Bank Loan Report

Loan Portfolio Analysis (Findings & Insights)

1. Project Overview

This report covers the analysis of a bank's loan portfolio consisting of 38,576 loan records with 24 fields. The data includes information on borrower demographics, loan terms, repayment history, interest rates and credit risk indicators. The analysis was done in Power BI using Power Query for data cleaning and DAX for building performance metrics.

The main objective was to understand the health of the loan portfolio, identify where the risk is concentrated and draw out patterns across regions, loan types and borrower backgrounds. The dataset captures all loan activity throughout 2021.

2. Core KPIs (Portfolio at a Glance)

Metric	Figure	Context
Total Loan Applications	38,576	Full year 2021
Total Funded Amount	$435,757,075	Total capital deployed
Total Amount Received	$473,070,933	Principal + interest collected
Average Interest Rate	12.05%	Across all loan grades
Average DTI Ratio	13.33%	Borrower debt burden measure
MTD Applications (Dec)	4,314	Highest single month in 2021
MoM Growth (Dec vs Nov)	+6.9%	Consistent upward trend

The bank received $473M against $435M funded , the $38M difference is the interest income earned over the year which reflects the revenue generation of this lending portfolio.

3. Good Loan vs Bad Loan Breakdown

Loans were split into two groups based on their current status - Good Loans (Fully Paid or Currently repaying) and Bad Loans (Charged Off, meaning the bank has written them off as unrecoverable).

Category	Applications	% of Total	Funded Amount	Amount Received
Good Loans (Fully Paid + Current)	33,243	86.2%	$370,224,850	$435,786,170
Bad Loans (Charged Off)	5,333	13.8%	$65,532,225	$37,284,763
Total	38,576	100%	$435,757,075	$473,070,933

On bad loans, the bank recovered about $37.3M out of $65.5M funded, a recovery rate of approximately 56.9%. An 86.2% good loan rate overall indicates the underwriting process is working well.

4. Monthly Trends

Loan applications grew consistently throughout 2021 from 2,332 in January all the way to 4,314 in December. That is an 85% increase over the year, reflecting strong and growing borrower demand rather than any sudden spike.

Month	Applications	Funded Amount ($)	Amount Received ($)
January 2021	2,332	$25,031,650	$27,578,836
February 2021	2,279	$24,647,825	$27,717,745
March 2021	2,627	$28,875,700	$32,264,400
April 2021	2,755	$29,800,800	$32,495,533
May 2021	2,911	$31,738,350	$33,750,523
June 2021	3,184	$34,161,475	$36,164,533
July 2021	3,366	$35,813,900	$38,827,220
August 2021	3,441	$38,149,600	$42,682,218
September 2021	3,536	$40,907,725	$43,983,948
October 2021	3,796	$44,893,800	$49,399,567
November 2021	4,035	$47,754,825	$50,132,030
December 2021	4,314	$53,981,425	$58,074,380

The consistent growth through Q3 and Q4 suggests borrower demand increases towards year end , possibly linked to year end financial planning, holiday spending or debt consolidation decisions.

5. Regional Analysis

The loan data covers all 50 US states. Lending activity is heavily concentrated in a few large states which is expected given population size and economic activity.

State	Applications	Funded Amount ($)	% of Total
California (CA)	6,894	$78,484,125	17.9%
New York (NY)	3,701	$42,077,050	9.6%
Florida (FL)	2,773	$30,046,125	7.2%
Texas (TX)	2,664	$31,236,650	6.9%
New Jersey (NJ)	1,822	$21,657,475	4.7%
Illinois (IL)	1,486	$17,124,225	3.9%
Pennsylvania (PA)	1,482	$15,826,525	3.8%
Virginia (VA)	1,375	$15,982,650	3.6%
Georgia (GA)	1,355	$15,480,325	3.5%
Massachusetts (MA)	1,310	$15,051,000	3.4%

California alone accounts for 17.9% of all applications. That level of geographic concentration is worth watching a regional economic downturn there would have a disproportionate impact on the overall portfolio.

