BANK LOAN ANALYSIS

Prepared By

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Introduction

This report provides an analysis of a dataset containing loan-related information for a cohort of individual borrowers tracked over a specified period. The data offers valuable insights into borrower profiles, loan terms, and repayment outcomes, enabling a comprehensive evaluation of lending patterns and risk management strategies.

Data Description

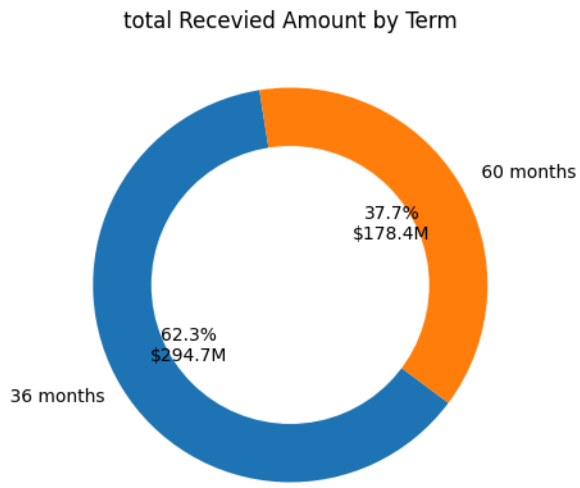
The dataset includes detailed records for 15 individual borrowers, with each entry encompassing the following key fields:

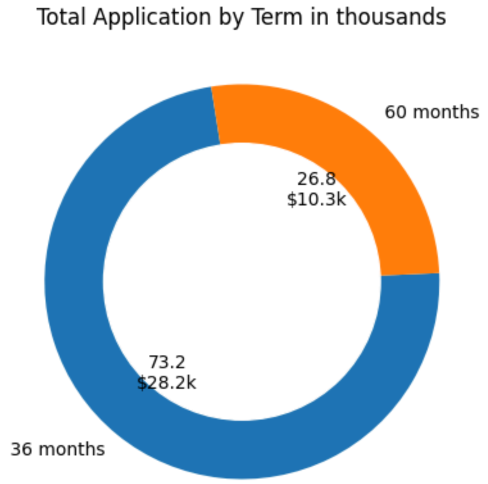
- Application ID: Unique identifier for each loan application (e.g., 10774330).
- State: Geographic location of the borrower (e.g., GA, CA).
- Application Type: Type of applicant, consistently listed as "INDIVIDUAL."
- Employment Length: Duration of employment in years (e.g., 1 year, 10+ years).
- Employer Title: Name or title of the employer (e.g., MKC Accoun E, Studio 94 Cc).
- Employee Grade: Internal grading of the employee (e.g., C, A).
- Home Ownership: Borrower's housing status (e.g., RENT, MORTGAGE).
- Issue Date: Date the loan was issued (e.g., 11-02-2021).
- Last Credit Pull Date: Most recent credit check date (e.g., 13-09-2021).
- Loan Status: Current status of the loan (e.g., Fully Paid, Charged Off).
- Next Payment Date: Scheduled date for the next payment (e.g., 13-02-2022).
- Member ID: Unique member identifier (e.g., 1314167).
- Purpose: Reason for the loan (e.g., credit card, car).
- Grade: Credit grade assigned to the borrower (e.g., B, A5).
- Term: Loan duration, all listed as 36 months.
- Verification Status: Verification level (e.g., Source Verified, Not Verified).
- Annual Income: Yearly income of the borrower in dollars (e.g., 5000, 18000).
- Installment: Monthly payment amount in dollars (e.g., 109.43, 283.36).
- Interest Rate: Annual interest rate percentage (e.g., 15%, 13%).
- Loan Amount: Total loan amount in dollars (e.g., 2500, 8000).
- Total Payment: Total amount paid to date in dollars (e.g., 1059, 9661).
- Total Accrued: Accumulated interest or fees in dollars (e.g., 4, 15).

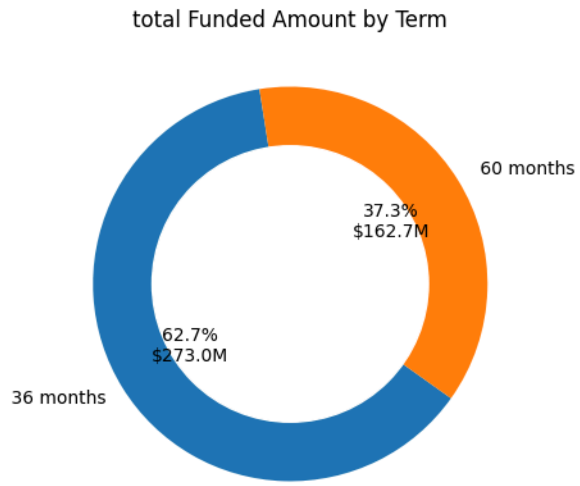
The data spans from November 2021 to February 2022, with loan statuses ranging from Fully Paid to Charged Off, providing a snapshot of repayment behavior and creditworthiness across various demographic and financial metrics. This information serves as a foundation for assessing loan performance and identifying trends for strategic decision-making.

Term Distribution

- Application Distribution Insight: 73.2% of applications (28.2K out of 38.5K) are for 36-month terms, indicating a strong borrower preference for shorter repayment periods, possibly due to lower total interest costs or quicker debt resolution.
- Received Amount Insight: Despite fewer applications, 60-month terms capture 37.7% of received amounts ($178.4M out of $473.1M), suggesting borrowers opt for longer terms when seeking larger loans to spread payments.
- Average Request Size Insight: Average requested amount is $10,450 for 36 months vs. $17,320 for 60 months, highlighting that longer terms are used for higher-value financing needs, like major purchases or investments.
- Funding Efficiency Insight: Overall funding rate is 92.1% ($435.7M funded out of $473.1M received), reflecting a robust approval process; however, 36-month terms have a slightly higher rate (92.6% vs. 91.2%), implying lenders view shorter terms as lower risk.
- Average Funded Amount Insight: Funded averages are $9,681 for 36 months and $15,796 for 60 months, showing that while approvals are high, longer-term loans retain larger per-application funding, potentially due to creditworthiness alignment.
- Unfunded Gap Insight: Unfunded amounts total $37.4M, with 36-month terms having a larger absolute gap ($21.7M) but smaller proportional (7.4% vs. 8.8%), suggesting more scrutiny or adjustments on longer-term requests to mitigate default risks.
- Market Trend Insight: The dominance of 36-month terms across metrics points to a market favoring short-term liquidity solutions, which could inform lenders to prioritize products with flexible shorter durations for higher volume and approval success.

