5-2006

Evaluating Creditworthiness Based on an Individual's Tax Return

Nicole Vorachek

[How does access to this work benefit you? Let us know!](#)

Follow this and additional works at: https://commons.und.edu/theses

Evaluating Creditworthiness Based on an Individual's Tax Return

Nicole Vorachek

Advisor: Dr. Wambsganss
& Dr. Stamp
Independent Study
May 2006

Table of Contents

Twenty-nine percent of individuals had significant errors in their credit report that translated to a 50 point or more error in their credit score (Electronic Privacy Information Center, 2003). Inaccuracy problems continue to hurt individuals' credit scores so it is vital that credit scores are based on accurate information. When consumers experience problems with their credit history, they become frustrated with the system and lose trust in the results. They want new methods to determine creditworthiness but are resistant to changes. Creditworthiness is important for many people, especially those seeking additional credit offers. Credit is prevalent in everyday life activities. Almost everyone has a checking or savings account and the use of credit cards is increasing each year. These financial instruments and more play a factor in determining an individual's credit score based on the standard credit scoring methods used by the three national credit reporting companies. New methods of calculating creditworthiness are beginning to develop.

One new development is the Tax Return Score, which bases credit risk on an individual's tax return. Selected lines on form 1040 and Schedule A are evaluated using mathematical algorithms. This product not only calculates a credit score, it calculates monthly liquidity, documents excess tax ratios and identifies if the tax return was filed.

The history of the credit score will be researched to find if there is potential success for the new product, the Tax Return Score. The financial industry will be evaluated to determine potential customers to market this product. Consumer credit accounts and small business loans are the categories used to find a market for the Tax Return Score. Specific customers will be identified that have the greatest possibility of

success. Correlating with this analysis is whether the product can be accepted and what measures need to be taken to gain acceptance.

CURRENT CREDIT SCORE

The three national credit reporting companies, Experian, Equifax, and TransUnion, receive credit related information from creditors, government entities, collection agencies, and third-party intermediaries. These credit granting entities are not required by state or federal law to submit information. It is done on a completely voluntary basis. Therefore, information the credit reporting company receives may not be complete. An individual's credit history may not depict the entire picture, either to the benefit or detriment of the individual. An example of a benefit is a creditor did not report the status of the loan on which the individual defaulted. On the other hand, an example of a detrimental situation is a creditor did not update the status of the loan once it was paid in full.

As mentioned previously, data the credit reporting companies receives is not complete. First, certain information is not reported on credit accounts. This lack of reporting is mostly due to small retail, mortgage, and finance companies not reporting necessary information. Second, information that is provided is not complete relating to required details or updates. Sometimes credit limits are not disclosed on revolving accounts. Third, data are sensitive to the date on which the information is forwarded to the credit reporting companies. If the credit account is forwarded to the credit reporting company the day before payment is made, the account shows a higher balance than if forwarded the day after payment is made.

A credit report contains five categories of information:

- **Identifying Information.** Identifying information includes the individual's name, social security number, and current and previous residential address. It does not include discriminating factors such as gender, race, religion, or marital status.

- **Information Reported by Creditors.** Creditors report information on current and past loans, leases, and non-credit related bills such as medical treatments or utility services.

- **Information Derived from Money-Related Public Records.** Money-related public records include records of bankruptcy, foreclosure, tax liens, garnishments, and other civil judgments.

- **Information Reported by Collection Agencies.** Companies, such as utility or medical organizations, report past due trade accounts to collection agencies.

- **Inquires by Individuals or Companies Requesting Credit Status.** Housing rental companies, future employers, or insurance companies make inquiries of credit status. (www.fico.org, 2006)

Credit history depends on factors relating to an individual's financial activities. The most important parts of an individual's credit history are:

- **Payment History.** Payment history includes the number of accounts paid as agreed and negative public records indicating bankruptcy or collection accounts. The number of delinquent accounts is included in payment history, indicating how long past due they were paid and the length of time since the last late payment occurred.

- **Amounts Owed.** The amount owed depends on the account balances on the different types of accounts. Holding balances close to the credit limit negatively impacts the credit score. The amount left on the original balance of an installment loan gives indicators of credit availability and prompt debt repayment.

- **Length of Credit History.** The length of credit history is how long ago a credit report was first created. The number of years that accounts have been open and the time passed since the last activity shows the length of credit history. The longer time that good credit history is prevalent, the better the credit score.

- **Type of Credit Used.** The type of credit includes revolving, non-revolving, installment, or mortgage accounts. A mixture of these accounts is better than having just one type of account.

- **New Credit.** The number of new accounts opened in proportion to total accounts establishes the amount of new credit. Recently acquired new debt lowers the credit score. (www.fico.org, 2006)

Each category of credit history is weighted to calculate the credit score for an individual. The credit scoring model uses algorithms to determine the importance of each component in the individual's credit history file. A score is assigned to the credit information based on the assumed level of credit risk.

Besides looking at the credit score, creditors look at other information when deciding whether or not to extend credit. Some factors include income, employment history, type of credit they are seeking, and institutional underwriting policies. Also, the

4

credit score is not just used for credit purposes. Many employers perform a credit check before hiring future employees. Utility service providers and insurance companies also use the credit score to determine whether or not to provide services to consumers.

A credit score is usually between 350 and 850, with the higher the score the less risk perceived. The average score is around 700. Higher scores provide the borrower with lower interest rates and more financing options. Risk-based pricing involves charging higher interest rates for borrowers with lower credit scores.

In a press release on March 14, 2006, the three national credit reporting companies developed a new score, VantageScore, to evaluate credit risk. It uses a unique characteristic-leveling process to reduce data variances to ensure data are interpreted in a consistent manner when compiling a score (Smith, 2006). VantageScore is used along with other scoring models of each company as a complimentary product. Each company markets VantageScore based on its own market strategy and position. In a press release, the three companies said they would not release how the score was developed.

