

# Lending Club Case Study

## Background – Lending Club Case Study

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Lending club is the largest peer-to-peer marketplace connecting borrowers with lenders. Borrowers apply through an online platform where they are assigned an internal score. Lenders decide 1) whether to lend and 2) the terms of loan such as interest rate, monthly instalment, tenure etc.

Some popular products are credit card loans, debt consolidation loans, house loans, car loans etc.

### Business Objective

To identify variables which are strong indicators of default and potentially use the insights in approval / rejection decision making.

# Data Understanding

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## Types of variables

- Customer (applicant) demographic
- Loan related information & characteristics
- Customer behaviour (if the loan is granted)

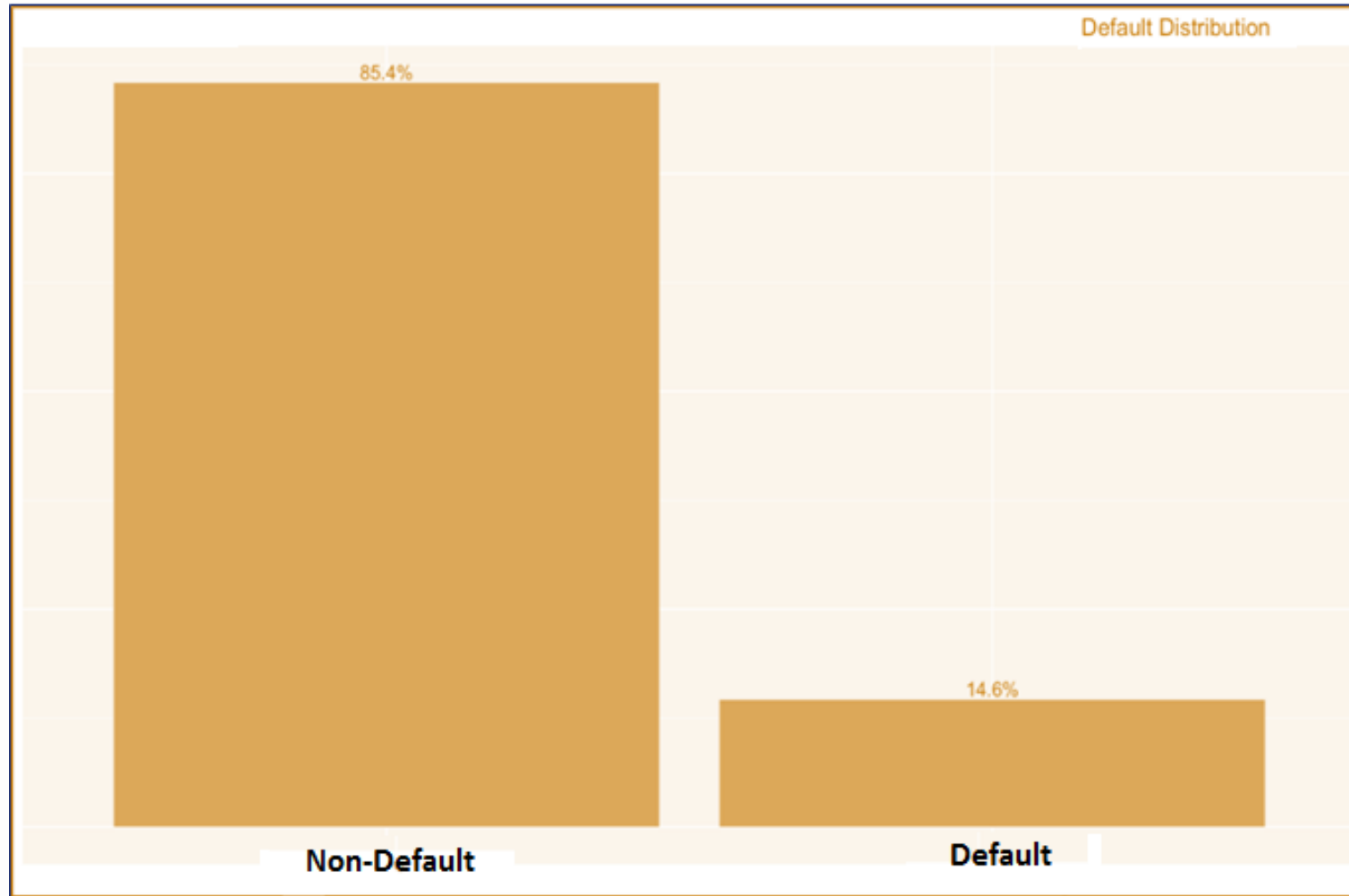
Customer's Demographics
Employment Length
Employment title
Annual Income
Zip Code
Description

Loan Information & Characteristics
Loan Amount
Funded Amount
Funded Amount Investment
Interest Rate
Loan Status
Laon Grade

Customer Behaviour variables
Delinquency year -2
earliest credit line
Revolving balance
Recoveries
Application type
Loan purpose

