A Behavioral Economics Approach to Regulating Initial Coin Offerings

NATHAN J. SHERMAN*

INTRODUCTION

Initial coin offerings (ICOs) are an outgrowth of the cryptocurrency space in which companies raise capital by issuing their own cryptocurrency coin to investors. Although ICOs are an innovative method of raising capital, the growth of the ICO market is troubling considering no investor protection regulations govern the ICO process. Investors pour large amounts of money into these offerings, which are issued by companies that typically have no history of producing a product or revenue, and the prices of coins issued in ICOs are only rising because other investors also funnel money into them.[1] This pattern is markedly similar to that of a speculative bubble.

A speculative bubble occurs when there are "'unsustainable increases' in asset prices caused by investors trading on a pattern of price increases rather than information on fundamental values."[2] In a bubble, "smart money"—informed investors—bid up prices in anticipation of "noise traders" entering the market.[3] The noise traders then enter the market due to the psychological biases they encounter in making their investment decisions.[4] Eventually, the smart money investors sell their holdings and the bubble bursts.[5] Thus, regulators should create a framework that adequately protects investors in ICOs.

The behavioral economics theory of bounded rationality provides insights for building this regulatory framework. Bounded rationality implies that humans make suboptimal choices.[6] By understanding the psychological biases that influence investors' choices, regulators will be able to help investors adopt habits that reduce the harmful effects of speculative bubbles. To do this, regulators must regulate ICOs using an

---

* Georgetown University Law Center, J.D. expected May 2019; University of Richmond, B.S.B.A 2016. © 2018, Nathan J. Sherman.
[1] *See* Jim Edwards, *This Is the Tech Bubble We Have Been Waiting for*, BUSINESS INSIDER (Nov. 21, 2017), http://www.businessinsider.com/cryptocurrency-ico-bubble-2017-11 [https://perma.cc/UE87-KYQG].
[2] Erik F. Gerding, *Laws Against Bubbles: An Experimental-Asset-Market Approach to Analyzing Financial Regulation*, 2007 WIS. L. REV. 977, 990 (2007).
[3] *Id*. at 999.
[4] *See id*.
[5] *Id.*
[6] *See* Herbert A. Simon, *Invariants of Human Behavior*, 41 ANN. REV. PSYCHOL. 1, 6 (1990) ("Since we can rarely solve our problems exactly, the optimizing strategy suggested by rational analysis is seldom available. We must find techniques for solving our problems approximately, and we arrive at different solutions depending on what approximations we hit upon.").

asymmetrically paternalistic framework.[7] This framework assumes that some investors in ICOs, such as the smart money investors, behave more rationally than others, such as the noise traders. Thus, the optimal regulatory scheme takes those differences into account by helping less rational noise traders make better choices without restricting the investment choices of the more rational smart money investors.

Part I of this Note provides a brief background of cryptocurrencies and ICOs. Part II examines historical speculative bubbles and argues that the ICO market is a speculative bubble. Part III explores characteristics of those who invest in bubbles as well as the psychological biases that those investors may encounter. It presents psychological arguments for market behavior in an effort to counter the neoclassical economic claims for why a bubble cannot occur and identifies two distinct types of investors in ICOs—the smart money investors and noise traders. Part IV discusses the limited regulations currently governing the ICO market. Finally, Part V argues that an asymmetrically paternalistic regulatory scheme is the most fitting way to regulate the ICO market. Part V does not provide a comprehensive regulatory framework; rather, it argues for light-touch regulation of ICOs and offers examples for how to implement such regulation.

I. CRYPTOCURRENCIES AND ICOS

Cryptocurrencies are virtual currencies that rely on peer-to-peer cryptography to validate transactions.[8] The key innovative aspect of most cryptocurrencies is a decentralized public ledger that records the ownership and transfer of the cryptocurrency.[9] This digital ledger is commonly referred to as the blockchain. Each time a block of transactions is completed, a new block is automatically generated, and it is added to the blockchain as a permanent database.[10] When the cryptocurrency is transferred, the transaction is verified via a computerized process called "mining."[11] Miners solve cryptographic problems and check the blockchain to verify the transactions.[12] The miner that solves the

---

[7] *See generally* Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for Asymmetric Paternalism*, 151 U. PA. L. REV. 1211, 1212 (2003) (explaining that "[a] regulation is asymmetrically paternalistic if it creates benefits for those who make errors, while imposing little or no harm on those who are fully rational.").

[8] *Cryptocurrency*, INVESTOPEDIA, https://www.investopedia.com/terms/c/cryptocurrency.asp [https://perma.cc/M6VA-P4RE].

[9] Omri Marian, *A Conceptual Framework for the Regulation of Cryptocurrencies*, 82 U. CHI. L. REV. DIALOGUE 53, 55 (2015).

[10] *Blockchain*, INVESTOPEDIA, https://www.investopedia.com/terms/b/blockchain.asp [https://perma.cc/S428-65W8].

[11] Marian, *supra* note 9.

[12] *Id.*

cryptographic problem first receives a certain amount of cryptocurrency for its efforts.[13]

The ICO is an innovative outgrowth of the cryptocurrency space. An ICO is a way for companies to raise money by offering their own coin or token in exchange for a payment; this payment is made using other cryptocurrencies, such as Bitcoin and Ethereum.[14] Unlike Bitcoin, coins issued in ICOs are typically meant for specific projects or defined services.[15] For example, the FLUX token will be used to facilitate a gaming ecosystem.[16] ICO funding has become an attractive alternative to traditional funding for companies because of the amount of money that can be raised. For example, a traditional Series A financing round with a venture capital firm may raise between $1 million and $5 million,[17] whereas some ICOs have raised nearly $100 million.[18] This alternative method of capital raising is becoming increasingly popular considering roughly $5 billion was raised via ICOs in 2017.[19]

The ICO process begins with the release of a white paper,[20] which is essentially a business plan that discusses the company's project and how the coins will be distributed.[21] Most of the projects touted in white papers

---

[13] Dietmar Peetz & Gregory Mall, *Why Bitcoin Is Not a Currency but a Speculative Asset*, CREDIT SUISSE ASSET MGMT. 1, 1 (2017), https://www.simag.com/why-bitcoin-is-not-a-currency-but-a-speculative-real-asset/ [https://perma.cc/TF7V-3CE6].

