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*.

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	-18501.97	35695.85	-35691.16	18504.40	7.12
2	-23826.95	5345.29	-5344.59	23830.07	3.82
3	-11087.21	2813.76	-2813.39	11088.67	1.83
4	-3903.03	22975.02	-22972.01	3903.54	3.52
5	-25475.56	9780.81	-9779.53	25478.89	4.61

Table 2: Assets moved for each feed.

#	CHI (Buy)	CHI (Sell)	EUR (Buy)	EUR (Sell)	Position
1	243	-469	469	-243	0
2	312	-70	70	-312	0
3	146	-37	37	-146	0
4	51	-301	301	-51	0
5	333	-128	128	-333	0