## Data Understanding - Overall Default Rate is 14%

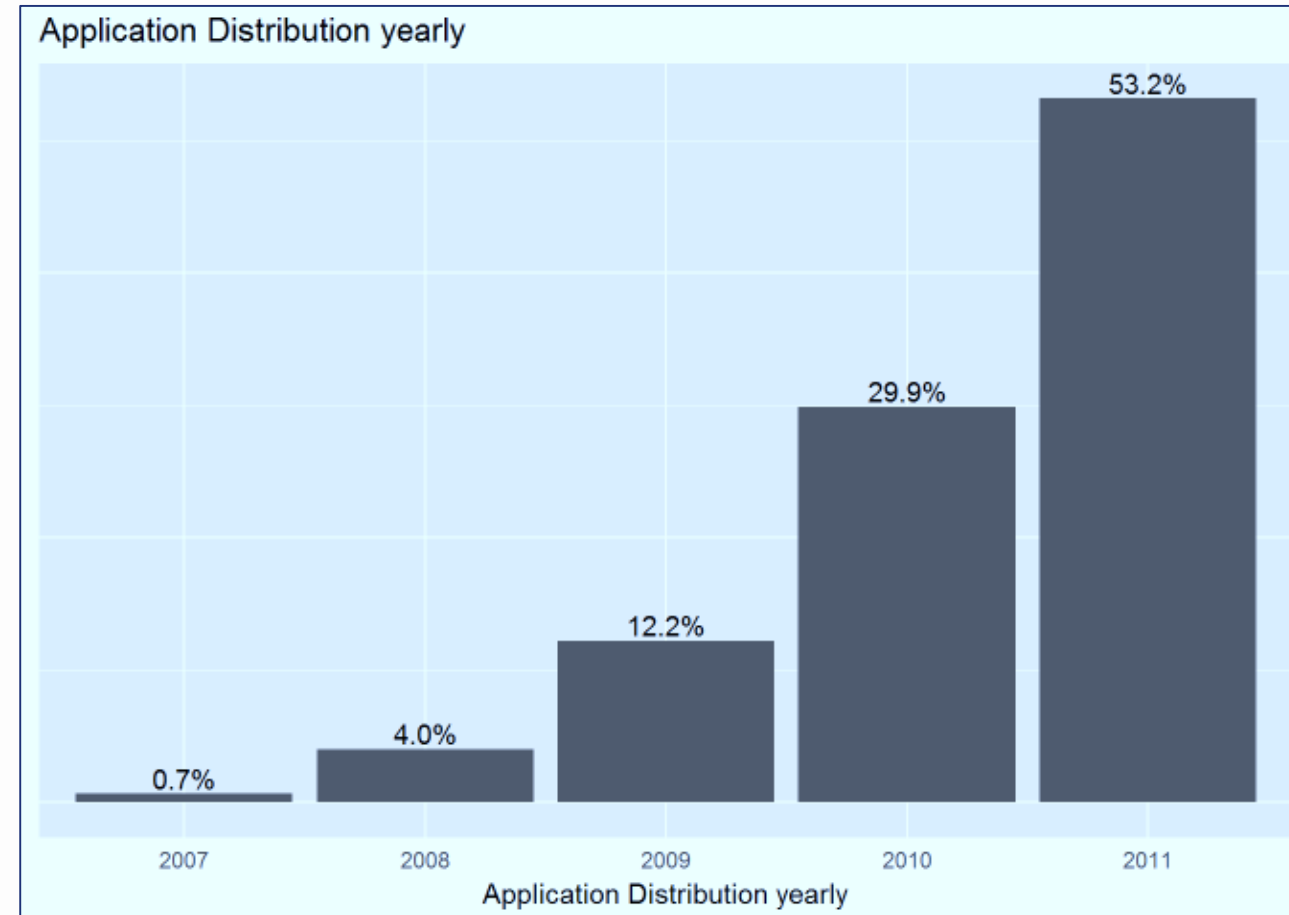
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## Time Frame of the Data – 2007-2011

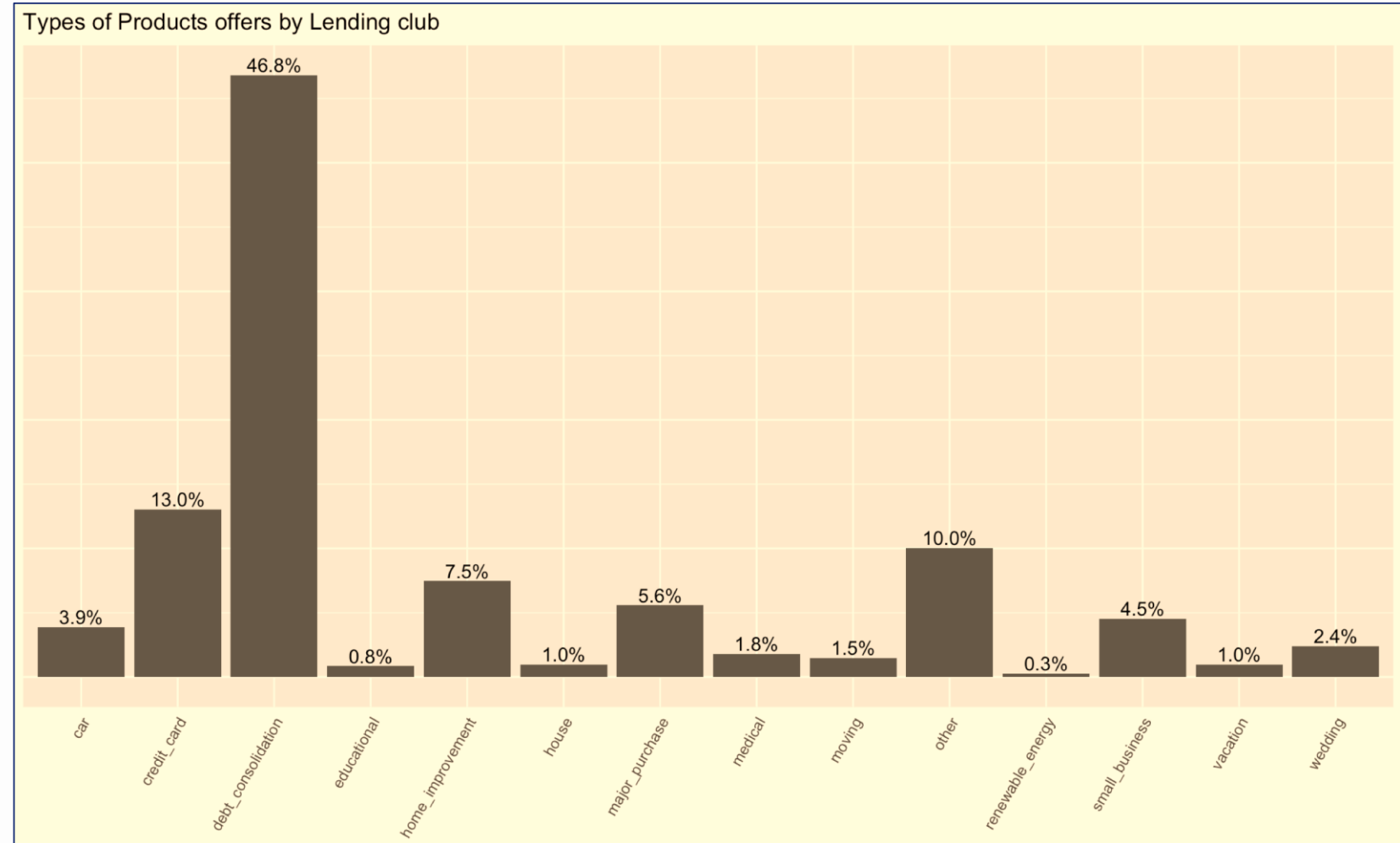
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- 78% increment in applicants in 2011 compared to 2010
- 145% increment in applicants in 2010 compared to 2009



