

BANK LOAN REPORT

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[GitHub Repo](#)

DOMAIN KNOWLEDGE

Bank loans are a crucial financial tool that enables individuals and businesses to achieve their goals and manage financial needs. However, it's essential for borrowers to understand the terms, costs, and responsibilities associated with loans to make informed financial decisions.

Banks collect loan data through various channels and processes, including:

Loan Applications: When individuals or businesses apply for loans, they submit detailed applications that include personal and financial information. This data is collected electronically or in paper form.

Credit Reports: Banks often access credit reports from credit bureaus when assessing a borrower's creditworthiness. These reports contain information about a person's credit history, existing loans, and payment behaviour.

Internal Records: Banks maintain internal records of loan transactions, including disbursements, repayments, and loan status changes. These records are generated and stored in the bank's database.

Online Portals: Many banks offer online platforms where borrowers can apply for loans, make payments, and access account information. Data from these portals is collected and stored for analysis.

Third-party Data Sources: Some banks may use external data sources, such as income verification services, to gather additional information about borrowers.

Bank Loan Queries and KPIs For Dashboard

1. BANK LOAN REPORT | SUMMARY:

1. Total Number of Applications for Loan

```
SELECT Count(id) as Total_Applications From bank_loan_data;
```

Total_Applications

38576

2. MTD Loan Applications

```
SELECT COUNT(id) AS MTD_Total_Applications FROM bank_loan_data  
WHERE MONTH(issue_date) = 12;
```

MTD_Total_Applications

4314

3. PMTD Loan Applications

```
SELECT COUNT(id) AS PMTD_Loan_Applications FROM bank_loan_data  
WHERE MONTH(issue_date) = 11;
```

PMTD_Loan_Applications

4035

4. Total Funded Amount

```
Select SUM(loan_amount) as Total_Funded_Amount From bank_loan_data;
```

Total_Funded_Amount

435757075

5. MTD Total Funded Amount

```
Select SUM(loan_amount) as MTD_Total_Funded_Amount From bank_loan_data  
Where MONTH (issue_date) = 12 AND YEAR (issue_date) = 2021;
```

MTD_Total_Funded_Amount

53981425

6. PMTD Total Funded Amount

```
Select SUM(loan_amount) as PMTD_Total_Funded_Amount From bank_loan_data  
Where MONTH(issue_date) = 11 AND YEAR(issue_date) = 2021;
```

PMTD_Total_Funded_Amount

47754825

7. Total Amount Recieved

```
Select SUM(total_payment) as Total_Amount_Recieved From bank_loan_data;
```

Total_Amount_Recieved

473070933

8. MTD Total Amount Recieved

```
Select SUM(total_payment) as Total_Amount_Recieved From bank_loan_data  
Where MONTH(issue_date) = 12 and YEAR(issue_date) =2021;
```

Total_Amount_Recieved

58074380

9. PMTD Total Amount Recieved

```
Select SUM(total_payment) as Total_Amount_Recieved From bank_loan_data  
Where MONTH(issue_date) = 11 and YEAR(issue_date) =2021;
```

Total_Amount_Recieved

50132030

10. Average Interest Rate

```
SELECT Round(AVG(int_rate)*100, 2) as Average_Interest_Rate From bank_loan_data;
```

Average_Interest_Rate

12.05

11. PMTD Average Interest Rate

```
SELECT Round(AVG(int_rate)*100, 2) as Average_Interest_Rate From bank_loan_data  
WHERE MONTH(issue_date) = 12;
```

Average_Interest_Rate

12.36

12. PMTD Average Interest Rate

```
SELECT Round(AVG(int_rate)*100, 2) as Average_Interest_Rate From bank_loan_data  
WHERE MONTH(issue_date) = 11;
```

