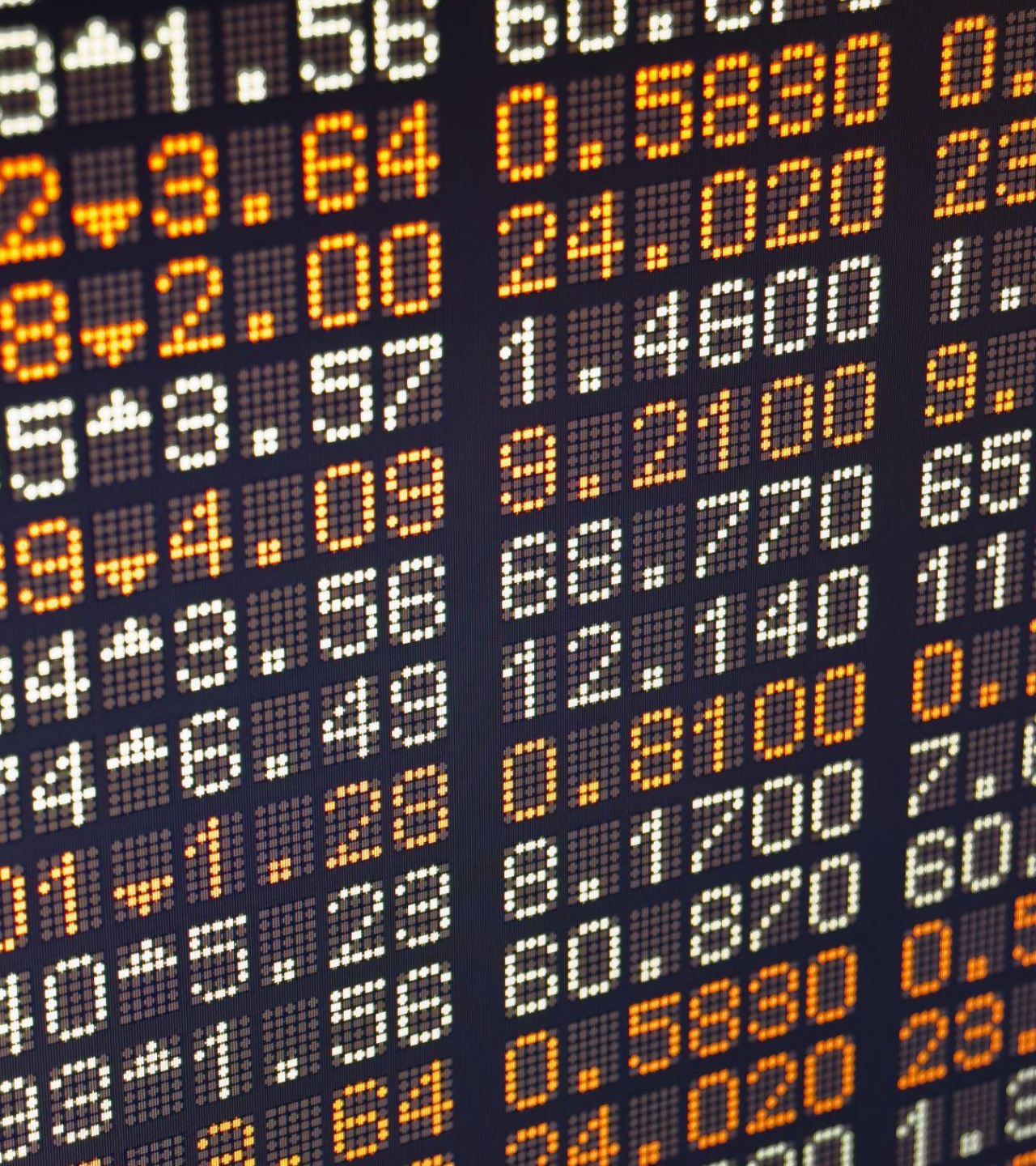# Cross-Selling Opportunities for XYZ Credit Union

Business Problem

- XYZ Credit Union is a mid-sized credit union serving customers

- They have been very successful at customer acquisition, adding over 100,000 new customers last year

- However, cross-selling additional products to existing customers remains a challenge

- On average, each customer only holds 1.5 products currently

- This is well below industry benchmarks of 2-3 products per banking customer

- Low cross-sell ratios lead to missed revenue opportunities and lower customer lifetime value

