

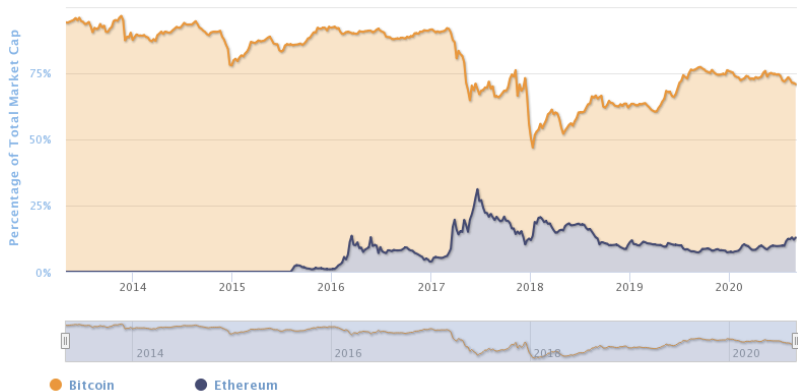
Discussion of  
“Competition or Contagion? Evidence from  
Cryptocurrency Peers”

by Gustavo Schwenkler and Hannan Zheng

Daniele Bianchi  
Queen Mary, University of London

SoFiE Seminar  
September 7th, 2020

# Why should we care



- BTC and ETH together cover 70% of the crypto market
- By comparison Apple, Microsoft, Alphabet, Amazon and Facebook account for less than 20% of the S&P 500.

# Contagion vs competition

Idiosyncratic shock/news

# Contagion vs competition

Idiosyncratic shock/news

**Contagion:** market- or industry-wide repercussions because of fundamental linkages → comparability and/or survival effect.

- Prices react similarly

# Contagion vs competition

**Event:** Sep 2nd, 2020. South Korean authorities have reportedly seized Bithumb (second largest Korean exchange) for a fraudulent token sale.

- Market-wide sell-off (e.g., Litecoin, ChainLink, Tezos, and Ox)



# Contagion vs **competition**

Idiosyncratic shock/news

**Contagion:** market- or industry-wide repercussions because of fundamental linkages → comparability and/or survival effect.

- Prices react similarly

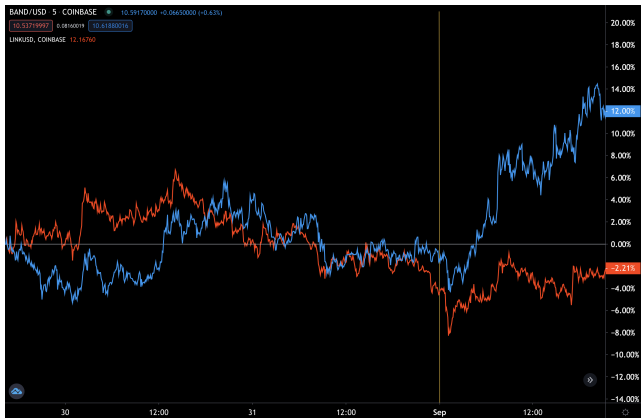
**Competition:** opportunity for competing firms to increase their market share → rebalancing of profits, cash flows, wealth.

- Prices react in opposite way.

# Contagion vs competition

**Event:** Aug 31st, 2020. Band Protocol (BAND) form strategic partnership with TRON for scalable oracle-blockchain integration.

- Prices of close **competitors** BAND (\$210mln) and ChainLink (\$4.2bln) strongly diverge.



## My Comments:

1. Competition in crypto markets
2. The role of BTC and ETH
3. Competition, ownership concentration and time held
4. Peer distance

## Identify competition.

*'The [...] announcement can reveal that the firm has become less efficient and that the competitive position of the other firms in the industry has improved. [...] hence create profitable opportunities for other firms in the industry.'*

Lang and Stulz (1992, JFE)

## Identify competition.

*'The [...] announcement can reveal that the firm has become less efficient and that the competitive position of the other firms in the industry has improved. [...] hence create profitable opportunities for other firms in the industry.'*

Lang and Stulz (1992, JFE)

Main ingredients for a “competitive effect”:

- Concentrated sector/industry/market.
- Rebalance of profits/cash flows/market share after a shock.
- Product/service competition  
(e.g., Facebook vs Twitter/Apple vs. Samsung)

## Identify competition.

*'The [...] announcement can reveal that the firm has become less efficient and that the competitive position of the other firms in the industry has improved. [...] hence create profitable opportunities for other firms in the industry.'*

