

Bitcoin: Users' risk perceptions, preference dynamics and profit considerations.

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What do we know about Bitcoin's users?

- Although the blockchain offers complete access to users' transactions, providing a wealth of financial data, the decentralised, pseudonymous, and globally-diffuse nature of its user base makes investors' preferences data harder to acquire (Brito and Castillo, 2013).
- As a result, the extant body of literature is filled with assumptions on user motivations underpinned by the application of existing theory to this new phenomenon (Bonneau, et al., 2015; Morisse, 2015).
- Prevalent theoretical assumptions include the risk-averse adoption of Bitcoin in response to fears over state and central bank intervention (hedging), and profit-motive based on speculating on price fluctuations (Briere, Oosterlinck, and Szafarz, 2013, Chowdhury, 2014, Dyhrberg, 2015).

Literature and Research Motivations

- Semantic analysis of Teigland, Yetis, and Larsson (2013).
 - Pioneered use of semantic analysis to address the difficulty in reaching individual Bitcoin users.
 - Determined that individuals and groups are collectively self-organising in the absence of a central governing authority to address problems.
- Bitcoin as a hedging instrument.
 - Briere, et al. (2013), Chowdhury (2014), and Dyhrberg (2015) all employed economic data to determine how Bitcoin might serve as a hedge in a hypothetical investment portfolio, arriving at different results.
 - Emphasis on objective determination of usefulness in a hypothetical portfolio, as opposed to how real-world users are actually employing Bitcoin: the focus of this research.
- Blockchain as a “constellaxy.”
 - MacDonald, Allen, and Potts (2016) argue that the blockchain technology underpinning Bitcoin is a “constellaxy” – a technology which serves to create self-organised, constitutionally-ordered catallaxies.
 - This research applies this premise to Bitcoin in particular, identifying features of the cryptocurrency consistent with Hayek’s (1975) conceptualisation of catallaxy.

Research Hypothesis

- Deriving data from primary human sources, this research contends that Bitcoin constitutes a catallaxy rather than a hedge, with users transitioning from an economy governed by hierarchical institutions to one underpinned by decentralised markets.
- This study will analyse the behaviour of bitcoin users by conducting a semantic analysis using 13.7 million posts from the online Bitcoin forum, bitcointalk.org (800+K users)

Methodology

- Semantic analysis, a method of deriving information from large, text-based data sources by analysing the language employed (Goddard, 2011).
 - All English-language posts on bitcointalk.org from 22nd November 2009 to 17th July 2016.
 - 13.7 million posts from 862,298 individual members.
- Words assigned to matrices using Stanford Log-linear Part-of-Speech Tagger.
- Isolation, extraction, and analysis (Teigland, Yetis, and Larsson, 2013).
 - Top 10,000 words in each category searched for terms related to economic risk or investment activity.
 - Identified topics charted over a series to track their usage over time.
 - Peaks in discussion cross-referenced with archived forum posts to determine drivers of increased conversation traffic.

