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Profitability of Installment Loans for Banks

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Profitability of Installment Loans for Banks

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Next, I apply the information given in the start of the paper to a direct example using actual data gathered from a mid-size bank in the DeKalb area. This actual data is put through a regression analysis to arrive at a final decision about which type of loan, direct or indirect, is more profitable for the bank.

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PROFITABILITY OF INSTALLMENT LOANS FOR BANKS

Consumer credit is in use all around us, everyday. Most people have used credit cards or borrowed money at one or more times in their lives. Consumer credit can be a high profit area for those institutions that are willing to serve the consumer's needs. Consumer credit includes "all types of credit extended to individuals primarily for the purpose of buying goods and services for their personal consumption" (Beares, p. 3). This includes both installment loans and single-payment loans. Installment loans are what this paper focuses on. An installment loan is one that is repaid over a period of time in two or more payments. Consumer credit does not include mortgage loans or any transaction that is used to purchase a home.

Consumer Lending History

Consumer credit has evolved greatly over the years. Benjamin Franklin who said "A penny saved is a penny earned" even believed in credit. He was known to extend secured loans to customers in his printing and bookselling business.

During the Industrial Revolution in the United States, there was a great need for credit. Goods were being mass-produced for the first time. The goods then had to be mass marketed which added to the price of the goods. However, consumers didn't have enough money to pay the entire price at once. Therefore, credit

programs had to be developed or the newly-produced items would go unsold. Unfortunately, most people frowned upon the use of credit. The usage of credit was associated with loan sharks and land sharks. Extremely high interest rates were commonplace. It was normal to be charged 5 cents a week per dollar borrowed (Beares, p. 8). This equaled out to be an effective yield of between 120 and 240 percent.

Around the turn of the century, there were many movements to regulate the consumer lending market. In 1916, the Uniform Small Loan Law was enacted in several states. The law helped set up licensing laws for consumer lenders and establish credibility guidelines for the industry.

After World War II, the industry was still in a lot of danger. "Installment loans outstanding--the amount of money consumers owed on credit obligations--were estimated by the Federal Reserve to be $1.3 billion. By 1950, "consumer credit outstanding had jumped to $12.2 billion" (Beares, p. 12). This was the era of "Buy all you can . . .use credit."

After the Vietnam War, inflation rates skyrocketed. The rates hit the double digits causing disintermediation. Consumers were pulling their money from the banks and investing in other sources with higher interest rates. The demand for higher interest rates drove up the prices at the banks, causing a continuous cycle. Also, banks could not always raise their interest rates because the money that was being paid to them on outstanding loans was controlled by the government. The high inflation rates led to increased structural changes in the industry. During this time

period much legislation was enacted. The most far reaching was the Consumer Credit Protection Act of 1968. Many acts followed this over the next eight years including: Equal Credit Opportunity Act, Fair Credit Reporting Act, Fair Credit Billing Act, and Consumer Leasing Act. These acts and more led to increased consumer support for the financial institutions and thus more financial growth and stability for the banks.

A crisis hit the consumer credit market in 1980. The Consumer Credit Restraint Program and the Federal Reserve policy of allowing freely floating interest rates clashed. "The imposition of credit restraints, at a time when deposit interest rates were skyrocketing toward 20 percent, put an extreme burden on consumer lenders" (Beares, p. 15).

Banks had several reactions to this problem. One of the most relevant to this paper was the discontinuation of credit accomodations to marginal indirect dealers. The banks also discontinued issuance of new credit cards and stopped issuing consumer loans to nonbank customers.

Legislation was enacted in the early 80's to provide for interest rate relief. Authorization was given for home equity lines of credit and variable rate consumer loans.

Today, consumer credit regulations are many. There is federal legislation passed by the U.S. Congress. The laws are implemented and enforced by several agencies: Comptroller of the Currency, the Federal Reserve Board, and the Federal Deposit Insurance Corporation.

The states are in charge of the rates lenders can charge, contract provisions in credit transactions, maximum loan maturities, and fees that can be charged. Each state also has regulatory agencies such as the state banking commissioner.

