Imperial College London

MEng Individual Project

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Department of Computing

Optimising Statistical Arbitrage Methods on Cryptocurrencies using Pure Arbitrage as a baseline

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Abstract

Your abstract goes here

Acknowledgements

Thanks mum!

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Hello [**?**]

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2.2 Arbitrage

Arbitrage is the process in which a trader simultaneously buys and sells an asset in order to take advantage of a market inefficiency [**?**]. Arbitrage is also possible in other types of securities by finding price inefficiencies in the prices of options, forward contracts and other exotics.

Sources have shown that the word "*Arbitrage*" has been used as early as the Renaissance era wehere surviving documents showed a large amount of bills being exchanged [**?**]. There has also been some evidence to suggest that arbitrage was used as early as the Greek and Roman eras. Objects such as Sumerian cuneiform tablets show trade of ancient bills however we cannot come to strong conclusions of this. Early forms of arbitrage would likely to have been purchasing a commodity then transporting them to a foreign land and selling them at a higher price. This is type of arbitrage is called commodity arbitrage and is still is applicable today. With the example above, transporting the goods takes a significant amount of to the merchant, trader, which could cause variations in the price, however in the modern day this has been reduced and with electronic exchanges this time to buy and sell is very small. This means inefficiencies in the market, where a trader can profit purely by buying and selling, should not exist. This is called the "Law of One Price". The "Law of One Price" states that every identical commidty or asset should have the same price regardless of exchange or location, given there are no transaction costs, no transportation costs, no legal restrictions, the exchange rates are the same and no market manipulation occurs [**?**]. This is because if this were not the case, an arbitrage opportunity would arise and someone would take advantage of the scenario causing the prices on both markets to converge due to the market forces. In the real world arbitrage opportunities are tremendously common, thus allowing a risk-free investment [**? ?**]. This project shows how these opportunities can be exploited both in a pure manner as well as using statistical methods.

2.3 State of Art

2.3.1 Pure Arbitrage Techniques

2.3.2 Statistical Arbitrage Techniques

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Appendix A

First Appendix

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