

IST 718 Final Project


























Cryptocurrency Price Prediction

Cryptocurrencies


























150+ cryptos on the Coinbase asset directory

Asset Directory


























O-D

-  Ox ZRX
-  1inch 1INCH
-  Aave AAVE
-  Alchemix ALCX
-  Alchemy Pay ACH
-  Adventure Gold AGLD
-  Algorand ALGO
-  Amp AMP
-  Ampleforth Governance Token FORTH
-  Ankr ANKR
-  API3 API3
-  ARPA Chain ARPA
-  Assemble Protocol ASM
-  Augur REP
-  Avalanche AVAX
-  Aventus AVT
-  Axie Infinity AXS
-  Badger DAO BADGER
-  Balancer BAL
-  Bancor Network Token BNT
-  Band Protocol BAND
-  BarnBridge BOND
-  Basic Attention Token BAT
-  Biconomy BICO
-  Bitcoin BTC

E-P

-  Enjin Coin ENJ
-  Enzyme MLN
-  EOS EOS
-  Ethereum ETH
-  Ethereum Classic ETC
-  Ethereum Name Service ENS
-  Fetch.ai FET
-  Filecoin FIL
-  Function X FX
-  Gala GALA
-  Bitcoin GTC
-  Gods Unchained GODS
-  Goldfinch GFI
-  Golem GNT
-  GYEN GYEN
-  Harvest Finance FARM
-  Horizen ZEN
-  IDEX IDEX
-  iExec RLC RLC
-  Immutable X IMX
-  Internet Computer ICP
-  Inverse Finance INV
-  IoTeX IOTX
-  Jasmy JASMY
-  Keep Network KEEP

P-Z

-  PlayDapp PLA
-  Pluton PLU
-  Polkadot DOT
-  Polkastarter POLS
-  Polygon MATIC
-  Polymath POLY
-  Polyswarm NCT
-  Powerledger POWR
-  Propy PRO
-  Quant QNT
-  Quantstamp QSP
-  QuickSwap QUICK
-  Radicle RAD
-  Rai Reflex Index RAI
-  Rally RLY
-  Rari Governance Token RGT
-  Rarible RARI
-  Ren REN
-  Render Token RNDR
-  Request REQ
-  Ribbon Finance RBN
-  Shapeshift FOX Token FOX
-  Shiba Inu SHIB
-  Shping Coin SHPING
-  SKALE SKL

Top 20 MOST Traded Cryptocurrencies

	Ticker <chr>	Slug <chr>	Average 24 Hour Trading Volume <chr>
1	USDC	USD Coin	129088271300
2	USDT	Tether	39268880411
3	BTC	Bitcoin	14825454741
4	ETH	Ethereum	12442367940
5	BCH	Bitcoin Cash	2304034022
6	SHIB	Shiba Inu	1989249861
7	EOS	EOS	1893479715
8	DOT	Polkadot	1886469905
9	LTC	Litecoin	1577010599
10	ADA	Cardano	1202764582
11	ETC	Ethereum Classic	1110775055
12	SOL	Solana	1052860276
13	DOGE	Dogecoin	1037022421
14	LINK	Chainlink	789422563
15	AVAX	Avalanche	596607468
16	MATIC	Polygon	534522132
17	XLM	Stellar Lumens	489744966
18	DASH	Dash	444738595
19	ATOM	Cosmos	440927569
20	AXS	Axie Infinity	431225149

Top 20 LEAST Traded Cryptocurrencies

	Ticker <chr>	Slug <chr>	Average 24 Hour Trading Volume <chr>
1	GFI	Goldfinch	861
2	SUPER	SuperFarm	3784
3	COMP	Compound	4108
4	MASK	Mask Network	25227
5	PLA	PlayDapp	37634
6	AVT	Aventus	184619
7	DESO	Decentralized Social	191053
8	PLU	Pluton	241983
9	UNI	Uniswap	302178
10	IMX	Immutable X	319586
11	TBTC	tBTC	327540
12	NCT	PolySwarm	365472
13	SHPING	Shping Coin	450714
14	SYN	Synapse	619798
15	MUSD	mStableUSD	634548
16	UPI	Pawtocol	762959
17	MIR	Mirror Protocol	783414
18	KRL	Kryll	859678
19	FOX	Shapeshift FOX Token	1111361
20	DDX	DerivaDAO	1335997