Average_Interest_Rate

11.94

13. DTI

```
SELECT ROUND(AVG(dti)*100, 2) AS Avg_DTI FROM bank_loan_data;
```

Avg_DTI

13.33

14. MTD Avg DTI

```
SELECT ROUND(AVG(dti)*100, 2) AS MTD_DTI FROM bank_loan_data  
WHERE MONTH(issue_date) = 12;
```

MTD_DTI

13.67

15. PMTD Avg DTI

```
SELECT ROUND(AVG(dti)*100, 2) AS PMTD_Avg_DTI FROM bank_loan_data
WHERE MONTH(issue_date) = 11;
```

PMTD_Avg_DTI

13.3

2. Loan Status Financial Summary:

```
SELECT
```

```
loan_status,
```

```
COUNT(id) AS LoanCount,
```

```
CAST(CAST(SUM(total_payment) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Amount_Received,
```

```
CAST(CAST(SUM(loan_amount) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Funded_Amount,
```

```
ROUND(AVG(int_rate * 100), 2) AS Interest_Rate,
```

```
ROUND(AVG(dti * 100), 2) AS DTI
```

```
FROM bank_loan_data
```

```
GROUP BY loan_status;
```

	loan_status	LoanCount	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
1	Fully Paid	32145	411.59M	351.36M	11.64	13.17
2	Current	1098	24.20M	18.87M	15.1	14.72
3	Charged Off	5333	37.28M	65.53M	13.88	14

3. December Loan Status Financial Summary

```
SELECT  
loan_status,  
CAST(CAST(SUM(total_payment) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Amount_Received,  
CAST(CAST(SUM(loan_amount) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Funded_Amount  
FROM bank_loan_data  
WHERE MONTH(issue_date) = 12  
GROUP BY loan_status;
```

	loan_status	Total_Amount_Received	Total_Funded_Amount
1	Fully Paid	47.82M	41.30M
2	Current	4.93M	3.95M
3	Charged Off	5.32M	8.73M

4. Grade A Loan Applications Summary by Purpose

```
SELECT
    purpose AS PURPOSE,
    COUNT(id) AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Amount_Received
FROM bank_loan_data
WHERE grade = 'A'
GROUP BY purpose
ORDER BY Total_Amount_Received DESC, Total_Funded_Amount DESC;
```

	PURPOSE	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
1	Debt consolidation	3753	37216300	38822971
2	credit card	1353	12636075	13339495
3	home improvement	933	8359175	8744006
4	other	1024	7043175	7397982
5	major purchase	796	5344575	5604259
6	car	577	3629475	3805538
7	small business	334	3172075	3190467
8	wedding	237	2001725	2126202
9	medical	197	1471850	1526882
10	moving	164	1069450	1099875
11	house	91	916575	957878
12	vacation	122	683625	694542
13	educational	79	484000	515639
14	renewable_energy	29	224150	225827

5. Home Ownership Status:

```
SELECT
home_ownership AS Home_Ownership,
COUNT(id) AS Total_Loan_Applications,
CAST(CAST(SUM(total_payment) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Amount_Received,
CAST(CAST(SUM(loan_amount) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Funded_Amount
FROM bank_loan_data
GROUP BY home_ownership
ORDER BY Total_Amount_Received DESC, Total_Funded_Amount DESC;
```

	Home_Ownership	Total_Loan_Applications	Total_Amount_Received	Total_Funded_Amount
1	OWN	2838	31.73M	29.60M
2	MORTGAGE	17198	238.47M	219.33M
3	RENT	18439	201.82M	185.77M
4	OTHER	98	1.03M	1.04M
5	NONE	3	0.02M	0.02M