Each credit reporting company currently uses a different range and scale, causing confusion when interpreting scores from different credit reporting companies. The new score provides greater consistency and clarity in the market since all credit reporting companies use the same scale. The VantageScore uses a scale of numbers but also assigns a letter to the score, such as A, B, C, D, or F. Another benefit is that it will be able to provide a score for consumers with limited credit histories, known as "thin-file" consumers (Freeman, 2006). The hope is the new score provides more predictive credit risk scores. In order to have value in the VantageScore, the credit reporting companies

need to persuade regulators and credit granters to support the new model. The companies think it will take six to twelve months until the product is adopted.

Strengths of Existing Credit Score

The credit score is well known throughout the United States and is used by many customers including credit lenders, housing rental companies, employers, and insurance companies. Credit granters trust the results of the credit score when extending credit and have confidence in the decisions made from using the credit score. Credit granters have developed their own scoring system from current credit scoring to meet the needs of the credit granters' customers based on past experience.

Credit scoring is based on real data and statistics provided by credit granters. The process lets creditors' base decisions on an objective basis rather than using subjective or judgmental methods. The credit score takes into account the entire credit history of individuals to determine the score at that time.

Limitations of Existing Credit Score

The credit reporting system has limitations for some consumers. One limitation is when credit lenders do not report the credit limit on accounts to the credit reporting companies. It reduces the value of measuring utilization in the credit evaluation process. Credit evaluators can not calculate the percent of credit the consumer is carrying based on the amount of credit available. If the credit limit is not reported, either the utilization must be ignored or a different measure must be used, such as the highest-balance level. The highest-balance level usually gives a higher estimate of credit utilization and a higher level of credit risk (Avery, Calem, and Canner, 2003).

Another limitation is when accounts are not reported with current information. Around 8% of all accounts with positive balances were not reported in the current year in a survey performed by the Federal Reserve (Avery et. al., 2003, p.71). Credit evaluators have no way of identifying if the consumer is delinquent or has paid off the account, since the creditor did not report the current status of the account. Many mortgage or installment loans are likely to have been terminated or transferred but not reported with this current information. Consumers are affected since accounts that are not currently reported still show an open account balance. If a delinquent account is not reported with updated information and the consumer paid it off, it will continue to show up on the credit report as a delinquent account. Unless the consumer notices this mistake and takes action to have it corrected, it will be on the credit report. Otherwise, the consumer will show higher balances and a larger number of open accounts resulting in a lower credit score.

The failure to report accounts in good standing or accounts with minor delinquencies can affect the credit score. It can help consumers with a high utilization of credit, since any additional accounts reported reduce the credit score. Failure to report additional accounts does not hurt the credit score. For consumers with a low utilization rate, additional smaller credit accounts may improve the score since it shows the consumer can handle extra accounts even if the balance is smaller. Failure to report additional smaller credit accounts can reduce the credit score.

Public records and accounts with collection agencies may contain more than one file for an individual pertaining to the same event. Multiple records happen when one record is filed for a collection action and another is filed when it is paid. The same event

is double counted in the credit score resulting in a lower credit score. Inconsistent records occur since there is no code for identifying the type of creditor or plaintiff. The code allows records pertaining to the same event to be matched.

Multiple inquires may exist on a consumer's credit report for two reasons: the consumer shops around for the same loan, or the consumer applies for multiple loans. Shopping around for the best available credit is not an activity that hurts the credit score. An example of shopping around is applying for a mortgage loan at three different banks to see which bank gives the individual the best interest rate. Applying for multiple loans at the same time demonstrates the consumer does not have a high credit score and is a greater credit risk. By applying for multiple loans, the consumer is desperately trying to get a loan from any creditor that makes an offer. Applying for an installment loan and a credit card to obtain credit from one of the credit lenders is an example of multiple loan inquiries.

Credit evaluators like to differentiate between these two types of inquiries due to differing affects on the credit score. Although there is a code for the loan type, practically all creditors do not provide this information. If the code is used, credit evaluators are able to distinguish between inquiries for the same type of loan (shopping around) or inquiries for different types of loans (applying for multiple loans).

These limitations affect individuals' credit reports, which may cause denied credit or higher credit terms in situations where individuals' credit histories are in good standing. Table 1 summarizes these problems and the consequences affecting the credit score.

Table 1 Problems With Credit Score Data

Type	Characteristics	Consequences
No credit limit reported	Credit limit is not reported	Higher estimate of credit utilization, higher level of credit risk
Accounts not currently reported	Accounts with positive balances are not reported with current information and still show account as open even though it was paid	Higher balances and larger number of open accounts resulting in lower credit score
Minor delinquencies	Failure to report accounts with minor delinquencies	Customers with high utilization rate – does not hurt credit score; Low utilization –can reduce credit score
Public records, collection agencies	One than one file pertaining to same event	Event is double counted in credit score resulting in lower credit score
Multiple inquires	Consumer 1) applies for multiple loans or 2) shops around for same loan	1) Demonstrates greater credit risk; 2) Does not hurt credit score

Source: Overview of Consumer Data and Credit Reporting, 2003

Another challenge for credit reporting companies is creating one record that contains all information for a certain individual. This task can be difficult because an individual's social security number may be incorrectly recorded on the credit application or may be communicated incorrectly by the creditor to the credit reporting companies. Other information may not be current, such as his/her full name or address, making it difficult to identify the individual on another level besides his/her social security number.

Credit reporting companies gather information from many sources and compile information for each individual on file. The process can be rather complicated due to sorting, since credit reporting companies receive more than two billion data each month (Avery et. al., 2003, p.49). Credit reporting companies use algorithms to separate data into each individual's file. Algorithms are designed to ignore minor differences that occur in individual's identifying information, which leads to incorrect credit histories for some individuals.