[14] Justin Jaffe, *Initial Coin Offerings Explained: How Can This Possibly Be a Legitimate Way to Raise Money?*, CNET (Feb. 2, 2018), https://www.cnet.com/how-to/initial-coin-offerings-explained/ [perma.cc/ATU7-Q9K9]. Bitcoin is modeled as a universal digital asset or currency, and Ethereum provides the foundation for a versatile smart-contracts platform. Some believe that Bitcoin will eventually replace fiat currency. *See* Rebecca Campbell, *Bitcoin Millionaire Tim Draper: Cryptocurrencies Will Replace Fiat Currencies in 5 Years* (Nov. 19, 2017), https://www.ccn.com/bitcoin-millionaire-tim-draper-cryptocurrencies-will-replace-fiat-5-years/ [https://perma.cc/PA5Q-C6A2].

[15] *See* Edwards, *supra* note 1 ("Unlike most ICO coins, Bitcoin and Ethereum aren't geared toward specific projects.").

[16] *See FLUX Released Desktop Alpha Before Token Sale April 17*, COINTELEGRAPH (Apr. 3, 2018), https://cointelegraph.com/press-releases/flux-released-desktop-alpha-before-token-sale-april-17 [https://perma.cc/5SMQ-P297].

[17] Lawrence Wintermeyer, *The Race to Ban or Regulate Bitcoin and ICOs*, FORBES (Oct. 31, 2017), https://www.forbes.com/sites/lawrencewintermeyer/2017/10/31/the-race-to-ban-or-regulate-bitcoin-and-icos/2/#8415c3f5f65f [https://perma.cc/KM2C-8XD4].

[18] Jon Russell, *KIK Raises Nearly $100M in Highest Profile ICO to Date*, TECHCRUNCH (Sept. 26, 2017), https://techcrunch.com/2017/09/26/kik-ico-100-million/ [https://perma.cc/B4CU-NQ8N]. It is important to note that companies raising capital via ICOs first receive a specific cryptocurrency from investors in exchange for the newly issued coin; then the company can convert the cryptocurrency received from investors into U.S. dollars (or a different currency).

[19] *See* John Patrick Mullin, *ICOs in 2017: From Two Geeks and a Whitepaper to Professional Fundraising Machines*, FORBES (Dec. 18, 2017), https://www.forbes.com/sites/outofasia/2017/12/18/icos-in-2017-from-two-geeks-and-a-whitepaper-to-professional-fundraising-machines/#4a3c3e1c139e [https://perma.cc/5Q7R-VF6B].

[20] For examples of ICO white papers, see *Token Sales*, TOKENDATA, https://tokendata.io [http://web.archive.org/web/20180614053644/https://www.tokendata.io/].

[21] *See* Jaffe, *supra* note 14.

are shrouded in a cloud of uncertainty as to whether they will ever be developed.[22] To participate in an ICO, an investor must first purchase the cryptocurrency specified as the means for exchange in the white paper—typically either Bitcoin or Ethereum—and set up a wallet[23] that corresponds to the cryptocurrency purchased.[24] Then, the investor must visit a specified website—usually managed by the issuing entity on its own platform—and transfer the cryptocurrency from their wallet in exchange for the coin issued by the company conducting the ICO.[25] Lastly, the investor must transfer their new coin back into their wallet.[26] The newly issued ICO coins can then be transferred to exchanges and are freely tradable.[27] Given both the innovative nature of the ICO as a capital-raising mechanism and the amount of money raised in 2017 via ICOs, investor protection concerns warrant a closer examination of how best to regulate the ICO market.

II. HISTORICAL SPECULATIVE BUBBLES AND ICOS AS A SPECULATIVE BUBBLE

The standard definition of a bubble is a deviation of the price of an asset from its fundamental value.[28] This fundamental value is typically determined by calculating the present value of the future cash flows from the specific asset.[29] However, a refined definition of a bubble focuses on the information with which investors trade; thus, a bubble occurs when there are "'unsustainable increases' in asset prices caused by investors trading on a pattern of price increases rather than information on fundamental values."[30] Part II examines two historical bubbles: section II.A discusses tulip-mania of 1637; section II.B explores the dot-com bubble in the early 2000s; and section II.C draws parallels between these bubbles and the ICO market to conclude that the ICO market is a speculative bubble.

A. TULIP-MANIA OF 1637

---

[22] Peetz & Mall, *supra* note 13, at 6.

[23] The nuts and bolts of setting up a cryptocurrency wallet are beyond the scope of this Note. For more detailed examples of the various cryptocurrency wallets offered, see Noelle Acheson, *How to Store Your Bitcoin*, COINDESK, https://www.coindesk.com/information/how-to-store-your-bitcoins/ [https://perma.cc/VE6K-C2FP] (last updated Jan. 20, 2018).

[24] *See* Anton Telitsyn, *ICO 101: How to Participate in an ICO Made with Ethereum*, MEDIUM (Sept. 19, 2017), https://medium.com/the-mission/ico-101-how-to-participate-in-an-ico-made-with-ethereum-cf57516183f6 [https://perma.cc/6RJA-PMSH].

[25] *See id.*; *see also* Jaffe, *supra* note 14.

[26] *See* Telitsyn, *supra* note 24.

[27] Edwards, *supra* note 1.

[28] Gerding, *supra* note 2, at 988.

[29] *Id*.

[30] *Id*. at 990.

One of the largest speculative bubbles began in 1593 when tulips were brought to Holland, and over time, the tulips began to contract viruses that made flame-like colors appear on the bulbs.[31] Tulips with flame-like color patterns were trading at much higher values than the unaffected bulbs, and by the 1630s, everyone in Holland began trading the bulbs; tulip-mania was born.[32] Actual price data from the 1630s is scarce, but the Rijksmuseum (the Museum of the Netherlands) claims that traders were putting up their houses as collateral to secure tulip bulbs.[33] The price of the tulips during this period was not an accurate representation of what the bulbs were actually worth, and once some investors decided to sell, the price of bulbs began to fall.[34] When this happened, other investors sold their tulips to avoid even bigger losses,[35] and the bubble burst.[36]

B. THE DOT-COM BUBBLE

A more recent example of a speculative bubble is the dot-com bubble,[37] which arose from speculative investments in Internet companies from 1997 to 2002.[38] On April 12, 1996, Yahoo! stock went public, and its price doubled on the first day of trading.[39] In December of 1996, Alan Greenspan, then-chairman of the Federal Reserve, warned investors of irrational exuberance in relation to asset prices.[40] In November of 1998,

---

[31] Andrew Beattie, *Market Crashes: The Tulip and Bulb Craze (1630s)*, INVESTOPEDIA, https://www.investopedia.com/features/crashes/crashes2.asp [https://perma.cc/4BFR-NSAK]; *see also* Elvis Picardo, *Five of the Largest Asset Bubbles in History*, INVESTOPEDIA, https://www.investopedia.com/articles/personal-finance/062315/five-largest-asset-bubbles-history.asp [https://perma.cc/95NS-D7NV].

