Project Proposal

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Project topic

Factors affecting bank competitive power——Evidence from emerging countries

Project description/goal

Along with the rapid development of nearly thirty years of China financial business, more and more people started to realize the importance of the banking market. Bank, a financial institution which operates monetary credit businesses and is established in accordance with the law, is the product that commodity money economy develops to a certain stage. In our project, we will find out several factors that determine the competiveness of a bank in the emerging countries. At the same time, we will figure out which is the best features to measure the competitiveness of a bank and the accuracy of our predictions.

Features

Features	Description	Data
LC	Personnel expenses (thousand $)	BankScope
TotIntC	Total interest expense (thousand $)	BankScope
IntCR	Interest expense/average interest-bearing liability	BankScope
TotD	Total deposits, money market and short-term funding (thousand $)	BankScope
OtherC	Other operating expenses (thousand $)	BankScope
FixA	Fixed assets (thousand $)	BankScope
LiqA	Liquid assets (thousand $)	BankScope
TotCap	Total capital (thousand $)	BankScope
TotNonIntC	Total non-interest expense (thousand $)	BankScope

Overheads	Overheads (thousand $)	BankScope
IntR	Gross interest & dividend income (thousand $)	BankScope
NonIntR	Total non-interest operation income (thousand $)	BankScope
NI	Net income (thousand $)	BankScope
GDPG	% change in real GDP, over previous year	EIU Countrydata
Inflation	Percentage change in consumer price index in local currency (period average) (thousand $)	EIU Countrydata
r	Money market interest rate (%)	EIU Countrydata
GDPper	GDP at purchasing power parity (PPP), divided by population (thousand $)	EIU Countrydata
FP_A	Foreign bank penetration_assets (thousand $)	Jeon et al. (2016)
FP_N	Foreign bank penetration_number	Jeon et al. (2016)
share	Market share	BankScope
HHI	Herfindahl-Hirschman Index, defined as the sum of the squared shares of bank assets to total banking sector assets within a country in a year	BankScope
TotA	Total assets (thousand $)	BankScope
Liquidity	Liquid assets/ total deposits & borrowing	BankScope
ROAA	Average ROA	BankScope
Efficiency	Non-interest expense/ average assets	BankScope
Risk	Loan loss reserve/ gross loan	BankScope
competition	The competitive level of a bank based on the Lerner index (1 represents good competitive ability, and 0 represents poor competitive ability)	BankScope and our classification

Methods

Step1: Building good training sets and data preprocessing.

Step2: Dimensionality reduction to figure out the best features.

Step3: Using Preceptron/Logistic Regression/(Kernel) SVM/Decision Tree/Random Forest/KNN/Majority Voting to predict the competitiveness of a bank.

Step4: Using holdout cross-validation and k-fold cross-validation to select the best model for our predictions.

Step5: Obtaining our results and the accuracy of our prediction.

Data sources

We use annual data of 35 emerging countries in Eastern and Central Europe, Latin America and Asia during the period of 2001-2014 from Bankscope Database, which contains the financial information of most banks in the world, provides us most of the bank-level data. Bankscope Database is also the most frequently cited database in many early works. We also collected macroeconomic data of each country from EIU Countrydata, which provides macroeconomic and historical data for more than 200 countries and regions.