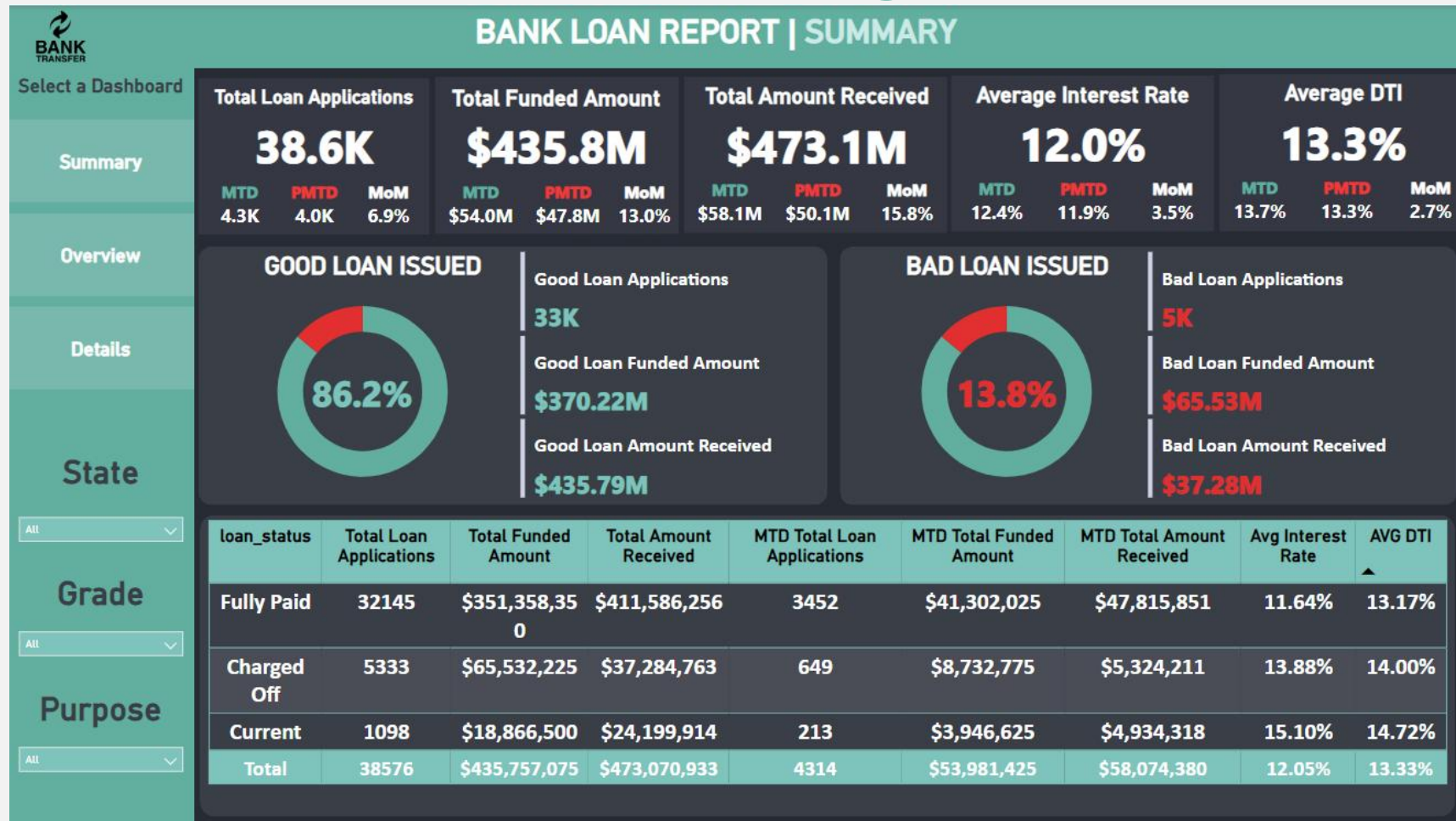
6. Top 5 Employees Experience:

```
SELECT TOP 5
emp_length AS Employee_Length,
COUNT(id) AS Total_Loan_Applications,
CAST(CAST(SUM(total_payment) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Amount_Received,
CAST(CAST(SUM(loan_amount) / 1000000.0 AS DECIMAL(10,2)) AS VARCHAR) + 'M' AS Total_Funded_Amount
FROM bank_loan_data
GROUP BY emp_length
ORDER BY Total_Amount_Received DESC, Total_Funded_Amount DESC;
```

