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Impact to VantageScore 3.0 Credit Score Model from Revisions to Public Record Reporting

Contents

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As industry and consumer needs evolve, the nationwide Credit Reporting Agencies ("CRAs") – Equifax®, Experian®, and TransUnion® – continually seek ways to ensure the data they maintain on their files reflect the most accurate and timely consumer financial and credit picture.

As part of the previously announced National Consumer Assistance Plan[1], the CRAs are currently focusing on best practices and procedures related to the selection, collection, reporting and updating of public record data included in consumer credit reports. Lenders should contact their CRA representatives for further information regarding specific enhancements.

While a final understanding regarding the impact to public record data and to the respective consumer reporting databases is under development, preliminary results suggest that there will be a reduction in the volume of tax lien and civil judgment public records recorded on consumer credit files. It is very likely that civil judgment public record data will not be part of the CRAs' core consumer credit database after the effective date of the Plan and that as many as 50 percent of tax lien records may be impacted.

From a credit score model development perspective, revisions in the underlying data used to develop a model can impact its predictive performance and consumer scores. Models that incorporate these data in their attributes and algorithms can deteriorate in predictive power if the data becomes less prevalent within consumer credit files. Furthermore, a reduction in the number of public records in a specific consumer's credit file is likely to cause their score to improve. Consequently, lenders should evaluate the impact of these data revisions on model predictive performance, their underwriting strategies and consumer scores.

1 *In March 2015, the three CRAs developed the National Consumer Assistance Plan, a series of initiatives to enhance the accuracy of credit reports and make the process of dealing with credit information easier and more transparent for consumers.*

To gauge the greatest possible impact of these revisions to models and scores, a "worst-case" scenario was developed. In this scenario, ALL tax liens and civil judgments were removed from credit bureau files of one CRA for a sample of four million consumers from the U.S. population. The VantageScore 3.0 credit score model's predictive performance, changes to consumer scores and scoreable population volumes were analyzed. Insights provided in this paper address the following:

- How many consumers have tax liens or civil judgments in this analysis sample?
- How does the VantageScore 3.0 model change as a result of removing all tax liens and civil judgments from the credit file?
- What is the impact of removing tax liens and civil judgments on the VantageScore 3.0 model's predictive performance?

Summary insights

- Under a maximum impact scenario where ALL liens and judgments are removed from consumer credit files, 11 percent of the sample population had tax liens or civil judgments removed.
- Approximately 8 percent of the sample received an average score increase of 11 points when all tax liens and civil judgments were removed.
- Under a maximum impact scenario where all liens and judgments are removed from consumer credit files, the VantageScore 3.0 model's predictive performance drops only minimally. The model continues to rank-order effectively.

