

Two-stage stock price prediction model

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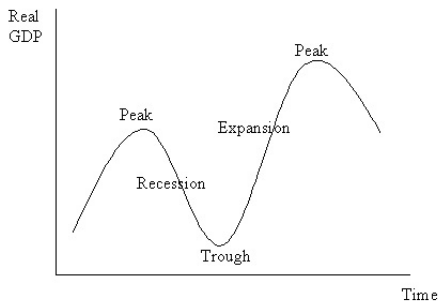


February 18, 2019

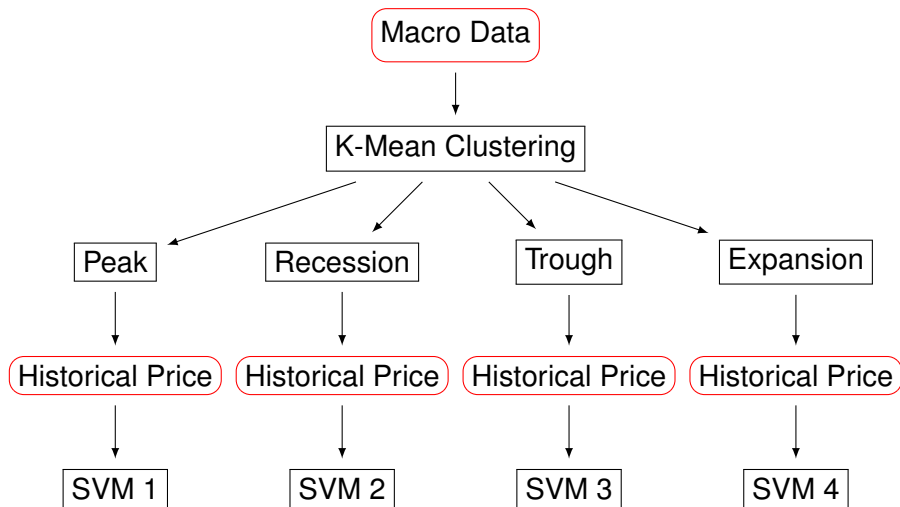
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Stock returns surpass 2% next month?

- Nature of stock price behaviours
- Business cycle theory



Two-stage model

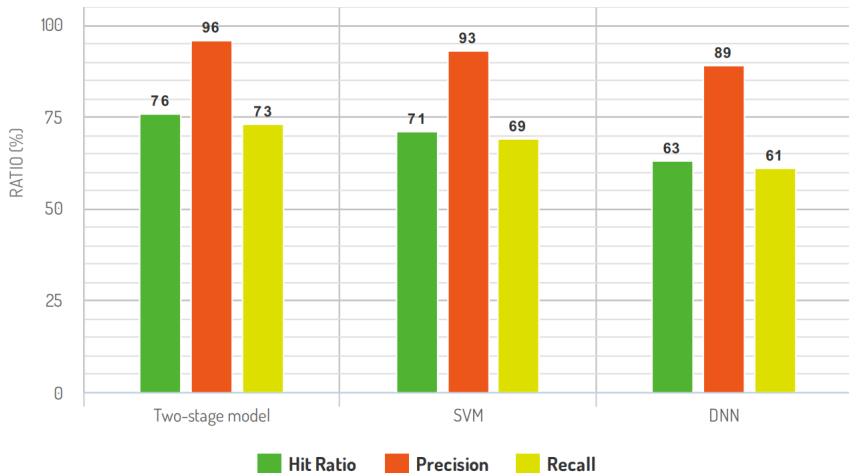


- Jan. 1990 - Dec. 2018 monthly data
- 4 macroeconomic features
- 3 moving averages of stock prices
- 32 stocks for this experiment
- Source: Yahoo Finance, OECD, Bureau of Labor Statistics, Kaggle
- Size: 2 GB

Model comparison



Base Rate: 59%



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- 73% recall score

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- $(1 + 2\%)^{73\% \times 59\% \times 12} - 1 = 10.78\%$ annual return

Prediction for next month



Winners	Losers
AAPL, T, NKE, BHGE HD, WMT, INTC, TM, HMC, MLHR, NXTFF, MCD, COKE, ORCL, F, IBM, BA, COP, CVX	MSFT, TIF, HOG, GE, NSANF, SNE, GPS, FDX, AVP, JPM, BAC, AMGN, DUK

Codes are available at my GitHub repositories

- <https://github.com/Csun1992/SVM-stock-return-prediction>
- <https://github.com/Csun1992/DNN-stock-prediction>