	Employee_Length	Total_Loan_Applications	Total_Amount_Received	Total_Funded_Amount
1	2 years	4382	49.21M	44.97M
2	< 1 year	4575	47.55M	44.21M
3	3 years	4088	47.55M	43.94M
4	4 years	3428	40.96M	37.60M
5	5 years	3273	40.40M	36.97M

Dashboard Section

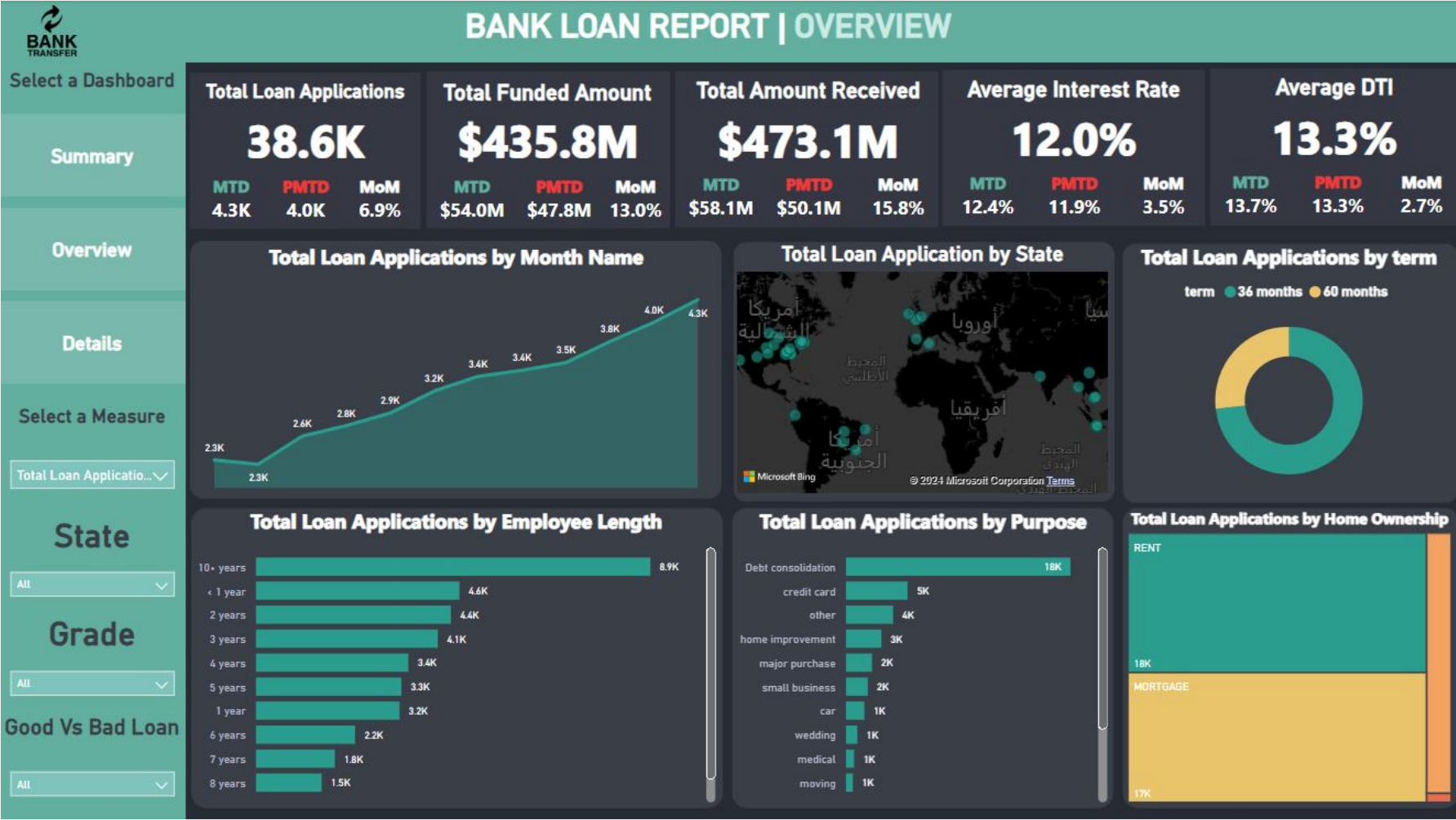
First Page



Insights

- **Overall Loan Performance:** In the Summary section, you can see that there were a total of 38.6K loan applications with a total funded amount of \$435.8M. The average interest rate is 12.0% and the average DTI is 13.3%. Month-over-month (MoM) comparisons show an increase in total loan applications (6.9%) and total amount received (15.8%).
- **Loan Applications vs Funded Loans:** The Overview section breaks down loan applications into good and bad loans. There were 33K good loan applications and 5K bad loan applications. Good loans make up 86.2% of the total funded amount at \$370.22M.
- **Loan Performance by Loan Status:** The loan_status section provides a detailed breakdown of loan performance by loan status. Fully paid loans make up the majority of total applications (32145), total funded amount (\$351,358,35) and total amount received (\$411,586,256). Current loans have an average interest rate of 15.10% and an average DTI of 14.72%.
- **Loan Performance by Purpose:** The Purpose section lets you see how loans are performing by their purpose. Unfortunately, the purpose with the most applications ("Off") is cut off in the screenshot so I can't tell you what that purpose is, but current loans for this purpose have the highest average interest rate (15.10%) and a DTI of 14.72%.

Second Page



Insights

- **Total Loan Application by Term:**

- The most popular loan term is 60 months. This term accounts for the largest slice of the pie chart, which equates to roughly 42.3% of total loan applications. Unfortunately, the data labels aren't perfectly visible so it's difficult to say for sure what percentage this is.
