

Price Patterns and Phases of ICOs

Demelza Hays
dh@incrementum.li
October 3, 2017

1. Motivation

- Is the price formation of every cryptocurrency random or do prices follow a pattern?
- This could be an opportunity for active trading strategies. Should investors invest before, during, or after an ICO?
- This paper relies on price time series data from 2013 through 2017.

2. Traditional Theory on IPOs

- J.Ritter (1991, p. 2) found that stock IPO prices are 16% lower during the IPO on the primary market compared to the price on the secondary market at the 3-year anniversary of the IPO.
- The more media exposure and hype that a stock gets, the higher the number of stock purchases (Barber and Odean, 2007, p. 785).
- More media exposure leads to overvaluation and bubble formation (Barberis and Schleifer, 2003, p. 161).

2.1 IPO vs. ICO

- To invest in an IPO in America, investors must have a net wealth ranging from \$100,000 to \$500,000 and between \$100,000 and \$500,000 invested in the brokerage account that will be invested in the IPO.
- Investors must be at least 18 years old.
- Trading can only occur during regular stock market business hours Monday - Friday.
- Majority of Americans are barred from participating in IPOs.
- ICOs allow lower and middle class people to invest in ideas that they believe will succeed while only rich people can invest in IPOs.
- According to the PWC report, *Considering an IPO* (2012) firms have to pay \$3.7 million to go to IPO.
- ICOs are basically free to operate and the company that performs the ICO has “no skin in the game.”

2.2 Caveat

- Important to keep in mind: What is called an ICO in the cryptocurrency world is not exactly a parallel concept to an IPO.
- An ICO is more of a crowdfund whereas the first day the token is launched on an exchange is the IPO because you cannot easily trade your tokens during an ICO. Instead, investors have to wait until the token is launched on an exchange.
- Therefore, the more fitting equivalent of a stock IPO is the first day a token is launched on an exchange. However, this still does not fit exactly because firms that go to IPO usually have a history and a track record for investors to research. In contrast, many of the firms going to ICO now do not have a history.









3. Hypothesis for Price Pattern of Real Cryptocurrency ICOs

- Due to the regulatory differences between IPOs and ICOs, the ICO market should attract lower average investments, scam ICO companies, and more market manipulation, which makes the lessons learned from the IPO market not directly applicable.
- Hypothesis: Cryptocurrency price fluctuations do not follow a random walk. Instead, the price fluctuations depend on independent variables and a random variable component.
- Similar to stock IPO's, most cryptocurrency ICO's will have four primary phases:
 1. ICO
 2. Post-ICO – Phase between when the ICO is finished but the coin has not been accepted by an exchange.
 3. Exchange Adoption
 4. Mainstream Adoption – Three year anniversary of ICO.

3.1 Hypothesis for Price Pattern of Real Cryptocurrency ICOs

- Due to no barriers to entry for investors or for firms, ICOs should not have the systematic underpricing pattern that stock IPOs have. Everyone who demands a token can enter the market. On the other hand, some people, who are sometimes not even incorporated in any geographic location, are launching ICOs without any costs.
- These two components **should result in a pattern of ICO overpricing.**

4. Readily Available Data on ICOs from 2014 through 2017

	Storj-x	Completed	\$461,802.00	Aug 2014	\$0.009	\$0.530	58.76x
	Bitcrystals (Spells of Genesis)	Completed	\$200,000.00	Sep 2015	\$0.015	\$0.373	25.22x
	Augur	Completed	\$5,300,000.00	Oct 2015	\$0.602	\$21.171	35.15x
	Iota	Completed	\$584,000.00	Dec 2015			
	DigixDAO	Completed	\$5,500,000.00	Mar 2016	\$3.235	\$76.450	23.63x
	Lisk	Completed	\$6,500,000.00	Mar 2016	\$0.076	\$6.066	79.32x
	The DAO	Failed	\$150,000,000.00	May 2016			
	Waves	Completed	\$16,010,008.00	May 2016	\$0.188	\$4.820	25.59x

4.1 Not Readily Available Data

- Although, the most recent ICOs are being well documented online, there are not enough data observations available to make reliable inferences. Therefore, this paper focuses on coins that have at least 3 years of price data available as per Ritter (1991).
- Unfortunately, the original ICOs are poorly documented. The preliminary analysis in this paper required case studies on each of the oldest cryptocurrencies that went to ICO between 2013 and 2014.
- I could not find a coin that went to ICO before 2013.
- Data is provided by a number of press releases and coinmarketcap.com API.