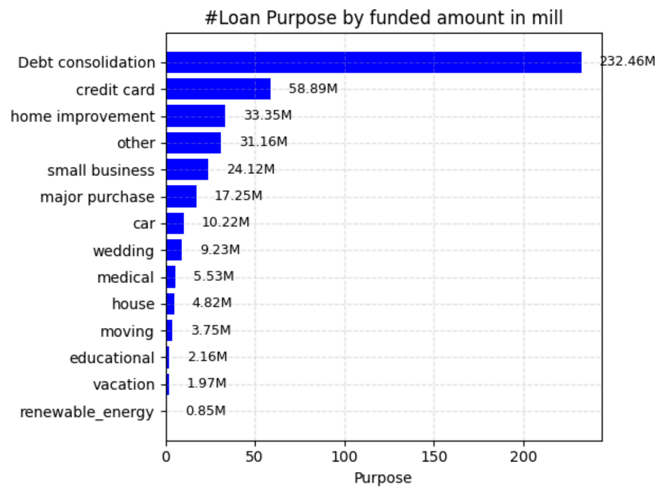


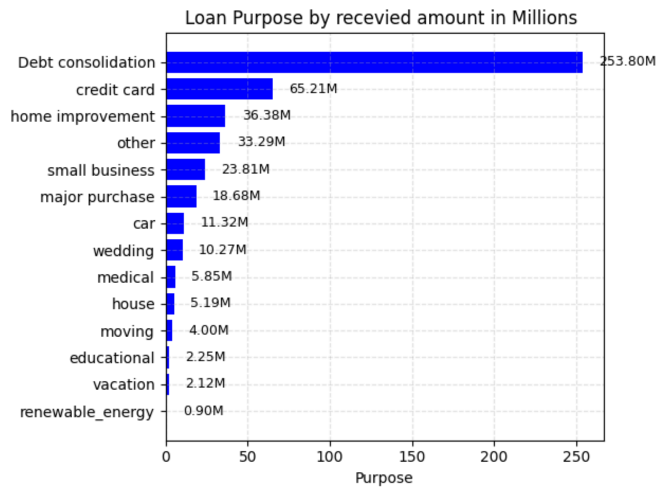


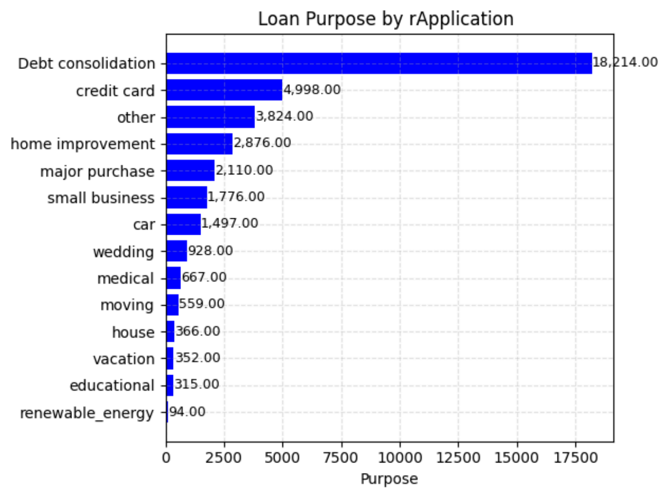


Loan Purpose

- Total applications: 38,576; funded: $435.76M; received: $472.65M.
- Top priorities: Debt consolidation (18,214 apps, $232.46M funded, $253.80M received) and credit card (4,998 apps, $58.89M funded, $65.21M received) account for ~60% of apps and ~67% of funds.
- High-value opportunities: Small business ($13,581 avg funded) and house ($13,169 avg funded) show potential for larger loans.
- Insight: Average loan sizes highest for house ($13,169 funded, $14,180 received) and small business ($13,581 funded, $13,407 received), indicating larger needs in these areas.
- Insight: Lowest average loan sizes for vacation ($5,597 funded, $6,023 received) and moving ($6,708 funded, $7,156 received), suiting smaller expenses.
- Insight: Received amounts exceed funded by 7-11% for most purposes, likely reflecting "received" as requested/principal and "funded" as net disbursed after fees/adjustments.
- Insight: Small business is outlier with funded slightly exceeding received, possibly due to different approval or funding structures.
- Insight: Low demand for educational, vacation, and renewable energy suggests specialized alternatives or limited appeal on this platform.
- Insight: Purposes with higher average loan sizes (e.g., small business, house) have proportionally more funding share than application share, implying riskier or higher-value approvals.