Lang and Stulz (1992, JFE)

Main ingredients for a “competitive effect”:

- Concentrated sector/industry/market.
- Rebalance of profits/cash flows/market share after a shock.
- Product/service competition (e.g., Facebook vs Twitter/Apple vs. Samsung)

This paper:

Yes

Maybe

Not so sure

## Identify competition.

### Aave Becomes Second DeFi Project to Overtake MakerDAO for Most Crypto Deposited

Aug 25, 2020 at 07:20 UTC · Updated Aug 25, 2020 at 14:09 UTC



*(U.S. Marine Corps, modified by CoinDesk)*

Decentralized finance (DeFi) credit market Aave has pulled ahead of stablecoin mint MakerDAO for the title of most collateral staked on Ethereum, according to DeFi Pulse.

- **Aave** is a peer-to-peer lending platform built on ETH
- **MakerDAO** governance token for the stablecoin DAI built on ETH

# Identify competition.

Link	Sample sentence
(Bibox Token, Ontology)	<i>"While there is still some time left for people to start trading ONT against fiat, those who are in a hurry to explore new token listings on BiboxEurope will soon be able to do so with BIX tokens which are expected to be available soon for fiat trading on the platform."</i>
<u>(Binance Coin, Ripple)</u>	<i>"More specifically, there are now people who genuinely believe Binance Coin's market cap will surpass that of XRP."</i>
<u>(Bitcoin, Ethereum)</u>	<i>"ETH holds greater risks when compared with BTC as it shows greater strength during rally."</i>
<u>(Bitcoin, Litecoin)</u>	<i>"In fact, Mike Novogratz, the head of Galaxy Digital, recently explained that LTC is overvalued and that investors should buy BTC instead."</i>
<u>(Bitcoin, Ripple)</u>	<i>"Although the current BTC trend is pretty significant, there is good reason to keep an eye on the XRP price as well."</i>
(Bitshares, Steem)	<i>"BitShares is listed before Steem, although Steem has arguably on-boarded more users than most platforms one can name."</i>
<u>(Dash, Stellar Lumens)</u>	<i>"BitGo, a major Palo Alto - based cryptocurrency startup, is adding Stellar Lumens (XLM) and Dash (DASH) to its list of cryptocurrencies that it offers custodian solutions for, signaling that the two cryptocurrencies are seen as being unique and practical enough to pass the company's selective coin addition process."</i>
(Gas, Neo)	<i>"There may be new contenders for this digital crown, though, and NEO and its smaller sibling, GAS, could be among them."</i>
(Icon, Wanchain)	<i>"On paper, it may sound like ICX has fared only marginally worse than WAN, and yet it would take a 20x multiple for icon to reach its former peak of \$12.04 per token."</i>
<u>(Ripple, Stellar Lumens)</u>	<i>"Both XRP and Stellar Lumens (XLM) are distributed ledger technology (DLT)-based platforms that aim to provide cross-border payments solutions between large banks and financial firms."</i>

Table 6: Sample sentences in which we identify links between two cryptos.

## Identify competition.

Possibly a non-trivial set of peers may **not be competitors** per se

### Comments:

- Can we rule out is not **risk shifting/substitution** effects which generates divergence between “peers”?
- This may be especially relevant since peers are clustered by market cap/volume, etc.

## Identify competition.

Possibly a non-trivial set of peers may **not be competitors** per se

### Comments:

- Can we rule out is not **risk shifting/substitution** effects which generates divergence between “peers”?
- This may be especially relevant since peers are clustered by market cap/volume, etc.

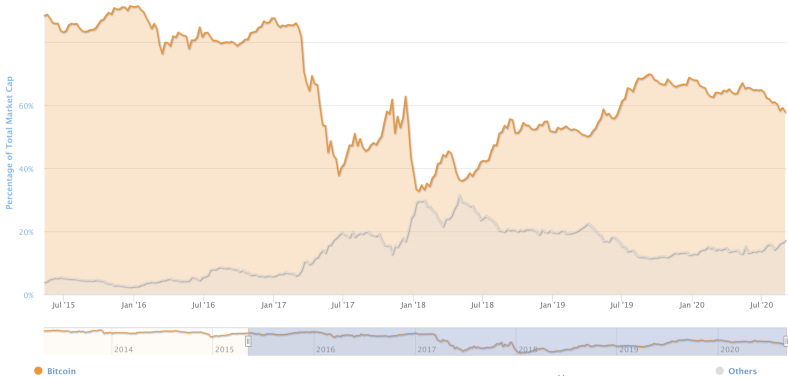
CoinTelegraph August 7th, 2020

## **Bitcoin Dominance Slides to 12-Month Low as Crypto Market Cap Tests Resistance**

Bitcoin's dominance has fallen to a 12-month low despite its recent rally, signaling renewed strength in the altcoins markets.