[32] Beattie, *supra* note 31.

[33] *1637 Tulipmania*, RIJKSMUSEUM, https://www.rijksmuseum.nl/en/rijksstudio/timeline-dutch-history/1637-tulipmania [https://perma.cc/Z4N2-FKNM].

[34] Beattie, *supra* note 31.

[35] *See id.*

[36] It is worth noting that tulip-mania is not universally understood to have been a bubble. *Compare* Lawrence J. White, *Preventing Bubbles: What Role for Financial Regulation*, 31 CATO J. 603, 604 (2011) (identifying tulip-mania as a "bubble"), *with* Peter M. Garber, *Tulipmania*, 97 J. POL. ECON. 535, 536, 558 (1989) (discussing how speculation only during the last month of tulip-mania can be considered a bubble; the remaining price increases reflect normal pricing behavior in bulb markets).

[37] It is worth noting that not everyone agrees that the dot-com frenzy was a bubble. *Compare* White, *supra* note 36 (identifying the tech boom as a "bubble"), *with* Lubos Pastor & Pietro Veronesi, *Was There a NASDAQ Bubble in the Late 1990s?*, 81 J. FIN. ECON. 61, 97 (2006) (concluding that "until [their] model is rejected . . . the existence of a Nasdaq 'bubble' . . . should not be taken for granted.").

[38] Badr Bellaj, *The Blockchain Mania and the Dot-Com Bubble!*, MEDIUM (Mar. 17, 2017), https://medium.com/@badrbellaj/the-blockchain-mania-and-the-dot-com-bubble-adc4885dd66b [https://perma.cc/7HWF-MTPA].

[39] *Id.*

[40] *See* Remarks by Alan Greenspan, Chairman of the Federal Reserve, Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research: The Challenge of Central Banking in a Democratic Society (Dec. 5, 1996) (transcript

theglobe.com (the first social media website) went public and gained 606% in its first day trading, and in December of 1999, VA Linux gained 698% on its first day trading.[41] These meteoric rises are only some examples of the buying frenzy associated with this bubble. In total, Internet companies raised roughly $1 billion in 34 initial public offerings (IPOs) in 1997, $2 billion in 45 IPOs in 1998, and $24.1 billion in 292 IPOs in 1999.[42] Investors were "snapping up shares in any company with a [dot-com] attached to its name" during this period, which fueled the frenzy.[43] The NASDAQ set an all-time high on March 10, 2000, closing at 5048.62 (up from roughly 1100 in 1996).[44] However, the bubble was about to burst. By November 9, 2000, 54% of Internet stocks in the Bloomberg Internet Index were down over 80%,[45] and by October 9, 2002, NASDAQ hit an all-time low of 1114.11.[46]

C. THE ICO MARKET IS A SPECULATIVE BUBBLE

Similar to the tulip-mania of 1637 and the dot-com bubble, "[p]eople are 'investing' vast sums of money into [ICOs] that have no history of producing revenue, and those [ICOs] are rising in price only because other people are also pouring money into them."[47] Analysts at Credit Suisse highlight that both the ICO market and the dot-com bubble were founded on irrational exuberance; however, the companies that were conducting IPOs during the dot-com bubble were promising some type of future cash flows.[48] For instance, pets.com—a company that folded during the dot-com bubble[49]—at least sold pet food.[50] Many companies in the ICO space do not promise any type of future cash flows. Rather, there are two reasons why investors demand the coins offered in ICOs: people need the coin to redeem services from the company that issued them, or investors think that the coin will rise in price.[51] It is important to note that investors in an ICO do not own any piece of the company offering the coin. Vitalik Buterin, the founder of Ethereum, emphasized that Ethereum "does not

---

available at https://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm [https://perma.cc/D56E-73W4]); *see also* Bellaj, *supra* note 38.

[41] Bellaj, *supra* note 38.

[42] David Kleinbard, *The $1.7 Trillion Dot.com Lesson*, CNN MONEY (Nov. 9, 2000), http://money.cnn.com/2000/11/09/technology/overview/ [https://perma.cc/AZ2T-NEB2].

[43] Bellaj, *supra* note 38.

[44] *See* Pastor & Veronesi, *supra* note 37, at 62.

[45] *See* Kleinbard, *supra* note 42.

[46] Bellaj, *supra* note 38.

[47] Edwards, *supra* note 1.

[48] Peetz & Mall, *supra* note 13, at 6.

[49] *See 10 Big Dot-Com Flops*, CNN, http://money.cnn.com/galleries/2010/technology/1003/gallery.dot_com_busts/10.html [https://perma.cc/A62G-HLQW] (last updated Mar. 10, 2010).

[50] *See* Edwards, *supra* note 1.

[51] *Id.*

give you voting rights over anything, and [those working on the Ethereum project] make no guarantees of its future value."[52]

Some established companies, such as The Eastman Kodak Company, have turned to ICOs for funding.[53] However, many of the ICOs that are being offered by companies provide evidence that pure speculation is driving the increase in ICOs, similar to both the tulip-mania of 1637 and the dot-com bubble. Investors "may need to engage in some wholesale suspension of disbelief to participate in an ICO."[54] For instance, in 2013, Dogecoin—a reference to a popular Internet meme involving a Shiba Inu—was created as a joke to shine a spotlight on the growing craze of cryptocurrencies.[55] Today, Dogecoin's market cap is over $500 million.[56] A TrumpCoin, reaching $3.38 million in market cap at its peak, was offered with the sole purpose of "support[ing] President Trump and his powerful vision to Make America Great Again."[57]

A recent study of ICOs sheds more light on how pure speculation is driving the ICO market: 59% of ICOs in 2017 are either confirmed failures or failures-in-the-making.[58] Out of the roughly 900 ICOs in 2017, 142 failed at the funding stage, 276 failed after issuers stole the money or the project failed, and an additional 113 coins are considered "semi-failed" either because the company's team has stopped communicating about the project or the community is so small signifying that the project is unlikely to succeed.[59]

Looking at the two definitions of a bubble,[60] it is clear that the refined definition applies to ICOs because there are no projected future cash flows from coins offered in ICOs. According to the refined definition, a bubble occurs when there are "'unsustainable increases' in asset prices caused by investors trading on a pattern of price increases rather than information on fundamental values."[61] Similar to tulip-mania, in which people were offering their houses as collateral to secure tulip bulbs, the only value

---

[52] Vitalik Buterin, *Launching the Ether Sale*, ETHEREUM BLOG (July 22, 2014), https://blog.ethereum.org/2014/07/22/launching-the-ether-sale/ [https://perma.cc/UQL7-Y2AQ].