Top 20 Closest to Maximum Supply

	Ticker<chr>	Slug<chr>	Circulating Supply<chr>	Maximum Supply<chr>	Percent of Maximum Supply<chr>
1	GLM	Golem	1000000000.00	1000000000	100%
2	OMG	OMG Network	140245398.25	140245399	100%
3	REQ	Request	999876008.01	999877117	100%
4	YFI	Yearn Finance	36637.72	36666	99.92%
5	REN	Ren	999037500.36	1000000000	99.9%
6	BAT	Basic Attention Token	1496812315.45	1500000000	99.79%
7	VGX	Voyager Token	278482214.19	279387971	99.68%
8	YFII	DFI.Money	38596.00	39375	98.02%
9	FARM	Harvest Finance	672312.56	690420	97.38%
10	MKR	Maker	977631.04	1005577	97.22%
11	LRC	Loopring	1329675414.15	1374513896	96.74%
12	IOTX	IoTeX	9540779324.31	10000000000	95.41%
13	LPT	Livepeer	21164655.33	22906951	92.39%
14	BCH	Bitcoin Cash	19009368.75	21000000	90.52%
15	BTC	Bitcoin	18984437.00	21000000	90.4%
16	ENJ	Enjin Coin	870624705.57	1000000000	87.06%
17	INV	Inverse Finance	85635.32	100000	85.64%
18	AAVE	Aave	13643973.80	16000000	85.27%
19	ZRX	0x	847496054.80	1000000000	84.75%
20	CRO	Crypto.com Chain	25263013692.00	30263013692	83.48%

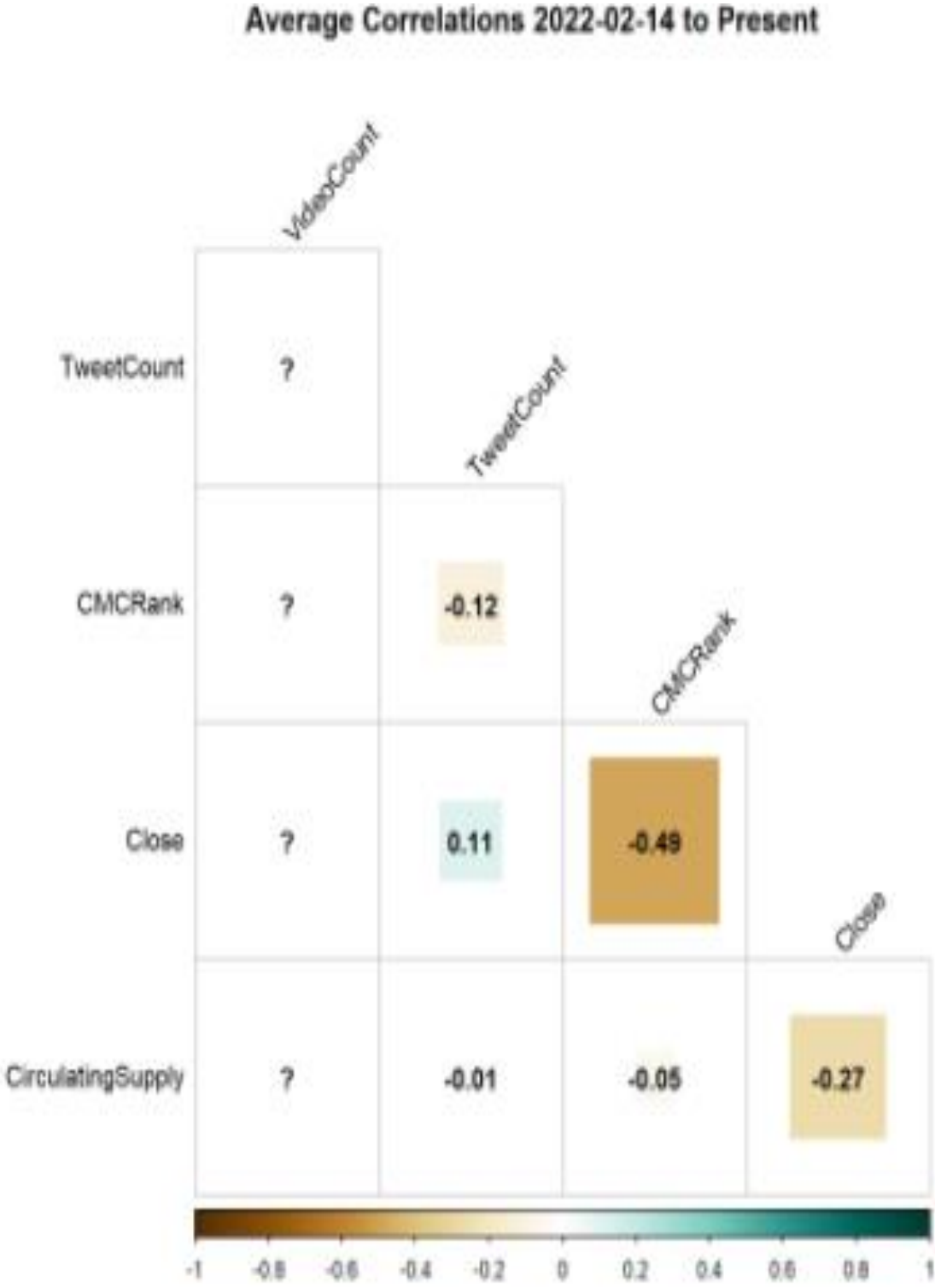
Top 20 Furthest Away from Maximum Supply