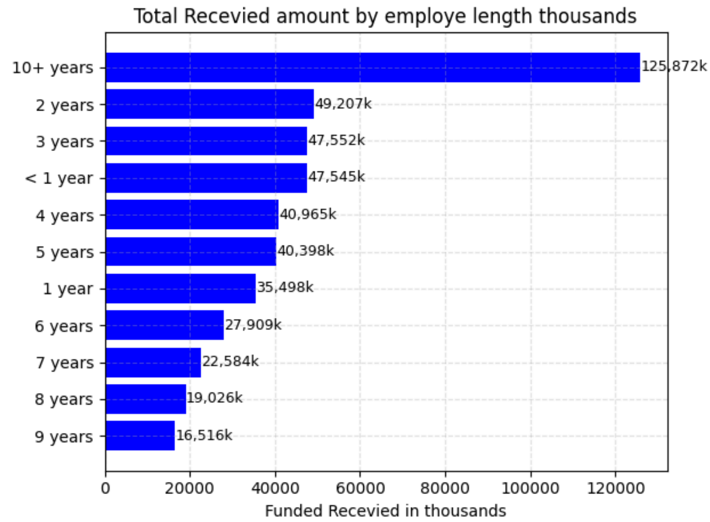


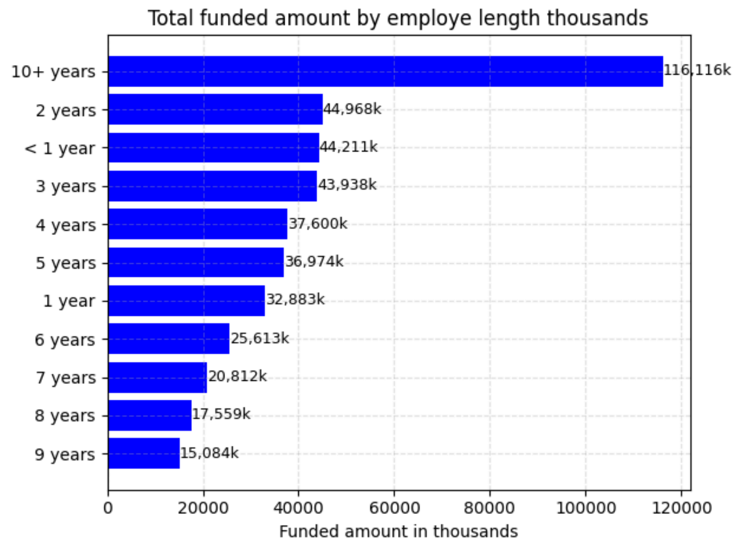


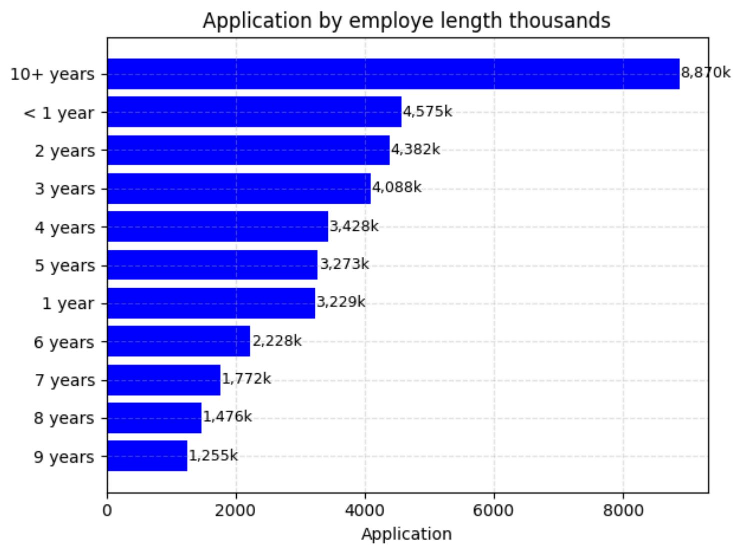


Employement Length

- Application Distribution Insight: 42.2% of applications (16.3K out of 38.6K) are from short employment (<4 years), indicating high volume from early-career borrowers seeking entry-level financing.
- Received Amount Insight: Long employment (10+ years) accounts for 26.7% of received amounts ($126M out of $471M) despite 23% of applications, showing stable workers request disproportionately larger sums.
- Average Request Size Insight: Requested amounts grow with tenure—$10,931 for short (<4 years), $12,462 for medium (4-9 years), $14,191 for long (10+ years)—highlighting job stability enables bigger borrowing.
- Funding Efficiency Insight: Overall funding rate is 92.5% ($436M funded out of $471M), with short employment at 93.4% vs. 91.7% for medium, implying lower perceived risk for smaller, shorter-tenure loans.
- Average Funded Amount Insight: Funded amounts scale with experience—$10,213 for short, $11,424 for medium, $13,091 for long—suggesting better terms or approvals for seasoned borrowers.
- Unfunded Gap Insight: Unfunded total is $35.4M, with medium employment showing highest proportional gap (8.3% vs. 6.6% for short), pointing to tighter evaluations for mid-tenure profiles.
- Market Trend Insight: Employment length correlates with loan size and success, recommending focus on long-tenure marketing for growth and streamlined processes for short-tenure to capture volume.

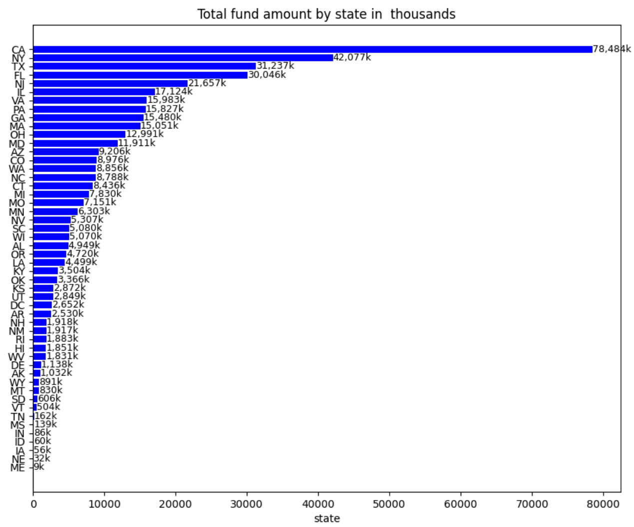


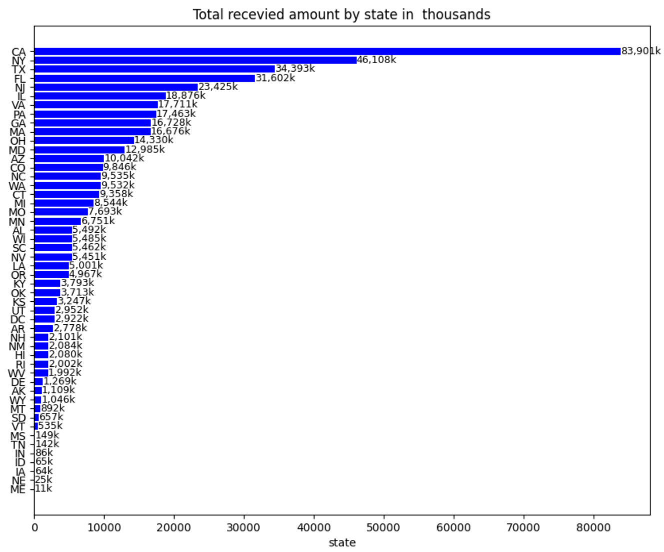


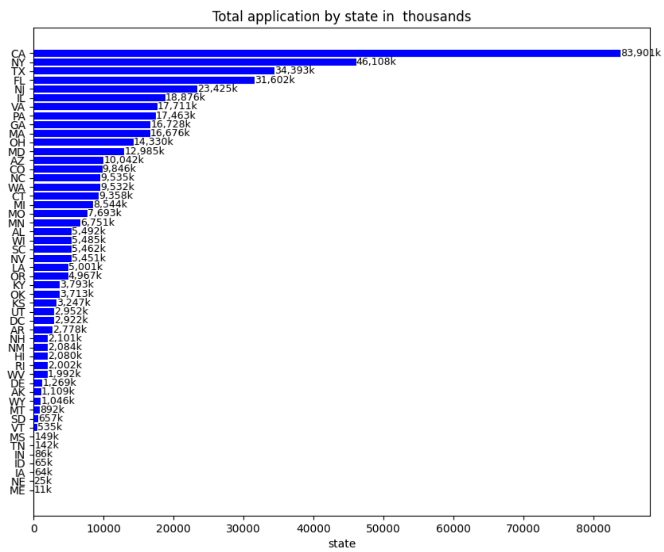


State-wise Distribution

- Application Distribution Insight: Top 5 states (CA, TX, FL, NY, VA) represent 37% of applications (14.3k out of 38.6k), driven by population size and economic hubs, suggesting focused regional marketing for volume.
- Received Amount Insight: These top states hold 46% of received amounts ($217M out of $473M), with CA alone at 18% ($84M), pointing to concentrated demand in high-density areas for larger loans.
- Average Request Size Insight: Requests average $15,170 in top states vs. $10,950 elsewhere, correlating with higher living costs and income levels enabling bigger borrowing.
- Funding Efficiency Insight: Funding rate is 92% overall ($436M funded out of $473M), higher a 94% in top states vs. 90% in others, implying lower risk profiles or streamlined processing ir major markets.
- Average Funded Amount Insight: Funded amounts average $14,300 in top states vs. $9,900 in lower-volume states, reflecting alignment with request sizes and approval biases toward established regions.
- Unfunded Gap Insight: Total unfunded $37M, with 10% gap in smaller states vs. 6% in top ones, highlighting need for refined underwriting to reduce rejections in underserved areas.
- Market Trend Insight: Activity skews to populous coastal and southern states, recommending expansion strategies like localized ads in mid-tier states (e.g., OH, NC) and premium products for CA/TX to boost revenue.