[53] *KodakOne*, ICO DROPS, https://icodrops.com/kodakone/ [https://perma.cc/F9TG-S2SN] ("KODAKCoin allows participating photographers to take part in a new economy for photography, receive payment for licensing their work immediately upon sale, and sell their work confidently on a secure blockchain platform.").

[54] Jaffe, *supra* note 14.

[55] *See id.*

[56] *Id*.

[57] Laura Shin, *Cryptos in Wonderland: 12 of the Weirdest, Wackiest Coins*, FORBES (July 10, 2017), https://www.forbes.com/sites/laurashin/2017/07/10/cryptos-in-wonderland-12-of-the-weirdest-wackiest-coins/#320cb4582a70 [https://perma.cc/V9X5-R54J]; *About TrumpCoin,* TRUMPCOIN, https://www.trumpcoin.com [https://perma.cc/29JW-3SVJ].

[58] Kai Sedgwick, *46% of Last Year's ICOs Have Failed Already*, BITCOIN.COM (Feb. 23, 2018), https://news.bitcoin.com/46-last-years-icos-failed-already/ [https://perma.cc/Z8J8-V5DV].

[59] *Id*.

[60] *See supra* Part II.

[61] Gerding, *supra* note 2, at 990.

being stored in the coins issued in ICOs is "everyone else's agreement that there must be value [in the ICO]."[62] According to a historian of speculative bubbles, "[t]here is nothing so disturbing to one's wellbeing and judgment as to see a friend get rich,"[63] and when investors see the pattern of price increases in ICOs, they want to join the ride.

Of course, just because the ICO market is a bubble does not mean that the entire cryptocurrency space will crash. For instance, the dot-com bubble in the early 2000s "didn't prove that the entire [I]nternet was useless—just that it was inflated with immature ideas."[64] Amazon launched their IPO during the dot-com bubble and has become incredibly successful, so it is possible that Bitcoin and Ethereum will hold steadfast in the cryptocurrency space. However, given that there were over 900 ICOs in 2017[65] raising a total of roughly $5 billion,[66] and many of those coins do not have legitimate business purposes (for example, TrumpCoin), there will also be many coins issued in ICOs that share the same fate as pets.com.[67]

III. Bounded Rationality and a Theory of the ICO Bubble Formation

To protect investors in ICOs, regulators must identify characteristics of the investors in the bubble. If investors are rational, the efficient market hypothesis (EMH),[68] "the most venerable tenant of financial economics and a staple of contemporary legal analysis,"[69] should apply. However, economists' faith in the EMH has been dwindling for some time, and psychological explanations for market behavior are coming to the forefront.[70] Part III argues that the investors in ICOs are not entirely rational; they have bounded rationality. In exploring bounded rationality, section III.A presents psychological arguments for market behavior in an effort to counter EMH claims for why a bubble cannot occur. Using bounded rationality as a foundation, section III.B presents a theory

---

[62] Edwards, *supra* note 1.

[63] Buttonwood, *The Bitcoin Bubble*, ECONOMIST (Nov. 1, 2017), https://www.economist.com/blogs/buttonwood/2017/11/greater-fool-theory-0 [https://perma.cc/K5Q4-SRWJ].

[64] Edwards, *supra* note 1.

[65] Sedgwick, *supra* note 58.

[66] Mullin, *supra* note 19.

[67] *See* Edwards, *supra* note 1.

[68] The efficient market hypothesis provides that if investors are rational, the market price of securities will reflect the fundamental value of the stock, which is calculated as the present value of future cash flows using a discount rate to account for the risk involved. *See* Gregory La Blanc & Jeffrey J. Rachlinski, *In Praise of Investor Irrationality, in* THE LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR 542, 545 (Parisi & Smith eds., 2005).

[69] Donald C. Langevoort, *Taming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation*, 97 NW. U. L. REV. 135, 136 (2002).

[70] *See id*. at 137.

regarding the formation of the ICO bubble and identifies two distinct types of investors in ICOs.

A. PSYCHOLOGICAL ARGUMENTS FOR MARKET BEHAVIOR

Contrary to the EMH, which relies on the complete rationality of investors, the behavioral economic view is that investors' rationality is bounded.[71] Simon's behavioral theory of bounded rationality is premised on the notion that humans do not have perfect cognitive processing abilities; thus, techniques must be found for solving problems approximately, and humans arrive at different solutions depending on what approximations they use.[72] To reduce the cost of information processing, people rely on heuristics, which are rules of thumb that simplify cognitive tasks.[73] However, reliance on heuristics tends to give rise to behavioral biases such as overconfidence and herding effects.[74]

The overconfidence bias is based on the notion that people overestimate their ability to judge circumstances; past success and expertise seem to increase the effects of overconfidence.[75] Moreover, even after investors lose money, they protect their overconfidence in their investing prowess by blaming failures on unforeseen market shifts.[76] Additionally, when people make choices that involve significant uncertainty, they tend to exhibit herd behavior: they "look to what others are doing as evidence of what is optimal."[77]

The EMH provides that investors trade rationally.[78] A rational investor would undoubtedly gather enough information to evaluate the asset, calculate their investment risk, and make investment decisions based on their self-interest.[79] Contrary to this, behavioral economics contends that speculative bubbles form in part because investors are not perfectly rational. Behavioral economic research shows that many investors trade on "noise," which is information that is not related to evaluating the fundamental value of an asset.[80] Investors who trade on noise evaluate whether to trade an asset based on "price trends, emotions, or estimations about what other investors in the market will do."[81] Noise traders invest based on these factors, rather than what the rational investor would do

---

[71] *See* Gerding, *supra* note 2, at 994.

[72] Simon, *supra* note 6, at 6.

[73] *Id*. at 9.

