



Explaining Prosecution Outcomes for Cryptocurrency-Based Financial Crimes

Research Context

Financial crime involving
cryptocurrencies

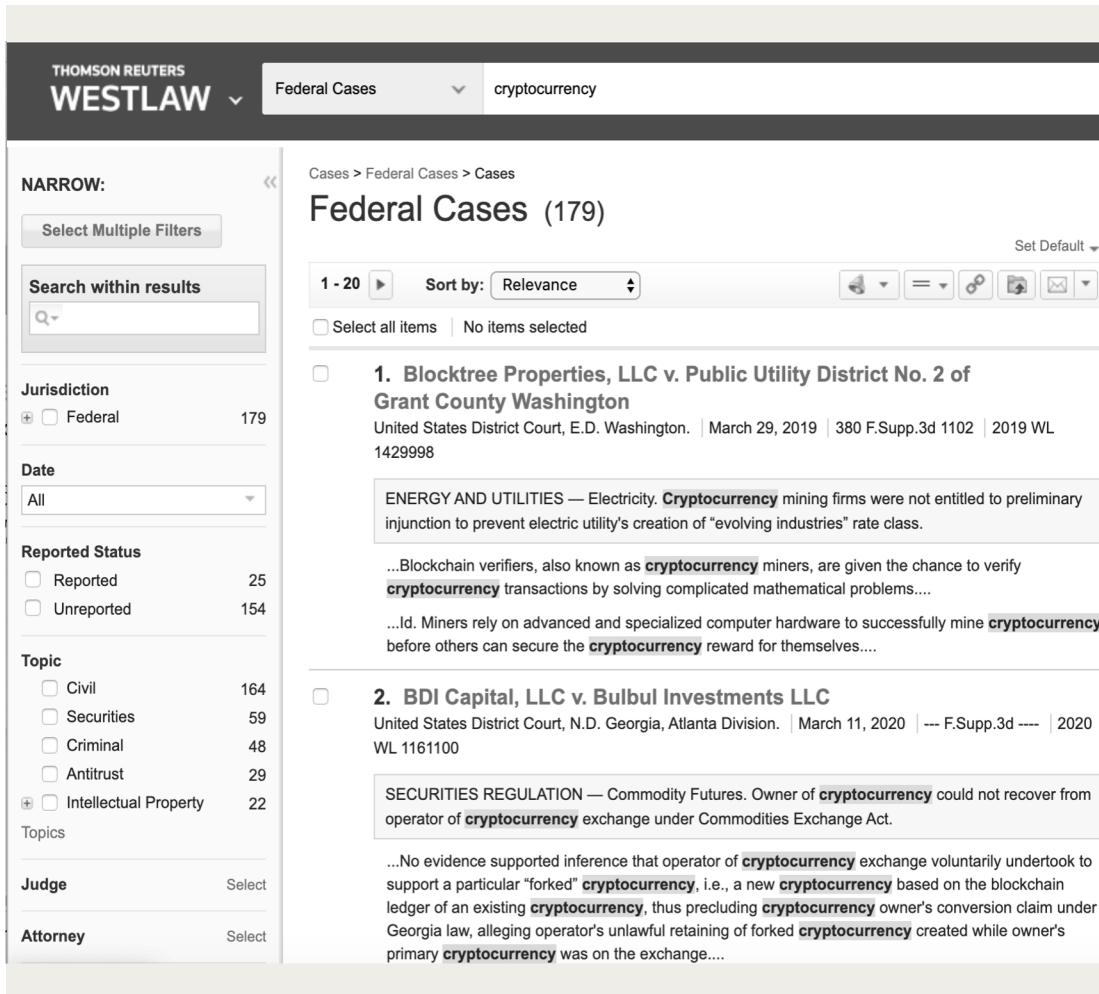
U.S. government prosecutions in
their infancy

Usefulness of existing predicate
offences

Research Question

What factors are associated
with successful U.S.-based
cryptocurrency financial crime
prosecutions?