Figure 1: Consumers with Tax Liens or Civil Judgments

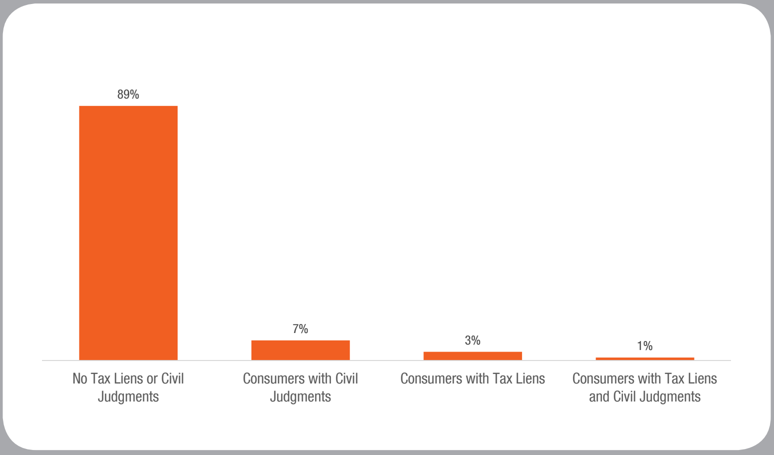


Figure 2: Number of Tax Liens on file

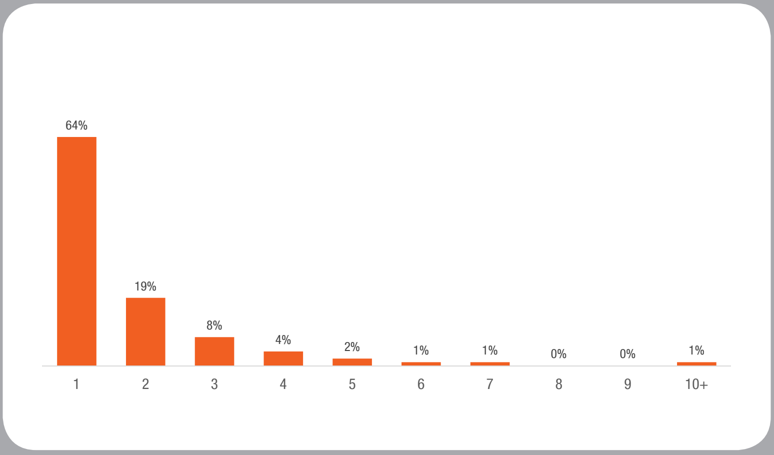
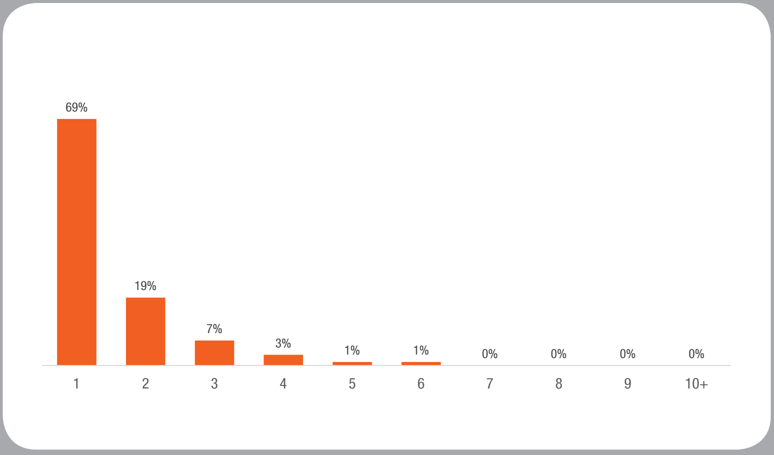


Figure 3: Number of Civil Judgments on file



How many consumers have tax liens or civil judgments in this analysis sample?

Tax liens are levied against a consumer's property to secure the payment of taxes. A civil judgment is a legal ruling requiring a consumer to pay damages, typically in response to a lawsuit. Figure 1 shows that 7 percent of consumers in the United States have civil judgments on their credit file, 3 percent have tax liens on their file. Slightly less than 1 percent have both liens and judgments. Note: all categories are mutually exclusive of each other.

64 percent of consumers with tax liens have just one lien (Figure 2), while 69 percent of consumers with civil judgments have just one judgment against them (Figure 3).

64

percent of consumers with tax liens have just one lien

69

percent of consumers with civil judgments have just one judgment against them

Figure 4: Impact from removing liens and judgments by score band on the sample population

Score Range	% US Population	Removing Liens & Judgments: % No Change in Score	% Change in Score	% Unscoreable
Deceased	0.1%	100.0%	0.0%	0.0%
No Score	1.5%	100.0%	0.0%	0.0%
300-350	0.1%	77.7%	22.3%	0.0%
351-400	0.2%	69.5%	30.5%	0.0%
401-450	1.2%	69.4%	30.6%	0.0%
451-500	4.7%	66.1%	33.9%	0.0%
501-550	14.0%	80.5%	19.5%	0.0%
551-600	11.4%	84.1%	15.2%	0.7%
601-650	11.0%	91.4%	8.5%	0.1%
651-700	13.4%	95.7%	4.3%	0.0%
701-750	12.9%	98.5%	1.5%	0.0%
751-800	14.3%	99.2%	0.8%	0.0%
801-850	15.3%	99.9%	0.1%	0.0%

How do consumer scores change as a result of removing all tax liens and civil judgments?