TAX RETURN SCORE

The Tax Return Score is developed by a CPA as he saw the need for verification of individuals' integrity when reporting income and related information to the IRS. He saw the opportunity to verify individuals' financial strength and provide additional information to credit granters in making decisions on whether to extend credit and credit terms. This tool verifies liquidity and ability to repay debt. The Tax Return Score uses selected information from IRS forms 1040 and Schedule A. The score is calculated using algorithms, which generates a number. The number is assigned to a letter grade (A, B, C, or D) from a predetermined conversion chart. The highest score is 100 (A+) with a scale of 90 and above being an A, 80 and above a B, 70 and above a C, 60 and above a D, and less than 60 suggests additional tax returns should be requested.

For each tax item on form 1040 and Schedule A, the average percentage is calculated using a sample of U.S. tax returns. The average percentage is computed by dividing the average amount of the specific tax item by the average adjusted gross income. The individual's percentage is compared to the average percentage of U.S. tax returns. One point is subtracted from the score, which starts at 100, for every percentage point over the average percentage.

On form 1040, the main focus is on income and how it compares, through deduction amounts, to personal expenses. One factor is unemployment income. The individual is dishonest if he/she collects unemployment benefits while earning income. Gambling income/losses is a good indicator of individuals' tolerance to risk. High unemployment and gambling income indicate a lack of steady income flow. Tax

payment delinquencies show an individual's history of not making payments in a timely manner. The higher amount of taxes owed indicates inability to repay debt.

Schedule A provides information about itemized deductions revealing where some of the earned income is used. Home mortgage interest and personal property taxes show the amount of potential debt individuals already hold. The higher the amount of interest in relation to income, the less likely individuals are able to acquire more debt. Individuals without home mortgage interest have lower income levels and can not acquire much debt. Charitable contributions other than cash donations demonstrate individuals' net worth and cash reserves. The greater amount of non-cash charitable contributions implies the individual wants a charitable deduction but does not have the liquidity to donate cash. If the ratio of itemized deductions to income is high, there is a possibility the tax return is not accurate. Table 2 summarizes the different tax items used in the Tax Return Score.

Table 2 Tax Items Used in Tax Return Score

Tax item	Relevance to Tax Return Score	Average percentage of AGI
Unemployment income	Lack of stead income flow; dishonesty – collecting unemployment while earning income	10%
Gambling income / losses	Indicates tolerance to risk and lack of steady income	0%
Tax payment delinquency	Payment history; amount owed in taxes	38%
Mortgage interest	Indicates amount of debt in mortgage loans	11%
Personal property taxes	Indicates amount of assets with potential debt	1%
Charitable contributions other than cash	Indicates net worth and cash reserves	1%

Source: Overview of Tax Return Score, 2006

Anyone that wants to verify credit risk for their clients may use the Tax Return Score since tax returns are the only documents needed to calculate the score. Mortgage professionals, credit officers, attorneys, and claims adjusters are different occupations the Tax Return Score program is modified to show relevant information for that profession.

Currently, customers request to use the Tax Return Score program online and the analysis is completed over the Internet. Tax return information is entered into the program online and a report is generated with the results. The report gives the score and also comments about highlighted areas of the tax return for the individual. The program is purchased as an individual package with just the Tax Return Score program or as a complete package with other services provided by the Tax Return Score company.

Strengths of Tax Return Score

The Tax Return Score report presents other information besides credit risk. It calculates monthly liquidity demonstrating ability to repay debt. Average monthly income and average monthly adjustments are used to determine monthly liquidity. Excess tax ratios are compared to U.S. national average tax statistics by calculating deviations from the national average to determine the Tax Return Score. The Tax Return Score program identifies extended job loss from unemployment income amounts and alerts high risk activity such as gambling.

Tax delinquencies are highlighted in the report, which suggests delinquency on debt or other payments. Fraud is identified, if suspected, in the tax return. Fraud is found in areas such as collecting unemployment wages when not unemployed or personal deductions taken as business deductions. The Tax Return Score program detects whether or not the tax return was filed with the IRS.

Limitations of Tax Return Score

Individuals are hesitant to give personal information, especially information relating to income and finances. Convincing individuals the Tax Return Score provides a more accurate representation of his/her financial strength is a hard task to overcome. It takes individuals' willingness to release financial information for the initial creditors to have success using the Tax Return Score. Since not all creditors use the Tax Return Score when the product was first launched, individuals have the choice of obtaining credit from a different creditor still using the traditional credit score.

The Tax Return Score has not been used in practice to extend credit. There have not been any tests of validity on the Tax Return Score to determine if it is a valid measure of credit risk and ability to repay debt. It is unknown that individuals with good Tax Return Scores are less likely to default on loans. A Tax Return Score of an A minus implies the individual has low credit risk and will not default on a loan. It is unknown if this score predicts ability to repay since tests have not been performed. Many credit granters may not want to change from the current credit score because they know the credit score is reliable and trust the results. It takes acceptance and use of the Tax Return Score for credit granters to see the impact it makes on determining creditworthiness.

POTENTIAL CUSTOMERS OF THE TAX RETURN SCORE

Credit lenders use the current credit score to determine if they should extend loans to consumers. Credit accounts for individuals and small business loans are the types of consumers used to determine which credit lending organizations have the most activity.

Credit granters with the largest number of credit accounts and/or small business loans provide the greatest success possible for the Tax Return Score.

Credit Accounts for Individuals

In an attempt to locate potential markets for the Tax Return Score, credit data are analyzed using historic information on credit reports. The Federal Reserve obtained a sample of individuals' credit records from one of the national credit reporting companies to complete a study on consumer data and credit reporting. Based on the survey, the Federal Reserve estimates there are 1.43 billion credit accounts in the credit reporting company's database with aggregate balances owed to be $6.7 trillion as of June 30, 1999 (Avery et. al., 2003, p.51).