# Identify competition.

## Market cap of BTC vs Altcoins



## Identify competition.

**Cluster cryptocurrencies is difficult**, but perhaps we could separately look at peers which openly compete to each other based on their target investors/funds/customers, e.g.,

### Smart-contract platforms:

- Ethereum, Cardano, EOS, Algorand, Cosmos, Tezos, etc.

### Peer-to-peer payments:

- Ripple, Stellar, Dash, etc.

### Decentralised Finance (DeFi):

- Compound, Aave, CoinLoan, Kyber Network, BlockFi, Ox, etc.

# The role of BTC and ETH

BTC and ETH **dominate** crypto markets for fundamental reasons, i.e., investment vehicle + smart contracts. Two consequences:

- Most news cover BTC, ETH.

# The role of BTC and ETH

		# Mentions	# Links	HC	EVC
Top 10 (# mentions)	<u>BTC</u>	<u>110125</u>	14867	0.018	0.330
	XRP	52654	5028	0.014	0.093
	<u>ETH</u>	<u>46392</u>	7918	0.015	0.172
	BNB	32870	2497	0.017	0.045
	MIOTA	10447	120	0.012	0.000
	BSV	9076	8067	0.012	0.284
	NEO	6216	699	0.014	0.003
	DASH	6118	420	0.013	0.004
	XLM	5488	735	0.014	0.006
	ADA	4171	514	0.013	0.006
Bottom 10 (# mentions)	SXP	24	0	0.000	0.000
	DGD	21	3	0.008	0.000
	MAID	19	5	0.009	0.000
	MANA	17	0	0.000	0.000
	ZRX	16	3	0.010	0.000
	PPT	15	0	0.000	0.000
	GBYTE	14	2	0.009	0.000
	ARDR	12	1	0.007	0.000
	RLC	12	0	0.000	0.000
	ZB	6	0	0.000	0.000

Table 5: Number of mentions in the news, number of links, and eigenvalue and harmonic centrality scores

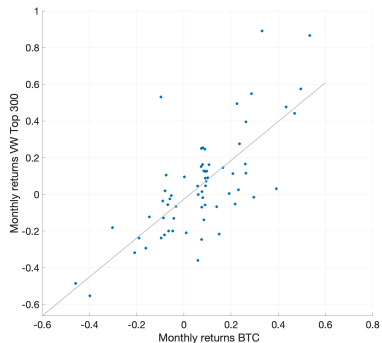
# The role of BTC and ETH

BTC and ETH **dominate** crypto markets for fundamental reasons, i.e., investment vehicle + smart contracts. Two consequences:

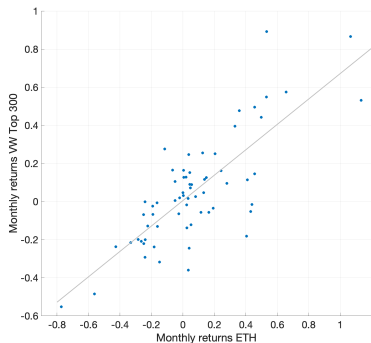
- Most news cover BTC, ETH.
- The vw market portfolio highly correlates with BTC, ETH.

# The role of BTC and ETH

BTC, ETH vs VW Mkt index (Top 100, sample July 2015-July 2020)



(a) BTC vs VW Market portfolio



(b) ETH vs VW Market portfolio

# The role of BTC and ETH

BTC and ETH **dominate** crypto markets for fundamental reasons, i.e., investment vehicle + smart contracts. Two consequences:

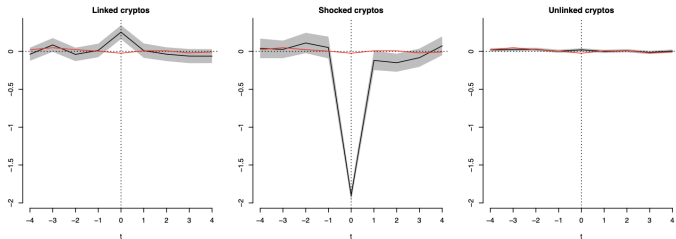
- Most news cover BTC, ETH.
- The vw market portfolio highly correlates with BTC, ETH.