	Ticker<chr>	Slug<chr>	Circulating Supply<chr>	Maximum Supply<chr>	Percent of Maximum Supply<chr>
1	ORCA	Orca	0.00	100000000	0%
2	WLUNA	Wrapped LUNA	0.00	5183893	0%
3	FIDA	Bonfida	44729963.59	1000000000	4.47%
4	GODS	Gods Unchained	23660714.00	500000000	4.73%
5	RBN	Ribbon Finance	51527058.96	1000000000	5.15%
6	BAL	Balancer	6943831.00	100000000	6.94%
7	PLU	Pluton	1851999.50	20000000	9.26%
8	JASMY	Jasmy	4754930779.74	50000000000	9.51%
9	IMX	Immutable X	235284001.00	2000000000	11.76%
10	HIGH	Highstreet	12302500.00	100000000	12.3%
11	CRV	Curve DAO Token	462797146.69	3303030299	14.01%
12	LQTY	Liquity	17056911.84	100000000	17.06%
13	RLY	Rally	2565749432.27	15000000000	17.1%
14	NU	NuCypher	703000000.00	3885390082	18.09%
15	ENS	Ethereum Name Service	20244862.09	100000000	20.24%
16	AUCTION	Bounce Token	2083955.60	10000000	20.84%
17	FX	Function X	408520357.00	1893022625	21.58%
18	AXS	Axie Infinity	60907500.00	270000000	22.56%
19	UPI	Pawtocol	257924377.08	1000000000	25.79%
20	DDX	DerivaDAO	26094663.78	100000000	26.09%

Top 20 Largest Rate of Increase in Supply

	Ticker <chr>	Slug <chr>	Average Daily Increase In Circulating Supply (Units) <chr>	Average Daily Increase In Circulating Supply (Percent) <chr>
1	INV	Inverse Finance	6587	8.08%
2	PLA	PlayDapp	1731931	0.49%
3	FOX	Shapeshift FOX Token	1087188	0.4%
4	RAD	Radicle	108233	0.37%
5	CTX	Cryptex Finance	9464	0.31%
6	DIA	Dia	167927	0.26%
7	RNDR	Render Token	514561	0.23%
8	UNI	Uniswap	1571163	0.23%
9	ALCX	Alchemix	2095	0.14%
10	CELO	Celo	568642	0.14%
11	RLY	Rally	3794261	0.14%
12	POWR	Powerledger	588571	0.11%
13	ACH	Alchemy Pay	2878917	0.09%
14	ERN	Ethernity Chain	16792	0.08%
15	ASM	Assemble Protocol	753571	0.06%
16	KEEP	Keep Network	528267	0.06%
17	LQTY	Liquity	21031	0.06%
18	MATIC	Polygon	6099447	0.06%
19	SPELL	Spell Token	64786492	0.06%
20	UNFI	Unifi Protocol DAO	3714	0.06%