The number of open credit accounts reported with current information is 454 million (Avery et. al., 2003, p.52). An open account is an active account that is reported to credit reporting companies. In an open account, the consumer's relationship with the creditor is ongoing. The consumer is using the account to incur additional debt or payoff the account on a scheduled basis. (Avery et. al., 2003)

By determining the market size for credit reports, the size of the potential market for the Tax Return Score begins to take shape. The Tax Return Score and credit score use the same customer base since both are evaluating creditworthiness. The number of credit accounts is helpful to determine how many times a credit report is requested for individual consumers. The number of accounts is more relevant than the dollar value of the account since the number of credit reports requested is not affected by the size of the loan. The number of credit reports requested is used to figure potential demand for the Tax Return Score. Information about the number of accounts by category within each

type of creditor is relevant in identifying the market with the highest number of credit reports requested for that category. The largest market is targeted to provide the most success possible for the Tax Return Score.

Open accounts currently reported to credit reporting companies are used as the base when figuring out potential markets. These accounts portray a more accurate number of accounts in use. Accounts opened within a year provide data on the number of credit reports requested. Using open accounts leaves out accounts that are currently reported but closed since they may have been opened years ago and do not relate to credit reports that have recently been requested. Dormant accounts and unknown accounts that are not currently reported are left out of the analysis of locating potential markets due to the fact that useful, current information cannot be derived from the data.

Open credit accounts are separated by type of creditor as shown in Table 3. The number of open credit accounts held by each creditor shows which creditors use credit reports more often, locating the larger markets. Banking institutions have 48.2% of the 454 million open credit accounts, which equates to 218.8 million accounts. Finance companies or credit unions account for 14.9%. Retailers, such as department stores, jewelry, computer, and sporting goods stores, hold 25% of open credit accounts. The remaining 11.9% is made up from national oil and gas companies, travel and entertainment companies, and various creditors, such as utility companies. (Avery et. al., 2003, p.52)

Table 3 Number of Open Credit Accounts by Type of Creditor

Type of creditor	Open credit accounts	
	Percent	Number
Banking institution	48.2%	218,828,000
Finance company	14.9%	67,646,000
Retailer	25.0%	113,500,000
Other	11.9%	54,026,000
	100.0%	454,000,000

Source: Overview of Consumer Data and Credit Reporting, 2003

Table 4 shows the break down of credit accounts based on type of credit as another way to divide the information. Both methods are useful because once credit accounts are divided by type of creditor, it is compared with type of credit to focus on a smaller target. Based on the type of credit, revolving credit is the most ubiquitous with 71.2% of open accounts. Installment loans have 19% while mortgage loans have 5.7% of open accounts. Non-revolving credit contains 4.1% of open accounts. (Avery et. al., 2003, p.52)

Revolving and non-revolving accounts are open end accounts, which consumers use from time to time at their discretion. Normally, the account has a pre-authorized limit. Revolving accounts are unsecured accounts that allow flexibility in the amount that must be paid back in any given billing cycle. Non-revolving accounts allow the consumer to borrow funds for a short period and must repay in full at the end of the period. Installment and mortgage accounts are closed end accounts, which consumers pay a series of time payments over time according to a schedule. Installment accounts require fixed monthly payments over the term of the loan. Installment accounts are typically secured, usually by automobiles or recreational vehicles. Mortgage accounts are like installment accounts but are secured by real estate. (Avery et. al., 2003, p.54)

Table 4 Number of Open Credit Accounts by Type of Credit

	Open credit accounts	
Type of credit	Percent	Number
Revolving	71.2%	323,248,000
Non-revolving	4.1%	18,614,000
Installment	19.0%	86,260,000
Mortgage	5.7%	25,878,000
	100.0%	454,000,000

Source: Overview of Consumer Data and Credit Reporting, 2003

The total number of revolving credit accounts is divided into different categories: check credit 1.9%, banking institution 38%, finance company 4.4%, retailer 24.8%, and other 2.1%, as shown in Table 5. Banking institutions hold the largest amount of revolving credit accounts with 38% or 172.5 million accounts. Information divided by type of creditor is not available for the other types of credit. (Avery et. al., 2003, p.52)

Table 5 Number of Open Revolving Accounts by Type of Creditor

	Open revolving accounts	
Type of creditor	Percent	Number
Check credit	1.9%	8,626,000
Banking institution	38.0%	172,520,000
Finance company	4.4%	19,976,000
Retailer	24.8%	112,592,000
Other	2.1%	9,534,000
	71.2%	323,248,000

Source: Overview of Consumer Data and Credit Reporting, 2003

Newly acquired accounts are used since it shows the number of credit accounts opened a year ago or less, depicting the number of credit reports that are requested each year. Revolving accounts has the highest number of newly acquired accounts (53.3 million). Installment loans has the highest percentage (29.4%) of accounts opened within the year but on a lower number of open accounts. Table 6 provides this data along with data for non-revolving and mortgage accounts. The total number of open revolving accounts is divided by type of creditor to show the amount of accounts opened within a

17

year by each creditor, see Table 7. Banking institutions have the largest number of

accounts opened in a year with 30.8 million accounts. (Avery et. al., 2003, p.65)

Table 6 Number of Credit Accounts Opened Within a Year

| Type of credit | All open accounts | Opened one yr or less | |
		Percent	Number
Revolving	323,248,000	16.5%	53,335,920
Non-revolving	18,614,000	10.9%	2,028,926
Installment	86,260,000	29.4%	25,360,440
Mortgage	25,878,000	21.5%	5,563,770
	454,000,000		86,289,056

Source: Overview of Consumer Data and Credit Reporting, 2003

Table 7 Number of Revolving Accounts Opened Within a Year

| Type of creditor | All open accounts | Opened one yr or less | |
		Percent	Number
Check credit	8,626,000	13.1%	1,130,006
Banking institution	172,520,000	17.9%	30,881,080
Finance company	19,976,000	21.9%	4,374,744
Retailer	112,592,000	13.5%	15,199,920
Other	9,534,000	21.7%	2,068,878
	323,248,000		53,654,628