- Loans with terms between 36 and 60 months are the most popular. The combined share of these two terms is 73.2%, which signifies that a significant majority of applicants prefer loan terms in this range.

- **Recommendations:**

- ◆ **Product Development:** If the data shows a strong preference for loans between 36 and 60 months, consider developing loan products specifically catered to this term range. This could involve:
 - Offering competitive interest rates for these terms.
 - Streamlining the application process for these loan types.
 - Tailoring marketing campaigns to highlight the benefits of these loan terms for specific loan purposes (e.g., car financing).

- **Loan Applications by Employee Length:**

- Employees with the most experience (over 10 years) tend to submit the most loan applications. There were 15K loan applications from this group.
- The number of loan applications generally decreases as the employee's tenure decreases. There were 4AK applications from employees with 1 year of experience and 2.2K applications from those with 6-8 years of experience.

- **Recommendation:**

- ◆ **Tailor Loan Products or Marketing Campaigns:** Since employees with over 10 years of experience submit the most loan applications, you can consider targeting this specific group with loan products or marketing campaigns that cater to their needs and financial situation. This could involve:

- **Loan Products:** Develop loan products with features that appeal to experienced employees, such as higher loan amounts, competitive interest rates for larger loans, or home equity loans for potential investments.
- **Marketing Campaigns:** Design marketing campaigns that highlight the benefits of these loan products and target them through channels likely used by this demographic, such as email campaigns or financial newsletters.

● **Loan Performance by Purpose:**

The Purpose section lets you see how loans are performing by their purpose. Here, the loan purpose with the most applications is "business" at 3.3K. Current loans for "credit card" have the highest average interest rate (15.10%) and a DTI of 14.72%.