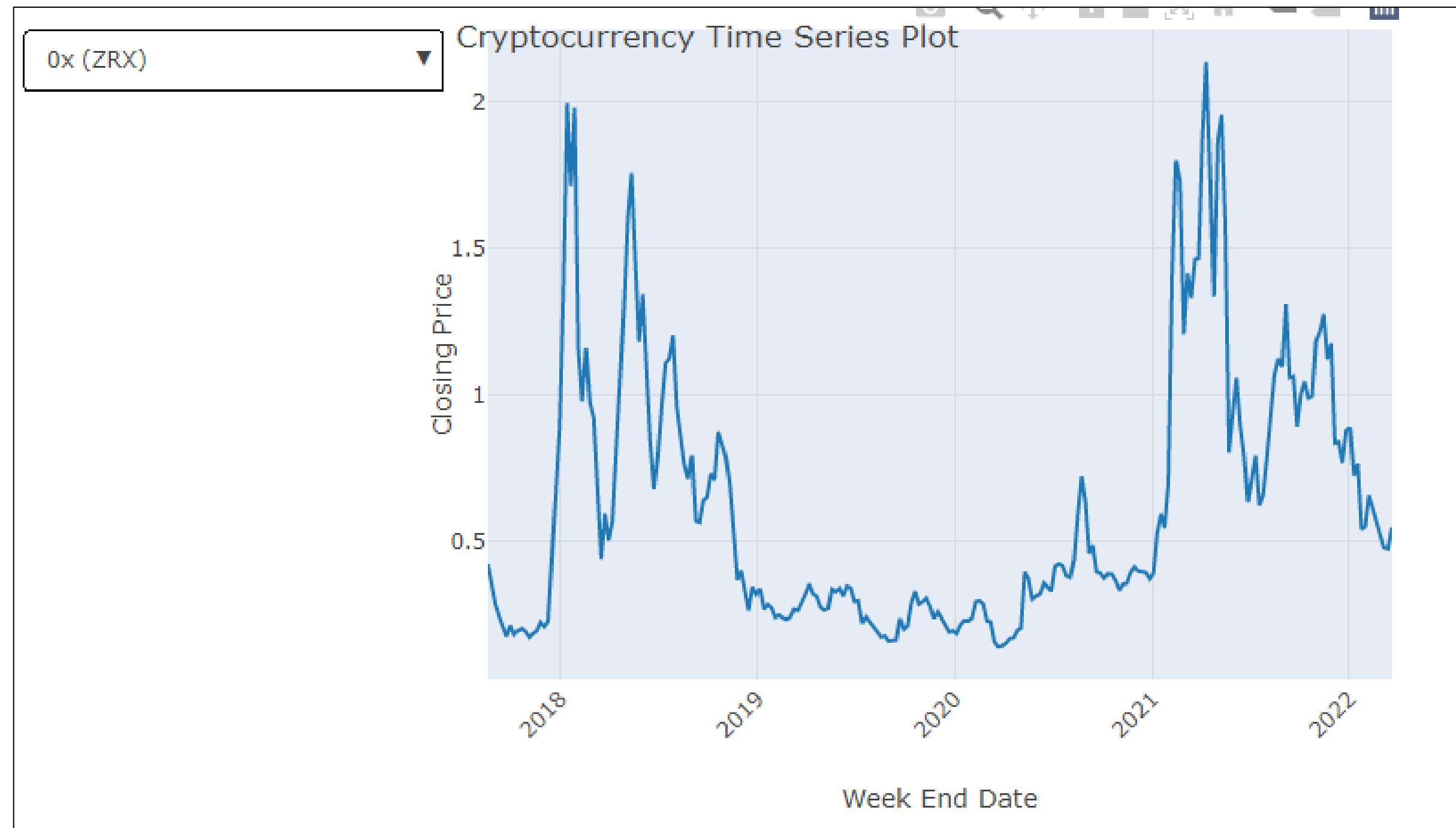
Correlation Matrix



Observations

- Notable correlations with CMCRank, CirculatingSupply, NASDAQ/DJI, and InterestLevel, and Volume