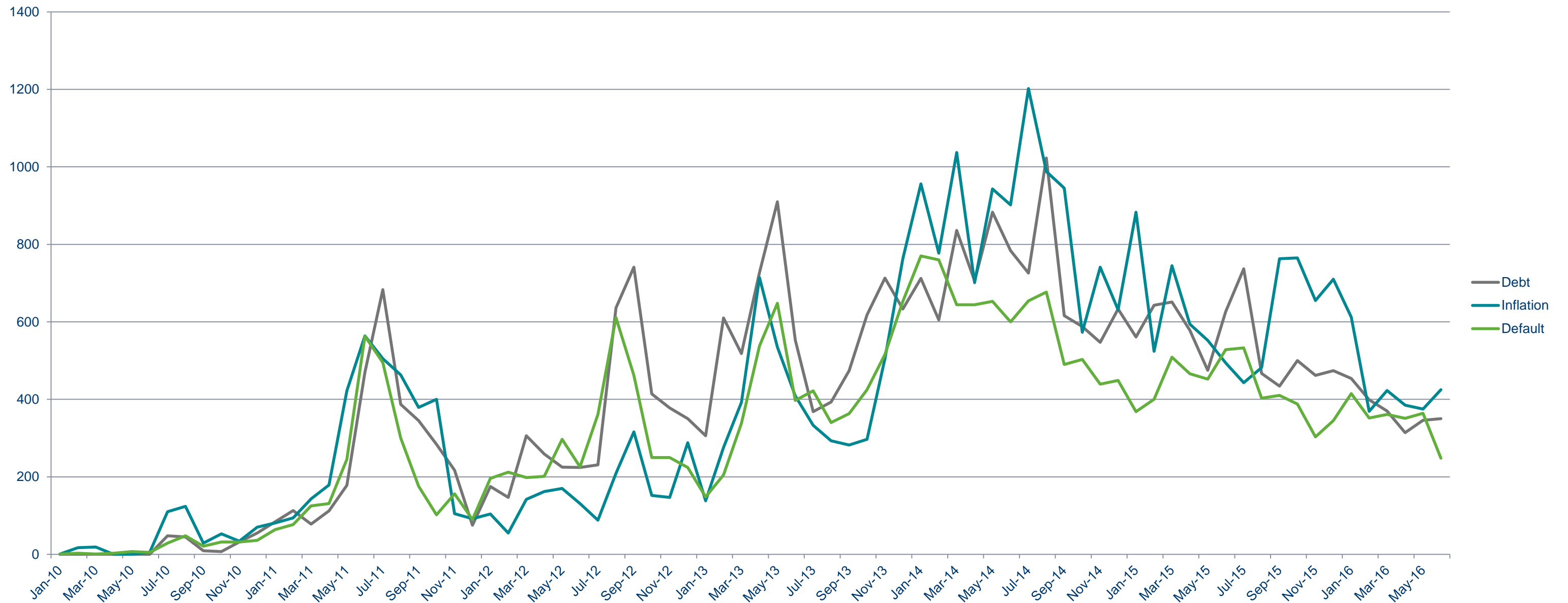
Data Analysis

Topic	Discussion Type	Number of Mentions	Discussion Peak date
Scam	Internal Risk	172,150	July 2014
Investment	Investment	124,506	June 2016
Gold	Investment	86,461	June 2016
Altcoins	Investment	78,931	January 2014
Steal	Internal Risk	68,866	March 2014
Security	All	64,253	March 2014
Ponzi	Internal Risk	34,263	January 2015
Debt	External Risk	31,840	August 2014

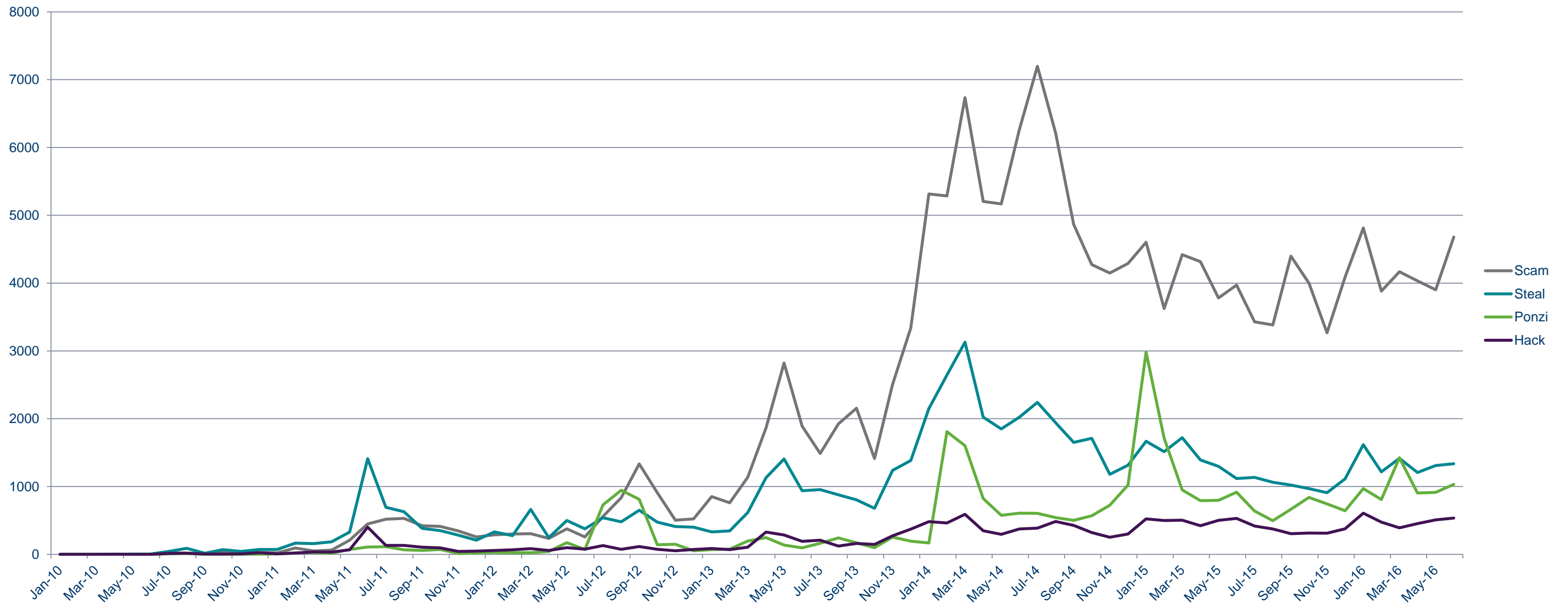
Data Analysis (cont.)