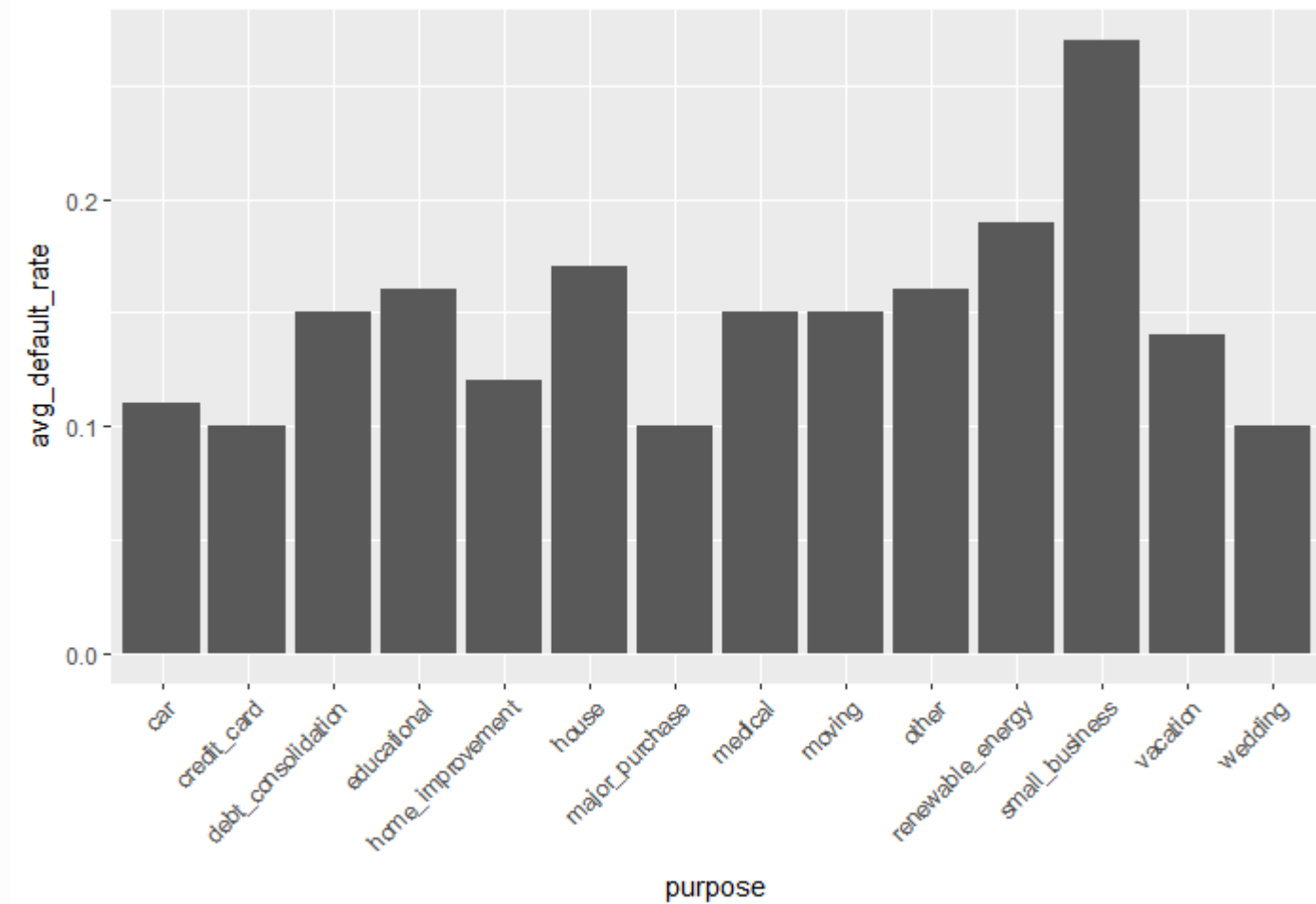
## Loan Purpose Distribution : Debt Consolidation Loan is the most popular