Loan Classification

Two major classifications of loans regulated by these agencies are closed-end loans and open-end (revolving) loans. Closed-end loans are a specific amount with a set beginning and ending time period to the agreement. Open-end loans are commitments that are made for a set amount but can be used at any time the consumer wishes. Installment loans are closed-end loans.

Of installment loans, there are two subtypes--direct and indirect. This is the area of focus for this paper. Installment loans have a predetermined payment schedule and collateral arrangements. These loans are directly related to a specific borrowing need ie. there must be a purpose for the loan. Then the lender can decide whether or not the intended use of the loan is acceptable.

A direct loan is one in which the borrower deals directly with the bank as the lender. This allows the bank to have the most amount of control over the lending process. This process has certain opportunities as well as difficulties for all involved. The bank must be able to provide the consumer with special services. After all, there are usually several banks in every town. A good credit risk could go anywhere to obtain a

loan. Probably the best area for a bank to excel in would be customer service. This is the least costly to a bank; it doesn't cost extra to be nice to the consumer. As for rates and loan products, these are fairly universal within a given area. All of the banks try to match the others.

Banks find that there are several advantages to the direct loan process. The bank has a higher degree of control over who receives the loan. More control leads to less losses, or charge-offs for the bank. Banks also find this process to be an important part of selling customers on other services within the bank. If a customer has a good experience with the loan process, this image will be carried over into the rest of the bank's products.

There is also a fairly large disadvantage to the direct loan process. Personnel costs are high with direct loans. It takes a lot of time for a banker to go through the entire loan process one-to-one with a customer resulting in a greater need for more staff. Personnel costs are already a great expense of the banking industry. Bankers look to minimize the cost whenever possible.

The consumer will also find advantages to the direct loan process. Part of the loan process is generally seen as financial counseling for the consumer. This can provide him with advice about the type of loan he needs, debt restructuring, investments, or savings.

Of course, there are disadvantages to the process for consumers. There can be more time involved for a consumer in the

direct avenue. Time is used in the application process, as with indirect loans, but also with personal interviews with the lender. There is also the exposure to the biases of the lender.

The other type of installment loan is the indirect loan. This also has its problems and advantages. With an indirect loan, there are others involved than just the borrower and the lender. There is now a dealer that provides goods or services which the consumer is purchasing with the loan.

A bank will make agreements with certain dealers. These agreements list the terms and conditions under which the bank agrees to buy the loans. The dealer takes care of the loan application, documentation, and the closing. Often, consumers are not aware of who is providing the loan until after the closing. The bank doesn't have any personal contact with the consumer. If the customer's credit matches the requirements made by the bank in the dealer-bank agreement, the customer may purchase the goods on loan. The loan is then assigned to the bank and the bank pays the dealer the amount of the principal of the loan--the actual price of the goods. The customer then makes payments to the bank (see exhibit 1). The dealer makes money because he makes loans that are a higher interest rate than what the bank is charging. For example, a bank charges an indirect customer 10%. The dealer makes the loan for 12%. The bank receives payments from the consumer for the cost of the principal plus 12% interest. The bank keeps the principal part of the payment (this has already been paid to the dealer) and 10% of the

interest. The dealer then receives the 2% spread from the bank. The bank makes money, not only through the interest on the loan, but also by the fact that the personnel cost of the indirect loan is less.

A dealer does not have to have an exclusive listing with a bank. Typically, a dealer has many agreements with many banks. The dealer will assign loans to whichever bank has the lowest rates or the most lenient credit requirements.

Research

I have chosen a mid-size bank in the DeKalb area on which to apply my research. To start the research process of the actual data, I had to learn how the bank makes loans and puts them on its books. Through interviewing several employees in the consumer credit department, I have learned how the bank originates the loans and puts them on its books.

The direct loan is done in the typical textbook manner. A potential customer comes directly to the bank to request a loan. The first step is the loan application process and the interview. This is usually done by a retail banker. The customer fills out the application and answers some typical questions. The retail banker looks for willingness to pay as one of the key things in the interview. After the initial application process, the loan is taken to the vice-president of consumer lending who has final approval on all loans of this type. The vice-president doesn't use credit scoring as a means of approving loans. There are certain financial criteria that must be met for each loan. The

loans are approved on an individual basis--each one is different. "A good, experienced lender can make the right decision", stated the vice-president that I interviewed. After the decision is made, the consumer comes back to the bank for the final signing of the loan papers if approved, or for the explaination of why he was turned down. Then the loan is set and the repayment period begins.