## Comments:

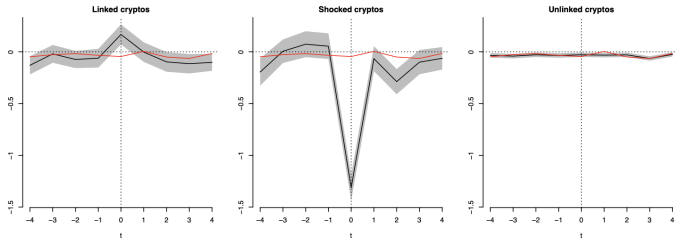
- It could be that working with **excess returns** can skew the results towards smaller, lower-beta, cryptos.
- Perhaps excluding BTC and/or ETH from the sample can shed some further light.

N.B., not sure controlling for size is enough indeed as there is a strong “level factor” in crypto.

# Competition, ownership concentration and time held



(a) Standardized idiosyncratic return in week  $e + t$ , where  $e$  is the event week.



(b) Standardized return in week  $e + t$ , where  $e$  is the event week.

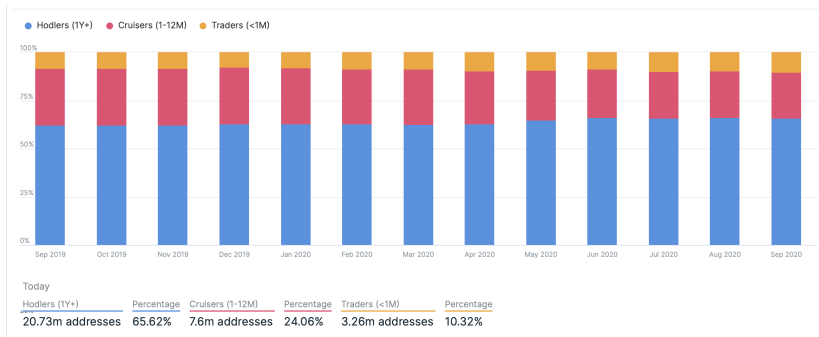
## Competition, ownership concentration and time held

There seems to be a “transitory” competition effect among peers.

- The “shocked” peer decreases in value quicker than linked peers.
- The reaction is close to average returns after few week.

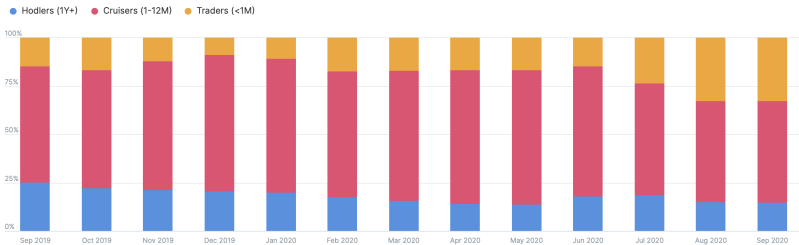
# Competition, ownership concentration and time held

## Bitcoin (BTC) ownership by time held



# Competition, ownership concentration and time held

## ChainLink (LINK) ownership by time held



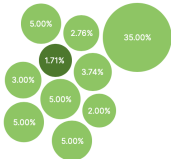
Today

<u>Hodlers (1Y+)</u>	<u>Percentage</u>	<u>Cruisers (1-12M)</u>	<u>Percentage</u>	<u>Traders (&lt;1M)</u>	<u>Percentage</u>
32.72k addresses	14.81%	116.19k addresses	52.60%	71.98k addresses	32.59%

# Competition, ownership concentration and time held

## LINK and BTC ownership concentration, i.e., Whales

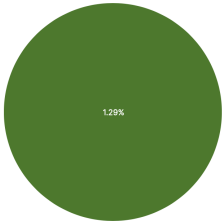
● Low Activity Addresses ● High activity addresses



Number of Whales   Whales Concentration  
10   **68.20%** 682.05m LINK

(c) Chainlink

● Low Activity Addresses ● High activity addresses



Number of Whales   Whales Concentration  
1   **1.29%** 237.5k BTC

(d) Bitcoin

## Competition, ownership concentration and time held

There seems to be a “transitory” competition effect among peers.

- The “shocked” peer decreases in value quicker than linked peers.
- The reaction is consistent with average returns after few week.

### **Comments:**

- Short-term effects may be consistent with speculation/risk-shifting behaviors.
- Can we delve further to understand if the effect is a function of ownership concentration and/or time held, i.e., floating capital?

## Peer distance

There could be differences in the reaction of peers depending on how “far” they are from the shocked crypto.