- 46.8% debt consolidation loans
- 13% credit card loans
- 7.5% home improvement loans
- 5.6% major purchase loans



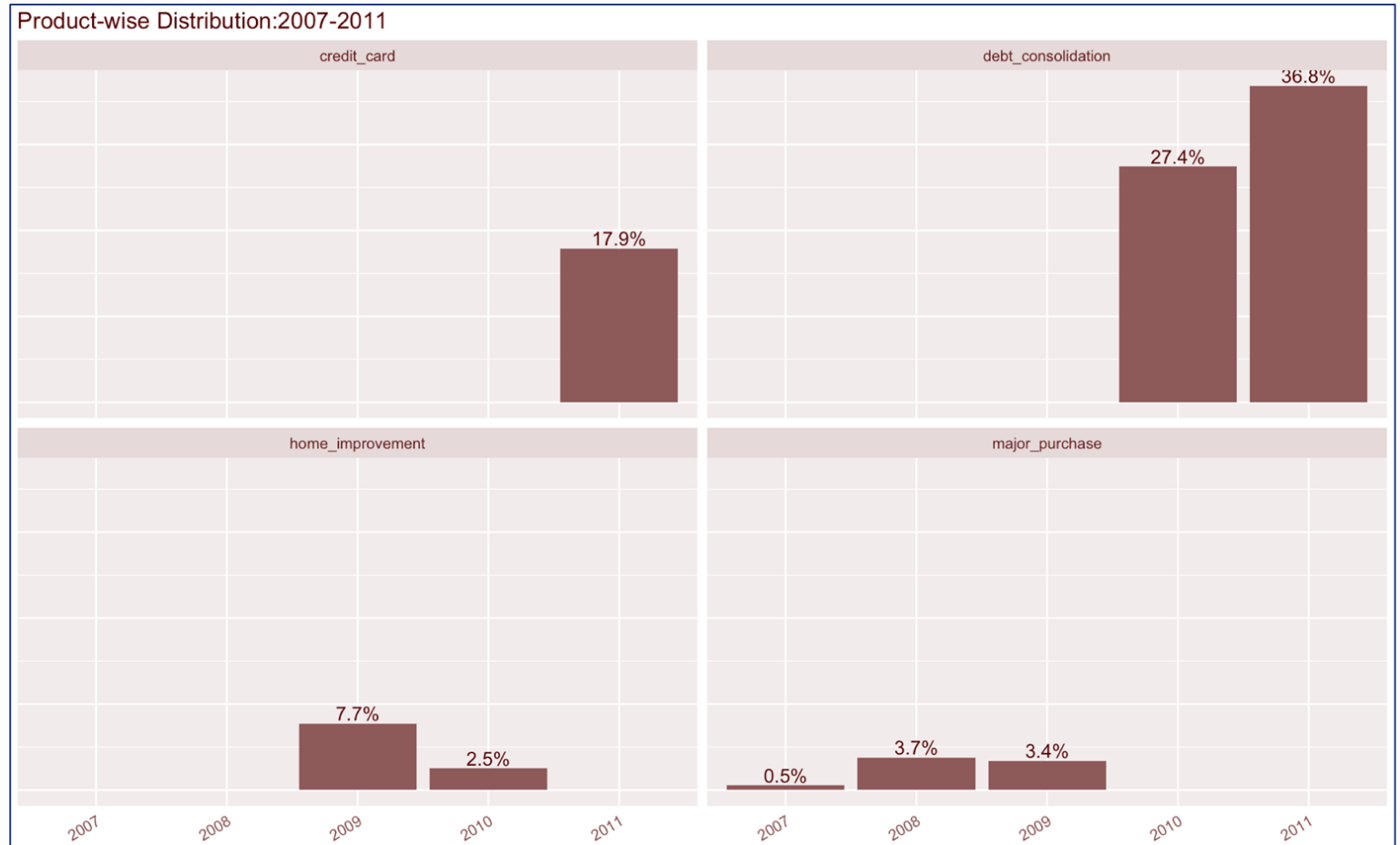
## Default Rates By Loan Purpose

- Small business: 27%
- House: 17%
- Educational: 16%
- Debt consolidation: 15%
- Credit card: 10%
- Major purchase: 10%