Indirect loans are a little more involved. The bank uses a dealer finance company from which to buy indirect paper. The bank belongs to a holding company that runs the finance company. The bank makes agreements with dealers in the bank's region. These agreements are sent to the finance company so it knows what the arrangements are. The profitability for the dealers is the same as was explained earlier--they make money on an interest rate spread. The dealer takes the loan application on-sight. The application is then faxed to the finance company and an answer is given within a few hours. The finance company takes all loans that meet the agreement made between the bank and the dealer. The dealer also may try to push through some borderline loans by stating how much business it has given the bank in the past on good loans. Often, because of the pressure, the finance company will decide to accept the loans even if it is evident that the loans will go bad.

After the finance company approves the loan, the consumer is notified and the transaction is completed between the consumer and the dealer. The dealer is then able to write what is called a sight draft for the amount of the principal of the loan. That

way the dealer is automatically paid for the amount of the goods that were purchased, just as with a direct loan. The sight draft is like a check and can be immediately deposited in that dealer's bank accounts at any bank.

At this point the loan application is sent to the bank from the dealer finance company for final approval. The loan officer of the bank has the final word as to the acceptance of the loan. Normally, the officer will accept the loan. If unusual circumstances arise, the officer can refuse to accept the loan into the bank's loan portfolio. This may happen if a dealer pushes through a terrible loan and the finance company accepts it. If the officer has not seen great results from the dealer on other loans, it will be refused. Then the dealer finance company must take the loan back and enter it onto its loan portfolio--it can't refuse a loan that has already been approved.

The dealer recieves the interest spread up front. The interest is deposited into a bank reserve account. The dealer can't withdraw from this account. A minimum balance that must be kept in the account is set for each dealer. Once a month, if there is more interest in the account than the minimum required, a regular check is written to the dealer that can be cashed. The minimum balance is kept in the reserve account to compensate for when consumers pay their loans off early and less interest was earned than was expected.

The bank pays the dealer finance company a flat fee per month for the advantage of having someone else pay the expense of the origination. The bank can give final approval on 30-40

indirect loans in an hour. Within that same hour, the bank could only finalize three loans. The volume of the loans that are put on the books from dealer finance outweighs the problems that can potentially occur.

Problems with loans can always occur. Each customer is given a date in the month when his payment is due. If that payment is late, there is a 10 day grace period during which no late charges are assessed. On the 11th day past due, letters are sent to the customers stating that a late fee has been assessed to their account. This late fee is $5 or 5% of the payment, whichever is less. On the twentieth day past due, the collection department begins making phone calls to the late customers. These phone calls are alternated with letters. Each step in the process becomes a little more harsh.

Before the account hits 90 days past due, there is a demand letter sent to the customers. This letter demands the return of the collateral on a voluntary basis to the bank. If this letter is ignored then a repossession company is hired to repossess the collateral. Once the collateral has been repossessed, the loan is charged off the bank's books.

Testing and Analysis

I have gathered several samples of direct and indirect loans from the months of May 1990 and October 1990. These months were chosen at random. The year 1990 was chosen so that it was recent data, yet allowed for almost two years of information to be

collected to follow any problem that may have occurred with each customer.

I started gathering the information from the bank's new loan journal and the indirect dealer listings. For the indirect loans, it was a random sample of every other loan that was made during both months. Since the bank makes fewer direct loans, all direct loans that were made during each month were included in the data.

I gathered five information pieces from each loan: whether or not it had ever been deliquent, the rate, the term, the amount and the type of loan (direct or indirect). I used this information to first perform a chi-square test and then a multiple regression analysis.

A chi-square test involves "comparing sample frequencies that have been entered into data categories with the expected pattern of frequencies that are based on a particular null hypothesis in each case" (Kazmier, p. 200). I used the chi-square test to check the independence of two categorical variables. The independence test checks that the variables are statistically independent. "Independence implies that knowledge of the category in which an observation is classified with respect to one variable has no affect on the probability of being in one of the several categories of the other variables" (Kazmier, p. 202). The variables are entered into a contingency table. The table's dimensions are defined as r X k, where r is the number of rows and k is the number of columns.

