Executive Summary

The analysis covers a loan portfolio of **38,576 applications**, with a total funded amount of **$435.76 million**. While the portfolio is profitable on a gross level, generating a net return of approximately **$37.31 million** (Total Received minus Total Funded), this margin is significantly eroded by credit losses. The "Bad Loan" segment, representing **13.82%** of applications, accounts for a principal loss of **$28.25 million**, reducing the portfolio's actual profit to just **$9.06 million** before operational costs. This indicates a critical need to refine credit risk assessment for the segment of borrowers who ultimately default.

Profitability and Revenue Analysis 💰

The financial health of the loan portfolio can be understood by examining its core revenue and cost drivers.

- **Net Interest Income:** The primary measure of profitability is the spread between the amount received from borrowers and the amount funded.
    - Total Funded Amount: **$435.76 M**
    - Total Amount Received: **$473.07 M**
    - **Gross Profit (Spread): $37.31 M**
- **Interest Rate as a Revenue Driver:** This gross profit is generated through an **average interest rate of 12.05%** charged across the loans. This rate is the key lever for revenue generation.
- **Month-To-Date (MTD) Performance:** The most recent data from **December 2021** shows strong activity with **$53.98 million funded** and **$58.07 million received**, indicating positive cash flow and continued business momentum for that period.

MTD Funded Amount

```
31]: latest_issue_date=df['issue_date'].max()
latest_year=latest_issue_date.year
latest_month=latest_issue_date.month

mtd_data=df[(df['issue_date'].dt.year==latest_year)&(df['issue_date'].dt.month==latest_month)]
mtd_total_funded_loanamt=(mtd_data['loan_amount'].sum())/1000000
print("Total MTD Funded Amount: ${:.2f} M".format(mtd_total_funded_loanamt))
```

```
Total MTD Funded Amount: $53.98 M
```

Total Amount Recieved

```
32]: total_payment_amt=df['total_payment'].sum()
total_payment_amt_mill=total_payment_amt/1000000
print("Total  Amount Recieved: ${:.2f} M".format (total_payment_amt_mill))
```

```
Total  Amount Recieved: $473.07 M
```

MTD Amount Recieved

```
33]: latest_issue_date=df['issue_date'].max()
latest_year=latest_issue_date.year
latest_month=latest_issue_date.month

mtd_data=df[(df['issue_date'].dt.year==latest_year)&(df['issue_date'].dt.month==latest_month)]
mtd_amount_recieved=(mtd_data['total_payment'].sum())/1000000
print("Total MTD Amount Recieved: ${:.2f} M".format(mtd_amount_recieved))
```

```
Total MTD Amount Recieved: $58.07 M
```

Good Loan Metrics

[50]:
```
good_loans=df[df['loan_status'].isin(["Fully Paid","Current"])]
total_loan_applications=df['id'].count()
good_loans_applications=good_loans['id'].count()
good_loan_funded_amt=(good_loans['loan_amount'].sum())/1000000
good_loans_total_payment=(good_loans['total_payment'].sum())/1000000
good_loans_percentage=(good_loans_applications/total_loan_applications)*100

print("Good Loans Applications",good_loans_applications)
print("Good Loans Funded Amount: ${:.2f} M".format(good_loan_funded_amt))
print("Good Loans Total Recieved: ${:.2f} M".format(good_loans_total_payment))
print("Good Loans Percentage: ${:.2f}%".format(good_loans_percentage))
```

```
Good Loans Applications 33243
Good Loans Funded Amount: $370.22 M
Good Loans Total Recieved: $435.79 M
Good Loans Percentage: $86.18%
```

Credit Risk Assessment 📉

A crucial aspect of financial analysis is understanding the credit risk and its impact on the bottom line. The portfolio is segmented into "Good Loans" (Current or Fully Paid) and "Bad Loans" (Charged Off).

