end data analysis process, from cleaning and standardization to strategic insights. The objective was to transform raw loan data into actionable intelligence, validating risk models and identifying key drivers of business growth.

Our analysis spans three critical phases: data preparation, KPI monitoring, and analytical findings that reveal the true drivers of portfolio performance.

Data Preparation & Cleaning

To ensure data integrity and enable accurate modeling, comprehensive transformation steps were executed across standardization, categorization, and data integrity protocols.

Standardization

Term column converted to numeric format for direct comparison between 36-month and 60-month loans. Issue date standardized to Month-Year-Day format for time-series analysis.

Categorization

Home ownership grouped into four categories. Verification status simplified to verified vs. not verified. Annual income bucketed into low, medium, and high tiers.

Data Integrity

Extra symbols stripped from employment length. Blank entries marked as "NA" for completeness. Duplicate records removed to ensure accurate KPI calculations.

Key Performance Indicators

The health of the portfolio is monitored through four high-level metrics that provide a comprehensive view of business performance and risk exposure.

These KPIs serve as the foundation for ongoing portfolio management and strategic decision-making.

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Core Metrics

Essential indicators tracked

- Total Loan Volume: Overall quantity of loans issued
- Portfolio Risk Rate: Percentage at risk of default
- Average Interest Rate: Mean rate across portfolio
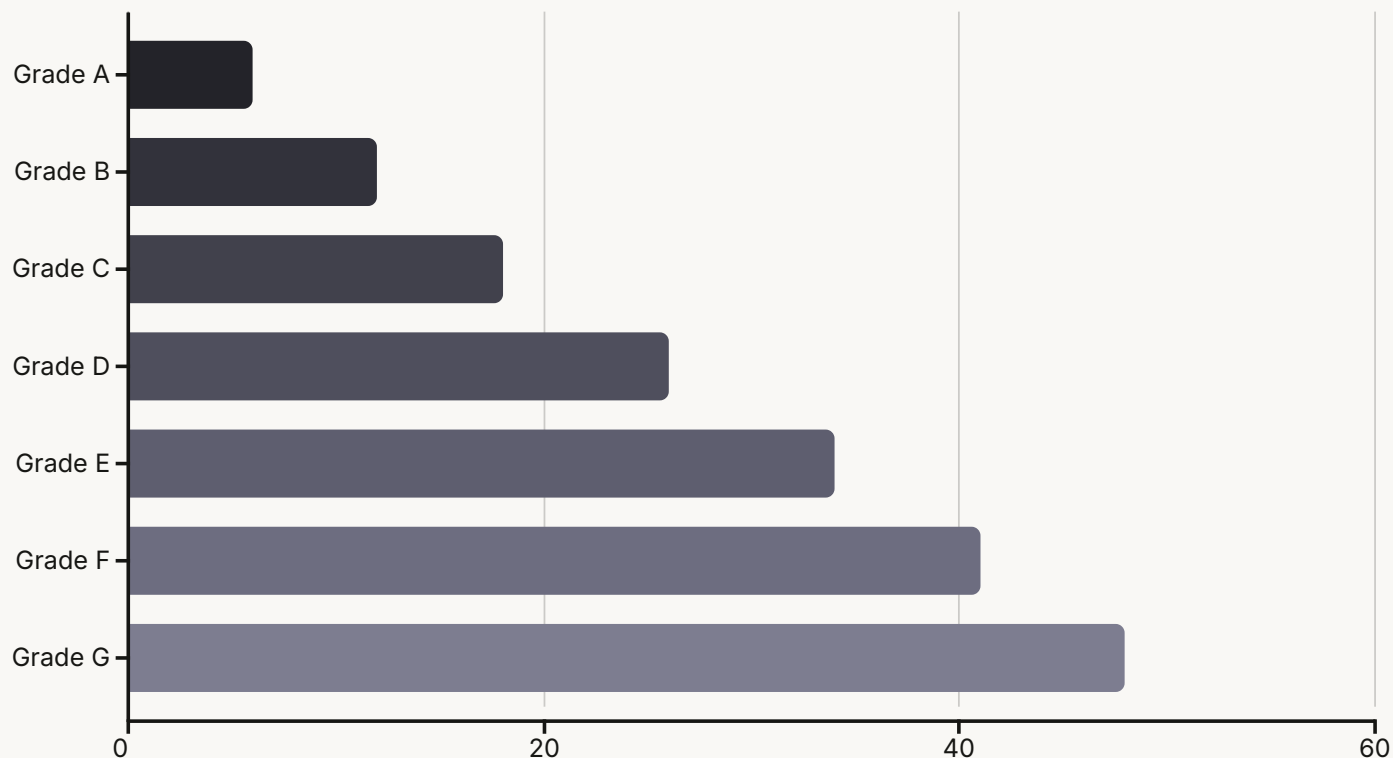- Average Customer Income: Mean annual borrower earnings

Analytical Findings & Conclusions

Five critical analyses reveal the true drivers of portfolio performance, from risk prediction accuracy to borrower motivation patterns. Each finding provides actionable insights for strategic decision-making.

Risk Prediction by Loan Grade

Objective

To validate the internal grading system and ensure it accurately predicts borrower risk.

Result

Loan Grade proved to be the strongest predictor of risk. Grade A loans are exceptionally safe with approximately 6% default rate, whereas Grade G loans are highly risky at approximately 48% default rate.

Conclusion

The current grading system is highly effective and validated by the data.