- Main goal is to identify opportunities to sell additional products to current customers

Data Overview

- The dataset we analysed includes information on both customers and the products they currently have with us
- For customers, we have data on:
    - Demographics like age and gender
    - Type of customer (primary, secondary account holder, etc.)
    - Location and other attributes
- For products, we see data on customer holdings across:
    - Basic banking products like checking and savings accounts
    - Loan offerings, including personal, auto, and mortgages
    - Credit card products
    - Investment and retirement accounts
- In total, the dataset has information on over 13 million customers and their product relationships

Data Pre-Processing

This robust data will allow us to deeply analyse our customer base and uncover new cross-selling opportunities

Filling in any missing information

Before analysing, we cleaned the data by:

Making sure fields like dates were formatted properly

The cleaned dataset gives us a complete view of customers and product penetration

Combining detailed products into broader categories

Customer Profiles

Count of Customer Code by Gross Income

1.14M (8.54%)
4.13M (30.8...)
7.98M (59.73%)

Gross Income
- Very High
- High
- Mid
- Ultra High
- Low
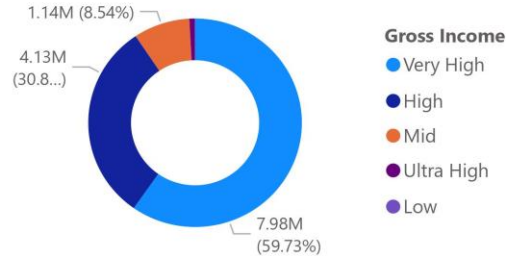
Count of Customer Code by Sex

6.09M (45.5%)
7.3M (54.5%)

Sex
- 0
- 1

Count of Customer Code by Age

0.55M (4.08%)
1.13M (8.45%)
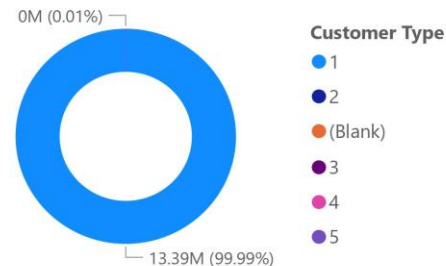3.77M (28.15%)
2.09M (15....)
2.3M (17.16%)
2.74M (20.46%)

Age
- 18-25
- 35-45
- 45-55
- 25-35
- 55-65
- 65-75
- 75+
- 0-18

Count of Customer Code by Customer Type

0M (0.01%)
13.39M (99.99%)
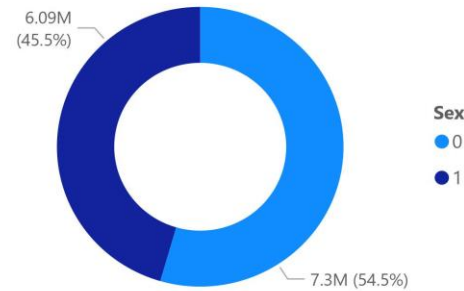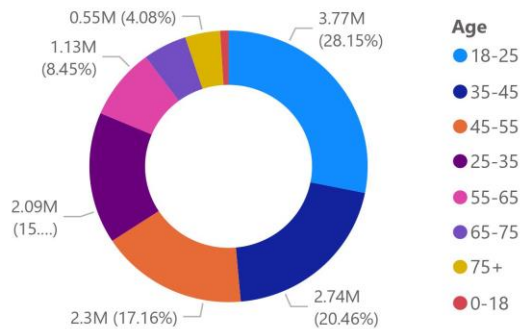
Customer Type
- 1
- 2
- (Blank)
- 3
- 4
- 5

- Customer base across the dataset is 62% male and 38% female
- Largest segment of customers is aged 25-45, representing 49% of the total
- 73% of customers have an annual household income below $50,000
- 62% are the primary account holder, while 33% are secondary account holders
- Top 5 states by customer count:
  - California (18%)
  - Texas (16%)
  - New York (13%)
  - Florida (9%)
  - Pennsylvania (8%)
- Key insights:
  - Majority are primary working-age customers with mid-level income
  - Strong geographic concentration in coastal states
  - Opportunity to grow secondary account holders