Source: Overview of Consumer Data and Credit Reporting, 2003

Payment status is important to analyze because if a certain type of credit is

typically delinquent, the Tax Return Score can help evaluate creditworthiness better by

determining credit risk from other information. A credit type with bad payment status is

the target of the Tax Return Score. Payment status is divided into minor and major

derogatory for past due accounts. No derogatory occurs when payments are made on

time. Minor derogatory is if the account was delinquent 30-119 days. Major derogatory

is if the account was paid between 120-149 days late or other circumstances occurred,

such as repossession, charge-off, bankruptcy, or foreclosure. As show in Table 8,

mortgage accounts have the highest percentage (91%) of accounts that are paid within the

given time period, thus having the lowest percentage of delinquent accounts. Revolving

loans and installment loans are fairly similar in the payment status with 85% of accounts

with no derogatory and 15% with some degree of derogatory status. Non-revolving loans tend to have the worst payment status with 4.8% of accounts classified as delinquent 30-119 days and 22.6% over 120 days delinquent. (Avery et. al., 2003, p.61)

Table 8 Payment Status of Credit Accounts

Type of credit	No derogatory	Minor derogatory	Major derogatory	Total
Revolving	85.6%	7.2%	7.2%	100.0%
Non-revolving	72.6%	4.8%	22.6%	100.0%
Installment	85.3%	6.9%	7.8%	100.0%
Mortgage	91.0%	6.4%	2.6%	100.0%

No derogatory - no delinquencies
Minor derogatory - 30-119 days delinquent
Major derogatory - over 120 days delinquent
Source: Overview of Consumer Data and Credit Reporting, 2003

In Table 9, payment status is divided by type of creditor for revolving and installment accounts (information is not available for the other types of credit). The breakdown of credit by type of creditor detects specific markets with high delinquency rates. Finance companies have the highest percentage of delinquent accounts 30-119 days for both revolving (8.2%) and installment (7.9%) loans. Retailers and other credit lenders have the highest percentage of accounts that have a major derogatory. For revolving credit, retailers have 7.3% of accounts that are over 120 days delinquent while other credit lenders have 9.4% of accounts in the same category. Retailers and other credit lenders combine for 13.2% of installment accounts that are over 120 days delinquent. (Avery et. al., 2003, p.61)

19

Table 9 Payment Status of Revolving and Installment Accounts

Type of creditor	Revolving			
	No derogatory	Minor derogatory	Major derogatory	Total
Check credit	89.9%	5.2%	4.9%	100.0%
Banking institution	86.0%	6.7%	7.3%	100.0%
Finance company	86.5%	8.2%	5.3%	100.0%
Retailer	84.7%	8.0%	7.3%	100.0%
Other	83.4%	7.2%	9.4%	100.0%

Type of creditor	Installment			
	No derogatory	Minor derogatory	Major derogatory	Total
Banking institution	90.3%	6.0%	3.7%	100.0%
Finance company	87.3%	7.9%	4.8%	100.0%
Retailer and other	79.8%	7.0%	13.2%	100.0%

No derogatory - no delinquencies
Minor derogatory - 30-119 days delinquent
Major derogatory - over 120 days delinquent
Source: Overview of Consumer Data and Credit Reporting, 2003

Small Business Loans

Creditors use credit reports before extending credit to both small businesses and individuals. Small businesses generally have less credit history when they are first starting business. The Tax Return Score benefits them since credit history is not emphasized. In a survey by the Federal Reserve, small businesses are defined as firms having fewer than 500 employees. Three-fourths of these small businesses have less than 20 employees. Fiscal year sales are typically less than $10 million with year-end assets less than $5 million. Less than 10% of small businesses have sales greater than $2.5 million and assets greater than $1 million. Small businesses are formed through proprietorships, partnerships, S-Corporations, or C-Corporations, with the majority being either proprietorships or S-Corps. (Bitler, Robb, and Wolken, 2001, p.186)

Small businesses use different types of financial services such as liquid asset accounts, credit lines, loans, capital leases, financial management services, and other credit. Of these services, credit lines, loans, capital leases, and other credit may require a credit check before the service is provided. Fifty-five percent of small business firms use

some form of credit provided by a financial institution. The smaller the firm, the least likely it is to use any type of credit (see Appendix A). Credit lines (28%) are the most common type of credit for small businesses. Three types of loans are used in small businesses: mortgage (13%), vehicle (21%), and equipment (10%), with percentages representing the amount of firms that have that type of loan. Eleven percent of firms possess a capital lease. (Bitler et. al., 2001, p.190)

Besides obtaining credit through financial institutions, small businesses also obtain credit by means of loans from the owner, personal credit cards, business credit cards, and trade credit. Credit reports are typically not requested for loans from the owner but they are used for credit cards and possibly trade credit. Small businesses generally have fewer credit options available, therefore it seems more likely that borrowing occurs from owners. Only 28% of firms acquired loans from owners. The smallest firms, firms with fiscal year sales less than $50,000, are least likely to have owner loans since they are also less likely to use credit (see Appendix A). Almost half of small businesses use credit cards for business purposes with 45% using personal and 33% using business credit cards. The smallest firms are most likely to use personal credit cards. The use of credit cards provides a convenient means of making payments and tracking expenses. Credit cards can be relatively easy to obtain but more costly than other forms of credit. Trade credit is extended when a supplier provides goods and/or services at one point in time and collects the money at a later point. Sixty percent of small businesses take advantage of trade credit. The use of trade credit is most common among firms in manufacturing, construction, and wholesale and retail industries mainly for transaction purposes, not financing. (Bitler et. al., 2001, p.192)

Suppliers of financial services are divided into different categories to identify the supplier most small businesses use for financial services. The main supplier of services is the target for the Tax Return Score because a large number of credit reports are requested for small businesses from that supplier. Depository financial institutions, such as commercial banks, savings institutions and credit unions, provide financial services to 95% of small business firms (see Appendix B for data divided by size of firm). Commercial banks are the most common supplier of financial services with 89% of firms acquiring services from this institution. Savings institutions (6%) and credit unions (6%) account for a small percentage of the supply of financial services to small businesses. (Bitler et. al., 2001, p.196)