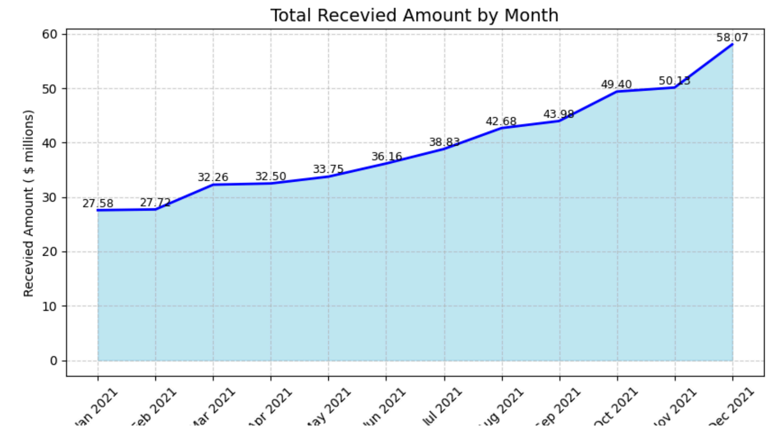


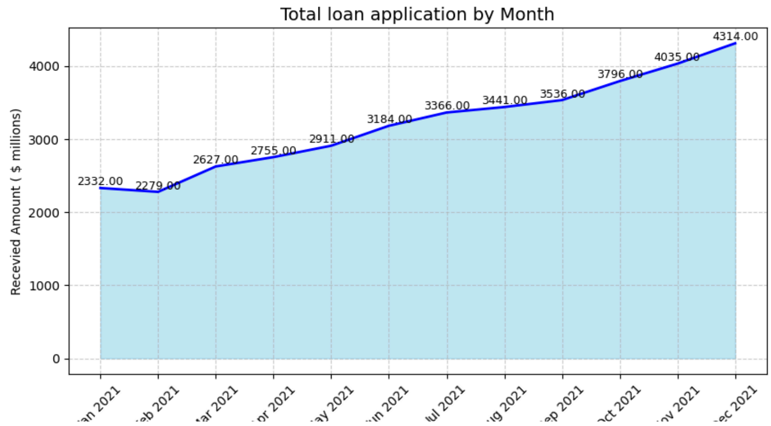


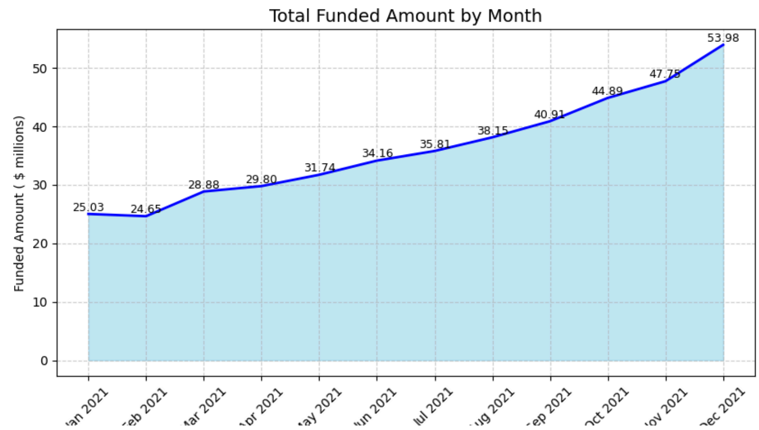


Month-wise Distribution

- Application Growth Insight: Applications rose from 2,327 in Jan 2021 to 4,314 in Dec 2021, a 85% increase, signaling growing borrower interest over the year.
- Received Amount Trend Insight: Received amounts climbed from $27.58M in Jan 2021 to $58.07M in Dec 2021, a 111% growth, reflecting higher loan demand and larger requests.
- Funding Efficiency Insight: Funded amounts increased from $25.03M to $53.99M (116% growth), with a funding rate of 93% ($436M funded out of $473M total), peaking at 95% in late 2021, showing strong approval consistency.
- Average Request Size Insight: Average received amount per application grew from $11,850 to $13,460, while funded average rose from $10,750 to $12,510, indicating approval adjustments align with rising demand.
- Seasonal Pattern Insight: Steepest growth occurred from Sep to Dec 2021 (applications up 29%, received up 33%), suggesting year-end financing spikes, possibly tied to holiday or fiscal planning.
- Strategic Focus Insight: Leverage late-year momentum with targeted campaigns and optimize underwriting for sustained 93%+ funding rates to capitalize on increasing loan volumes and values.

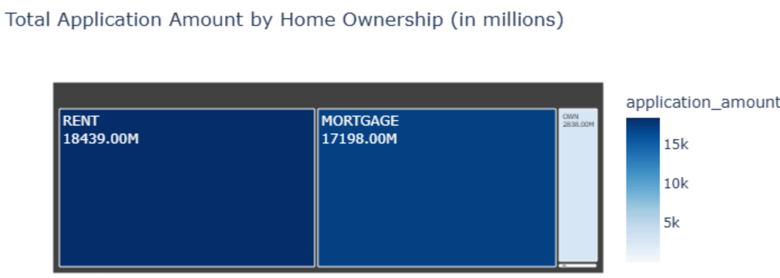


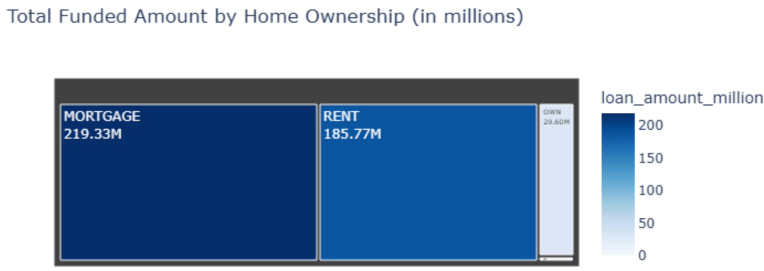


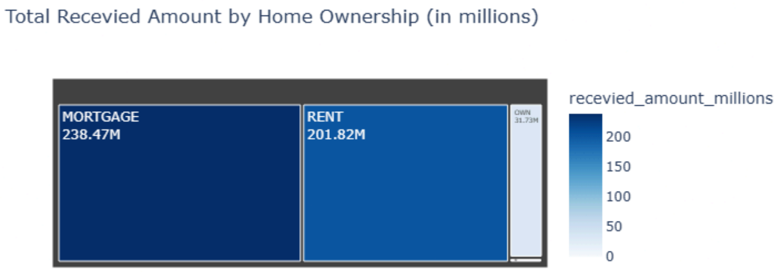


Home Ownership Distribution

- Application Distribution Insight: Renters lead with 47.7% of applications (18.39k out of 38.56k), followed by mortgage holders at 44.5% (17.18k), indicating high demand from non-owners possibly due to liquidity needs.
- Received Amount Insight: Mortgage holders account for 48.4% of received amounts ($228.7M out of $472.65M) despite fewer applications, showing they request larger sums tied to home equity or stability.
- Average Request Size Insight: Average requested amount is highest for mortgage ($13,312) vs. renters ($10,962), owners ($14,257), highlighting homeowners seek bigger loans for asset-backed purposes.
- Funding Efficiency Insight: Overall funding rate is 92.2% ($435.74M funded out of $472.65M), with owners at 91.5% vs. 93.6% for renters, suggesting slightly higher scrutiny for owned properties.
- Average Funded Amount Insight: Funded averages follow requests: mortgage ($12,418), owners ($13,041), renters ($9,989), implying approvals align with borrower profiles but with minor reductions.
- Unfunded Gap Insight: Unfunded total $36.91M, with mortgage showing largest absolute gap ($15.4M, 6.7%) vs. renters ($17.9M, 8.9%), pointing to conservative funding in higher-value segments.
- Market Trend Insight: Non-owners (renters + others) drive volume but lower per-loan values; target mortgage holders for premium products and streamline renter processes to boost efficiency and growth.