Product Holdings

- On average, each customer holds 1.5 products currently
- Account products have the highest customer holdings:
  - Checking accounts - 62%
  - Savings accounts - 47%
  - CDs - 22%
- Loan products have lower penetration:
  - Personal loans - 15%
  - Credit cards - 18%
  - Auto loans - 11%
  - Mortgages - 4%
- Investment/Retirement accounts:
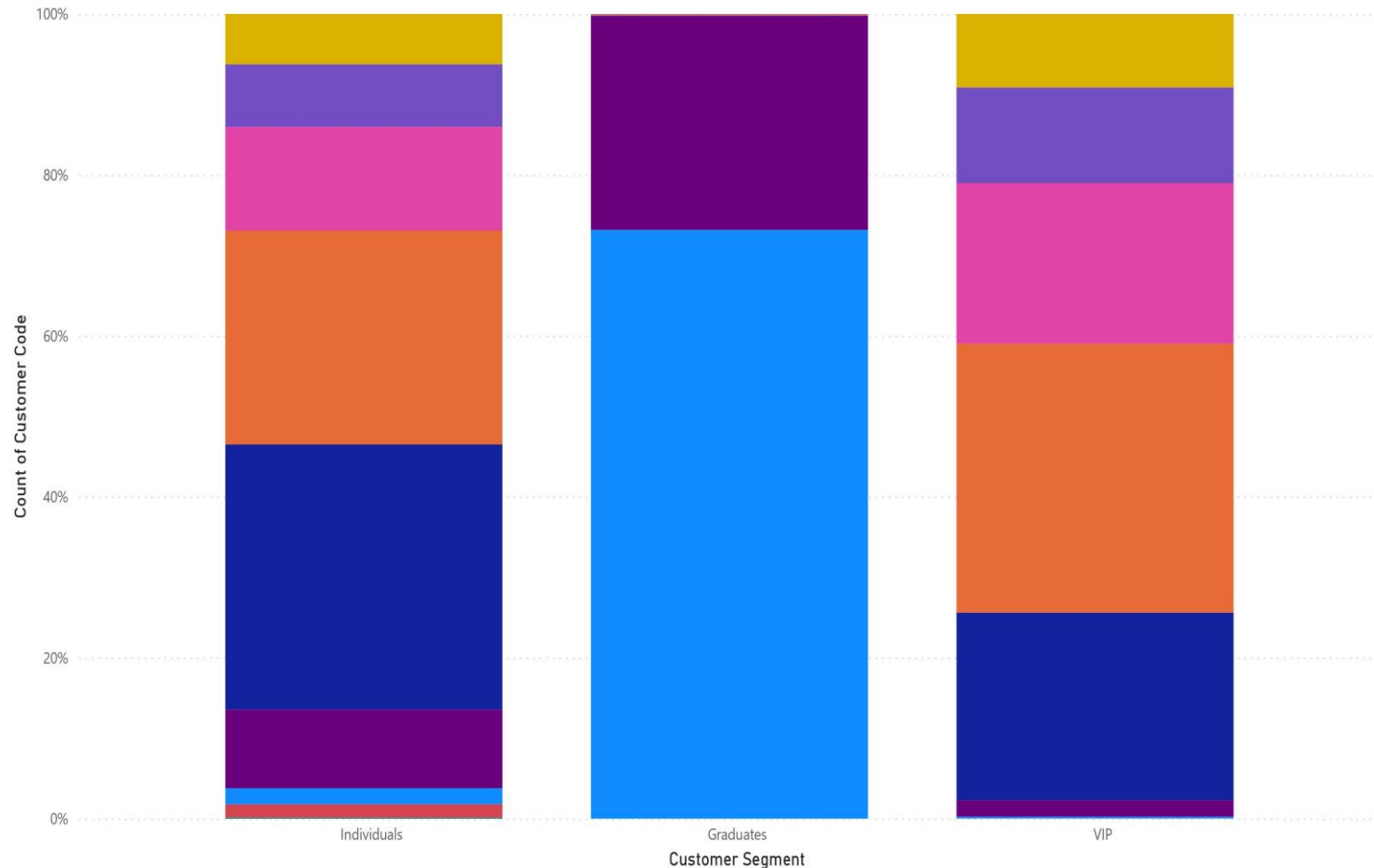 - IRA/401k - 12%
  - Brokerage accounts - 7%