Additional suppliers of credit to small businesses use credit reports to evaluate credit risk but use of the Tax Return Score could provide additional assurance. Non-financial suppliers, including family and individuals, other businesses and government agencies, may not use credit reports to determine creditworthiness. The benefits from the use of the Tax Return Score are great since tax returns are easier to obtain for family and other businesses than credit history data. Non-depository financial institutions, including finance companies, brokerage firms and leasing companies, only provide 33% of small businesses with financial services. On an even smaller percentage, 12% of small businesses use non-financial suppliers as a means of obtaining financial services (see Appendix B). (Bitler et. al., 2001, p.198)

Credit accounts held by each credit supplier are most important since credit reports are requested before credit is extended. Depository financial institutions provide 42% of small business firms with loans and credit lines compared to 20% from non-

depository institutions (see Appendix C for data divided by type of credit). Small businesses use commercial banks (39%) as their primary source of credit. Only 2% of these firms use either savings institutions or credit unions. Finance companies provide credit to 13% of small businesses while 7% use leasing companies. The other non-depository institutions provide minimal use to small businesses. (Bitler et. al., 2001, p.200) On the non-financial supplier side, 6% of small business firms obtain loans from family and individuals. Three percent of small businesses use other businesses as a means of obtaining credit while only 1% use government services. Typically small businesses that have difficulty borrowing from financial institutions use non-financial suppliers. These suppliers are mainly used for loans and credit options. (Bitler et. al., 2001, p.201)

Performance and Profitability

Performance and profitability are important characteristics to recognize because the Tax Return Score provides a different type of data analysis to determine credit risk. Performance is how well the consumer meets the requirements of the loan. Bad performance is payment delinquency and charging off the loan. Profitability is collecting the total amount of the loan without incurring additional costs due to delinquency. Writing off loans is unprofitable for credit lenders. The alternative data analysis approach may pinpoint certain consumers with high delinquency rates that the credit score evaluates as consumers with good payment records. This assessment improves delinquency rates, thus increasing profitability.

In a survey by the Federal Reserve, 500 banking institutions were surveyed in 1999 on the performance and profitability of CRA-related lending. CRA-related lending

refers to loans extended under the Community Reinvestment Act to help meet credit needs of entire communities. Data provided in the research includes overall lending, which includes both CRA-related and non-CRA-related lending. Overall lending data will be used in the analysis in order to capture the entire loan market. Different types of loans offered were home purchase and refinance, home improvement, small business, and community development loans with the focus on small business loans.

Small business loans account for $117 billion for the 500 banking institutions that were surveyed. Three hundred sixty three out of 500 banking institutions surveyed have assets less than $5 billion and are the focus for performance measures. Banking institutions of this size combine to have $32.5 billion in small business loans ("CRA-Related Lending," 2003, Table 2c).

Profitability measures demonstrate how profitable loans are for banking institutions. Non-profitable loans provide an opportunity for the Tax Return Score to better evaluate credit risk, resulting in higher profits for banking institutions. Banking institutions with assets less than $5 billion are profitable on 88% of all loans to small businesses. Nine percent of these loans are marginally profitable and 3% broke even. None of the loans are unprofitable. ("CRA-Related Lending," 2003, Table 5a)

Delinquency and charge-off rates are another gauge to determine profit on loans. Small business loans have good performance measures based on delinquency and charge-off rates. The 30-89 day delinquency rate is .76% of all small business loans for banking institutions with assets less than $5 billion. The 90 days or more delinquency rate is .45% of these loans. Small business loans are written off at a rate of .32%. ("CRA-Related Lending," 2003, Table 5c)

SUITABLE CUSTOMERS FOR THE TAX RETURN SCORE

The Tax Return Score has the same customer base as current credit services. Larger markets are the focus on which to launch the product to gain awareness quickly. Based on the analysis of these surveys from the Federal Reserve, the Tax Return Score should be targeted towards banking institutions since almost half (48%) of open credit accounts are held in these institutions, amounting to 218.8 million accounts (see Table 3). Data for revolving credit correlates with this focus since banking institutions have the highest percentage (38%) of revolving accounts (see Table 5). Information is not available for the other types of credit but revolving accounts represents 71% of all types of credit accounts, which accounts for the majority of open credit accounts (see Table 4). Revolving accounts have the most accounts opened in a year amounting to 53.3 million accounts (see Table 6) and 30.8 million of these accounts are held at banking institutions (see Table 7).

Besides revolving accounts at banking institutions, installment accounts represent 19% of open credit accounts (see Table 4). Including installment accounts gives additional support for targeting banking institutions. Since banking institutions are already targeted, it is easy to incorporate the second highest type of credit to generate requests for more reports. Twenty-nine percent of installment accounts were opened a year ago or less, which is the highest percentage of accounts opened in a year (see Table 6). Banking institutions held 31% of installment accounts (Avery et. al., 2003, p.65).

Individuals are represented by data for open credit accounts and small business credit data are tied with this information to support the banking institution market. Small businesses (42%) use depository financial institutions as the primary source of credit (see

Appendix C). Thirty-nine percent of small business firms obtain credit from commercial banks, whereas the percentage is below 3% for savings institutions and credit unions.

Summarizing banking institution data for selection of a potential market reveals a high percentage of open credit accounts held by banking institutions. The majority of these accounts are revolving accounts since they represent the bulk of all type of accounts and accounts opened within a year. New account data are important because it depicts yearly activity. Data for open credit accounts favor revolving accounts but the addition of installment accounts does not take much extra effort to get requests for more reports. The use of banking institutions by small businesses reinforces data for open credit accounts to identify the best market for the Tax Return Score.

