Research Topic: The Feasibility of Applying Blockchain Technology to the Taiwan Futures Market

Research Date: 2017/05/01 – 2017/11/30

Abstract:

The objective of this study was to survey the use of blockchain technology by foreign financial institutions and exchanges, evaluate the feasibility of utilizing the technology in the Taiwan futures market, and the plan for doing so.

The study showed that the use of blockchain technology would be most applicable to margin depositing and least feasible for trade matching. The study designed three mechanisms for reference purposes: 1) "Futures Coin"—a denomination of fiat money could be converted to "Futures Coin" through the currency exchange, which would be recorded in the "Futures Coin" blockchain. An investor could also convert securities certificates to an equivalent value of "Futures Coin" through the currency exchange. The "currency exchange" would query the amount of investor's deposited securities and determine the value based on the stock price; 2) decentralized storage of trading orders by broadcasting trading orders to futures firms to be recorded in the blockchain—the purpose is to use the blockchain's decentralization and inalterability of its data to guard against the malicious use or alteration of trading orders and to reduce the cost of information system maintenance; 3) automated margin calls—this would involve the use of smart contracts to automatically issue margin calls to futures firms, enabling inadequate margins to be automatically deposited.

The study recommended applying blockchain technology outside the scope of cryptocurrencies. For example, the technology could alleviate the need for many complicated checks typically required to allow free flow of information exchanged among exchange members and thus increase the efficiency of the futures market.