## Top-4 Products over time: Credit Card, Debt Consolidation, Home Improvement & Major purchase

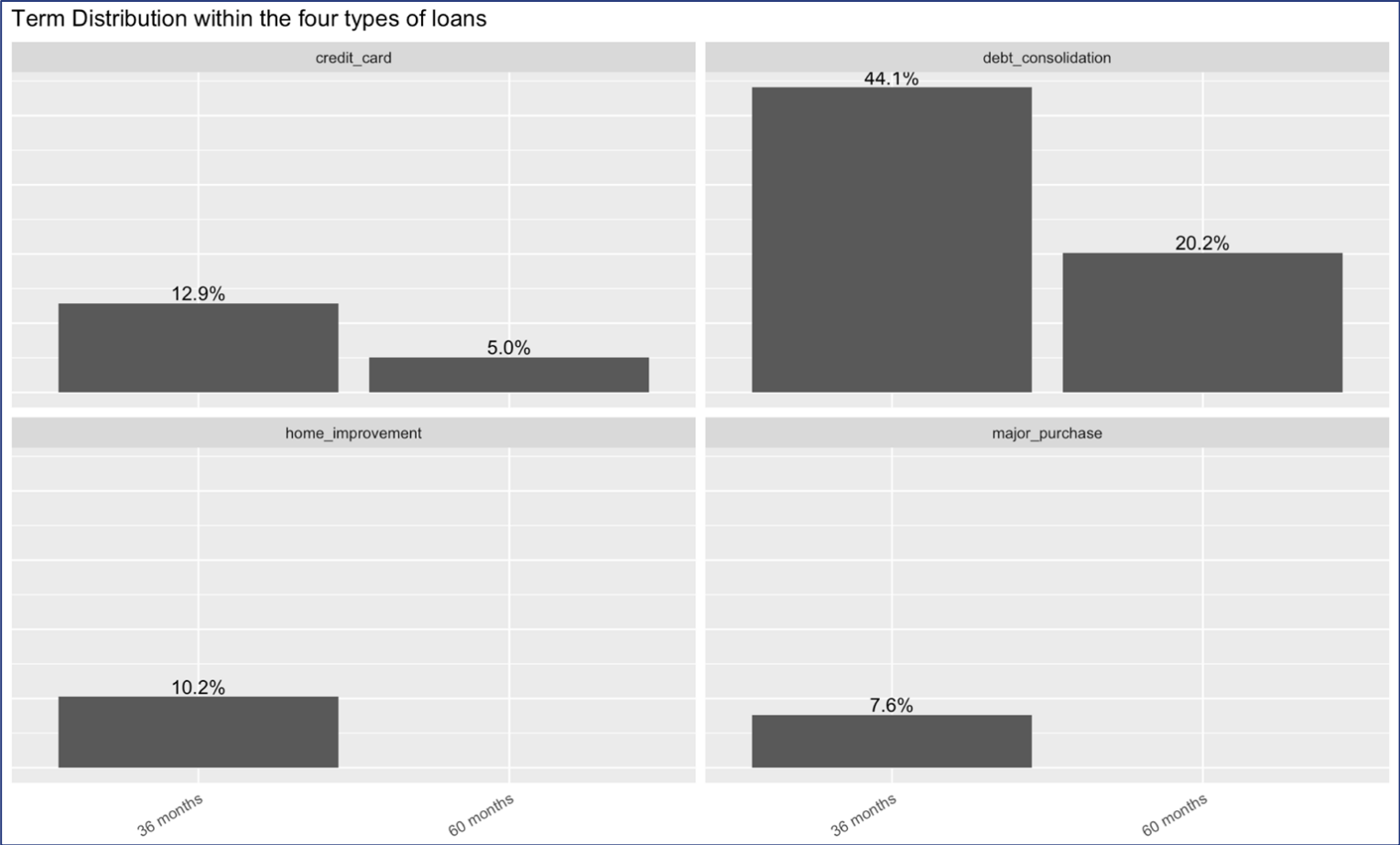
- In 2007 & 2008, Lending Club focused on major purchase loans
- In 2009, they started lending money for home improvement purpose also
- In 2010, they started lending loan for debt consolidation
- In 2011, credit card loans were introduced