4.2 Case Studies - 2013

- BitcoinStarter: Disappeared after raising 60 BTC during ICO in April of 2013
- Seedcoin: Ran two ICOs in April of 2013 before rebranding themselves as Coinsilium.
 - Seedcoin had ICOs for itself and for its incubator startups:
 - (250) Bitcoin Transaction Network, (250) Quantave, (250) Global Coin FX, (250) Ignite Financing, (250) BTCTrip, (250)BITnews Media, (150) Tagpesa
 - Price of BTC on April 24, 2014 = 500
 - All companies have disappeared.
- Mastercoin: June 2013
- Nextcoin: September 2013
- Dealcoin: Disappeared after raising 500 BTC during ICO in September of 2013

4.3 Case Studies - 2014

- BitShares: January, 2014
- Nubits: January, 2014
- AngelShares: January, 2014
- Counterparty: January, 2014
- Mailsafe: April, 2014
- Qora: April, 2014
- Startcoin: June, 2014
- Storj-x: August, 2014
- Ethereum: August, 2014
- LXCcoin: Disappeared after raising £50,000 during ICO in September of 2014

4.4 LXCcoin – Advertised as competitor to Bitcoin

The Telegraph

LXC Coin crowdfunds in challenge to Bitcoin

Cryptocurrency enthusiasts can now dabble in peer-to-peer lending with challenger coin, LXC