The null hypothesis that I assigned to the table was that the default on loans is independent of the loan type. Hypothesis one is that the default on loans is dependent on the loan type. Actual calculations for each month are shown in exhibits 2 and 3 in the appendix.

The test shows that the null hypothesis for both months cannot be rejected. This indicates that there is not a relationship at the level of significance given between defaults and the types of loans. The test was done at 1% level of significance and at 5% level of significance, both having 1 degree of freedom.

Next, I performed a multiple regression analysis on Lotus 1-2-3, shown in exhibits 4 and 5 in the appendix. The dependent variable, Y, is the number of delinquent loans. The independent variables are: rate, term, amount, and type of the loan.[1] There are several terms in the exhibits that should be explained. The constant is the b_0 intercept. This is the regression equation value of the dependent variable given that all of the independent variables are equal to zero. The standard error of the Y estimate is the conditional standard deviation of the dependent variable given a value of the independent variables.

[1] I ran two other regression analyses to test for significance. One had the independent variables of rate, term, amount, type, and if the car purchased was new or used. This showed no significance in the output for the new/used variable. The other regression run had the variable for the amount taken out because I suspected a high correlation between the type of car purchased and the amount of the loan. After taking out the amount of the loan, the new/used statistic did not significantly change. Therefore, whether or not the car was new or used was not significant enough to warrant further discussion.

R squared is the coefficient of determination. That coefficient indicates the proportion of variance in the dependent variable which is statistically explained by the regression equation. The X coefficients are actually partial coefficients. They indicate that the coefficient is conditional upon other independent variables being included in the equation. (Kazmier, pp. 242-266).

The R squared number in both samples is statistically significant -- .29308 for May and .34842 for October. This indicates that the movement of the dependent variable, delinquency, is 29% and 34.8% explained by the changes in the independent variables.

To see which independent variable had the most effect on the delinquency, I looked at the T statistic. A T statistic is the X coefficient divided by the standard error of the coefficient. A significant T statistic is +1.5 to +2.0 or -1.5 to -2.0. Looking at the actual T statistics, I found that the amount of the loan is negatively correlated, -1.887, with the delinquency of the loan during the month of October. This means that the less the amount of the loan, the more likely the loan is to become delinquent. This would be due to the fact that poor credit risks are not able to obtain a large loan, so they borrow less amounts of money than a good credit risk. The borrower of a small amount may be a borderline risk that the bank decides to accept. Then the loan becomes delinquent.

During the month of May, none of the independent variables are statistically significant. The amount of the loan shows a T

statistic of -1.24095, indicating a negative relationship as was shown in October, but not to as high of a degree. Therefore, the May data still indicates that the less the amount of the loan, the more likely that loan is to go into delinquency.

Results

After looking at the data and the results of the tests and analyses, I have found that whether or not the loan goes into delinquency does not depend on the type of loan made, whether direct or indirect. It does seem to matter, though, about the amount of the loan made (the negative correlation previously discussed). Looking at the regression data chart, it appears that the bank that I analyzed granted more direct small loans than were made through indirect channels (see exhibits 4 and 5). The indirect dealers made larger loans than the bank. Therefore, as shown by the regression in the T statistic, more of the direct loans in each month had delinquency problems. This isn't related to the type of loan, only the amount of the loan.

Conclusion

After analyzing the data and results of the tests and regression analysis, my conclusion for this bank is that indirect loans are more profitable for them. This is because the bank is accepting poor credit risks and making small loans to those borrowers and the loans are going bad. The indirect loans seem to be much more profitable. The bank has less of a delinquency problem when buying indirect loans because most indirect loans

are on new cars that borrowers can afford. Those that can't get financing through the dealers are the ones that come to the bank for the direct loans. The bank encourages consumers to get their financing through the dealers by having higher interest rates on the direct loans than on the indirect. However, the difference in the interest rate is made up by having a much less cost of personnel to originate the loan as was discussed earlier.