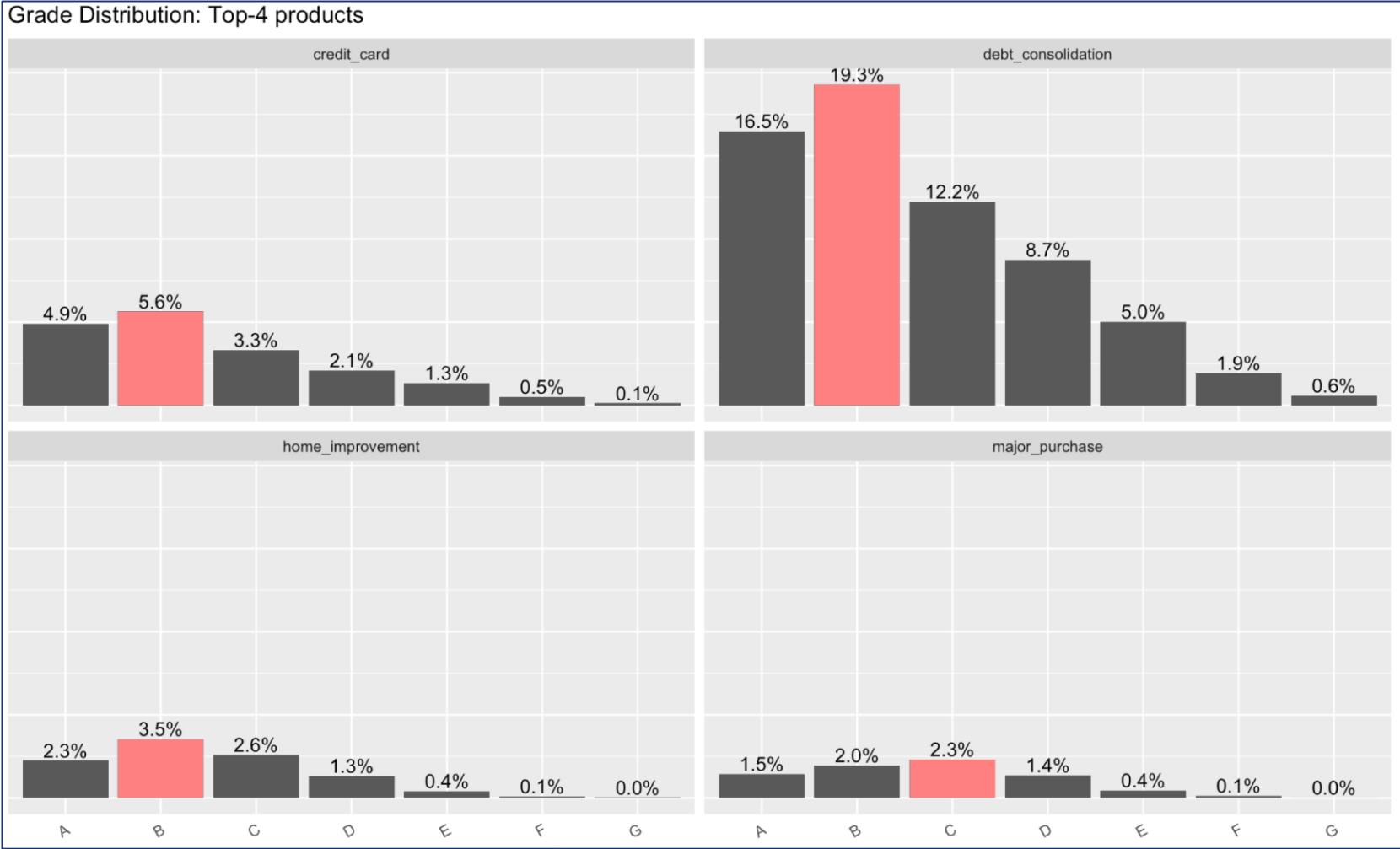


# Term Distribution in Top-4 products

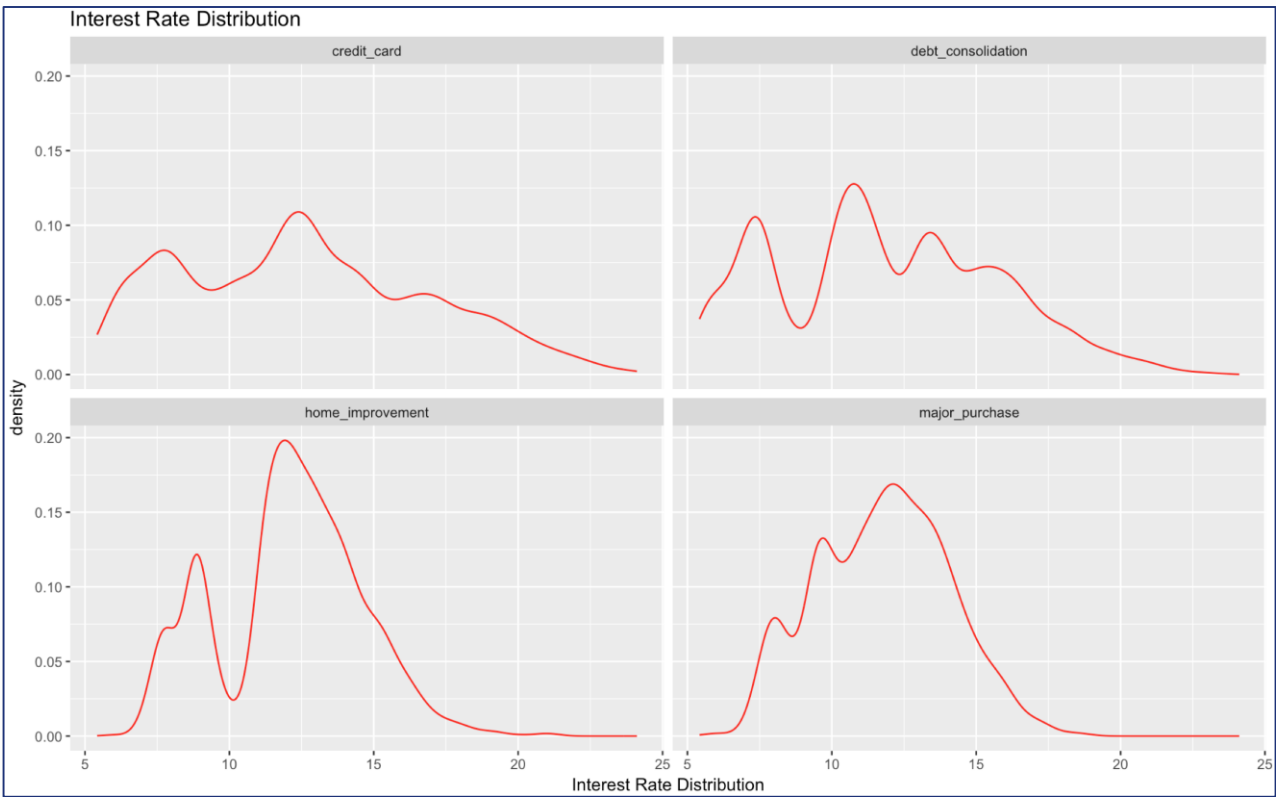
- Lending club has given out 36 month term period loan for major purpose and home improvement.