6. Loan Purpose Breakdown

Looking at why borrowers are taking these loans reveals a lot about the financial situation of the customer base.

Loan Purpose	Applications	% of Total	Funded Amount ($)	Avg Interest Rate
Debt Consolidation	18,214	47.2%	$232,459,675	12.50%
Credit Card	4,998	13.0%	$58,885,175	11.73%
Other	3,824	9.9%	$31,155,750	11.86%
Home Improvement	2,876	7.5%	$33,350,775	11.40%
Major Purchase	2,110	5.5%	$17,251,600	10.87%
Small Business	1,776	4.6%	$24,123,100	13.03%
Car	1,497	3.9%	$10,223,575	10.59%
Wedding	928	2.4%	$9,225,800	11.89%

Nearly half of all loans are for debt consolidation, borrowers are using these loans to manage existing debt. Small business loans carry the highest average rate at 13.03%, reflecting their elevated risk. Car loans are the lowest at 10.59% as they are typically secured.

7. Loan Grade & Term Analysis

7.1 By Loan Grade

Each loan is assigned a grade from A to G based on the borrower's credit profile. Grade A is the safest and G is the riskiest. Interest rates rise with each grade to reflect increased default risk.

Grade	Applications	Funded Amount ($)	Avg Interest Rate	Avg DTI
A	9,689	$84,252,225	7.35%	12.04%
B	11,674	$130,703,975	11.03%	13.43%
C	7,904	$87,456,450	13.55%	13.92%
D	5,182	$63,920,800	15.71%	13.98%
E	2,786	$44,165,100	17.71%	14.10%
F	1,028	$18,910,450	19.74%	14.17%
G	313	$6,348,075	21.40%	14.06%

Grades A and B together make up 55.1% of the portfolio, a positive sign that the book is weighted towards lower-risk borrowers. The E, F, G segment is small but carries the highest default likelihood.

7.2 By Loan Term

Term	Applications	% of Total	Funded Amount ($)	Avg Interest Rate
36 Months	28,237	73.2%	$273,041,225	11.03%
60 Months	10,339	26.8%	$162,715,850	14.83%

Most borrowers go for the 36-month option, lower total interest cost even though monthly payments are higher. The 60 month term carries a 3.8% higher average rate reflecting the additional risk for longer repayment.

8. Borrower Profile

8.1 By Employment Length

Borrowers with 10+ years of employment are the largest group at 8,870 applications (23% of total). Stable long-term employees tend to have better credit profiles and stronger repayment capacity. Borrowers with less than one year of employment account for 4,575 applications, a smaller but comparatively higher-risk segment.

8.2 By Home Ownership

Home Ownership	Applications	% of Total	Funded Amount ($)
Rent	18,439	47.8%	$185,768,475
Mortgage	17,198	44.6%	$219,329,150
Own	2,838	7.4%	$29,597,675
Other	98	0.3%	$1,044,975

Renters and mortgage holders together account for over 92% of all borrowers. Mortgage holders receive higher average loan amounts ($12,753) compared to renters ($10,076), likely because they tend to have higher incomes and better credit scores.

9. Key Takeaways

Based on the analysis, here are the five most important observations from this dataset:

- Portfolio health is strong , 86.2% of loans are performing. The focus should be on tightening underwriting criteria for Grade D through G loans which carry the highest default risk.
- Debt consolidation dominates at 47.2% of all applications. There is a clear opportunity to develop a dedicated debt consolidation product with competitive rates to capture this demand more effectively.
- California makes up nearly 18% of all loans, a significant geographic concentration. Expanding into mid-size states would help reduce this dependency and distribute portfolio risk.
- Loan volumes consistently peak in Q4 with December being the highest month. Operational capacity staffing, liquidity and processing should be planned accordingly ahead of year end.
- 26.8% of borrowers chose the 60 month term despite higher interest rates, suggesting they prioritise lower monthly payments over lower total cost. This behaviour could be leveraged to offer structured longer-term products at slightly better margins.