The effect of exchange policies on liquidity of cryptocurrency markets

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Introduction

Bitcoin has much attention nowadays by investors in recent years

Cryptocurrency is a decentralized electronic currency system

- The technology is based on peer-to-peer networks and cryptographic protocols
- Bitcoin is not managed by any governments or bank
- The characteristics have posed great challenges and opportunities for policy makers, economists, and researchers

Problem statement

The previous research

- focused was initially dominated by studies on the safety, ethical and legal aspects of Bitcoin

The exchanges(brokers) become a key issue on trading of cryptocurrency

- However there was a little attention on exchanges where the cryptocurrencies are traded

Exchange has their own trading policies

- Therefore, we examine the effect of its policies on efficiency of the cryptocurrency market

Goal of this study

The primary goal of this research is to examine the effect of specific exchange policies on the market liquidity.

- RQ1: To what extent are trading fee related to the market trading volume?

- RQ2: To what extent are availability of margin trading related to the market trading volume?

- RQ3: Does the location of headquarter or characteristics of different coins affect the market liquidity?

Data and Method

Trading volume(dependent variable) was collected

- from the cryptocurrency aggregation website which is called CoinMarketCap (https://coinmarketcap.com)
- Total 525 samples after the outlier screening

OLS approach was applied

- Dependent variable – *Trading Volume*
- Independent variables
  - *Taker Fee : Market order*
  - *Maker Fee : Limit order*
  - *Leverage : Margin trading*
  - *Minimum amount of order size*
  - *Number of coin traded in each exchange*
  - *Location : Headquarter of the exchange'*
  - *Price : average log price during the period*

Result

Table 3

OLS and regression result of exchange policy on market liquidity (trading volume)

	OLS (1)	OLS (2)	OLS (3)	OLS (4)
Dependent Var.	log_vol	log_vol	log_vol	log_vol
Intercept	10.101***	10.377***	12.6274***	9.902***
	(33.015)	(38.708)	(37.209)	(10.017)
MinTrade	9.803	19.4350**	12.8487**	8.608*
	(0.333)	(2.316)	(1.656)	(1.199)
Takerfee	-1.200	2.417*	0.6633	3.838***
	(-0.720)	(1.725)	(0.509)	(2.839)
Makerfee	-3.309**	-4.404***	-4.0353***	-3.293**
	(-1.830)	(-2.941)	(-2.92)	(-2.168)
leverage		0.084***	0.0496**	0.044**
		(3.255)	(2.067)	(2.067)
log_prc		-0.463***	-0.6059***	-0.758***
		(-15.610)	(-19.503)	(-21.259)
NumCoin			-0.009***	0.0018*
			(-9.673)	(1.567)
Coin Effect	NO	NO	NO	Yes
Country Effect	NO	NO	NO	Yes
Observations	525	525	525	525
R-squared	0.022	0.335	0.437	0.637
F-statistic	3.992	52.31	66.93	39.96

Result

Multicollinearity

- The largest correlation coefficient is 0.67 between MakerFee and TakerFee
- Theoretically, the two fees affect different impact to the market
- All the variables have VIF number less than 10

Correlation matrix of the variables

		1	2	3	4	5	6	7	8	VIF
1	CurRatio	1.000								1.5
2	NumCoin	-0.329	1.000							2.0
3	TakerFee	0.086	-0.176	1.000						5.9
4	MakerFee	-0.007	-0.063	0.667	1.000					4.1
5	Leverage	0.256	-0.184	-0.168	-0.167	1.000				1.3
6	MinTrade	-0.036	-0.111	-0.079	-0.130	0.072	1.000			1.2
7	log_prc	0.436	-0.514	0.137	0.040	0.153	0.077	1.000		1.8
8	log_vol	-0.048	-0.008	-0.117	-0.141	0.048	0.056	-0.545	1.000	3.7

Result

RQ1: Trading fee

- Each additional percentage increases in taker fee and maker fee affect the trading volume with the size of 3.83% and -3.23% (significant level of 0.05)

RQ2: Margin trading

- examined the effect of the level of leverage used in margin trading
- For every unit increase in *Leverage*, the trading volume increased by 4.4% with the confidence level of 95%.

Result

RQ3: Price

- The effect of coin price on the trading volume is the 1% increase of price result in 0.61% decrease of trading volume

Additional result

- We classified the coins into two group based on the aggregated number of coins traded
- All average value of the factors used in this regression analysis are statistically different

Difference in coins based on frequency

	BigCoin (1)	SmallCoin (0)	T-statstics	p-value
The number of coins	13	185		
The number of samples	256	269		
MakerFee	0.149	0.120	2.715	0.007
TakerFee	0.171	0.179	3.523	< 0.001
MinTrade	7.156e-03	3.604e-03	2.517	0.012
Leverage	7.296	1.489	2.818	0.005
Log_prc	-1.155	5.987	27.0721	< 0.001
Log_vol	8.447	10.442	-6.299	< 0.001

Conclusion

We examine

- The effect of exchange policy and rule of trade on market liquidity(trading volume)

This research reveals that

- as the taker fee increased and maker fee decreased trading volume increased
- availability of margin trade also statistically affect the trading volume with positive direction

This finding can be adopted to the exchange policies and its regulation.

Thank You