Method



The screenshot shows the Westlaw interface with the search results for 'cryptocurrency' in Federal Cases. The left sidebar contains filters for Jurisdiction (Federal: 179), Date (All), Reported Status (Reported: 25, Unreported: 154), Topic (Civil: 164, Securities: 59, Criminal: 48, Antitrust: 29, Intellectual Property: 22), Judge, and Attorney. The main results area shows two cases:

- 1. Blocktree Properties, LLC v. Public Utility District No. 2 of Grant County Washington**
United States District Court, E.D. Washington. | March 29, 2019 | 380 F.Supp.3d 1102 | 2019 WL 1429998
ENERGY AND UTILITIES — Electricity. **Cryptocurrency** mining firms were not entitled to preliminary injunction to prevent electric utility's creation of "evolving industries" rate class.
...Blockchain verifiers, also known as **cryptocurrency** miners, are given the chance to verify **cryptocurrency** transactions by solving complicated mathematical problems....
...Id. Miners rely on advanced and specialized computer hardware to successfully mine **cryptocurrency** before others can secure the **cryptocurrency** reward for themselves....
- 2. BDI Capital, LLC v. Bulbul Investments LLC**
United States District Court, N.D. Georgia, Atlanta Division. | March 11, 2020 | --- F.Supp.3d --- | 2020 WL 1161100
SECURITIES REGULATION — Commodity Futures. Owner of **cryptocurrency** could not recover from operator of **cryptocurrency** exchange under Commodities Exchange Act.
...No evidence supported inference that operator of **cryptocurrency** exchange voluntarily undertook to support a particular "forked" **cryptocurrency**, i.e., a new **cryptocurrency** based on the blockchain ledger of an existing **cryptocurrency**, thus precluding **cryptocurrency** owner's conversion claim under Georgia law, alleging operator's unlawful retaining of forked **cryptocurrency** created while owner's primary **cryptocurrency** was on the exchange....

1. Search using Westlaw
2. Extract all cases involving financial crime offence and cryptocurrencies
3. Cross-reference with agency press releases and prior research

Coding Framework

Variable	Code	Where to Find
Dependent		
Disposition	0= Voluntary dismissal 1= Settlement 2= Jury trial 3= Bench trial 4= Default or summary judgment 5= Guilty plea	Docket
Sentence (criminal)	0= non-custodial 1= custodial	Judgment, sentencing order
Monetary penalty (civil)	0= Not alleged in complaint 1= restitution + disgorgement is less than alleged in complaint (excluding interest) 2= restitution + disgorgement is equal to amount alleged in complaint (excluding interest) 3= restitution + disgorgement is greater than amount alleged in complaint (excluding interest)	Judgment, forfeiture order, restitution order
Independent		
Offence characteristics		
Charges	0= one count 1= two to five counts 2= six to ten counts 3= eleven or more counts	Complaint, indictment, information

Variable	Code	Where to Find
Wire fraud charged? (criminal)	0= wire fraud not charged 1= wire fraud charged	Complaint, indictment, information
Cryptocurrency involved	0= other coin only or unspecified 1= Bitcoin involved	Complaint, indictment, information
Defendant characteristics		
Number of defendants	0= one defendant 1= two to five defendants 2= six or more	Complaint, indictment, information
Individual or corporate	0= individual defendant only 1= presence of corporate defendant	Complaint, indictment, information
Evidence characteristics		
Witness evidence	0= no witnesses 1= witness evidence	Exhibits, judgment, appeal opinion, docket
Forensic evidence	0= qualitative evidence presented only 1= quantitative evidence presented	Exhibits, judgment, appeal opinion, docket
Additional evidence	0= information in charging document is only evidence filed 1= additional evidence filed	Exhibits, judgment, appeal opinion, docket

Final dataset

Initial Search: 483 cases

Removal of Ineligible Cases: Removed duplicates, cases that did not involve financial criminal offence, *in rem* cases, or where decision had not been reached by 1 May 2020

