



Gold Price Prediction

Background



Problem

Head and Shoulders Pattern



Fibonacci

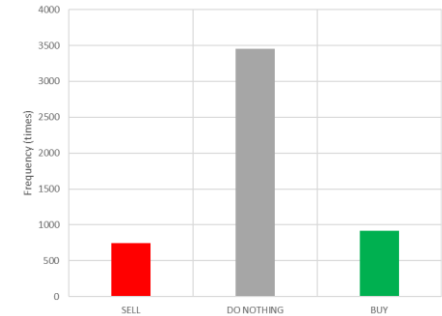
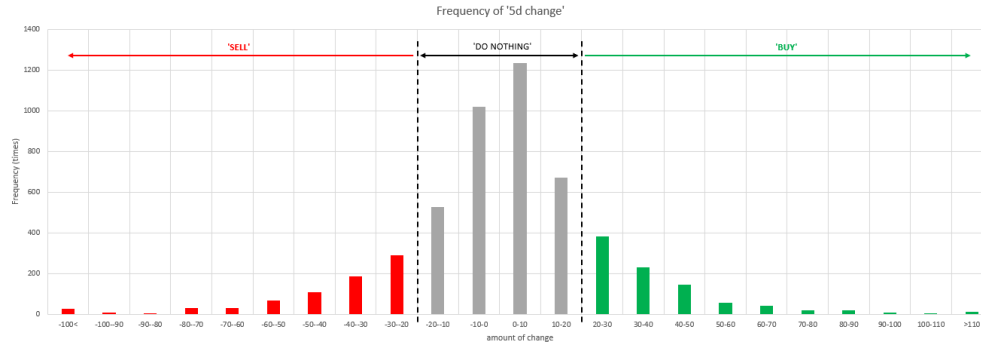


???



Scope

- Assume that we are in 2019, trying to use gold's historical data to make model for investing in 2020.
- The model we are trying to make is 'Classification model' which can tell us to 'BUY', 'SELL' or 'DO NOTHING'
- Data for training : from 01-01-2010 to 31-12-2019
- Data for validation : from 01-01-2020 to 31-10-2020



Evaluation

- Precision of model (Positive event is 'BUY' and 'SELL')
- Investment result



V
S



yahoo!
finance

'Date'	'Open'	'High'	'Low'	'Close'	'Volume'
11 Nov 2020	1,878.80	1878.80	1855.50	1860.70	220

$$Close_{t+5d} - Close_t = 5d \text{ change}$$



INDICATORS

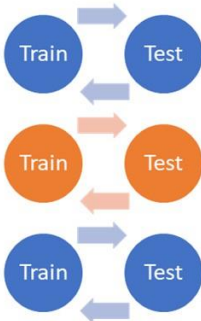
NEW FEATURES

SELECTION

- Chi Square
- Anova

*50 features were chosen from 84 features

Model Selection



*We selected
XGBoosting and
CatBoost as our
best model

Hyperparameter tuning



*Default is the best

Prediction



Apply to Investment Strategy



Result and gain



Output from Model



XGBoost



CatBoost



Vote 1



Vote 2

		Model 1	Model 2	Vote 1	Vote 2
Precision	Buy	50%	67%	50%	63%
	Sell	48%	55%	100%	48%
Number of order	Buy	14	18	4	24
	Sell	21	11	4	27
	Total	35	29	8	51
Gain	Buy	215.80	940.10	234.60	949.80
	Sell	470.20	505.10	244.50	687.60
	Total	686.00	1445.20	479.10	1637.40



Less Data



Timeframe : Day

Data 1 year

200 rows



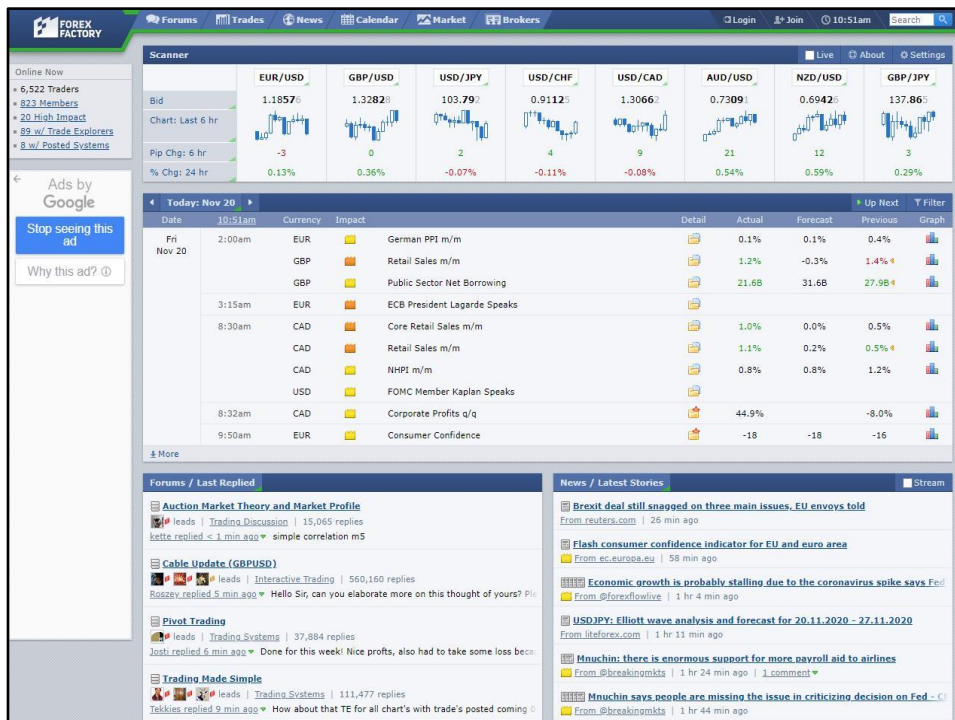
Timeframe : 1 Hour

Data 1 year

4800 rows

“Smaller time frame for Bigger data”

Feature Engineering



Money management





ห้างทอง เอเอ



เขาราช

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Thank you