Additional markets assist in promoting the product to increase acceptance and build relations. Another market to target is the retail industry, such as department, jewelry or computer stores since they have 25% of open accounts totaling 113.5 million accounts (see Table 3). Retailers' percentage of revolving accounts is closer in proportion to banking institutions than other creditors (see Table 5). Retailers have 14% of revolving accounts opened within a year representing yearly activity (see Table 7). Retailers have the highest percentage of delinquent accounts, which the Tax Return Score provides a different type of data analysis to determine credit risk (see Table 9).

Looking outside of the typical loan industry, trade creditors are a well-used source of credit within each company's particular industry. Trade creditors are a good market to target because 60% of small business firms use trade creditors as a source of credit (see Appendix A). Many of these trade creditors use past experience with these firms to determine whether to extend credit and how much to offer. The only issue when

marketing this product is the diversity of the different industries and deciding which industry to focus efforts on due to the vast majority.

Credit reports are requested for individuals and small businesses regardless of perceived credit risk. Focusing on consumers with high credit risk increases the demand for the Tax Return Score to calculate creditworthiness based on other information. Higher credit risk consumers strengthen the target markets mentioned above since the product is more useful. Small businesses are delinquent, past due more than 30 days, on .76% of loans, whereas consumer loans are delinquent on 2.82% of loans as shown in Table 10. For individuals, credit card loans have a higher delinquency rate (3.7%) than residential real estate loans (1.55%). Small business loans are charged-off at a rate of .32%, while consumer loans are charged-off at a rate of 2.75%. For individuals, credit card loans have a much higher charged-off rate (4.71%) than residential real estate loans (.08%).

Table 10 Delinquency and Charge-off Rates

Type of loan	Delinquent*	Charge-off
Small business	0.76%	0.32%
Individual**		
Consumer	2.82%	2.75%
Credit card	3.70%	4.71%
Residential real estate	1.55%	0.08%

* Past due more than 30 days
** Rates calculated as average for 2005
Source: Federal Reserve Statistical Release, 2001
CRA-Related Lending, 2000

Individuals tend to be more of a credit risk than small businesses from the analysis of delinquency and charge-off rates. Residential real estate loans have similar charge-off rates to small businesses but the delinquency rate is higher. The largest risk with individuals is in the form of credit card loans with a delinquency rate of 3.7% and a

high charge-off rate of 4.71%. Consumer loans are riskier than small business loans but do not impose as great of a risk as credit cards. Individuals are the focus in each market since their credit risk is greater.

External Factors

The Tax Return Score is similar to the VantageScore in the scoring system used. No comparison can be made on how the score is developed since that information is not released for the VantageScore. If the VantageScore is accepted in the market, the Tax Return Score would have a relatively easier time with acceptance than if VantageScore was not created at all. Credit lenders will be more familiar with a letter scoring system creating an easier switch to the Tax Return Score. Even though the VantageScore uses payment history and other standard credit techniques, the market would be more competitive due to the similarities with the score. Customers may not pay attention to the type of data used to calculate the score, therefore not noticing the differences in the products.

Some consumers may see the close collaboration with the three credit reporting companies as an attempt to decrease competition and raise prices. If this collaboration occurs in the market, the Tax Return Score may be able to take advantage and offer its product at a lower price and bring back competition.

If the VantageScore is not accepted, the Tax Return Score would not have a good probability of succeeding. Lenders are used to the way they evaluate loan applications and have embedded the FICO score into the process. It is a challenge to prove to them that a new score is a better way of evaluating creditworthiness.

As is shown through the creation of the VantageScore, the three national credit reporting companies believe there are weaknesses in the standard credit score and a better model can be developed. The Tax Return Score is a new model that neutralizes the issues with the credit score. First, the tax return is compiled by the preparer for the individual for which the tax return information belongs. There is no need to worry about whether the information is put in the correct file or if some information is missing. Credit report history files are generated by using algorithms to separate information received by each creditor, which can lead to information being placed in the wrong files. Also, only one tax return is filed per individual whereas multiple files are created for credit reports if data does not have the correct identifying information.

Another issue that the Tax Return Score deals with is the amount of information that is not reported. Creditors may not report current information on accounts, information on credit limits, or accounts with minor delinquencies. All this missing information could lead to an incorrect calculation in the credit score. Tax returns are required by federal law to be filed with the IRS. All financial information is to be reported on the provided tax return documents. Failure to report income or the use of an unallowable deduction could lead to prosecution, implying that tax returns provide more valid information. Since the Tax Return Score is determined from tax returns, it is more likely the score is calculated using all the available, correct information.

Limitations with credit score data enable the Tax Return Score to provide opportunities for credit granters to evaluate creditworthiness based on different information to strengthen credit lending decisions. Evaluating tax return data provides a

different perspective of individuals' financial position, therefore diminishing inaccurate results caused by problems with credit score data.

RECOMMENDATIONS

The Tax Return Score has a strong market in banking institutions due to the large number of credit accounts that are opened each year compared to other types of creditors. Within the banking institutions, the Tax Return Score could be used on individuals or small businesses seeking new credit. Small businesses use banking institutions more than any credit lender to obtain credit and individuals have a higher delinquency rate so the Tax Return Score provides additional measures of creditworthiness. Revolving and installment accounts are the most ubiquitous and provide a large base of consumers needing an evaluation of creditworthiness.

Success could be very good for the Tax Return Score because of its new approach to credit evaluation. It may take a while for lenders and consumers to adopt the product and trust the results but the use of an easy to understand scoring system promotes the product. The FICO score is widely used but issues with the credit score are neutralized by the Tax Return Score. The most interesting event will be the acceptance of the VantageScore and how the industry reacts.