Set of Cases (for IRR): Initial set of 50 cases

Final Set: After more detailed data extraction, final set of 37 cases

Additional Coders: Two people
coded 10 cases each

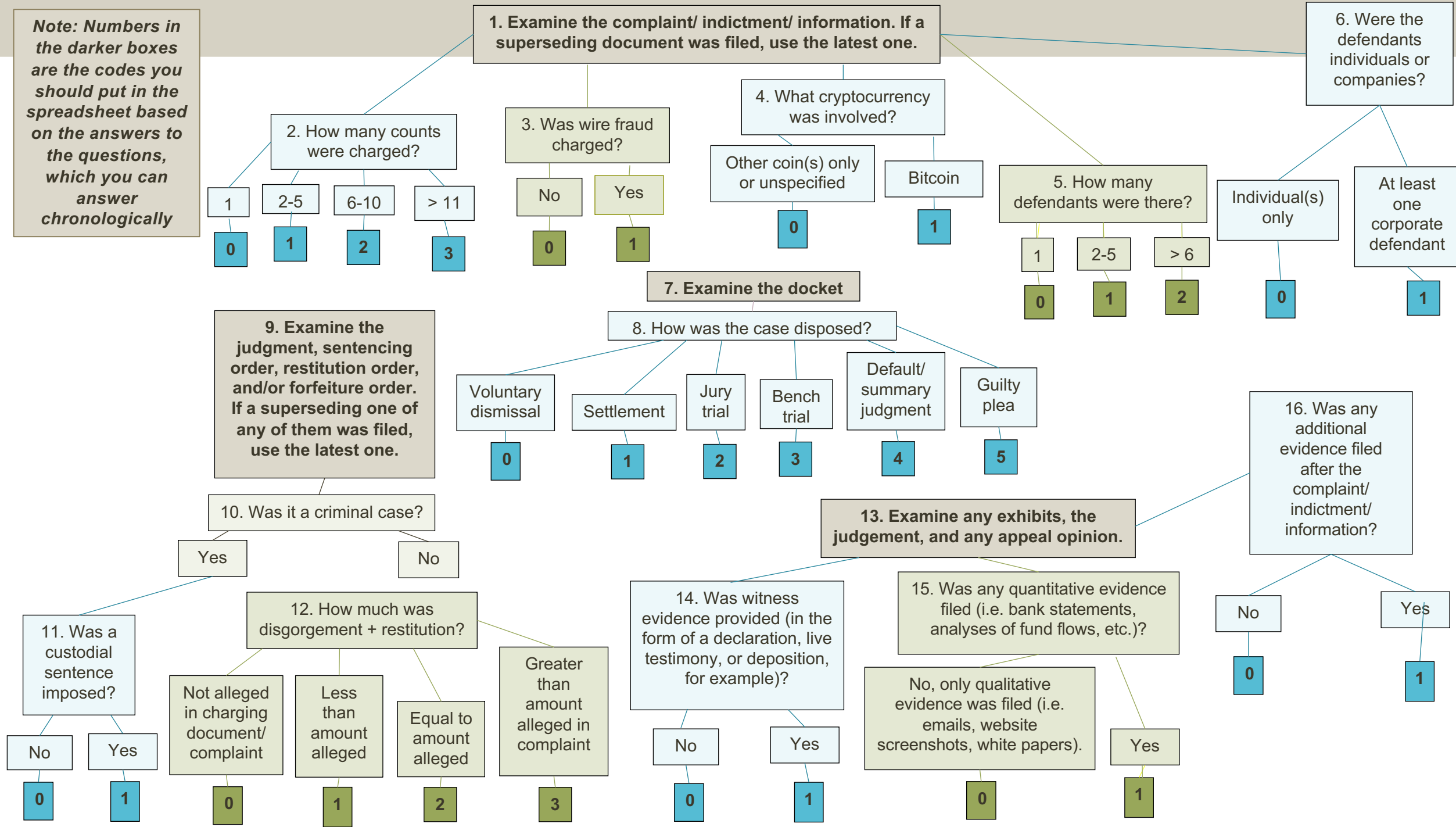
Fleiss' Kappa: 0.791, $p < .0001$

