**COMP3183 Financial Computing**

Individual Project

On

New Trading Strategy

Using

MA and Bollinger Band

Date: 06/12/2018

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# Abstract

This project is to build a new strategy that can find the trading signal based on the combination of Moving Average and Bollinger Band. In the whole project, I establish a strategy that include functions like sell, buy, stop profit, stop loss.

The purpose is to avoid the risk in the trading, especially for the new investor.

All the operation in the trading must keep in a low risk, or the operation won’t be done. The project is fit for those investor who don’t chase the high returns in a short period, the suggesting period is during 6 months to 12 months.

### **Trading strategy**

Trading strategy is based on Moving Average and Bollinger Band. After finished the previous lab tasks, I find the Fibonacci Moving Average is more accurate comparing with others. At the same time, the system combine 2 MA line is not that accurate sometimes, so I choose 3 lines together to get the better result. The MA1 is MA(13), MA2 is MA(34), MA3 is MA(55). As I mentioned before, the project is mean to reduce the risk, so I also add Bollinger Band as another indicator. The upper bound and lower bound is from 2 stand deviation far. The center line is MA(13). The main idea of the strategy is that:

* When MA1>MA2 & MA1>MA3, judge the price if is higher than the upper bound of Bollinger Band. If is higher, sell all.
* When MA1<MA2 & MA1<MA3, judge the price if is lower than the lower bound of Bollinger Band. If is lower, buy.
* When the all profit is over 100%, sell them all to avoid the risk
* When the loss is over 15%, stop loss as soon as possible.
* In this project, I use iMA( ) functions. If the shift is one (the last digit in the function is 1), it means the value of yesterday. If the shift is zero (the last digit in the function is 0), it means the value of today. In my program, a MA use this concept to judge whether the cross occur. Because the cross happens when the price of a MA raises up, another one decreases and the smaller one will be larger, the larger one will be the smaller one.

### **Best Parameters**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | MA1 | MA2 | MA3 | Center line of BOLLINGER | EARNING | PROFIT |  |  |  |
| AUDNZD | 13 | 21 | 89 | 13 | 100/0 | 3491 |  |  |  |
| NZDJPY | 13 | 34 | 55 | 89 | 100/0 | 1123 |  |  |  |
| GBPUSD | 5 | 8 | 89 | 13 | 100/0 | 2959 |  |  |  |
| EURCAD | 13 | 55 | 89 | 13 | 2.18 | 2387 |  |  |  |
| USDSGD | 5 | 34 | 55 | 13 | 100/0 | 1819 |  |  |  |
| GBPAUD | 13 | 34 | 55 | 55 | 100/0 | 2970 |  |  |  |
| EURCHF | 5 | 8 | 13 | 13 | 100/0 | 4471 |  |  |  |
| NZDUSD | 5 | 8 | 34 | 13 | 100/0 | 5461 |  |  |  |
| EURJPY | 21 | 34 | 55 | 13 | 1.7 | 2396 |  |  |  |
| USDCAD | 21 | 34 | 55 | 55 | 100/0 | 3548 |  |  |  |
| \* The earning part is the profit factor in MT4, which means the rate of earning order/loss order. | | | | | | | | | |
| So 100/0 means that in the whole process, all the order earned the money. The start money is 10000 dollar. | | | | | | | | | |

### **Scope**

The strategy can be used in forex(currency), I randomly chose the ten products (above) in the test, it all performance well though some can’t earn a lot. Maybe it can also work for other products but still need more test.

### **Limitation and Future works**

* The sample size of the test is not large enough.
* Less varieties of testing period.
* Order and trade are not that much during a period.
* More parameters and more accuracy.
* Maybe the profit and the earnings can improve after modifying the strategy after getting better parameters and add more indicators.

### **Expected returns**

According to the test data, the expected monthly returns during 6%-12%.

### **References**

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