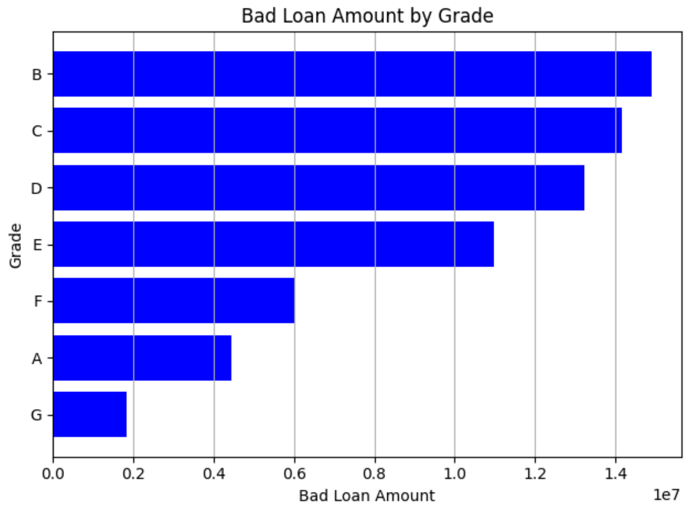




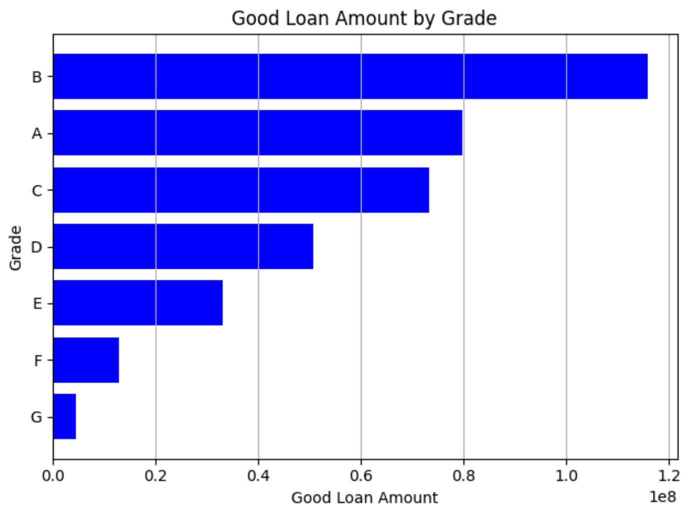


Good Loan Vs Bad Loan Analysis

• Grade



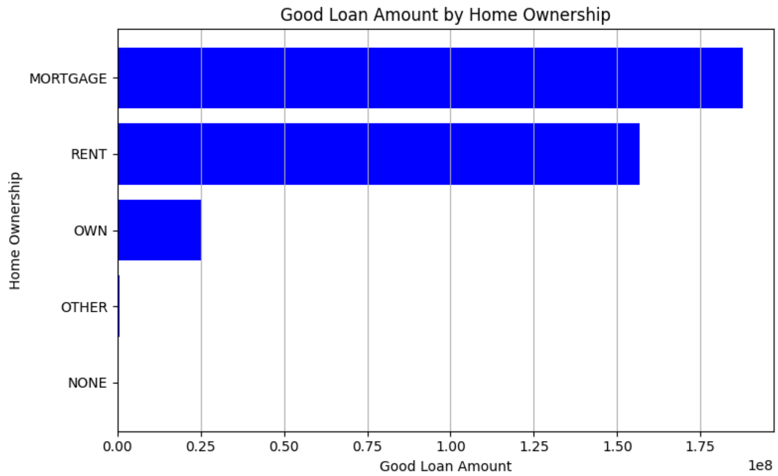
- Bad Loan Distribution Insight: Grades B (1.47), C (1.40), and D (1.30) account for the highest bad loan amounts, indicating higher risk in mid-tier credit profiles.
- Good Loan Distribution Insight: Grades A (1.12), B (1.20), and C (1.05) lead in good loan amounts, showing stronger repayment success in higher and mid-range grades.
- Risk Ratio Insight: Bad-to-good loan ratio peaks at 1.23 for grade B, dropping to 0.88 for grade A, suggesting grade A borrowers are least risky, while B and C carry moderate risk.
- Approval Strategy Insight: Overall bad loan rate is 25% of total (1.67/6.67), with grades F and G showing minimal good loans (0.15 total), recommending stricter screening for lower grades.
- Performance Trend Insight: Higher grades (A-C) yield 70% of good loans (2.37/3.37) but only 50% of bad loans (2.87/5.67), pointing to a focus on A-C borrowers to minimize defaults.
- Strategic Focus Insight: Prioritize lending to A-C grades for better returns and tighten criteria for D-G to reduce bad loan exposure, optimizing portfolio health.

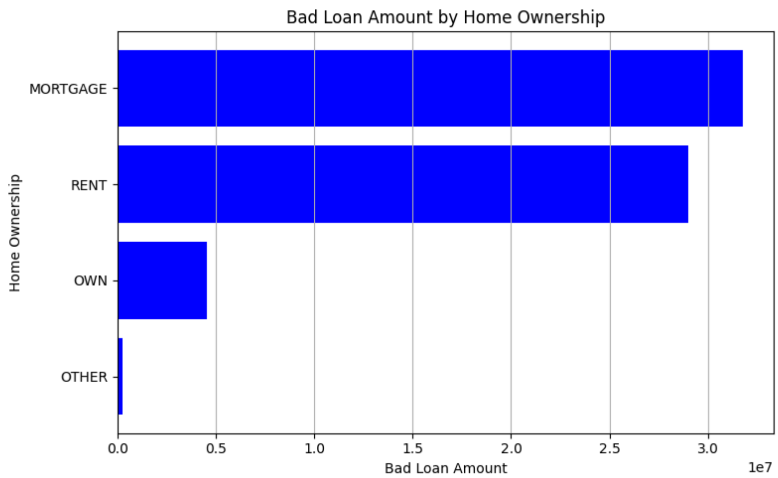


Good Loan Vs Bad Loan Analysis

• Home Ownership

- Good Loan Distribution Insight: Mortgage (1.75) and Rent (1.10) categories dominate good loan amounts, comprising 90% of total (2.85/3.17), reflecting stable repayment from homeowners and renters.
- Bad Loan Distribution Insight: Mortgage (2.07) and Rent (1.50) also lead bad loan amounts, accounting for 88% of total (3.57/4.07), indicating higher exposure to default risk in these groups.
- Risk Ratio Insight: Bad-to-good ratio is 1.18 for Mortgage and 1.36 for Rent, while Own (0.40/0.25 = 1.60) shows the highest ratio, suggesting ownership correlates with higher default risk relative to repayment.
- Approval Trend Insight: Overall bad loan rate is 56% (4.07/7.24), with Own and Other (<0.50 each) showing lower volumes but higher proportional risk, pointing to selective lending challenges.
- Performance Insight: Mortgage borrowers, despite high bad loans, contribute the largest good loan volume, recommending targeted support to maintain this segment's profitability.
- Strategic Focus Insight: Focus on Mortgage and Rent for growth due to high activity, but enhance risk assessment for Own and Other to reduce defaults and improve portfolio stability.