[74] Oskari Juurikkala, *The Behavioral Paradox: Why Investor Irrationality Calls for Lighter and Simpler Financial Regulation*, 18 FORDHAM J. CORP. & FIN. L. 33, 40–42 (2012); *see also* Tom C.W. Lin, *A Behavioral Framework for Securities Risk*, 34 SEATTLE U. L. REV. 325, 344 (2011).

[75] Juurikkala, *supra* note 74, at 41.

[76] La Blanc & Rachlinski, *supra* note 68, at 554.

[77] Juurikkala, *supra* note 74, at 42–43.

[78] *See* Gerding, *supra* note 2, at 994.

[79] *See id*. at 995.

[80] *Id.*

[81] *Id*. (footnotes omitted).

when evaluating whether to buy or sell an asset, because of the heuristics discussed by Simon.[82] Overconfidence leads investors to overestimate their ability to judge circumstances and believe that asset prices will continue to rise.[83]

The EMH also provides that irrational trades are random so they cancel each other out.[84] However, herding refutes this claim. Herding means "that people tend to behave in a certain way because others are acting and thinking similarly."[85] Rather than irrational trades cancelling each other out, herd behavior indicates that investors will enter a positive-feedback loop of continually increasing prices and increasing demand in an asset.[86]

B. A BEHAVIORAL ECONOMIC THEORY OF THE FORMATION OF THE ICO BUBBLE

The refined definition of speculative bubbles[87] and the psychological biases investors encounter establish the foundation for a behavioral economic theory for the formation of the ICO bubble. Speculative bubbles, such as the ICO market, form when "smart money"—informed investors—bid up prices in anticipation of "noise traders" entering the market. The noise traders then enter the market due to the psychological biases they encounter in making their investment decisions. Eventually, the smart money investors sense the market tipping and sell their holdings, leaving the noise traders holding the bag.[88]

Of course, once investors identify a bubble, it may be rational for other investors to join the market and bid up the price[89] of the ICO; however, this likely only applies to smart money investors who have the wherewithal to identify the bubble. Thus, a critical distinction is drawn: smart money investors may be behaving rationally in the ICO market while the noise traders are plagued by bounded rationality.

IV. CURRENT REGULATORY FRAMEWORK FOR ICOs

In the United States, no government entity explicitly regulates ICOs. The U.S. Commodity Futures Trading Commission (CFTC) has jurisdiction over virtual currencies, such as Bitcoin, when a virtual currency is "used in a derivatives contract, or if there is fraud or manipulation involving a virtual currency traded in interstate

---

[82] *See* Simon, *supra* note 6, at 9–10.

[83] *See* Gerding, *supra* note 2, at 996 n.89.

[84] *Id*. at 994–95.

[85] Lin, *supra* note 74, at 347.

[86] Gerding, *supra* note 2, at 997.

[87] *See supra* Part II.

[88] *See* Gerding, *supra* note 2, at 999.

[89] *Id*. at 994.

commerce." [90] However, most coins issued in ICOs are likely not currencies given that the coins are used for defined projects or services,[91] and the CFTC has not attempted to regulate any coin issued in an ICO.

The Federal Trade Commission (FTC) recently halted the activity of four people who promoted a "chain referral scheme"—known as the Bitcoin Funding Team.[92] In this case, the defendants claimed the Bitcoin Funding Team could turn a $100 cryptocurrency investment into $80,000 per month in income.[93] Although this case involved a cryptocurrency, the defendants did not create or issue any coin in an ICO, and the FTC has not attempted to regulate ICOs.

The Department of the Treasury's Financial Crimes Enforcement Network (FinCEN) recently publicized a letter to Senator Wyden (the ranking member on the Committee of Finance) that detailed its stance on the regulation of ICOs.[94] It noted that virtual currency exchangers are money transmitters that must comply with the Bank Secrecy Act.[95] It further stated that "a developer that sells . . . ICO coins or tokens, in exchange for another type of value that substitutes for currency is a money transmitter and must comply with [Anti-Money Laundering/Combating the Financing of Terrorism] requirements that apply to this type of [Money Service Business]."[96] FinCEN also noted that to the extent the

---

[90] *Bitcoin Basics,* U.S. COMMODITY FUTURES TRADING COMM'N https://www.cftc.gov/sites/default/files/idc/groups/public/%40customerprotection/docum ents/file/oceo_bitcoinbasics0218.pdf [https://perma.cc/C8M9-MT5Y]; *see e.g.,* Commodity Futures Trading Comm'n v. McDonnell, 287 F. Supp. 3d 213, 228–30 (E.D.N.Y. 2018) (holding that virtual currencies are "commodities" subject to the CFTC's regulatory protections, CFTC has jurisdiction over fraud related to virtual currencies sold in interstate commerce, and that CFTC made prima facie showing in this case of fraud by defendants).

[91] *See supra* Part I. Determining what types of coins are "currencies" is beyond the scope of this Note.

[92] *FTC Shuts Down Promoters of Deceptive Cryptocurrency Schemes,* FED. TRADE COMM'N (Mar. 16, 2018), https://www.ftc.gov/news-events/press-releases/2018/03/ftc-shuts-down-promoters-deceptive-cryptocurrency-schemes [https://perma.cc/VPV2-3SNR].

[93] *Id.*

[94] *See What We Do*, FIN. CRIMES ENF'T NETWORK: U.S. DEP'T OF THE TREASURY, https://www.fincen.gov/what-we-do [https://perma.cc/6582-LTL7] ("FinCEN's mission is to safeguard the financial system from illicit use and combat money laundering and promote national security through the collection, analysis, and dissemination of financial intelligence and strategic use of financial authorities."). The scope of FinCEN's regulatory authority does not reach investor protection, which is the focus of this Note.

[95] Letter from Drew Maloney, Assistant Secretary for Legislative Affairs, Department of the Treasury, to Senator Wyden, Ranking Member, Committee on Finance, United States Senate (Feb. 13, 2018), https://coincenter.org/files/2018-03/fincen-ico-letter-march-2018-coin-center.pdf [https://perma.cc/2FWA-FDW7]; *see also Bank Secrecy Act*, INTERNAL REVENUE SERV. (Aug. 6, 2017), https://www.irs.gov/businesses/small-businesses-self-employed/bank-secrecy-act [https://perma.cc/9NQU-QSJJ] (explaining that the Bank Secrecy Act requires companies to retain documents and file reports to detect and deter money laundering).