Topic	Discussion Type	Number of Mentions	Discussion Peak date
Inflation	External Risk	31,715	July 2014
Speculation	Investment	25,949	March 2014
Default	External Risk	21,829	January 2014
Hack	Internal Risk	17,528	March 2016
Volatility	Internal Risk	14,843	March 2014

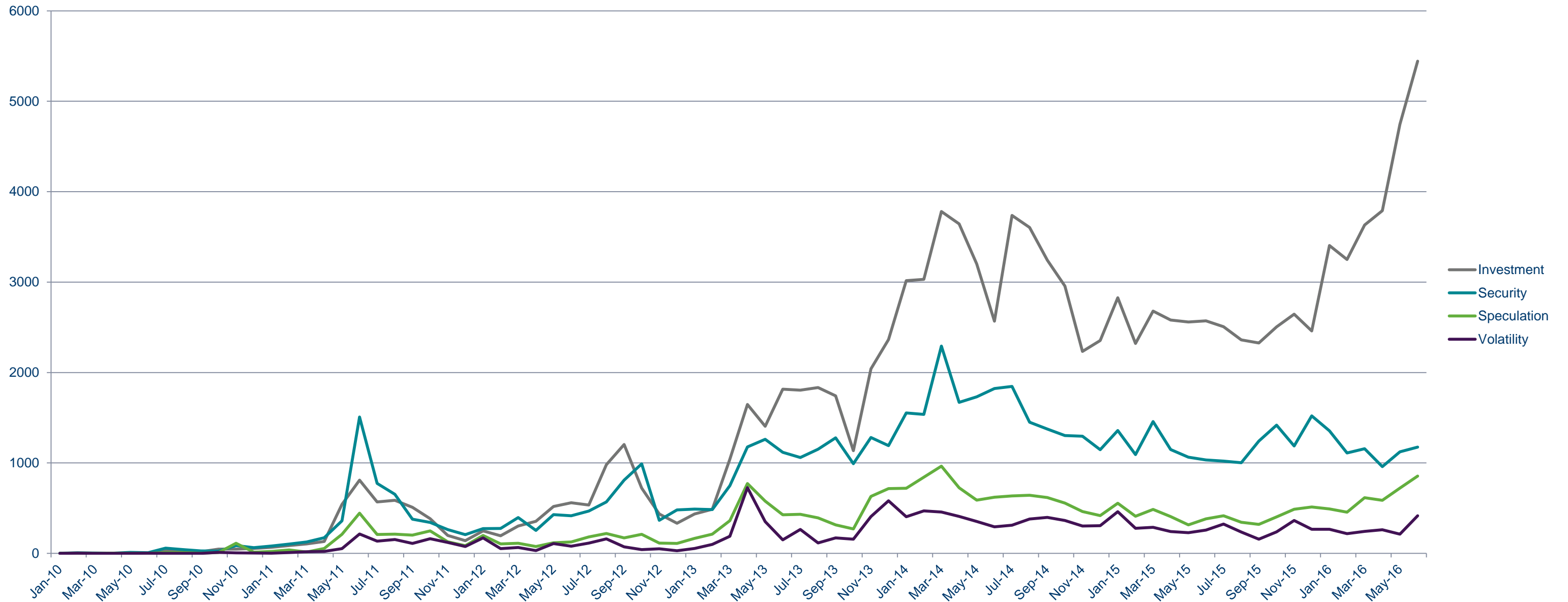
Data Analysis: External Economic Risks



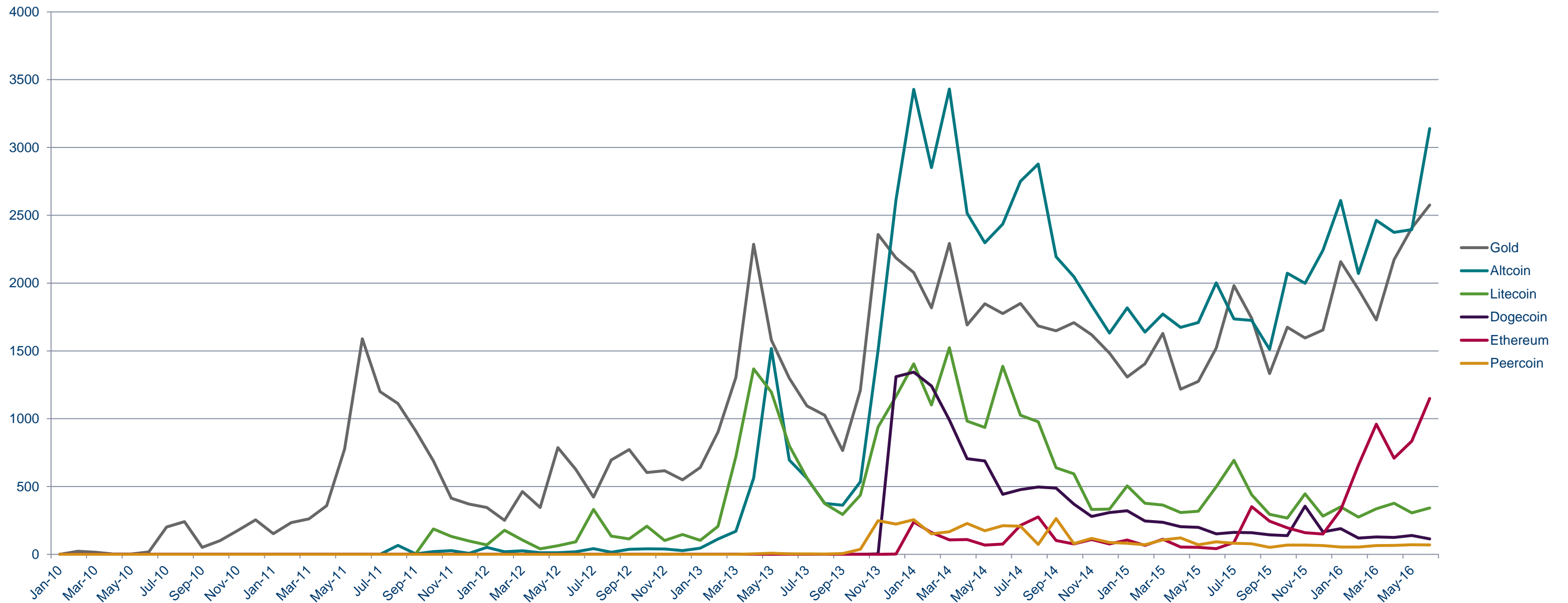
Data Analysis: Internal Economic Risks



Data Analysis: Investment Activities



Data Analysis: Alternative Investments



Summary of Key Findings

- There is a greater interest in internal rather than external economic risks.
- Internal risks are regarded as problems to be solved, while External risks are perceived as hazards to be avoided.
- The Bitcoin economy and community have both evolved over time, with an increasing focus on legitimate markets and digital security via decentralised actors (Teigland, Yetis, and Larrison, 2013; Tasca, Liu, and Hayes, 2016).
- Contrary to previous assumptions, there is a greater focus on longer-term investments rather than short-term profit-making through price speculation.
- While there is a persistent interest in altcoins more broadly, specific altcoins have yet to attract community attention over the long term.

Conclusion

- While Bitcoin adoption is defined to be risk-averse, suggesting hedge-like properties, users are not simply parking their assets for protection against real or perceived risks.
- Bitcoin users are transferring their risk-taking activities from the mainstream economy to the cryptocurrency market, which appears to be more in line with their subjective risk appreciation.
- Whereas the mainstream economy is defined by hierarchical, centralised institutions, the cryptocurrency market is decentralised to the level of individual actors in line with Hayek's (1972) theory of catallaxy.
- While this research proposes a broader theoretical framework for cryptocurrency, additional methodological tools must be implemented to compare the data and compensate for the limitations imposed by the nature of the user base.