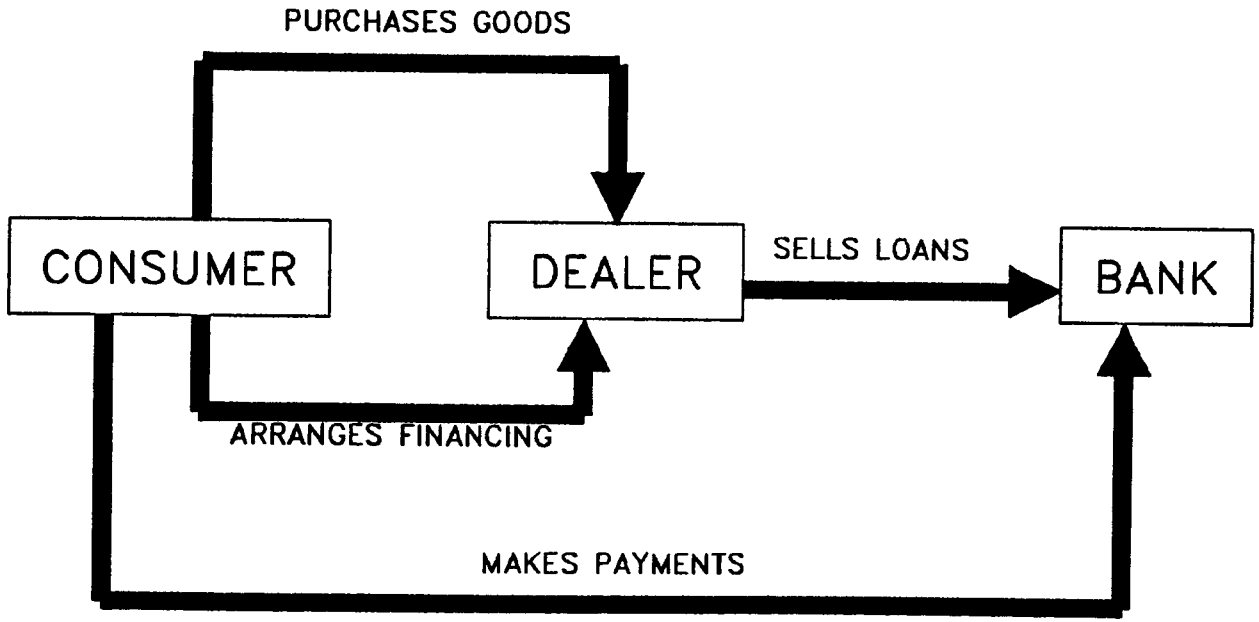
This bank should continue its current strategy of having many indirect dealers to buy loans from. For the two months that I analyzed, the indirect loans show much more potential for profit than the direct loans.

These results were surprising to me. At the beginning of this project, I assumed that because the bank didn't have as much control over the indirect loans as the direct, that the indirect loans would have more problems. However, as was shown through the testing, what type of loan it is doesn't affect the delinquency ratio. The amount of the loan is what has the largest impact on the delinquency ratio. This is not what I had assumed would be the results. It was very interesting to see what factors, for the bank I analyzed, affected the delinquency of the loan.