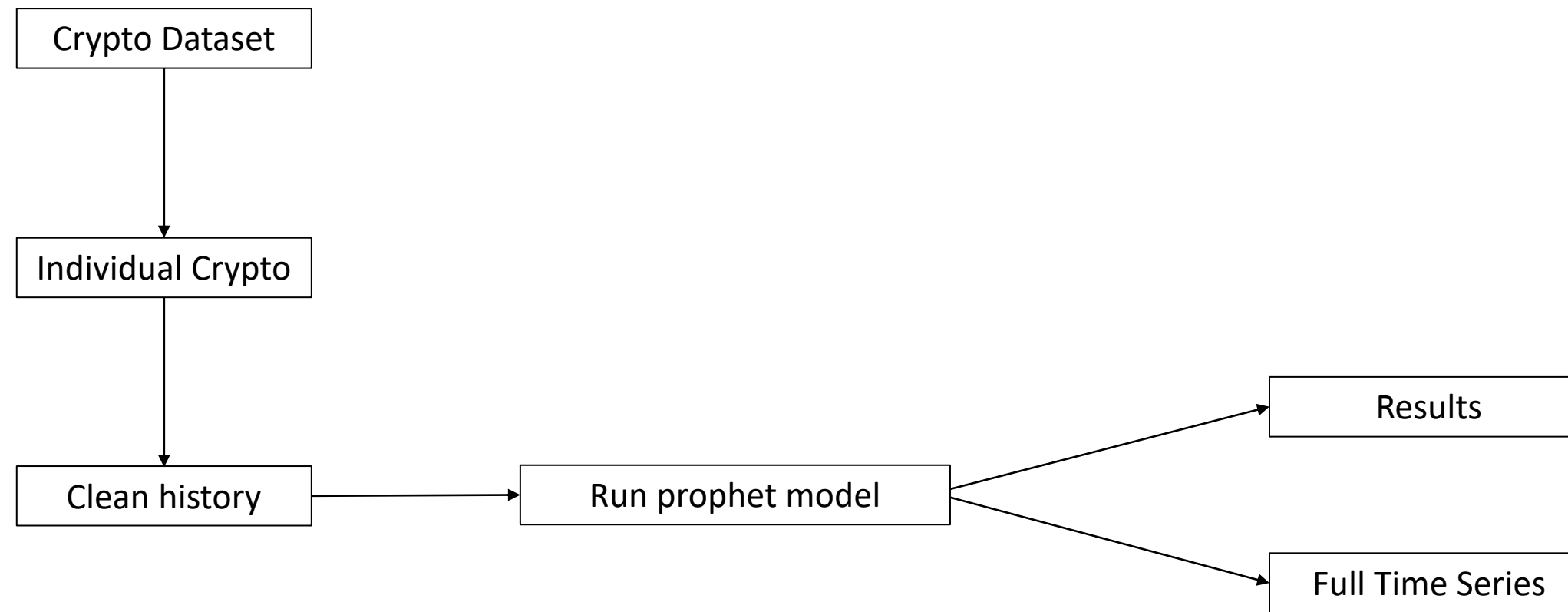
Time Series Plot



Observations

- Wanted to get the additional variables as separate lines in the chart but was not able to do so