# Grade Distribution in top-4 products



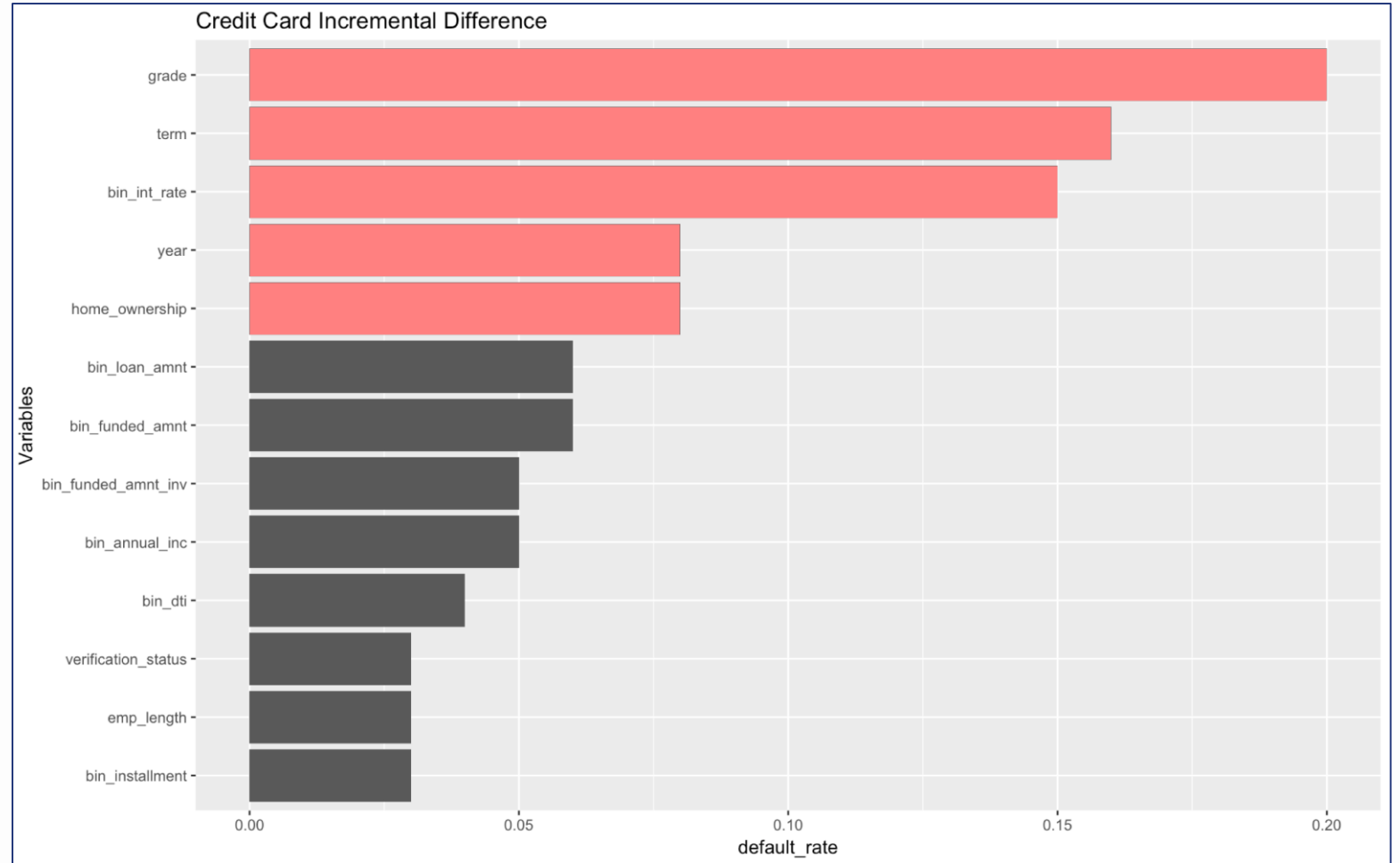
# Average Interest Rate in top-4 products



Credit Card	Debt Consolidation	Home improvement	Major purchase
11.62%	12.40%	11.29%	10.80%