APPENDIX

Exhibit 1

INDIRECT LENDING RELATIONSHIPS



SOURCE: CONSUMER LENDING

Exhibit 2

Test for Independence of Two Categorical Variables

May 1990

Actual

Default	Direct	Indirect	Total
Yes	3	1	4
No	6	13	19
Total	9	14	23

$$f_e = \frac{f_r \, f_k}{n}$$

Expected

Default	Direct	Indirect	Total
Yes	1.56	2.43	4
No	7.43	11.56	19
Total	9	14	23

df = 1 $\alpha = .01$ Critical $x^2 = 6.63$

$$x^2 = \frac{(f_0 - f_e)^2}{f_e}$$

$x^2 = 1.25 < 6.63$

df = 1 $\alpha = .05$ Critical $x^2 = 3.84$

$x^2 = 1.25 < 3.84$

Exhibit 3

Test for Independence of Two Categorical Variables

October 1990

Actual

Default	Direct	Indirect	Total
Yes	4	1	5
No	5	13	18
Total	9	14	23

$$f_e = \frac{f_r \, f_k}{n}$$

Expected

Default	Direct	Indirect	Total
Yes	1.96	3.04	5
No	7.04	10.96	18
Total	9	14	23

df = 1 α = .01 Critical x^2 = 6.63

$$x^2 = \frac{(f_0 - f_e)^2}{f_e}$$

$x^2 = 1.66 < 6.63$

df = 1 α = .05 Critical x^2 = 3.84

$x^2 = 1.66 < 3.84$

Exhibit 4

MAY 1990

LOAN #	# DELINQUENT	RATE	TERM	AMOUNT	TYPE
1	1	0.1325	18	$1,724.40	0
2	1	0.1300	36	$5,228.64	0
3	0	0.1325	24	$2,859.60	0
4	0	0.1325	24	$5,740.80	0
5	1	0.1300	24	$2,738.40	0
6	0	0.0950	60	$7,120.80	0
7	0	0.1100	60	$14,468.40	0
8	0	0.1200	54	$13,017.78	0
9	0	0.1150	48	$27,000.00	0
10	0	0.1200	60	$22,170.60	1
11	0	0.1125	60	$6,942.00	1
12	0	0.1295	61	$21,792.94	1
13	0	0.1100	49	$9,629.07	1
14	0	0.1125	60	$10,000.00	1
15	0	0.1100	60	$7,000.00	1
16	0	0.1290	60	$11,867.50	1
17	0	0.1125	48	$10,245.00	1
18	0	0.1100	61	$9,200.00	1
19	0	0.1150	60	$14,478.59	1
20	1	0.1150	60	$10,363.00	1
21	0	0.1250	60	$9,224.54	1
22	0	0.1250	36	$7,507.00	1
23	0	0.1100	36	$7,894.66	1

Regression Output:

Constant	-0.7237801707
Std Err of Y Est	0.3599842352
R Squared	0.2940828823
No. of Observations	23
Degrees of Freedom	18

	RATE	TERM	AMOUNT	TYPE
X Coefficient(s)	10.1227864807	-0.0002765408	-0.0000187675	-0.1602549849
Std Err of Coef.	9.8019625841	0.009034472	0.0000151235	0.188557036
T statistic	1.0327305776	-0.0306095167	-1.2409517358	-0.8499019091

Loans 1-9 are direct = Type 0

Loans 10-23 are indirect = Type 1

Exhibit 5

OCTOBER 1990

LOAN #	# DELINQUENT	RATE	TERM	AMOUNT	TYPE
1	0	0.1325	24	$2,989.44	0
2	1	0.1325	18	$2,770.38	0
3	0	0.1100	36	$11,219.04	0
4	1	0.1325	36	$3,953.16	0
5	0	0.1100	60	$21,000.00	0
6	1	0.1325	36	$8,075.88	0
7	0	0.1325	36	$6,086.52	0
8	0	0.1300	36	$3,103.56	0
9	1	0.1300	36	$5,869.08	0
10	0	0.1000	36	$17,534.52	1
11	0	0.1295	60	$13,081.36	1
12	0	0.1075	60	$10,440.00	1
13	0	0.1090	60	$12,082.69	1
14	0	0.1099	48	$11,987.25	1
15	0	0.1175	48	$13,636.97	1
16	1	0.1175	60	$4,364.89	1
17	0	0.1200	60	$13,000.00	1
18	0	0.1095	48	$11,420.93	1
19	0	0.1390	60	$15,479.06	1
20	0	0.1100	48	$10,247.50	1
21	0	0.1290	36	$9,459.50	1
22	0	0.1350	60	$10,743.61	1
23	0	0.1475	36	$5,464.25	1

Regression Output:

Constant	0.7596854325
Std Err of Y Est	0.376359679
R Squared	0.3484256031
No. of Observations	23
Degrees of Freedom	18

	RATE	TERM	AMOUNT	TYPE
X Coefficient(s)	-1.5826672857	0.005720273	-0.0000437705	-0.2954922671
Std Err of Coef.	7.5734148904	0.0089091905	0.0000231944	0.2053550528
T statistic	-0.2089767045	0.6420642864	-1.8871183859	-1.4389335106

Loans 1-9 are direct = Type 0

Loans 10-23 are indirect = Type 1

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