■ **Recommendation:**

Focus on Business Loans:

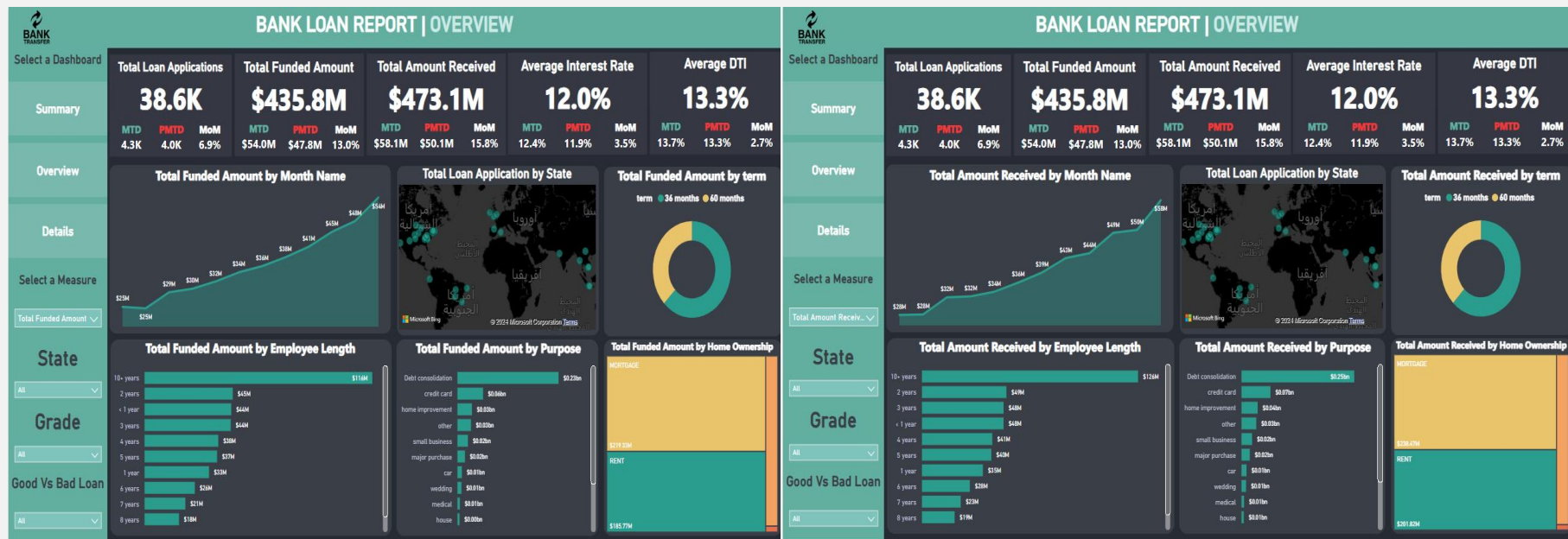
- ◆ **Targeted Products and Services:** Since "business" loans have the highest volume of applications, consider developing specialized loan products and services tailored to different business needs. This could involve:
 - Short-term working capital loans for businesses with temporary cash flow needs.
 - Equipment financing options for businesses purchasing machinery or technology.
 - Lines of credit for established businesses with ongoing operational expenses.
- ◆ **Dedicated Business Loan Teams:** Create dedicated teams within the bank that specialize in business loans. These teams can develop expertise in different industries and tailor loan solutions to meet the specific needs of business borrowers.

● **Total Loan Application by Month:**

- **Seasonality:** There appears to be a seasonal trend in loan applications, with the number of applications generally increasing throughout the year, peaking in December (4.3K applications) and potentially starting lower in January (2.3K applications).
- **Increased Loan Activity in Later Months:** The data suggests a rise in loan applications towards the end of the year. There could be several reasons for this, such as:
 - ◆ **Holiday Spending:** Loan applications may increase around the holiday season (November-December) to finance holiday purchases or larger gifts.
 - ◆ **Year-End Business Needs:** Businesses may apply for loans towards the end of the year for year-end investments, inventory purchases, or working capital needs.
 - ◆ **Tax-Related Decisions:** Loan applications might increase in anticipation of tax refunds or tax-related investments around the end of the year.
- **Recommendation:**
 - ◆ **Targeted Marketing Campaigns:** marketing campaigns that align with the seasonal trends in loan applications. You can:
 - Promote holiday loans or financing options in November and December.
 - Highlight small business loan products around the end of the fiscal year (e.g., Q4) to target businesses finalizing their budgets.
 - Offer tax-related loan solutions in the lead-up to tax filing deadlines.