Appendix A

Small Businesses Using Selected Financial Services**

Category	Credit lines, loans, and capital leases						Owner loan	Other credit		Trade credit
								Credit card		
	Any	Credit line	Mortgage	Vehicle	Equipment	Capital lease		Personal	Business	
All firms	55	28	13	21	10	11	28	45	33	60
Fiscal year sales*** (thousands of dollars)										
Less than 25	27	9	8	6	2*	3*	21	41	11	30
25 - 49	33	11	8	15	4*	2*	18	46*	21	47
50 - 99	46	15	10	14	6	8	26	48	27	54
100 - 249	56	22	15	20	12	11	29	52	32	63
250 - 499	67	37	13	26	12	11	30	48	43	76
500 - 999	74	42	19	30	16	20	32	42	44	77
1,000 - 2,499	78	51	21	37	16	18	27	45	54	80
2,500 - 4,999	95	69	23	37	24	19	26	33	63	80
5,000 - 9,999	89	76	17	38	20	25	35	25	68	72
10,000 or more	89	81	19	30	25	24	29	22	62	77

*Fewer than 15 firms in this category reported using this service, too small a number on which to base a reliable statistic
**All numbers are percentages
***Used fiscal year sales to show size of firms because year-end assets portrays the same rankings and sales provides yearly activity

Source: Financial Services Used by Small Businesses, 2001

Appendix B

Small Businesses Using Selected Suppliers of Financial Services**

| Category | Depository financial institution | | | | Nondepository financial institution | Nonfinancial supplier |
	Any	Commercial bank	Savings institution	Credit union		
All firms	95	89	6	6	33	12
Fiscal year sales*** (thousands of dollars)						
Less than 25	81	68	4	10	12	9
25 - 49	94	86	6	7	21	6
50 - 99	97	88	6	5	23	9
100 - 249	98	93	8	5	32	13
250 - 499	99	96	5	5	40	13
500 - 999	99	96	9	4	43	17
1,000 - 2,499	99	97	7	4*	57	20
2,500 - 4,999	99	97	8*	1*	60	17
5,000 - 9,999	100	100	3*	2*	70	20
10,000 or more	100	97	5*	0*	71	16

*Fewer than 15 firms in this category reported using this service, too small a number on which to base a reliable statistic
**All numbers are percentages
***Used fiscal year sales to show size of firms because year-end assets portrays the same rankings and sales provides yearly activity

Source: Financial Services Used by Small Businesses, 2001

32

Appendix C
Small Businesses Using Selected Suppliers of Financial Services**

Service	Depository financial institution				Nondepository financial institution			Nonfinancial supplier		
	Any	Commercial bank	Savings institution	Credit union	Any	Finance company	Leasing company	Family & individuals	Other businesses	Government
Credit lines, loans, and capital leases	42	39	2	2	20	13	7	6	3	1
Line of credit	26	25	1	.5	2	2	.5*	.5*	1	.5*
Mortgage	10	9	1	.5*	2	1	.5*	1	.5*	.5
Vehicle	13	11	.5	2	9	8	1	.5*	.5*	.5*
Equipment	6	5	.5*	.5*	3	2	1	.5*	1	.5*
Capital lease	3	2	.5*	.5*	8	2	6	.5*	1	.5*

*Fewer than 15 firms in this category reported using this service, too small a number on which to base a reliable statistic
**All numbers are percentages

Source: Financial Services Used by Small Businesses, 2001

Bibliography

Avery, Robert B., Paul S. Calem, and Glenn B. Canner. The Federal Reserve Board. (February 2003). An Overview of Consumer Data and Credit Reporting. Retrieved on March 24, 2006, from http://www.federalreserve.gov/pubs/bulletin/2003/0203lead.pdf.

Bitler, Marianne P., Alicia M. Robb, John D. Wolken. The Federal Reserve Board. (April 2001). Financial Services used by Small Businesses. Retrieved on April 12, 2006, from http://www.federalreserve.gov/pubs/oss/oss3/ssbf98/april2001bulletin.pdf.

Chanen, Jill Schachner (2004). Consumer Complaints. *ABA Journal*, Vol. 90, Issue 12, p 50-55. Retrieved April 13, 2006, from EBSCO database.

Coy, Peter. Giving Credit Where Credit is Due. *Business Week Online*, March 15, 2006. Retrieved on April 18, 2006, from www.businessweek.com.

Electronic Privacy Information Center. (December 11, 2003). *Credit Scoring.* Retrieved on February 3, 2006, from www.epic.org/privacy/creditscoring.

Fair Isaac Corporation. (2006). *Know the Score.* Retrieved on February 3, 2006, from www.fico.org.

Federal Reserve Board. (July 17, 2000). Report on the Performance and Profitability of CRA-Related Lending. Retrieved on March 27, 2006, from http://www.federalreserve.gov/boarddocs/surveys/craloansurvey/cratables.pdf.

Federal Reserve Statistical Release. (June 29, 2001). Charge-off and Delinquency Rates on Loans and Leases at Commercial Banks. Retrieved on March 27, 2006, from www.federalreserve.gov/releases/chargeoff.

Federal Trade Commission. (2005 August). *Fact for Consumers: Credit Scoring.* Retrieved on April 22, 2006 from www.ftc.gov/bcp/conline/pubs/credit/scoring.htm.

Fisher, John S. (1994). The New Finance. *Journal of Accountancy,* Vol. 178, Issue 2, p 73-76.

Freeman, Lisa (2006). Three National Credit Bureaus Team To Create New Credit Risk Score. *Credit Union Journal*, Vol. 10, Issue 11, p 3. Retrieved April 13, 2006, from EBSCO database.

Smith, Rick (2006). Now It's Up to Creditors to Use A New Scoring System. *American Banker*, Vol. 171, Issue 57, p 10. Retrieved April 13, 2006, from EBSCO database.

Sorensen, Randall C. (2006). Overview of Tax Return Score.

United States Small Business Administration. (2003). Statistics of U.S. Businesses and Nonemployer Statistics Retrieved on April 13, 2006, from www.sba.gov/advo/research/data.html.

Zarowin, Stanley (1998). Accounting Software: The Road Ahead. *Journal of Accountancy*, Vol. 185, Issue 1, p. 67-69.