Consumers were scored using the VantageScore 3.0 model. Scores were calculated with and without tax lien and civil judgment public records. Figure 4 shows the percentage of consumers in each score band with no change in score (because they had no liens or judgments on file originally), the percentage of consumers with score changes (as a result of removing their liens or judgments) and finally the consumers who became un-scoreable (because insufficient information was available to score them after removing the records).

The majority of score changes occur in the 350 to 600 range. Overall, slightly more than 8 percent of the sample population receive a change in score, with an average score increase of 10 points.

Figure 5 provides the score change distribution in twenty point score bands for consumers with tax liens or civil judgments.

How to read:
For consumers with scores in the 300 to 320 band when liens and judgments were originally included, 44.2 percent of them had scores in the 300 to 320 band after removing the liens and judgments. 51 percent of consumers received scores in the 321 to 340 band and 4.8 percent of them received scores in the 341 to 360 band. [Note: gray score bands reflect collapsed range.]

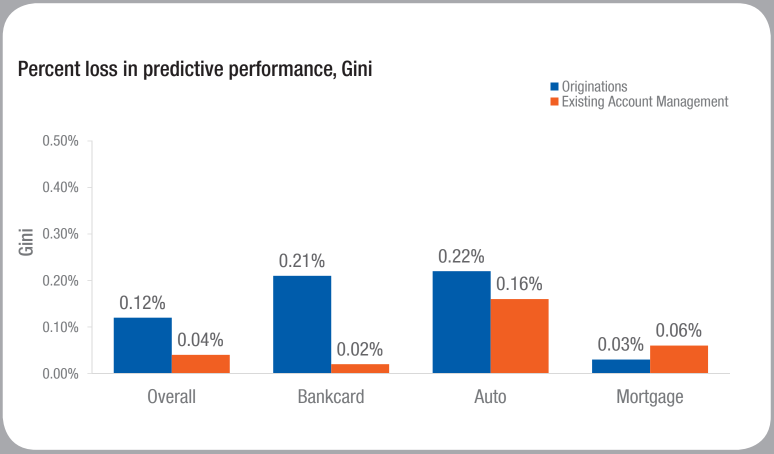
Figure 5: Score change distribution by 20 point score band