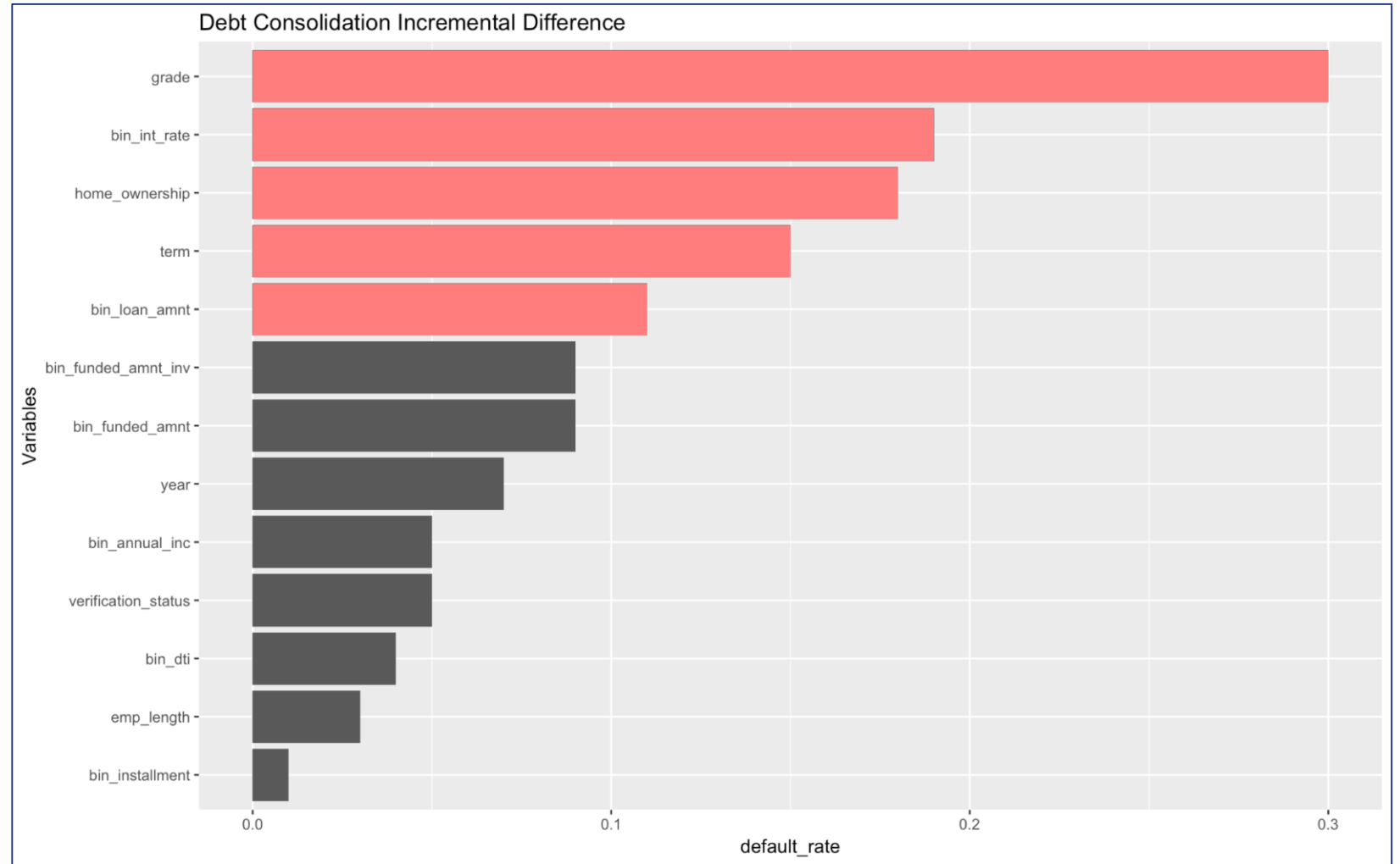
## Important Variables: Credit Card

- Grade
- Term
- Bin interest rate
- Year
- Home Ownership



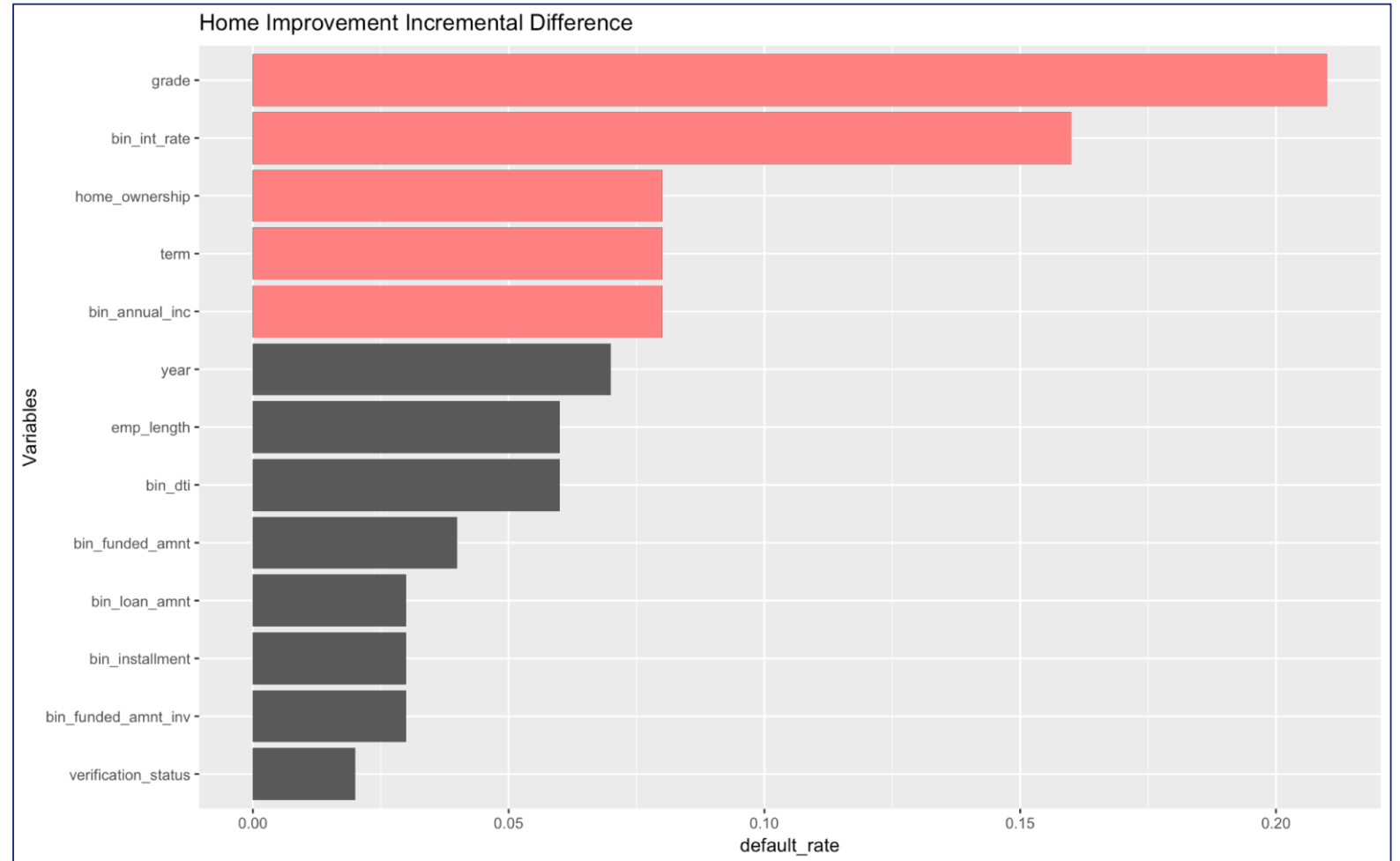
## Important Variables– Debt Consolidation

- Grade
- Bin interest rate
- Home Ownership
- Term
- Bin loan amount



## Important Variables - Home Improvement

- Grade
- Bin interest rate
- Home Ownership
- Term
- Bin Annual Income



## Important Variables– Major Purchase

- Grade
- Bin interest rate
- Term
- Home Ownership
- Year