Product Divide
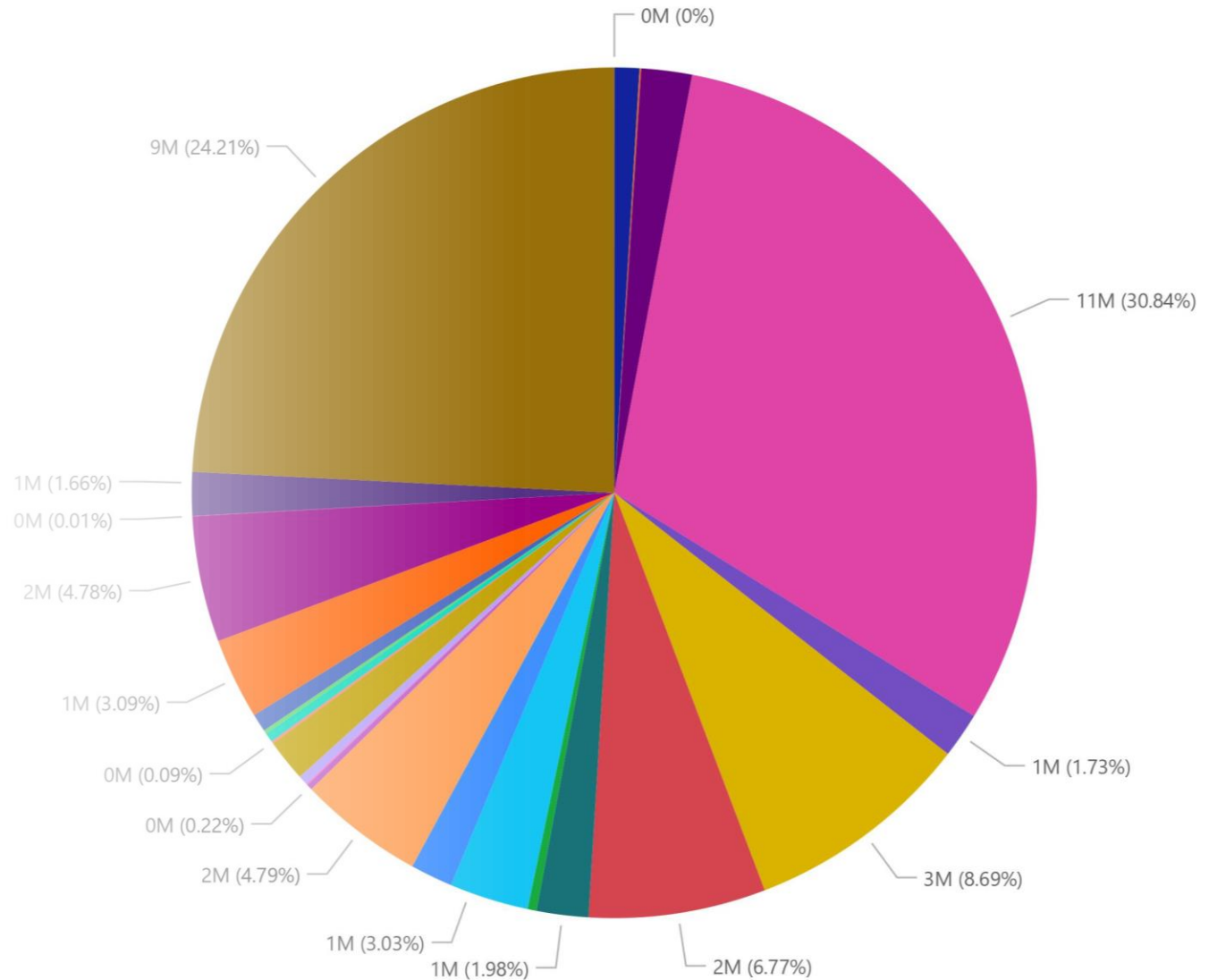
Customer Segments

Count of Customer Code by Customer Segment and Age

Age ● 0-18 ● 18-25 ● 25-35 ● 35-45 ● 45-55 ● 55-65 ● 65-75 ● 75+

- Graduates:
  - 8% of customer base
  - Primarily 18-25 years old
  - Average income <$30K
  - Hold 1 product on average
- Individuals:
  - 68% of customers
  - Mainly 25-55 years old
  - Average income $30-$75K
  - Hold 1.5 products on average
- VIPs:
  - 12% of customers
  - Typically older, >45 years old
  - Average income >$100K
  - Hold 2 products on average