Business Trajectory

Objective

To track the business trajectory and identify growth phases versus slowdowns.
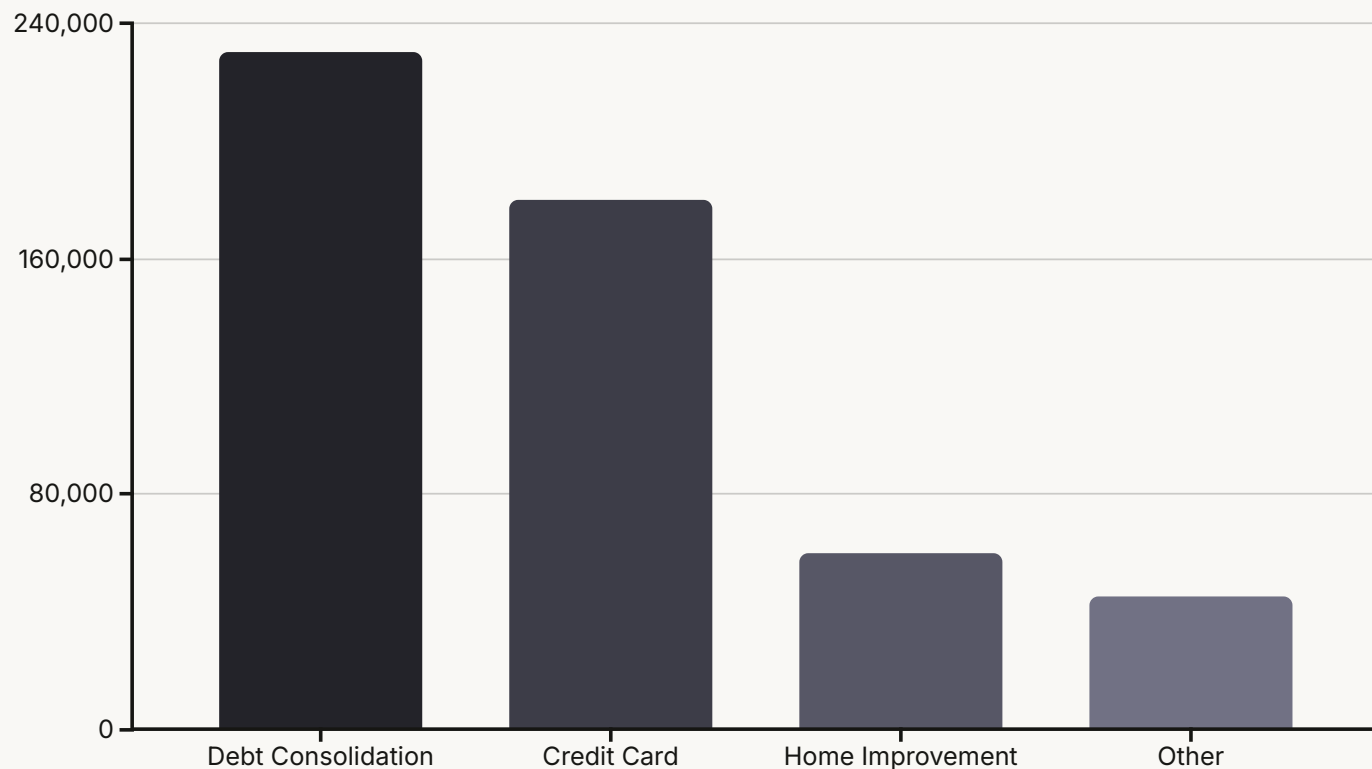
Result

The data shows massive growth between 2012 and 2014, peaking in the 2014–2015 period, followed by a visible slowdown in 2016.

Conclusion

While the early 2010s were "boom" years, recent trends suggest a cooling market, indicating a need for new acquisition strategies.

Borrower Motivation

Objective

To understand customer needs and determine which loan products drive the most volume.

Result

"Debt Consolidation" is the primary driver with over 230,000 loans, followed closely by "Credit Card" refinancing.

Conclusion

These two categories represent the core of the business model and should be the focus of marketing efforts.

Impact of Loan Terms and Income

Analysis reveals that both loan term length and borrower income level are critical risk factors with significant impact on default rates.

Loan Term Analysis

Objective: Determine if longer terms increase risk.

Result: 60-month loans show 32% default rate versus 16% for 36-month loans—nearly twice as risky.

Conclusion: Term length is a critical risk factor for underwriting decisions.

Income Level Analysis

Objective: Test if high income provides a safety net.

Result: High earners (>$100k) show 15% default rate compared to 24% for low earners (<$50k).

Conclusion: High income provides a valid safety buffer against default.

The Verification Paradox

Objective

To test if the administrative effort of verifying income actually results in lower defaults.

Result

Counter-intuitively, "Verified" loans show a higher default rate of approximately 22% compared to "Not Verified" loans at approximately 15%.

Conclusion

This suggests a "borderline" bias in the process: banks likely only demand verification for borrowers who already look risky on paper, while "rock-solid" borrowers get automatic approval (Not Verified) and perform better.

Strategic Recommendations

Targeted Marketing

Prioritize debt consolidation customer segments.

Term–Based Pricing

Align rates with loan term risk profiles.

Optimize Underwriting

Tighten criteria to reduce high-risk approvals.

Refine Verification

Strengthen income and identity checks.

Based on our analytical findings, we recommend four strategic actions to optimize portfolio performance and reduce risk exposure while maintaining growth momentum.

Key Takeaways

Validated Risk Model

The loan grading system accurately predicts default risk from 6% (Grade A) to 48% (Grade G).

Market Opportunity

Debt consolidation and credit card refinancing drive 80% of loan volume.

Critical Risk Factors

60-month terms double default risk; high income reduces defaults by 38%.