

Questions about Bitcoin Futures

In December 2017 several US exchanges began trading futures contracts on bitcoin (BTC). This case asks you to focus on the contract proposed by the Chicago Mercantile Exchange (CME). The main question of the case is whether (or to what extent) cash-and-carry arbitrage imposes upper and/or lower bounds on the futures prices.

Please review the links to articles and information sources that are posted on the Compass site. Prepare a brief report to address the questions below.

You are also encouraged to gather further information from your own research. (Be sure to appropriately cite all sources for information that you use in your report. Include urls for web-based sources.)

- **Question 1.** Summarize the possibilities for borrowing and lending bitcoin today.
If you own bitcoins, is there any way to safely lend them out? What interest rate can you earn? Can you lock-in an interest rate for 3-months or longer?
If you do so, who guarantees the transactions? Is there a collateral? Under what legal jurisdiction could you attempt to enforce the contract or seize the collateral?
If you want to borrow bitcoins, can you do the same transactions in reverse? How different are the borrowing and lending rates?
If you own or borrow bitcoin and just hold on to them, do you incur storage costs?
- **Question 2.** What about the dollar interest rates for doing futures arbitrage? If you lend dollars to someone who wants to buy bitcoin and you hold the bitcoin as collateral, what dollar rate can you earn? (Notice this is the same transaction as borrowing bitcoin and posting dollars as collateral.)
- **Question 3.** Does the settlement mechanism for the proposed CME contract guarantee an economically fair settlement price, i.e., one at which someone who is long or short spot could be sure of unwinding their positions if they wanted to? Are there technological or other types of events that could prevent the collection of an accurate settlement price?
- **Question 4.** Do you think the spot price of bitcoin is likely to be correlated with the net cost of carrying a long bitcoin spot position? Would you expect a positive or negative correlation? Why?
- **Question 5.** Suppose the spot value of BTC today is \$14,000. Given your answers to the questions above, and any other transaction costs that may apply estimate upper and lower (quasi-arbitrage) bounds for that restrict where 3-month futures can trade.