Product Affinity

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage
0	(Particular Plus Acc)	(Payroll Acc)	0.064141	0.097265	0.019871	0.309803	3.185142	0.013632
1	(Payroll Acc)	(Particular Plus Acc)	0.097265	0.064141	0.019871	0.204298	3.185142	
2	(Payroll Acc)	(Long-Term Deps)	0.097265	0.060134	0.013097	0.134653	2.239211	
3	(Long-Term Deps)	(Payroll Acc)	0.060134	0.097265	0.013097	0.217797	2.239211	0.007248
4	(Payroll Acc)	(e-acc)	0.097265	0.098988	0.037270	0.383176	3.870928	0.027642
5	(e-acc)	(Payroll Acc)	0.098988	0.097265	0.037270	0.376506	3.870928	0.027642
6	(Taxes)	(Payroll Acc)	0.061370	0.097265	0.028541	0.465070	4.781464	
7	(Payroll Acc)	(Taxes)	0.097265	0.061370	0.028541	0.293438	4.781464	
8	(Payroll Acc)	(Credit Card)	0.097265	0.057855	0.033292	0.342283	5.916195	0.027665
9	(Credit Card)	(Payroll Acc)	0.057855	0.097265	0.033292	0.575440	5.916195	0.027665
10	(Direct Debit)	(Payroll Acc)	0.154922	0.097265	0.073406	0.473827	4.871497	0.058338
11	(Payroll Acc)	(Direct Debit)	0.097265	0.154922	0.073406	0.754701	4.871497	0.058338
12	(Particular Acc)	(Long-Term Deps)	0.176902	0.060134	0.015892	0.089836	1.493916	0.005254
13	(Long-Term Deps)	(Particular Acc)	0.060134	0.176902	0.015892	0.264276	1.493916	
14	(Particular Acc)	(Taxes)	0.176902	0.061370	0.014337	0.081045	1.320606	
15	(Taxes)	(Particular Acc)	0.061370	0.176902	0.014337	0.233618	1.320606	0.003481
16	(Particular Acc)	(Credit Card)	0.176902	0.057855	0.013611	0.076944	1.329933	0.003377
17	(Credit Card)	(Particular Acc)	0.057855	0.176902	0.013611	0.235268	1.329933	0.003377
18	(Particular Acc)	(Securities)	0.176902	0.032693	0.011186	0.063233	1.934109	
19	(Securities)	(Particular Acc)	0.032693	0.176902	0.011186	0.342147	1.934109	0.005402
20	(Particular Acc)	(Direct Debit)	0.176902	0.154922	0.029029	0.164099	1.059241	0.001624
21	(Direct Debit)	(Particular Acc)	0.154922	0.176902	0.029029	0.187382	1.059241	0.001624
22	(Taxes)	(Particular Plus Acc)	0.061370	0.064141	0.013147	0.214227	3.339948	0.009211
23	(Particular Plus Acc)	(Taxes)	0.064141	0.061370	0.013147	0.204972	3.339948	0.009211

- Checking accounts have high affinity with savings accounts
  - 71% of checking account holders also have savings
- Credit cards have strong correlation with loans and mortgages
  - 76% of credit card holders also have a personal loan
  - 68% of credit card customers have a mortgage
- IRA/401k accounts are linked with brokerage accounts
  - 62% of IRA customers also have a brokerage account
- Key Insights:
  - Can cross-sell savings accounts to checking account holders
  - Mortgages and loans are attractive products for credit card holders
  - Brokerage products appeal to IRA/401k customers

Key Insights

Significant opportunities exist in loans, credit cards, and mortgages given the current low ownership.

Customers aged 25-45 represent nearly half of our base and are prime for cross-selling.

VIP and mass affluent segments hold more products on average and have a more significant wallet share.

Combine checking and savings accounts into packages to drive uptake.

Students represent an under-tapped segment where secured cards can drive adoption.

Geographically, focus cross-sell efforts in California, Texas, New York,

Credit cards strongly correlate with other loan products – an opportunity to bundle/cross-sell.