High level of agreement



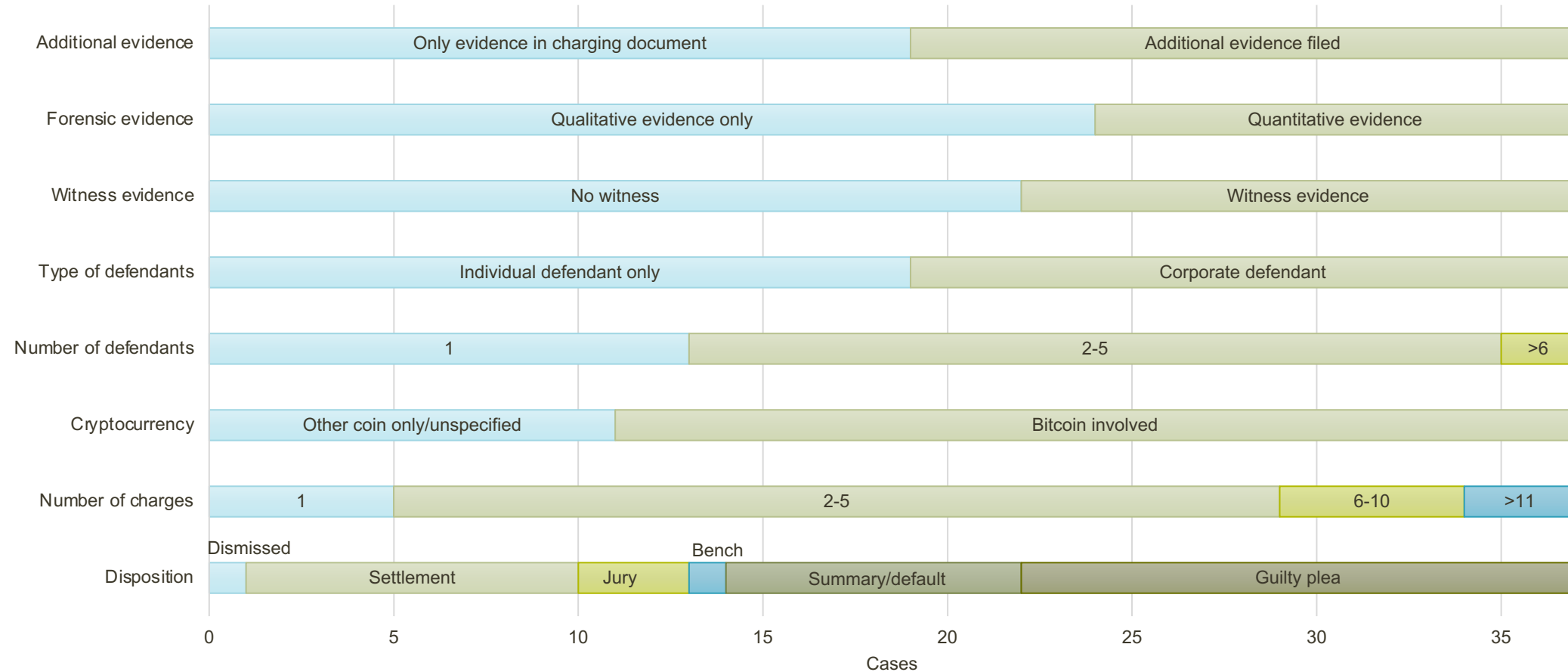
**Inter-coder
reliability**

Note: Numbers in the darker boxes are the codes you should put in the spreadsheet based on the answers to the questions, which you can answer chronologically