Data Modeling

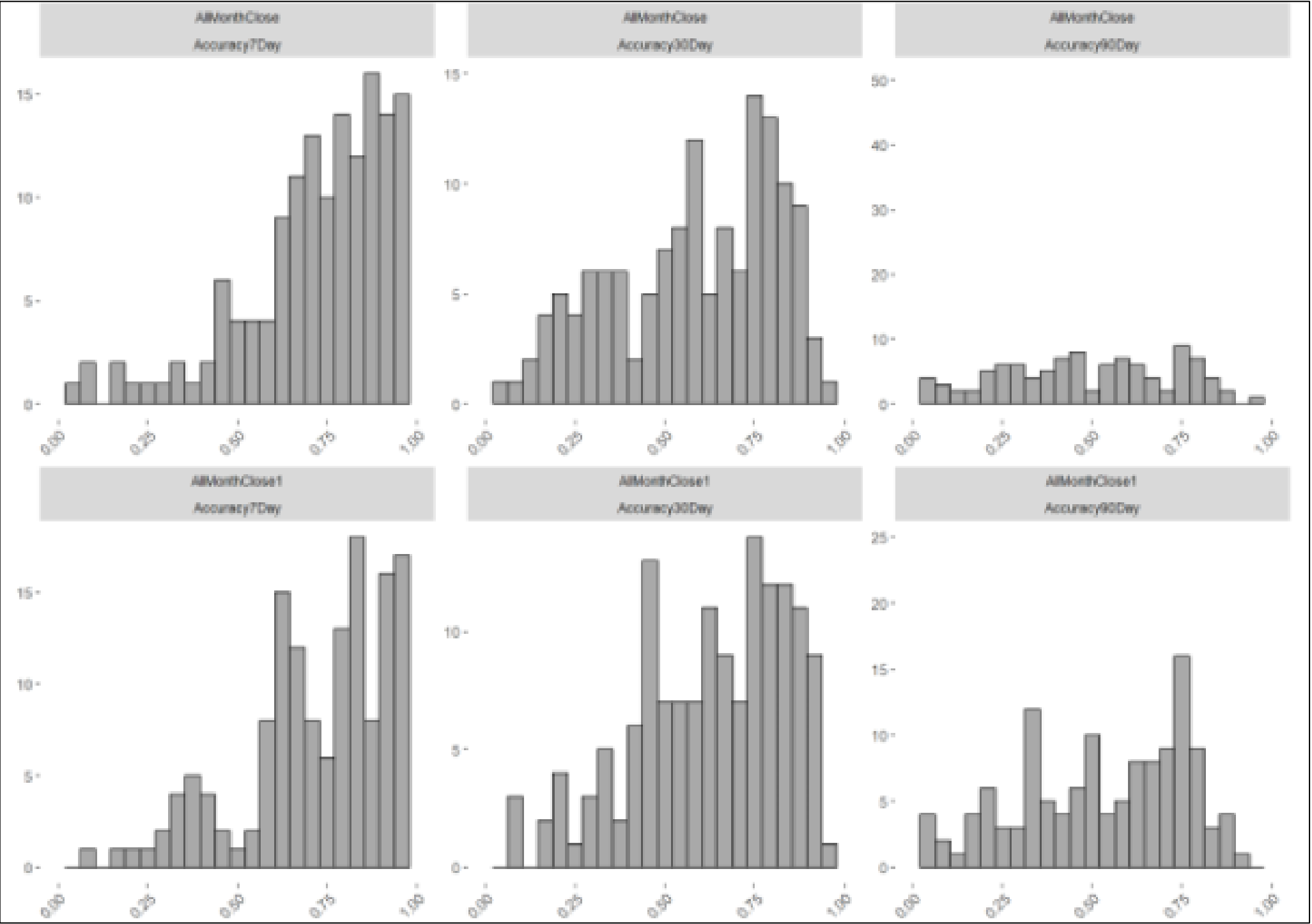


- Outliers
- Truncated history

- Prophet is a package developed by Facebook that is useful for time series forecasting
- Steps completed for each individual crypto and then appended to a large data.frame
- Ends with a results data.frame and a large time series data frame with both actuals and forecast