- e.g., BTC reacts more to a shock to Litecoin (LTC) than to some small crypto, despite being related.

# Peer distance

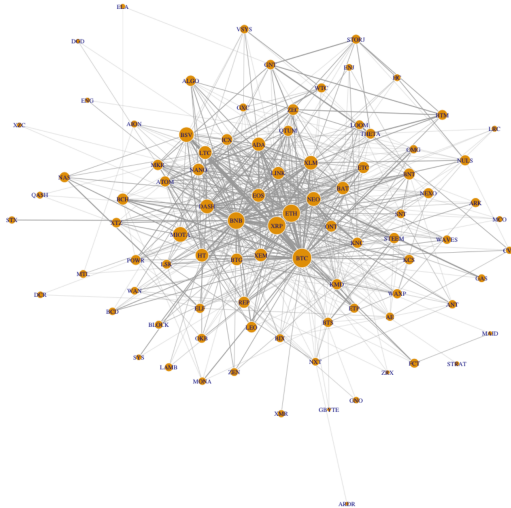


Figure 4: Network of crypto assets implied by the full news data sample covering the period October 1, 2017, through December 31, 2019. The size of a node is proportional to the logarithm of the number of times that crypto is mentioned in the news. The width of a link between two cryptos is proportional to the logarithm of the number of times that link is identified in the news data.

# Peer distance

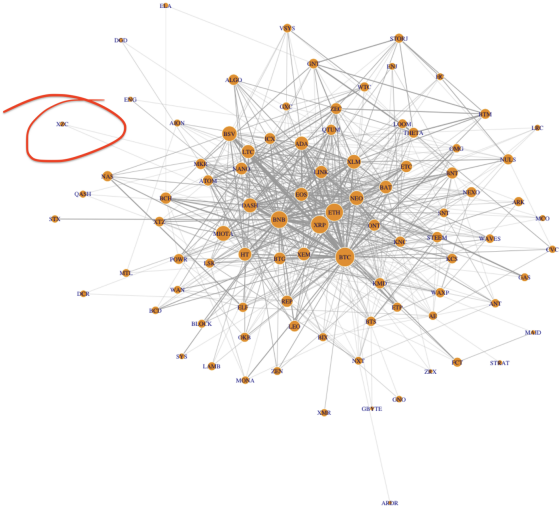


Figure 4: Network of crypto assets implied by the full news data sample covering the period October 1, 2017, through December 31, 2019. The size of a node is proportional to the logarithm of the number of times that crypto is mentioned in the news. The width of a link between two cryptos is proportional to the logarithm of the number of times that link is identified in the news data.

# Peer distance

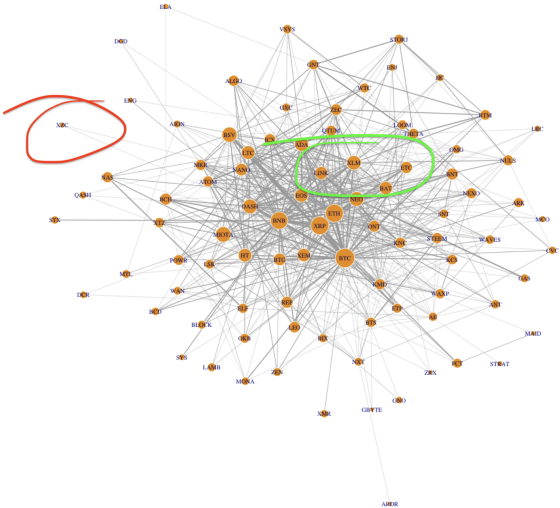


Figure 4: Network of crypto assets implied by the full news data sample covering the period October 1, 2017, through December 31, 2019. The size of a node is proportional to the logarithm of the number of times that crypto is mentioned in the news. The width of a link between two cryptos is proportional to the logarithm of the number of times that link is identified in the news data.

## Peer distance

There could be differences in the reaction of peers depending on how “far” they are from the shocked crypto.

- e.g., BTC reacts more to a shock to Litecoin (LTC) than to some small crypto, despite being related.

**Comments:** Distance from shocked cryptos to peers could possibly matter:

- Can we disentangle the effect of a shock to “closer” vs “distant” cryptos (distance based on network centrality measures, e.g., Betweenness centrality/Closeness)?
- Perhaps sorting linked cryptos based on distance could add some more heterogeneity to the results, e.g., double-sorting on distance and size.

## Conclusion

**Recommended reading, very interesting paper !!**