

# Survival of Deposit Accounts Using Logistic Regression

Felix Wahl\*

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## Abstract

The objective of this thesis is two-fold. The first is to find a predictive model for the probability of a deposit account, held at a Swedish bank, being closed or emptied within a year. The second is to describe how a change in the interest rate of the deposit account affects this probability. The data consists of monthly observations of the maximum account balance for each deposit account along with a set of explanatory variables. We use the explanatory variables from the first month in each year. The remaining months are used to determine whether the account stayed open or closed. When the data is of this form we have approximately 200 000 yearly observations. We use logistic regression along with a set of different algorithmic selection procedures. A number of model validation statistics are used and the conclusion is that no model is completely satisfactory in regard to predictive capabilities. Nevertheless, we find that the coefficient for the interest rate is robust, i.e. does not change considerably, between models. Together with the fact that the coefficients in a logistic regression model always are the log-odds ratios, even if the model does not fit the data, we find that the interest rate coefficient is interpretable. Note that the data and results used and obtained in this thesis are confidential and hence only an overview is presented.

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\*Postal address: Mathematical Statistics, Stockholm University, SE-106 91, Sweden.  
E-mail: [felixwahl91@gmail.com](mailto:felixwahl91@gmail.com) . Supervisor: Tom Britton.