Homework 3: Dual Listing Arbitrage

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Abstract. In this homework we study pure arbitrage as a way of making risk-free profits by trading some volume between two markets. Even though the profits per trade are low compared to the amount of cash involved, it is still possible to make a significant profit over time.

1 Trading robot

1.1 Algorithm

1.2 Implementation

The previous algorithm is fundamentally implemented in three separate steps, executed every time there is a book update. These three steps are *offers and bids checking*, *trading* and *book updating*. We'll briefly explain

2 Results

As we can see in Table 2

3 Conclusion

Our main conclusion is that it takes a high investment to make a small profit. This seems like it is not a good investment, but there is no chance on making a loss. So we make a small risk-free profit without the risk of making a loss.

References

[1] P. Wilmott et al, *The Mathematics of Financial Derivatives*, 1995.

4 Appendix

Table 1: Cash moved for each feed.

#	CHI (Buy)	CHI (Sell)	EUR (Buy)	EUR (Sell)	Profit
1	-37407.95	74623.63	-74613.81	37412.86	14.73
2	-57272.87	24620.31	-24617.09	57280.36	10.71
3	-37686.14	29292.16	-29288.31	37691.10	8.81
4	-19650.57	85786.14	-85774.92	19653.14	13.79
5	-66249.23	57756.53	-57748.97	66259.82	18.15

Table 2: Assets moved for each feed.

#	CHI (Buy)	CHI (Sell)	EUR (Buy)	EUR (Sell)	Position
1	491	-982	982	-491	0
2	749	-322	322	-749	0
3	496	-385	385	-496	0
4	257	-1122	1122	-257	0
5	866	-756	756	-866	0