Results

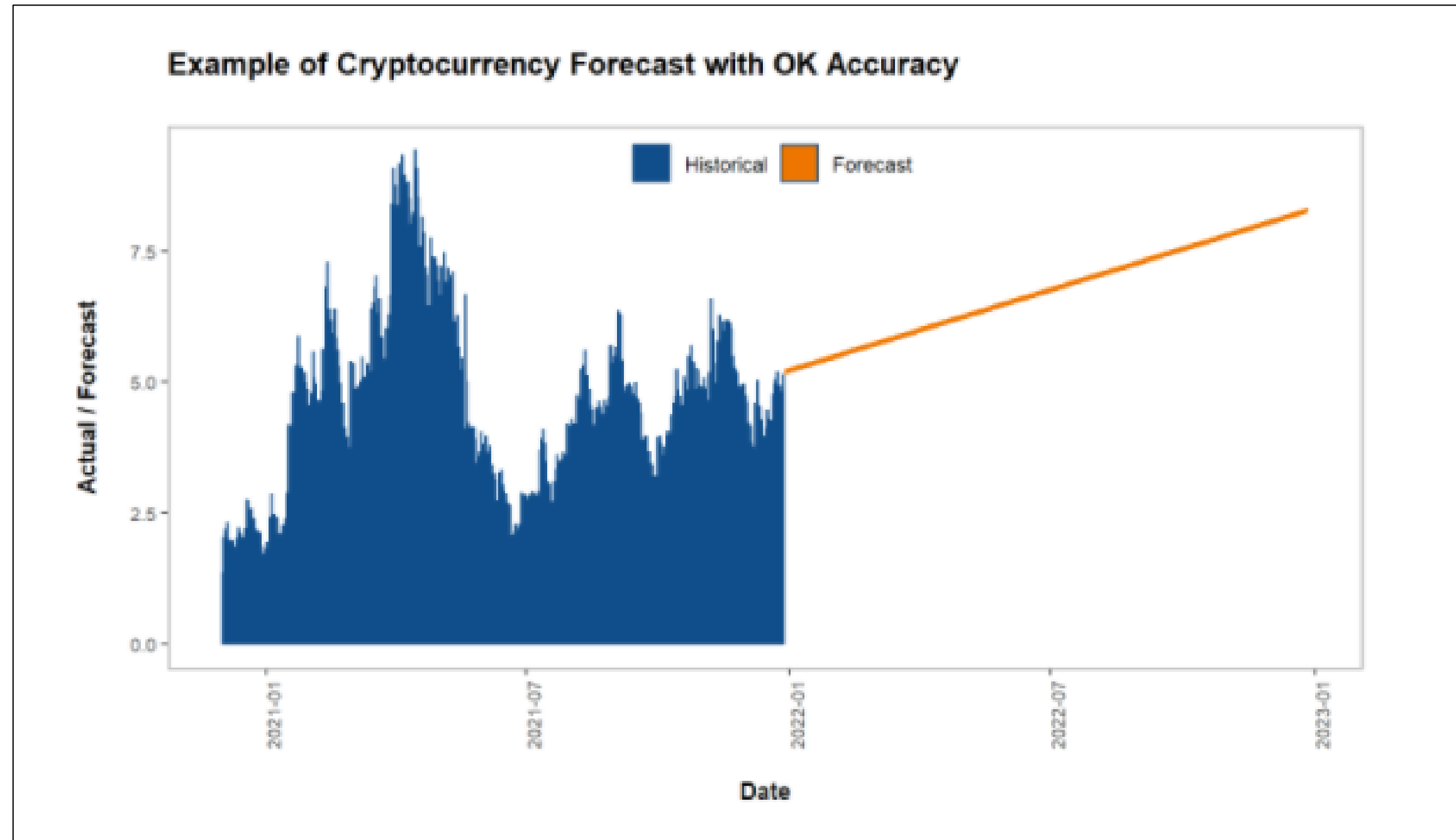
No outlier
corrections



Outliers
corrected at
1 Sd from the
mean

- Measured accuracy at 7 days, 30 days, and 90 days for each version of the crypto data
- These distributions are the accuracy by individual cryptocurrencies

Forecast Example



- Forecast produces a flat line
- More fine tuning of the model is needed

The end