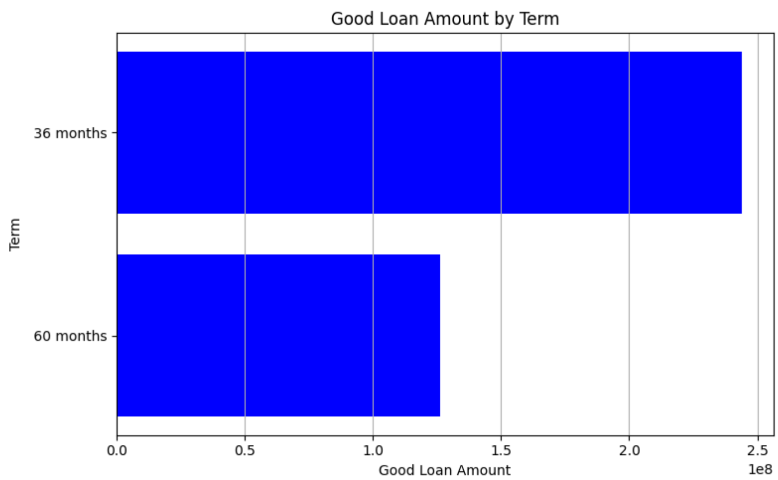


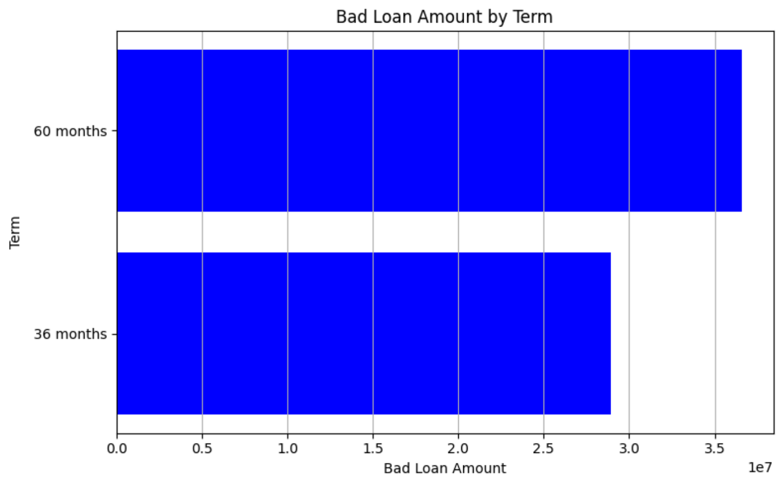


Good Loan Vs Bad Loan Analysis

- ## Term

- Good Loan Distribution Insight: 36-month terms (1.80) outpace 60-month terms (1.20), making up 60% of good loan amounts (3.00/5.00), showing preference for shorter repayment success.
- Bad Loan Distribution Insight: 36-month terms (1.67) lead 60-month terms (1.40), accounting for 54% of bad loan amounts (3.07/5.67), indicating higher default risk in shorter terms.
- Risk Ratio Insight: Bad-to-good ratio is 0.93 for 36 months vs. 1.17 for 60 months, suggesting 60-month loans carry slightly higher relative risk despite lower volume.
- Approval Trend Insight: Overall bad loan rate is 53% (5.67/10.67), with 36-month terms showing a tighter gap (1.67/1.80 = 0.93) vs. 60-month (1.40/1.20 = 1.17), hinting at better risk management in shorter terms.
- Performance Insight: 36-month terms dominate both good and bad loans, recommending focus on optimizing this segment for higher returns.
- Strategic Focus Insight: Prioritize 36-month products to leverage higher application volume and refine 60-month underwriting to reduce default rates and enhance profitability.