Score, AFTER removal of tax liens and civil judgments

Starting score, BEFORE removal of tax liens and civil judgments

VS 3.0	300-320	321-340	341-360	361-380	381-400	401-420	421-440			
300-320	44.2%	51.0%	4.8%	0.0%	0.0%	0.0%	0.0%			
321-340	0.0%	22.8%	75.8%	1.4%	0.0%	0.0%	0.0%			
341-360	0.0%	0.0%	31.1%	65.7%	3.3%	0.0%	0.0%			
361-380	0.0%	0.0%	0.0%	30.3%	67.3%	2.4%	0.0%			
381-400	0.0%	0.0%	0.0%	0.0%	37.7%	60.6%	1.6%			
VS 3.0	381-400	401-420	421-440	441-460	461-480	481-500	501-520	521-540	541-560	561-580
401-420	0.0%	41.4%	57.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
421-440	0.1%	0.2%	42.1%	56.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
441-460	0.1%	0.2%	0.3%	41.8%	56.1%	1.3%	0.1%	0.1%	0.0%	0.0%
461-480	0.0%	0.1%	0.2%	0.3%	38.7%	59.0%	1.3%	0.1%	0.1%	0.0%
481-500	0.0%	0.0%	0.1%	0.2%	0.3%	34.3%	64.0%	0.7%	0.2%	0.1%
VS 3.0	441-480	481-500	501-520	521-540	541-560	561-580	581-600	601-620	621-640	641-680
501-520	0.3%	0.3%	49.9%	48.1%	0.6%	0.3%	0.2%	0.1%	0.0%	0.0%
521-540	0.3%	0.4%	0.6%	50.6%	44.6%	1.2%	1.1%	0.9%	0.3%	0.0%
541-560	0.1%	0.3%	0.7%	1.0%	53.1%	39.0%	2.7%	2.2%	0.7%	0.1%
561-580	0.0%	0.2%	0.5%	0.9%	1.5%	56.0%	36.3%	2.7%	1.5%	0.3%
581-600	0.0%	0.1%	0.4%	0.6%	1.1%	1.8%	57.8%	33.6%	3.1%	1.3%
VS 3.0	501-580	581-600	601-620	621-640	641-660	661-680	681-700	701-720	721-740	741-780
601-620	2.4%	2.1%	59.2%	33.1%	1.9%	0.8%	0.3%	0.1%	0.1%	0.0%
621-640	1.1%	1.5%	2.2%	59.1%	32.1%	1.9%	1.0%	0.3%	0.3%	0.4%
641-660	0.3%	0.6%	1.1%	2.3%	58.0%	32.4%	3.0%	1.6%	0.4%	0.2%
661-680	0.0%	0.1%	0.4%	1.0%	2.2%	57.8%	31.8%	4.4%	1.8%	0.4%
681-700	0.0%	0.0%	0.1%	0.3%	0.7%	1.4%	61.2%	28.0%	5.7%	2.4%
VS 3.0	621-660	661-680	681-700	701-720	721-740	741-760	761-780	781-800	801-820	821-850
701-720	0.5%	0.6%	1.6%	68.6%	18.1%	8.0%	2.3%	0.2%	0.0%	0.0%
721-740	0.1%	0.4%	1.2%	2.1%	66.7%	13.3%	13.6%	2.2%	0.2%	0.0%
741-760	0.0%	0.3%	0.4%	1.6%	3.4%	57.5%	17.0%	18.7%	1.1%	0.0%
761-780	0.0%	0.0%	0.2%	0.6%	1.6%	3.4%	45.5%	28.0%	20.7%	0.0%
781-800	0.0%	0.0%	0.1%	0.1%	0.7%	1.2%	3.0%	46.5%	43.7%	4.7%
VS 3.0	701-720	721-740	741-760	761-780	781-800	801-820	821-850			
801-820	0.1%	0.2%	0.4%	0.8%	1.8%	70.7%	25.9%			
821-850	0.0%	0.0%	0.0%	0.0%	1.5%	4.8%	93.6%			

Figure 6: Reduction in the VantageScore 3.0 model's predictive performance given removal of liens and judgments



For VantageScore 3.0, predictive performance loss is minimal due to the fact that each scorecard within the algorithm incorporates a combination of derogatory behavioral attributes

What is the impact of removing this data on the VantageScore 3.0 credit score model's predictive performance?

The VantageScore 3.0 model's predictive performance was evaluated after removing liens and judgments. Percentage loss in Gini is provided for key industries, originations and existing account management (Figure 6). For the VantageScore 3.0 model, predictive performance loss is minimal due to the fact that each scorecard within the algorithm incorporates a combination of derogatory behavioral attributes.

Conclusion

This analysis evaluated a maximum impact scenario where all tax liens and civil judgments were removed from a consumer's credit file. These results apply solely to the VantageScore 3.0 model and are not reflective of score impact and performance on other credit score models. Lenders should evaluate their proprietary and incumbent generic scores to determine the associated impact on performance and whether models should be redeveloped or replaced. Note that a conclusive understanding of the impact to consumer credit scores will not be available until a final determination has been made regarding PII (personally identifiable information) on tax liens and civil judgments.

The VantageScore credit score models are sold and marketed only through individual licensing arrangements with the three major credit reporting companies (CRCs): Equifax, Experian and TransUnion. Lenders and other commercial entities interested in learning more about the VantageScore credit score models, including the VantageScore 3.0 credit score model, may contact one of the following CRCs listed for additional assistance:

EQUIFAX

Call 1-888-202-4025

http://VantageScore.com/Equifax

Experian

Call 1-888-414-4025

http://VantageScore.com/Experian

TransUnion

Call 1-866-922-2100

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