Note that: you can Switch a Measure between:

1. Total Loan Applications
2. Total Funded Amount
3. Total Amount Received



Third Page



BANK LOAN REPORT | Details

Select a Dashboard

Summary

Overview

Details

Select a Measure

State

Grade

Good Vs Bad Loan

Total Loan Applications			Total Funded Amount			Total Amount Received			Average Interest Rate			Average DTI		
38.6K			\$435.8M			\$473.1M			12.0%			13.3%		
MTD	PMTD	MoM	MTD	PMTD	MoM	MTD	PMTD	MoM	MTD	PMTD	MoM	MTD	PMTD	MoM
4.3K	4.0K	6.9%	\$54.0M	\$47.8M	13.0%	\$58.1M	\$50.1M	15.8%	12.4%	11.9%	3.5%	13.7%	13.3%	2.7%

id	purpose	Home Ownership	Grade	Sub Grade	Date	Total Funded Amount	Interest Rate	Installment	Total Amount Received
54734	Debt consolidation	RENT	B	B4	09 2021, أغسطس	\$25,000	0.12	829.10	\$29,330
55742	credit card	RENT	B	B5	08 2021, مايو	\$7,000	0.11	228.22	\$8,216
57245	Debt consolidation	OWN	C	C2	10 2021, مارس	\$1,200	0.13	40.50	\$1,458
57416	Debt consolidation	RENT	C	C3	09 2021, نوفمبر	\$10,800	0.14	366.86	\$13,208
58915	Debt consolidation	RENT	B	B3	08 2021, أبريل	\$7,500	0.10	162.34	\$5,844
59006	credit card	MORTGAGE	C	C5	09 2021, سبتمبر	\$3,000	0.14	102.92	\$3,705
61390	credit card	MORTGAGE	A	A5	10 2021, فبراير	\$4,000	0.08	125.13	\$4,452
61419	Debt consolidation	RENT	D	D2	10 2021, فبراير	\$5,600	0.15	194.02	\$6,475
62102	Debt consolidation	RENT	B	B1	10 2021, أبريل	\$3,200	0.10	103.08	\$3,414
65426	car	MORTGAGE	B	B1	09 2021, أغسطس	\$4,000	0.11	131.22	\$2,755
65640	home improvement	MORTGAGE	C	C2	08 2021, مايو	\$5,000	0.11	87.19	\$3,154
66431	Debt consolidation	RENT	B	B5	09 2021, فبراير	\$2,525	0.12	84.12	\$3,028
66749	Debt consolidation	MORTGAGE	C	C4	08 2021, أغسطس	\$10,625	0.13	360.43	\$12,975
Total						\$435,757,075	4,647.96	12,609,065.74	\$473,070,933

Insights

- **Overall Loan Performance:** In the Summary section, you can see that there were a total of 38.6K loan applications with a total funded amount of \$435.8M. The average interest rate is 12.0% and the average DTI is 13.3%. Month-over-month (MoM) comparisons show an increase in total loan applications (6.9%) and total amount received (15.8%).
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Here are some additional insights based on the table data:

- **Total Amount Received vs Total Funded Amount:** The total amount received (\$473.1M) is higher than the total funded amount (\$435.8M). This difference could be due to interest accrued on the loans.
- **Details Section:** The details section provides a glimpse into individual loan applications. Here you can see details such as loan purpose, grade, sub-grade, date, total funded amount, interest rate, installment amount, and total amount received. However, due to the limited data displayed, it is difficult to draw specific conclusions from this section.

Thanks For Watching

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