Statistical Property for the Limit Order of Foreign Exchange Market

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The amount of data has been radically increasing accompanied by the development of electronics devices, and the data set, so-called big data has attracted attention among econophysicists lately [1]. One of the big data in financial market is the Order Book Data, which includes the price and volume information for both transactions and limit orders. Limit order is the order placed by traders to buy or sell a certain number of volume at a specific price or better. This information is quite useful to understand the evolution of price in a short time range since the imbalance of supply and demand of market can be known with it. Indeed, price change is attempted to be described from the limit order information [2].

Limit order has, therefore, been thought to be important information to understand the price properties of financial market, and plenty number of researchers have analyzed the relation between limit order and price statistical property [3-4]. There, however, are few studies on the limit order itself. There must be some statistical property for the limit order since it is closely related to price movement which has many well-known statistical properties.

In this presentation, we will report that limit order is classified into stationary and non-stationary regimes. The critical point corresponds to the quantity shown by Ref. [2], which is the change-point of relation between price change and limit order volume change. This result implies existence of an underlying law for limit order, and we expect that this law will lead a new way for financial market analysis.

References

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