Results

Frequencies



Fisher's Exact Test

All Cases

<i>Independent Variable</i>	<i>Disposition (p-value)</i>
Charges	0.004
Cryptocurrency	0.010
Defendants	0.036
Type of Defendant	<0.001
Witness Evidence	0.057
Forensic Evidence	0.089
Additional Evidence	0.184

Criminal Cases

<i>Independent Variable</i>	<i>Disposition (p-value)</i>	<i>Sentence (p-value)</i>
Charges	0.103	0.608
Wire Fraud	1	0.405
Cryptocurrency	1	1
Defendants	1	0.497
Type of Defendant	1	1
Witness Evidence	0.025	0.098
Forensic Evidence	0.025	0.098
Additional Evidence	0.069	0.183

Civil Cases

<i>Independent Variable</i>	<i>Disposition (p-value)</i>	<i>Penalty (p-value)</i>
Charges	0.008	0.830
Cryptocurrency	0.055	0.426
Defendants	0.653	0.103
Type of Defendant	1	0.678
Witness Evidence	1	0.666
Forensic Evidence	0.860	0.251
Additional Evidence	0.714	0.666

Disposition		Std. Error	Sig.	Exp(B)
Trial	Intercept	8080.672	.998	
	Charges: low (one to three counts)	11031.324	.997	2.404E-17
	Cryptocurrency: other coin only or unspecified	.000	.	6.533E-18
	Number of defendants: one defendant	1.805	.553	2.914
	Type of defendant: individual defendant only	8080.672	.998	7.833E-10
	Forensic evidence: qualitative evidence presented only	7509.518	.998	61232857.850
	Additional evidence: information in charging document is only evidence filed	.000	.	2.612E-17
Summary judgment or default judgment	Intercept	1.910	.180	
	Charges: low (one to three counts)	1.632	.685	.516
	Cryptocurrency: other coin only or unspecified	1.399	.078	.085
	Number of defendants: one defendant	1.973	.670	2.319
	Type of defendant: individual defendant only	2.025	.035	.014
	Forensic evidence: qualitative evidence presented only	1.898	.522	.297
	Additional evidence: information in charging document is only evidence filed	1.823	.719	.520

Effect of Independent Variables on Disposition:

Aggregated Number of Charges (low or high),
 Number of Defendants (one or more than one), and
 Disposition (trial; summary/default judgment; or guilty plea or settlement) (last categories as reference categories)

Logistic Regression

Key Findings

All cases: # of charges, cryptocurrency, # of defendants, and type of defendants each associated with disposition

All cases: Presence of individual (not corporate) defendants made case less likely to be resolved by summary or default judgment

Criminal cases: Witness and forensic evidence associated with disposition

Civil cases: # of charges associated with disposition

Disposition and Penalties

- Consistent with fact that almost all U.S. criminal convictions obtained by guilty plea
- Overcharging and sentencing guidelines incentivise guilty pleas

Charges

- Evidence of horizontal overcharging
- Types of charges were surprising

Discussion

Discussion

Cryptocurrency

- Cases primarily involved Bitcoin or scam tokens
- Almost no cases involved other popular cryptocurrencies

Defendants

- Results consistent with research that co-defendants did not impact conviction rates
- Presence of individual defendant made a case less likely to be resolved by summary / default judgment

Evidence: Primarily qualitative evidence—
emails, texts, screenshots of websites,
marketing materials, Tweets

Blockchain evidence: Debate about
admissibility

Witness evidence: Expert witness
testimony to validate blockchain evidence?

Additional evidence: Unnecessary or
coerced guilty pleas?

Discussion

- Small population
- U.S. cases only and various federal courts
- COVID case delays
- Basic data extracted
- Civil and criminal analysed together

Limitations

Future Research

Variables: More granularity in variables extracted or additional factors

Cases: Expand to all financial crime cases or private civil cases

Evidence: Further research into quantitative evidence, automating collection, cost/benefit analysis, jury handling of blockchain evidence



**Thank
You!**

Questions?

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