- **Good Loan Portfolio:**
    - This segment represents **86.18%** of the applications and is performing as expected.
    - With **$370.22 million funded**, it has already generated **$435.79 million** in receipts, making it the profitable engine of the portfolio.
- **Bad Loan Portfolio (Charge-Offs):**
    - This segment, though smaller at **13.82%** of applications, creates a significant financial drain.
    - **Funded Amount: $65.53 M**
    - **Amount Received: $37.28 M**
    - **Principal Loss: $28.25 M**

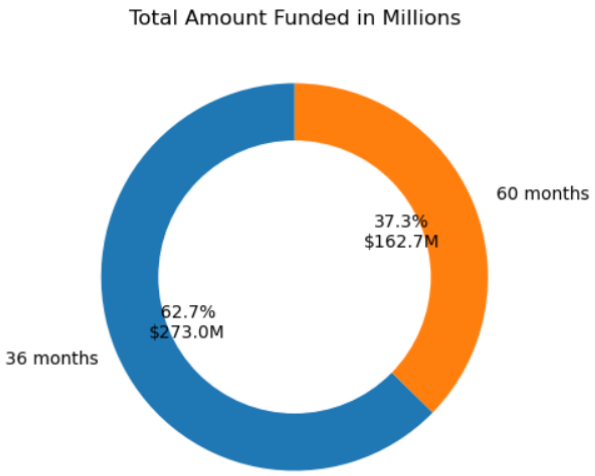
This **$28.25 million loss** directly offsets the gross profit generated by the entire portfolio. When this loss is factored in, the portfolio's profit before operating expenses shrinks from $37.31 million to a mere **$9.06 million**. This demonstrates that the underwriting process for the segment of borrowers who default is not effectively screening for risk. The **average Debt-to-Income (DTI) ratio of 13.33%** provides a

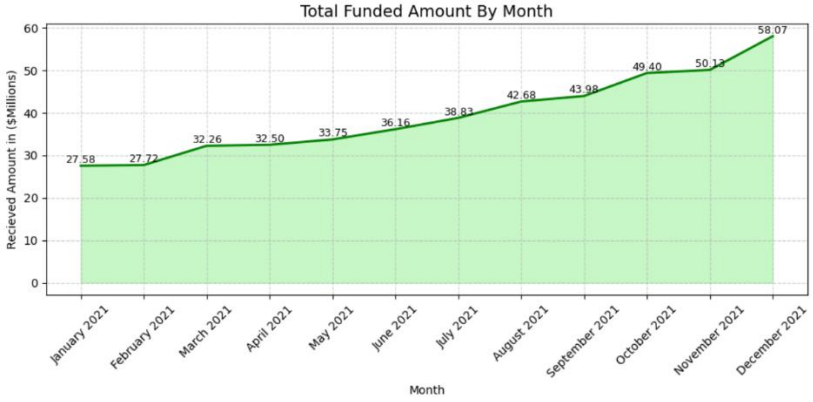
general measure of borrower capacity but is not sufficient on its own to mitigate the risk posed by this sub-segment.

Strategic Insights from Visual Analysis

The visualizations offer further financial context for strategic decision-making:

- **Geographic Concentration:** The concentration of funding in states like **California and New York** highlights a dependency on these regional economies. Any economic downturn in these key states could pose a significant threat to the portfolio's stability.
- **Product Mix (Loan Term):**
    - **36-month loans** are more frequent, suggesting a focus on shorter-term consumer credit, which allows for quicker capital turnover.
    - **60-month loans**, however, command a larger share of the total funded amount. Financially, this extends the risk exposure over a longer period but offers higher potential interest income per loan. The bank needs to ensure its long-term risk models are robust enough to handle this exposure.
- **Customer Segmentation (Home Ownership):**
    - Borrowers with a **MORTGAGE** constitute the largest segment by funded amount (**$219.3 million**). This group is often perceived as lower risk due to property ownership, which could justify larger loan amounts.
    - The **RENT** segment is the second-largest (**$185.8 million**). This group may be subject to higher interest rates to compensate for a perceived higher risk profile, contributing significantly to both revenue and potential losses. A deeper analysis into the default rates within this segment would be financially prudent.


Total Amount Funded in Millions
60 months
37.3%
$162.7M
62.7%
$273.0M
36 months


Total Funded Amount By Month
Recieved Amount in ($Millions)
Month
0
10
20
30
40
50
60
27.58
27.72
32.26
32.50
33.75
36.16
38.83
42.68
43.98
49.40
50.13
58.07
January 2021
February 2021
March 2021
April 2021
May 2021
June 2021
July 2021
August 2021
September 2021
October 2021
November 2021
December 2021