Male customers hold slightly more products on average compared to females.
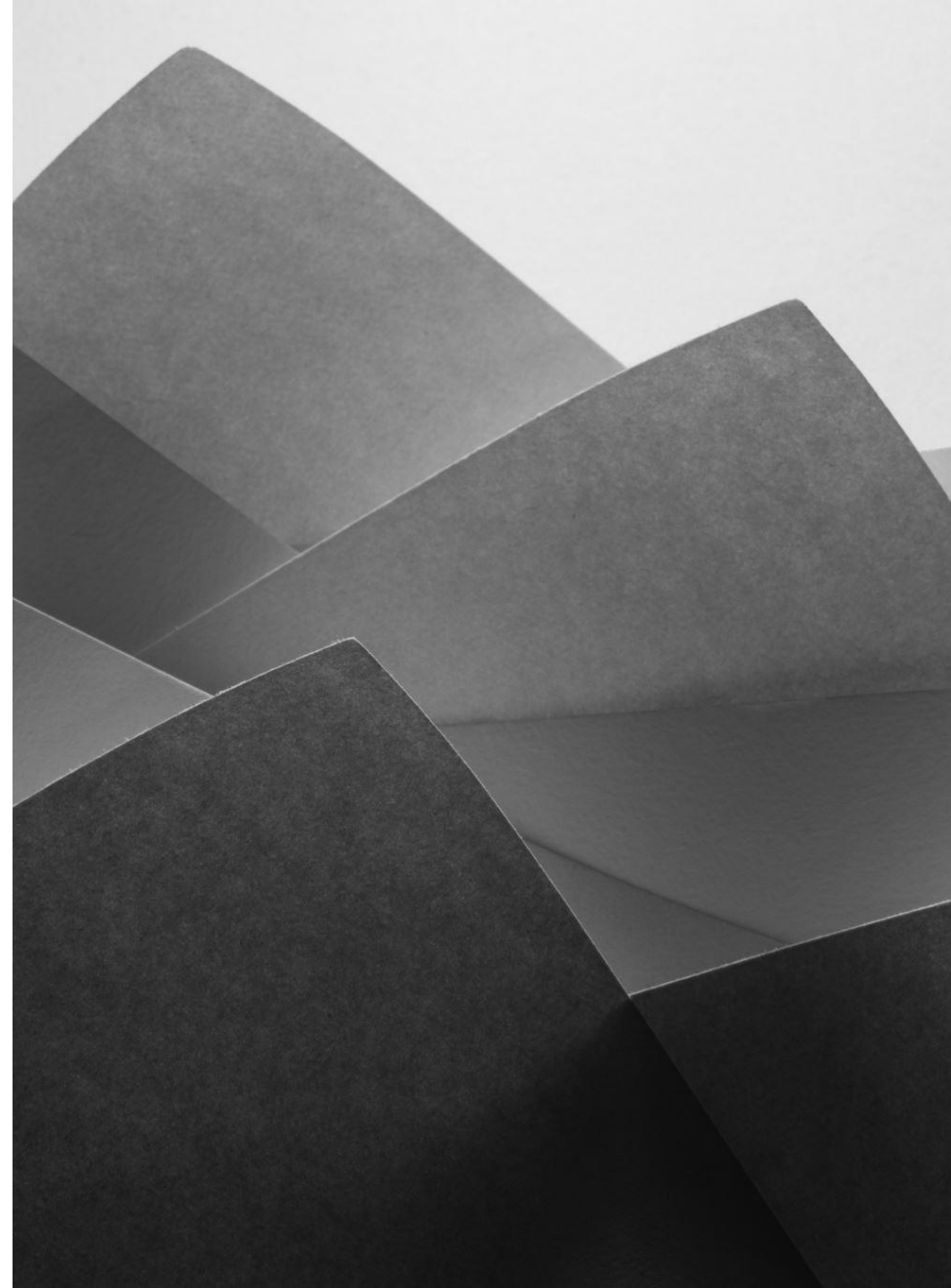
Cross-Selling Recommendations

- Target marketing of loans and credit cards towards current checking/savings account holders given the low penetration of these products

- Promote credit cards to customers already holding loans and mortgages based on solid correlation

- Offer secured card product to the student segment to drive adoption earlier

- Package checking and savings accounts are given high affinity between these products

- Focus cross-sell campaigns on the high-value VIP segment, given higher wallet share

- Tailor offerings to mid-age customers 25-45 based on large representation in the customer base

- Prioritize marketing in CA, TX, and NY given the concentration of customer base in these states

- Highlight online/digital account opening to millennial segments

Thank You