ICO-Phase

September 12, 2014

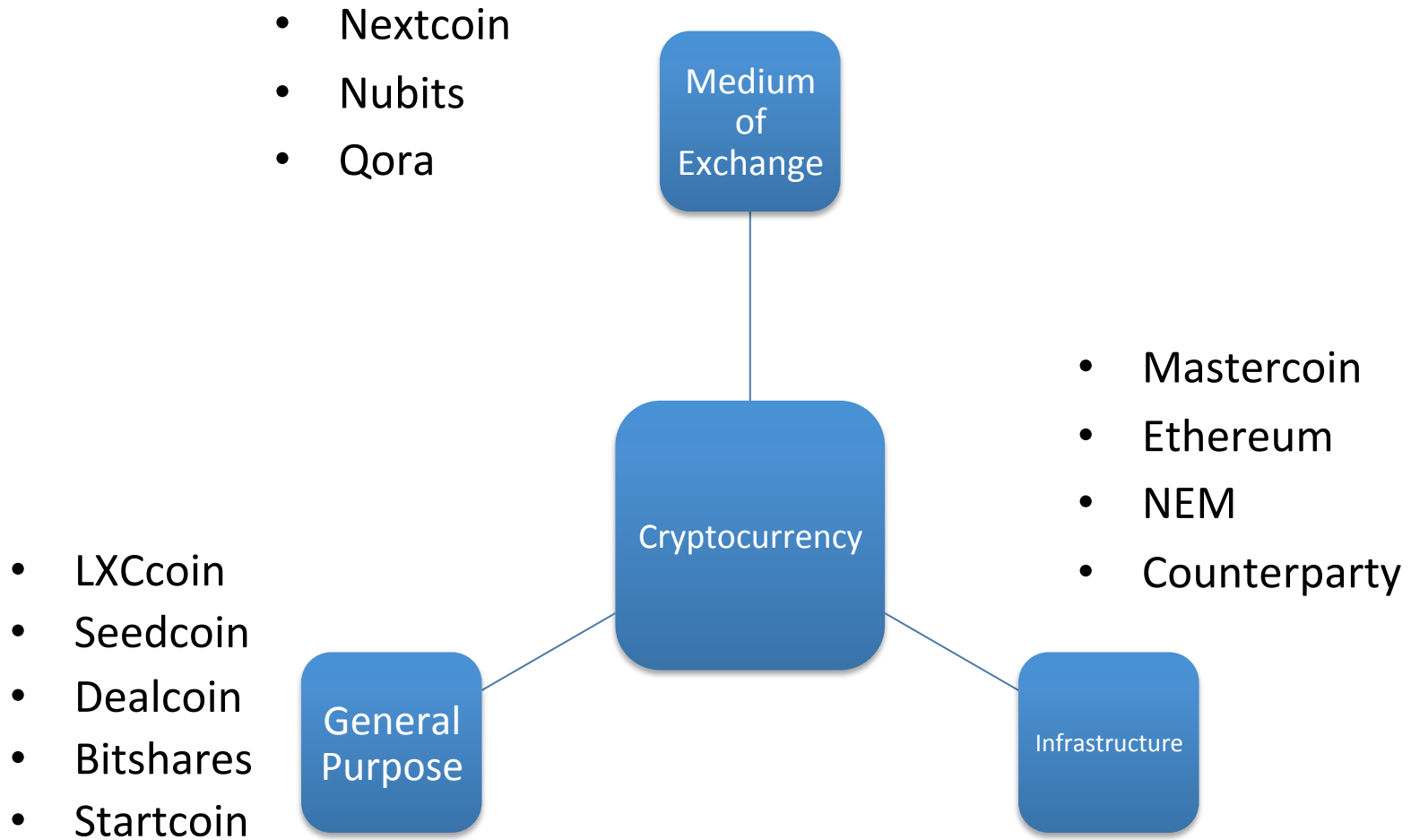
ICO set price at £1 per LXCcoin

A report on a blog from October 2014 states that £50,000 was collected within three weeks.

No further reports have been made.

No trading is available.

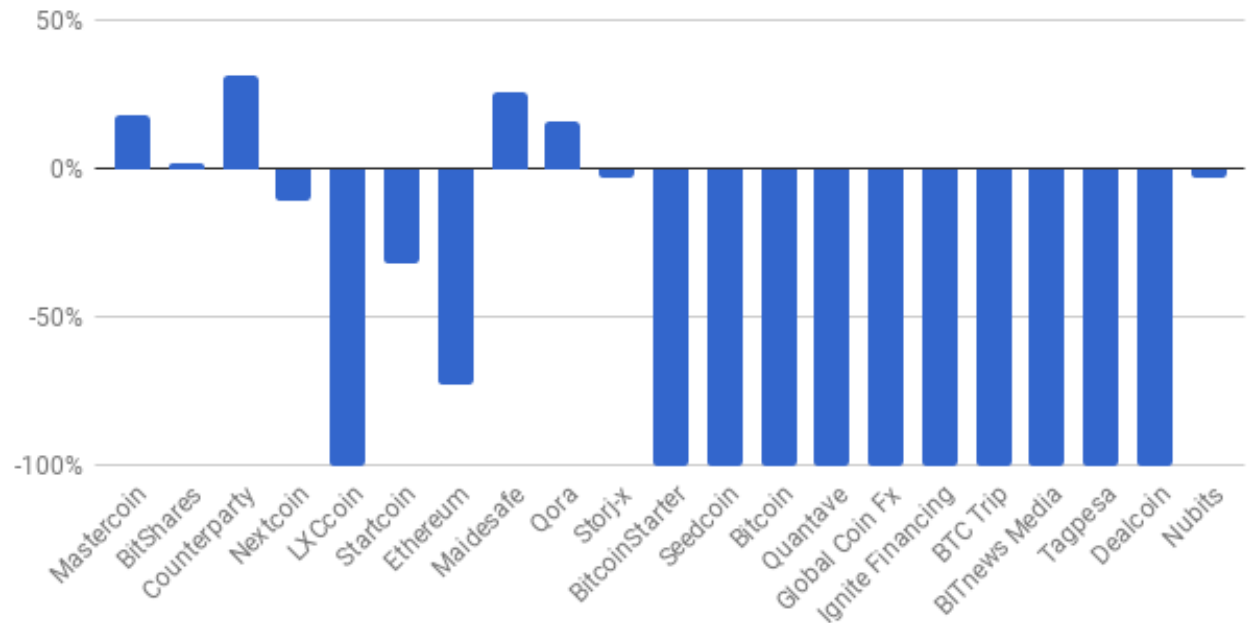
4.5 Different Applications of ICO Projects



