# RISKS MANAGEMENT. DATA ISSUES WITH RISKS ESTIMATIONS IN CONSUMER CREDIT

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*Abstract Risk management is relatively unexplored in Romania. Although Romanian specialists dwell on theoretical issues such as risks classification – existing today as many classifications as papers on risks – practical issues of modeling risks were neglected. This paper focuses on important data considerations that affect directly the estimations' results.*

*Key Terms Risks management, business application, data issues*

## Introduction

Following the significant development of consumer credit market after the 1980's, the risk management of consumer lending has become critical to protect the interests of both lenders and consumers. Modeling default probabilities has received considerable attention, both in theory and in practice.

I have used an anonymous Hungarian dataset of 5060 observations of existing accounts of loans for personal needs. There are three groups of variables. A first group consists of demographic characteristics. A second group of variable refers to the financial situation of the borrower and the third refers to the loan and re-payment history. The old scoring date variable has been used to determine the tenure of the accounts. In the analysis I have constructed several banded variables.

## Results

I ahve employed regression analysis of the default cases. Main results are presented in what follows.

***Tabel 1. Regressions' main results***

| Label | Estimates | T-scores |
|---|---|---|
| Intercept | -3.60 | -0.27 |
| Current account NO | 0.27 | 2.54 |
| Employer CO W UNLIMITED | 2.51 | 0.19 |
| Employer LTD | 1.73 | 0.13 |
| Employer OTHER | -0.16 | -0.01 |
| Employer PENSIONER | 0.31 | 0.02 |
| Employer STUDENT | -6.03 | -0.07 |
| Employer PRIVATE ENTREPRENEUR | 0.94 | 0.07 |
| Marital status DIVORCED | 0.61 | 1.80 |
| Marital status MARRIED AND COMMON-LAW | -0.54 | -1.85 |
| Marital status SINGLE | 0.00 | 0.02 |
| Residence ownership FAMILY | -0.80 | -2.83 |
| Residence ownership OTHER | 0.12 | 0.19 |
| Residence ownership OWN | -0.70 | -2.64 |
| Residence ownership RENT | 0.75 | 1.33 |

Table 1 presents the main estimates and their statistical significance. A stepwise procedure was employed so the coefficients are statistically significant by definition. We see that estimates have the appropriate sign.

Figure 1 and 2 presents how well our models do in terms of predicting default cases.

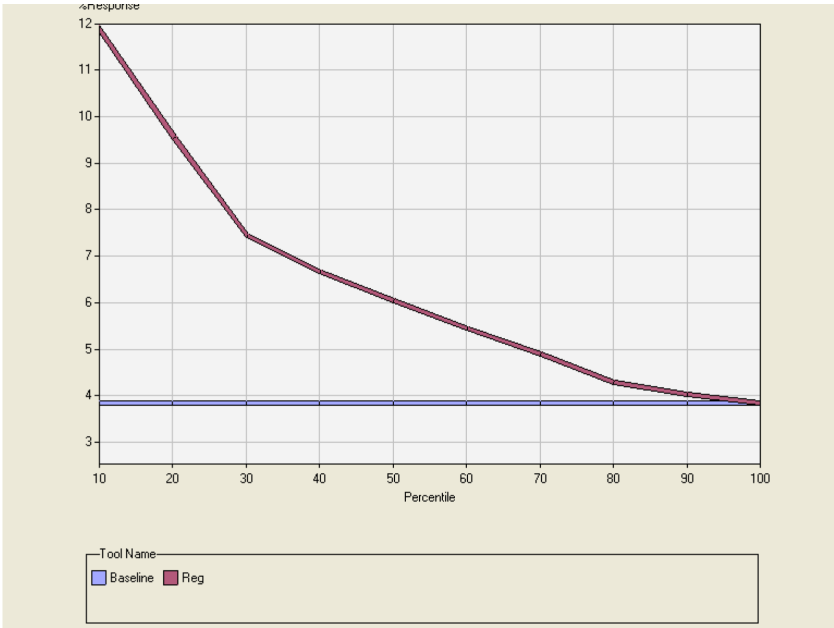


***Figure 1. Cumulative estimated default***

Figure 1 shows that our models does well comaped with baseline model . However the question regarding its accuracy is still on.