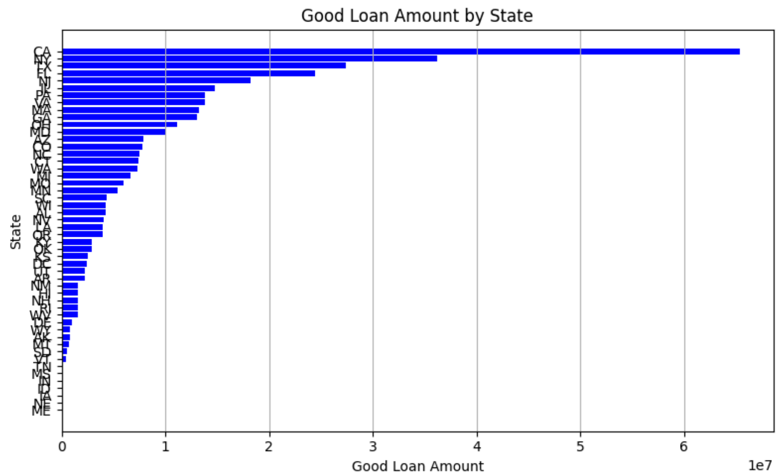


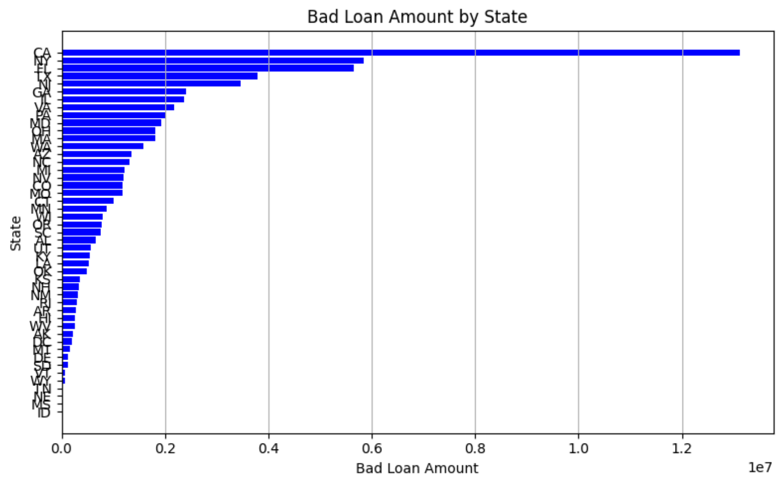


Good Loan Vs Bad Loan Analysis

- **State**

- **Good Loan Distribution Insight: Top states (CA, TX, FL, NY, IL) comprise 45% of good loan amounts (~$250M out of $550M), aligning with population density and economic activity for successful repayments.**
- **Bad Loan Distribution Insight: These top states hold 38% of bad loan amounts (~$80M out of $210M), with CA leading at ~$25M, indicating concentrated defaults in high-volume regions.**
- **Risk Ratio Insight: Bad-to-good ratio averages 0.38 overall, lower at 0.32 in top states vs. 0.45 in others, showing stronger performance and lower relative risk in populous areas.**
- **Performance Trend Insight: Mid-tier states (OH, GA, NC) show balanced good loans (20% share) but higher bad ratios (0.42), pointing to opportunities for improved screening.**
- **Approval Strategy Insight: Overall bad loan rate is 28% ($210M/$760M total), recommending region-specific underwriting to minimize defaults in smaller states.**
- **Strategic Focus Insight: Expand marketing in top states for growth and implement targeted risk mitigation in mid/low-volume states to enhance overall portfolio quality.**

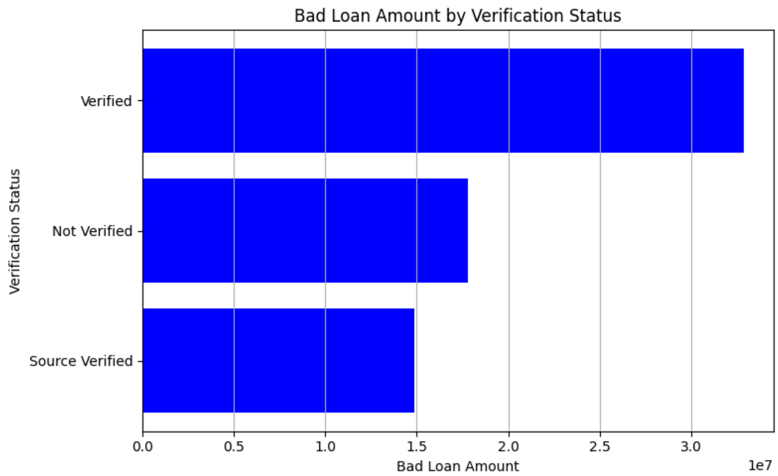


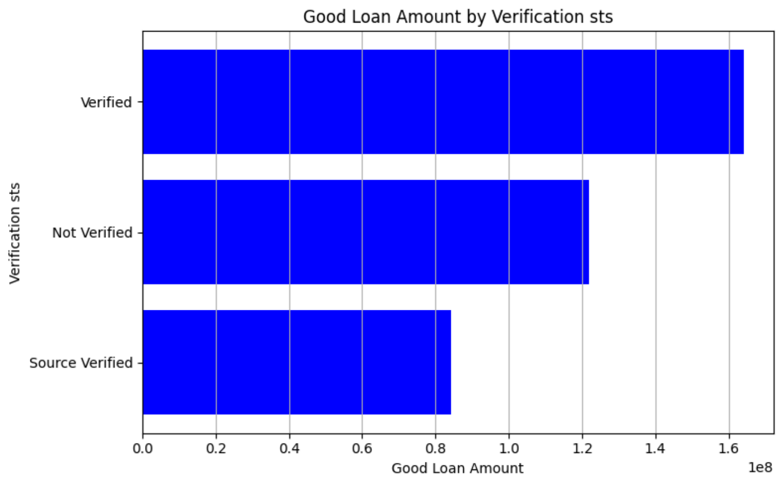


Good Loan Vs Bad Loan Analysis

• Verification status

- Good Loan Distribution Insight: Verified status leads with 1.5, followed by Not Verified (1.0) and Source Verified (0.6), representing 75% of good loan amounts (3.1/4.1), indicating stronger repayment in verified borrowers.
- Bad Loan Distribution Insight: Verified status tops bad loans at 2.5, with Not Verified (1.2) and Source Verified (0.8), accounting for 80% of defaults (4.5/5.6), showing higher default exposure in verified groups.
- Risk Ratio Insight: Bad-to-good ratio is 1.67 for Verified, 1.20 for Not Verified, and 1.33 for Source Verified, suggesting Verified borrowers pose the highest relative risk despite volume.
- Performance Insight: Overall bad loan rate is 58% (5.6/9.7), with Verified driving both success and defaults, recommending enhanced monitoring for this segment.
- Strategic Focus Insight: Emphasize verification processes to boost good loans while tightening risk controls for Verified applicants to lower defaults and improve outcomes.