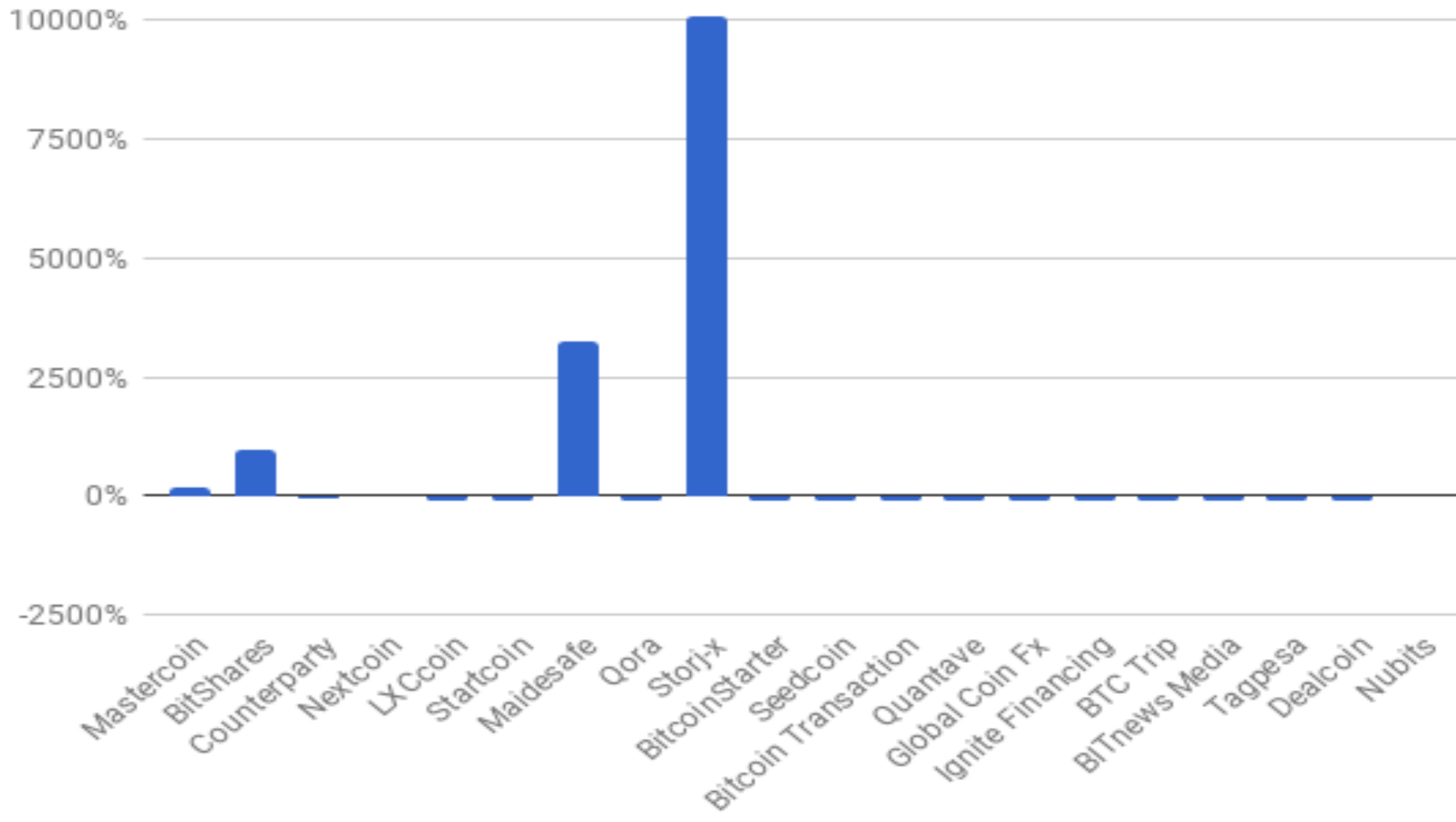
5. Preliminary Results: ICO Returns

- By analyzing several ICOs, ICOs show an empirical pattern of overpricing on average. Theoretical foundations provide support for this finding. This column graph shows the return on the first day the coin was launched on an exchange. Only 5 out of 21 ICOs in 2013 had a positive return.

IPO Return on Investment for 2013 and 2014 Cryptoassets



5.1 Preliminary Results: 3 Year Anniversary Returns



6. Conclusion

- 5/21 ICOs had a positive return on the first day they were launched.
 - Even Ethereum lost 73% in value the day it was launched on an exchange.
- 3/20 from 2013 had a positive 3-year return.

6.1 Limitations

- Due to the limited amount of data, there is not enough data to have a reliable result. The coins shown are not representative of the entire population of cryptocurrency ICOs because they were not randomly chosen, and there are not over 30 coins, therefore, the central limit theorem does not apply. Further research should expand the statistical research to all ICOs where data is available.
- The market has changed rapidly since these coins went to ICO. If a price pattern does exist and investors determine the pattern, then the pattern will change. For example, if the price always increases after the ICO then investors will try to invest during the ICO phase. If a large number of investors invest during the ICO phase in anticipation of post-ICO gains, then the ICO price may become overvalued.

Questions?

- Thank you for coming! Please email me at demelza.hays@uni.li