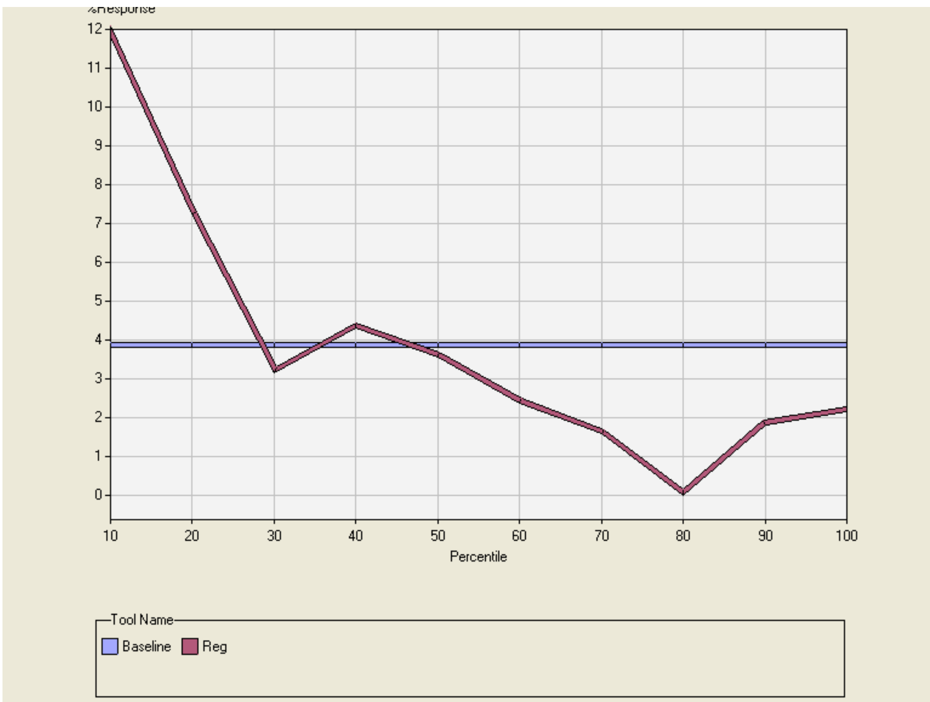


***Figure 2. Non - cumulative estimated default***

Figure 2 shows that for top 30 predicted default model does better than the baseline underlying model. However the Table 2 shows a different perspective underlying the existence od several data issues.

***Tabel 2. Predicted default***

| Obs | Default | P |
|---|---|---|
| 1 | NO | 0.22 |
| 2 | No | 0.20 |
| 3 | NO | 0.19 |
| 4 | NO | 0.17 |
| 5 | NO | 0.17 |
| 6 | NO | 0.17 |
| 7 | NO | 0.17 |
| 8 | NO | 0.17 |
| 9 | NO | 0.16 |
| 10 | NO | 0.16 |

## Concluding remarks

There are several issues that might bias the analysis of credit risk. A first issue is that the monitoring period of arrears is short, which raises the question regarding the maturity of the accounts. Immature accounts are considered those which do not have time to "go bad". In practice behavioral scorecards need to rely on at least a two years observation period.. On the other hand, using data on existing accounts to predict default probabilities is problematic because of selection bias issue. Furthermore empirical papers underlines that the developing sample must include an equal number of defaults, non-default and rejected cases. Another issue that might compromise the results is the population drift. This refers to changes in time in the distribution of population. This issue is particularly relevant for transition economies, as Natasa Sarlija et all (2007) have found in a study using Croatian data.

## References


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