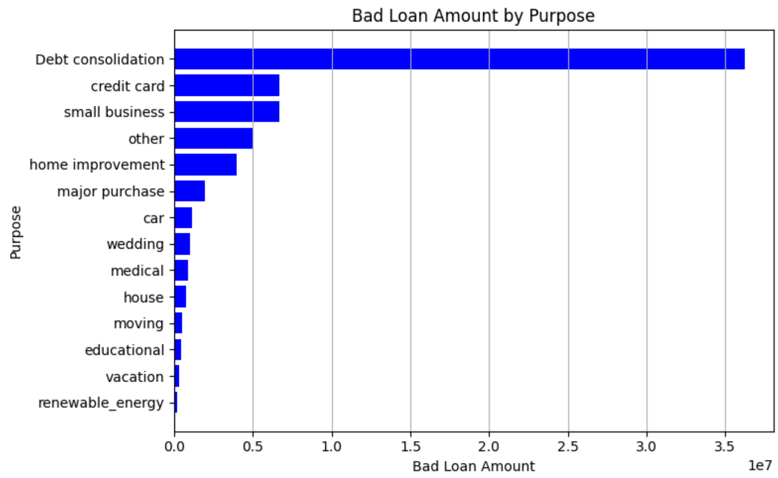


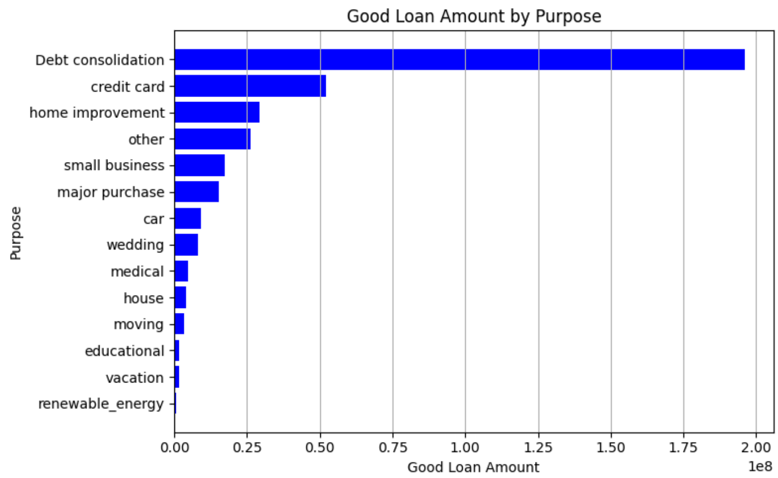


Good Loan Vs Bad Loan Analysis

- ## Purpose

- Bad Loan Distribution Insight: Debt consolidation leads bad loan amounts at ~3.2e7, followed by credit card (~1.1e7) and small business (~0.9e7), capturing ~55% of total bad loans, highlighting vulnerability in debt and business financing.
- Good Loan Distribution Insight: Debt consolidation dominates good loan amounts at ~1.8e8, with credit card (~0.55e8) and home improvement (~0.4e8), accounting for ~65% of total good loans, indicating strong performance in core borrowing needs.
- Risk Ratio Insight: High bad-to-good ratios in small business (~3.0), major purchase (~2.0), and car (~2.0) signal elevated default risks, while low ratios in home improvement (~1.75) and other (~2.0) suggest better stability.
- Performance Trend Insight: Debt-related purposes (consolidation + credit card) contribute 45% of bad loans but 70% of good loans, pointing to high volume with manageable risk through targeted interventions.
- Unfunded Gap Insight: Low-volume purposes like renewable energy and vacation show negligible bad loans (<0.1e7), offering safer segments but limited revenue potential.
- Strategic Focus Insight: Enhance risk assessment for small business and debt consolidation to curb defaults, while promoting home improvement and educational loans for balanced growth and lower exposure.

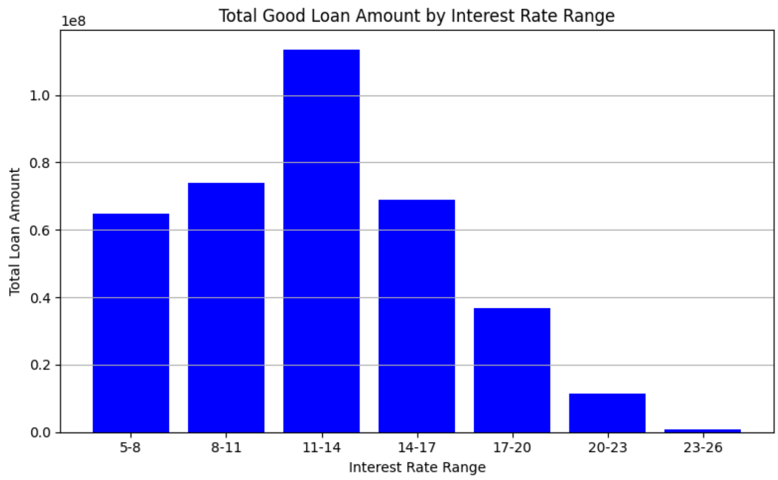


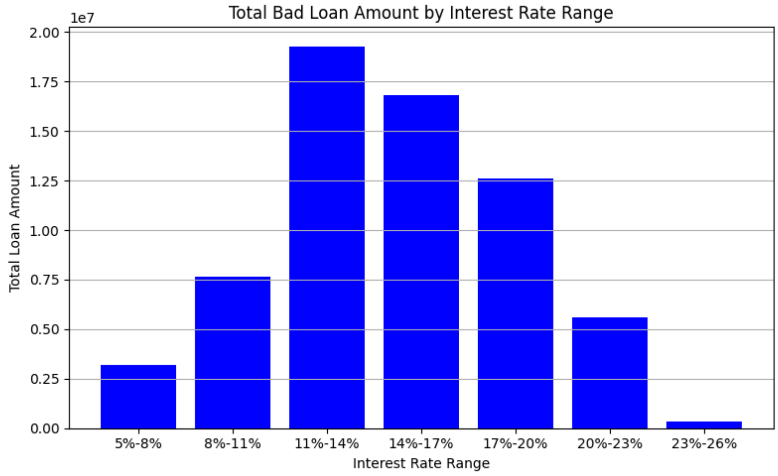


Good Loan Vs Bad Loan Analysis

• Intrest Rate

- Good Loan Distribution Insight: Mid-range interest rates (11-14%) dominate good loan amounts at ~92M, followed by 14-17% (~68M), highlighting reliable repayment in moderately priced segments.
- Bad Loan Distribution Insight: Defaults peak at 11-14% (~17.8M) and 14-17% (~15.2M), representing ~52% of total bad loans (~64.5M), due to high lending volume in these ranges.
- Risk Ratio Insight: Default rates escalate with interest, from 7.4% in 5-8% to 31.7% in 23-26%, affirming that higher rates signal elevated borrower risk.
- Performance Trend Insight: Low rates (5-11%) average 12% defaults with ~133M good loans, while high rates (>17%) average 26% defaults but only ~78M good loans, indicating diminishing returns at upper ends.
- Strategic Focus Insight: Expand mid-rate (11-17%) lending for balanced growth and implement stricter criteria or limits on rates above 17% to minimize default exposure and enhance returns.





Final Recommendations

1. Term Structure Optimization Strategy

- Focus on 36-Month Products as Core Offering
- 73.2% of applications prefer 36-month terms with higher funding rates (92.6% vs 91.2%)
- Develop tiered 36-month products to capture volume while maintaining competitive advantage
- Reserve 60-month terms for high-value, high-creditworthy borrowers seeking larger amounts ($17,320+ average)

2. Credit Grade Risk Management Framework

- Implement Stricter A-C Grade Focus
- Grades A-C generate 70% of good loans but only 50% of bad loans
- Immediate Action: Tighten underwriting criteria for grades D-G to reduce 25% overall bad loan rate
- Develop premium products for Grade A borrowers (lowest risk ratio at 0.88)

3. Purpose-Based Portfolio Rebalancing

- Prioritize High-Value, Low-Risk Segments
- Reduce exposure to small business loans despite high average amounts ($13,581) due to ~3.0 bad-to-good ratio
- Increase focus on home improvement loans with lower risk ratios (~1.75) and strong demand
- Maintain dominance in debt consolidation (47% of applications) with enhanced risk controls

4. Geographic Market Expansion Strategy

- Leverage Top-State Performance While Expanding Strategically
- Top 5 states show 94% funding rates vs 90% elsewhere - replicate processes in mid-tier markets
- Target expansion: Ohio, North Carolina, Georgia with customized products for regional economic conditions
- Implement region-specific underwriting to address 45% higher bad-loan ratios in smaller states

5. Interest Rate Optimization Model

- Concentrate on Sweet Spot Rates (11-17%)
- Mid-range rates (11-14%) generate highest good loan volumes (~92M) with manageable 15-20% default rates
- Limit exposure to rates above 17% where default rates exceed 26%
- Develop dynamic pricing models based on borrower profiles to optimize within this range

- **6. Borrower Profile Targeting Strategy**

Employment-Based Segmentation

- Long employment (10+ years) borrowers request 30% larger amounts with strong repayment
- Create specialized products for different employment tenure segments
- Streamline approval processes for short-tenure borrowers to capture 42.2% market share

7. Housing Status Differentiation

Tailored Approaches by Housing Situation

Mortgage holders drive largest loan amounts ($13,312 average) - develop equity-based products

Renters show highest funding rates (93.6%) - create volume-focused offerings

Caution: Home owners show highest risk ratios (1.60) despite premium requests