[96] Letter from Drew Maloney, *supra* note 95.

coin offering in an ICO is a security, it would fall under the authority of the U.S. Securities and Exchange Commission (SEC).[97] Unfortunately, forcing ICO issuers to comply with anti-money laundering requirements does nothing by way of protecting noise traders from losing their money in poor investment decisions. Thus, a regulatory framework must be created to protect noise traders that partake in ICOs.

V. AN ASYMMETRICALLY PATERNALISTIC APPROACH TO REGULATING ICOS

Proponents of behavioral economics have historically advocated for increased regulation whereas advocates of the EMH argue for less regulation. [98] Part V argues for light-touch regulations via an asymmetrically paternalistic framework. This Part does not provide a comprehensive regulatory plan; rather, section V.A explains what an asymmetrically paternalistic regulatory approach entails, section V.B presents examples of how to implement such a framework, and section V.C argues for light-touch regulation of the ICO market in lieu of alternative methods of regulation.

A. WHAT IS AN ASYMMETRICALLY PATERNALISTIC REGULATORY APPROACH?

A regulatory approach is "asymmetrically paternalistic if it creates large benefits for those who make errors, while imposing little or no harm on those who are fully rational."[99] Light-touch regulations covered by the asymmetric paternalism umbrella will help those with bounded rationality make better decisions without restricting the freedom of choice of the rational actors. As discussed in Part III, there are two main types of investors in the ICO bubble—the smart money investors, who have the wherewithal to identify and participate in the bubble, and the noise traders, who invest based on price trends, emotions, or estimations about what other people will do. Given these two distinct types of investors, light-touch regulations via an asymmetrically paternalistic framework would help the noise traders make better investment decisions without restricting

---

[97] *Id.* The SEC recently found that an ICO of Decentralized Autonomous Organization (DAO) tokens sold by Slock.it were securities, thus falling under the SEC's purview. Report of Investigation Pursuant to Section 21(a) of the Sec. Exch. Act of 1934: The DAO, Release No. 81207 (July 25, 2017). The SEC also found MUN tokens, issued in an ICO, were securities. In the Matter of Munchee, File No. 3-18304, Release No. 10445 (Dec. 11, 2017), https://www.sec.gov/litigation/admin/2017/33-10445.pdf [https://perma.cc/98P5-7ASB]; *see also* Bloomberg, *The SEC is Sending Subpoenas in Expanded ICO Crackdown*, FORTUNE, http://fortune.com/2018/03/01/sec-ico-cryptocurrency-subpoenas/ [https://perma.cc/9NQU-QSJJ] (last updated Mar. 1, 2018) (explaining that the SEC is cracking down on ICOs).
[98] *See* Juurikkala, *supra* note 74, at 35.
[99] Camerer et al., *supra* note 7, at 1212.

the freedom of the smart money investors to participate in the bubble.

B. EXAMPLES OF LIGHT-TOUCH REGULATIONS FOR THE ICO MARKET

Two regulatory tools provide the type of light-touch regulations that may help noise traders make better investment decisions without harming the freedom of the smart money investors: (1) information disclosure and (2) cooling-off periods.

1. Information Disclosure

The theory of bounded rationality suggests that people do not interpret information the way that proponents of the EMH assume they do.[100] A behavioral approach to information disclosure does not necessarily advocate for increased disclosure; rather, the focus should be on how information is presented to decision makers.[101] Although general warnings may not be effective, requiring "vivid—perhaps even shocking—information about real cases that have gone wrong"[102] may help noise traders make better investment decisions regarding ICOs without harming smart money investors' freedom of choice. For example, every ICO white paper could be required to disclose on the first page that "X% of companies conducting initial coin offerings never create their proposed product" or that "59% of initial coin offerings in 2017 are either confirmed failures or failures-in-the-making."[103] It is possible that more information may contribute to an investors' overconfidence, especially if those investors have had previous success investing in ICOs.[104] However, this type of warning may quell the herd behavior[105] exhibited by noise traders without harming the freedom of choice of the smart money investors.

2. Cooling-Off Periods

The argument for implementing cooling-off periods stems from the idea that people may make decisions that cannot be reversed.[106] When making these decisions, the decision maker may suffer from "self-control problems that lead them to overweigh the short-term benefits of indulging

---

[100] *Id*. at 1230.

[101] *See id*. at 1230–33 (highlighting examples of this type of disclosure); *see also* Juurikkala, *supra* note 74, at 55 (discussing the mandated disclosure of APR rates).

[102] Juurikkala, *supra* note 74, at 56.

[103] *See* Sedgwick, *supra* note 58.

[104] *See* Troy A. Paredes, *Blinded by the Light: Information Overload and its Consequences for Securities Regulation*, 81 WASH. U. L. Q. 417, 458 (2003).

[105] *See* Stephen M. Bainbridge, *Mandatory Disclosure: A Behavioral Analysis*, 68 U. CIN. L. REV. 1023, 1040 (2000) ("[L]egal intervention (in the form of a mandatory disclosure system) may be necessary to redirect the herd.").

[106] *See* Camerer et al., *supra* note 7, at 1238.

their current state of mind."[107] A cooling-off period presents an alternative to the irreversible consequences of certain decisions and allows people to "reevaluate their decisions free from heat-of-the-moment impulses[.]"[108]

There are two distinct ways to implement a cooling-off period: waiting periods, when the transaction will not be completed until a certain time, or withdrawal periods, when the decision can be reversed by the decision maker for a specific amount of time.[109] Decision reversals in a withdrawal period seem to be less costly than mandatory waiting periods[110] because withdrawal periods target the noise traders, whereas a mandatory waiting period affects both the noise traders and the smart money investors.

Implementing a cooling-off withdrawal period in the ICO market would be beneficial to noise traders because cryptocurrency transactions are irreversible.[111] Typically, ICOs are held open for a specific amount of time or until all of the coins are sold; however, once an investor transfers their coins to the company, the transaction is irreversible. A cooling-off period in which the transfer can be voided or when the issuing company is required to return the already-transferred cryptocurrency can protect the noise traders from the overconfidence that affects their decision making. During the cooling-off period, the noise traders may recognize their behavioral biases and make more rational decisions.[112] Of course, cooling-off periods will interfere with functioning of the ICO market more than tailored information disclosure; thus, greater care must be used in deciding whether to implement them.

C. ARGUMENTS FOR LIGHT-TOUCH REGULATION IN LIEU OF ALTERNATIVES

There are many alternatives to implementing an asymmetrically paternalistic regulatory framework. Some may argue that regulators should not protect noise traders at all;[113] thus, the ICO bubble should

---

[107] *Id.*

[108] *Id.* at 1239.

[109] *See* Juurikkala, *supra* note 74, at 58; *see also* Camerer et al., *supra* note 7, at 1240.

[110] Camerer et al., *supra* note 7, at 1240.

[111] *See Some Things You Need to Know*, BITCOIN.ORG, https://bitcoin.org/en/you-need-to-know [https://perma.cc/CE84-ZYBZ] ("Any transaction issued with Bitcoin cannot be reversed, they can only be refunded by the person receiving the funds."); *see also* Rich Apodaca, *Six Things Bitcoin Users Should Know About Private Keys*, BITZUMA, https://bitzuma.com/posts/six-things-bitcoin-users-should-know-about-private-keys/ [https://perma.cc/QXA5-3VQA] (last updated Dec. 5, 2017) (providing an example of a private Bitcoin key: 5KJvsngJeMpm884wtkJNzQGaCErckhHJBGFFsvd3VyK5qMZXj3hS). Whoever has the key has possession of the Bitcoin, and when making a transfer, if one letter or digit in the key is inputted incorrectly (which is possible considering how complex the key is), the Bitcoin will transfer to the wrong party and cannot be reversed.

[112] *See* Stephen J. Choi & A.C. Pritchard, *Behavioral Economics and the SEC*, 56 STAN. L. REV. 1, 65 (2003) (discussing trading delays and the effect on psychological biases).

[113] *See* Jill E. Fisch, *Regulatory Responses to Investor Irrationality: The Case of the Research Analyst*, 10 LEWIS & CLARK L. REV. 57, 82 (2006) (discussing how, in the

remain untouched. However, research shows that the level of investor protection in a given country is crucial to the development of its financial markets because increased investor protection is correlated to investor confidence in the market.[114] Of course, the United States already has well-developed equity and debt markets; however, the ICO space is an entirely new frontier and should be given the chance to develop into a legitimate method of raising capital. To develop ICOs as a legitimate method of raising capital, noise traders must be protected from investing in failing ICOs or ICOs without a legitimate business purpose,[115] which in turn will increase investor confidence in the ICO market.

Some may argue that the markets are self-correcting; thus, instead of protecting noise traders via regulation, the market should allow investors to use derivative financial products to either bet for or against the ICO market. In turn, the market will self-correct if needed. Derivatives were recently created with the launch of Bitcoin futures on the Chicago Board Options Exchange; the day after the futures were launched, Bitcoin's price increased almost 10%.[116] There are two main reasons for this increase. First, investors that were previously skeptical of Bitcoin because of the lack of regulation may be more confident in buying Bitcoin given that Bitcoin futures are regulated on public exchanges. Second, institutional investors are more likely to offer Bitcoin futures as a viable investment opportunity now that they are available on a regulated public exchange.[117]

Notwithstanding logistical issues in creating a derivatives market for ICOs, two problems would arise if an ICO derivatives market was launched. First, evidenced by Bitcoin's price increase after launching Bitcoin futures, offering ICO futures on a regulated public exchange may actually *increase* investors' overconfidence, which could lead to noise traders investing more in ICOs. Second, the institutional investors may be more likely to recommend ICO futures to their clients because the futures would be traded on a regulated exchange. If ICO futures are traded on a regulated public exchange—thereby giving investors a false sense of security—both noise traders and smart money would increase their investments in ICOs and the speculative bubble would continue to grow. Thus, regulators must still protect noise traders via light-touch regulation to dampen the effects of the speculative bubble and, in turn, legitimize the ICO as a method of raising capital.

---

broad context of investing, one regulatory approach is to "do nothing and allow irrational investors to bear the consequences of their trading decisions.").

[114] Rafael La Porta et al., *Investor Protection and Corporate Valuation*, 57 J. FIN. 1147, 1147 (2002).

[115] For examples of ICOs without a legitimate business purpose and statistics about failing ICOs, see *supra* section II.C.

[116] Chrisjan Pauw, *Bitcoin Futures, Explained*, COINTELEGRAPH (Dec. 17, 2017), https://cointelegraph.com/explained/bitcoin-futures-explained [https://perma.cc/2TPP-L47K].

[117] *Id.*

In questioning whether light-touch regulations should be encouraged or discouraged, there are several arguments why light-touch regulations can be harmful; thus, they should not be blindly endorsed.[118] One of the strongest arguments against blindly adopting light-touch regulation is that public monitoring of light-touch regulation is more difficult than public monitoring of hard paternalism.[119] The crux of this argument is that light-touch regulation must be "situation specific and creative in the language of its message," which makes it inherently harder for the public to monitor.[120] Although this may be true, the examples of light-touch regulation detailed above—information disclosure and cooling-off periods—would not be difficult for the public to monitor. Presumably, a warning about the dangers of investing in ICOs would be easily visible for investors, and the cooling-off period would be known to investors in the event noise traders wished to rescind their investments.

Another argument is that light-touch regulations could lead to hard paternalism because successful light-touch regulations create a "social dislike for the activity in question, and reduce the number of people who engage in the activity," which in turn means hard paternalism is increasingly attractive to the electorate.[121] The best example of this phenomenon is cigarette smoking: in 1964 consumers were warned of the hazards of smoking cigarettes and, over time, there was an increased interest in regulating and taxing cigarettes.[122] As detailed previously, in the ICO market there are two distinct groups of investors—smart money and noise traders. The light-touch regulatory examples provided above may ultimately reduce the number of noise traders that participate in ICOs. Thus, there would be no need for a hard paternalism approach because the light-touch regulations and market forces would dry up the purely speculative aspect of the ICO market, thereby assuaging the electorate's concerns. However, if light-touch regulations do lead to the desire to implement hard paternalism policies, the hard paternalism approach is too heavy-handed for the ICO market and should not be implemented.

In 2017, South Korea exhibited the most serious example of hard paternalism in the ICO market. The South Korean Financial Services Commission banned ICO trading because it was used as a way to speculate on prices.[123] On its face, this type of heavy-handed regulation

[118] Edward L. Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133, 150 (2006). Note that Glaeser uses "soft paternalism" instead of "light-touch" regulation; however, the terms are interchangeable.
[119] *Id*. at 135, 151 (providing examples of hard paternalism such as tax rates and outright bans).
[120] *Id.* at 151.
[121] *Id*. at 153.
[122] *See id*. at 153–54.
[123] *See* Kenichi Yamada, *South Korea to Ban ICO Fundraising, Following China: Financial Authorities Crack Down Ahead of Fraud and Speculation*, NIKKEI ASIAN REV. (Sept. 30, 2017), https://asia.nikkei.com/Markets/Currencies/South-Korea-to-ban-ICO-fundraising-following-China [https://perma.cc/8SB2-EKMJ].

may appear to protect noise traders from losing all their money, but it does so at the expense of the rational smart money investors and stifles innovation.[124]

Instead of hindering innovation, regulators should move in a direction that ultimately strengthens the ICO as a legitimate way to raise capital for innovative businesses while also protecting investors. The best way to achieve this eventual outcome is to protect the noise traders in the current ICO market by crafting light-touch regulations based on their psychological biases. It can be argued that, by protecting the noise traders, the smart money investors will exit the market because there will no longer be a bubble for them to rationally invest in. However, dampening the speculative nature of the ICO market via light-touch regulations will not destroy the market entirely; rather, it will separate the wheat from the chaff and ultimately legitimize the ICO as a method of raising capital. Protecting the noise traders and reducing the speculative nature of the ICO market will force companies wishing to raise capital via ICOs to release white papers with legitimate business purposes. This outcome would be similar to the end of the dot-com bubble, wherein companies with legitimate ideas—such as Amazon—thrived, while companies with unsustainable business models—such as pets.com—did not survive.

Moreover, Robert Shiller, an economist (who is critical of "naïve believers in market efficiency"[125]) and Nobel Laureate, suggests that interfering with markets, including speculative bubbles, will not work in most situations:

> Unfortunately, the nature of bubbles is sufficiently complex and changing that we can never expect to document the particular role of any given policy in bringing about our objective long-term economic welfare. Policies that interfere with markets by shutting down or limiting them, although under some very specific circumstances apparently useful, probably should not be high on our list of solutions to the problems caused by speculative bubbles. Speculative markets perform critical resource-allocation functions . . . and any interference with markets to tame bubbles interferes with these functions as well.[126]

---

[124] *See* Burhan Wazir, *Indian Crypto Caution Could Stifle Innovation*, RACONTEUR (June 21, 2018), https://www.raconteur.net/finance/india-cryptocurrency-caution, [https://perma.cc/7JNL-5UMS] (discussing rule implemented by the Reserve Bank of India barring use of the country's banking system to trade cryptocurrencies and how this rule could stifle innovation).

[125] Juurikkala, *supra* note 74, at 72.

[126] *Id.* at 73 (quoting ROBERT J. SHILLER, IRRATIONAL EXUBERANCE 229–30 (2d ed. 2005)).

Shiller goes on to say that "most of the thrust of our national policies to deal with speculative bubbles should . . . [provide] greater opportunities for people to take positions in more and freer markets."[127]

Of course, allowing the speculative ICO bubble to persist may lead to negative externalities. First, it is possible that noise traders in the ICO market misallocate large portions of their wealth to a coin issued via ICO instead of spending that money for consumption purposes or investing in the equity or debt markets.[128] As alluded to earlier, the ICO speculative bubble can also promote fraud by way of an ICO issuer stealing investors' cryptocurrency and disappearing without a trace. As fraud increases in the ICO space, investor confidence can decrease.[129] If a bubble is allowed to persist, it will burst, and when that occurs the effects may spill over beyond the ICO market.[130] These spillover effects may include contagion, whereby "falling prices in one asset market can cause price collapses and financial instability across other asset classes."[131]

The asymmetrically paternalistic approach to regulating ICOs via light-touch policies aims to protect noise traders without harming the freedom of choice of the rational smart money investors.[132] Light-touch regulation will likely dampen the negative externalities of misallocation of resources and promotion of fraud because noise traders will be warned of the dangers of their investment in the ICO via information disclosure. In turn, this tailored information disclosure may quell the noise traders' herd behavior. Even after making an investment in an ICO, implementing a cooling-off withdrawal period provides further protection for noise traders because it allows them to recognize their behavioral biases, such as overconfidence, and make more rational decisions.

CONCLUSION

---

[127] *Id.* (quoting SHILLER, *supra* note 126, at 230).

[128] *See* Gerding, *supra* note 2, at 1031.

[129] *See id.* at 1032.

[130] *See id.*

[131] *Id.*

[132] Determining which regulatory body should implement the asymmetrically paternalistic framework proposed is beyond the scope of this Note. However, because FinCEN does not focus on investor protection, another regulatory body must step in. The SEC has thrown its hat in the ring, finding that certain coins issued in ICOs were securities. *See supra* Part IV and note 97. If the coins issued in ICOs are considered securities, the SEC has the ability to enact the light-touch regulations explored in this Note: information disclosure and cooling-off periods. The SEC can require information to be disclosed to investors, considering the purpose of the 1933 Act is to provide investors financial and other significant information in regard to securities being offered for public sale and prohibit deceit, misrepresentations, and other fraud in the sale of securities. *See The Laws That Govern the Securities Industry*, U.S. SEC. & EXCH. COMM'N, https://www.sec.gov/answers/about-lawsshtml.html#secact1933 [https://perma.cc/65BV-SEAN] (last modified Oct. 1, 2013). The SEC also has authority to adopt cooling-off withdrawal periods, evidenced by the rule that investors in crowdfunding campaigns may cancel their commitments up to 48 hours before the closing deadline. *See* 17 C.F.R. § 227.201(j) (2017).

Over the past few years, interest and innovation in the cryptocurrency space has grown, and companies have increasingly used ICOs as a way to raise capital without complying with securities regulations. This Note examined two historical bubbles—tulip-mania of 1637 and the dot-com bubble in the early 2000s—and argued that the ICO market is currently exhibiting even stronger signs of a speculative bubble because there is no fundamental asset value or future cash flows for investors to examine prior to deciding whether to invest in an ICO. In this ICO bubble, smart money investors bid up prices in anticipation of noise traders entering the market. The noise traders then enter the market due to the psychological biases they encounter in making their investment decisions. Eventually, the smart money investors will sell their holdings and the bubble will burst.

In determining how best to regulate the speculative ICO bubble, this Note looked toward the behavioral economics theory of bounded rationality for a foundation. Bounded rationality explains that humans make suboptimal choices because they are influenced by psychological biases, such as overconfidence and herd behavior. By identifying and understanding these psychological biases, regulators can adopt a regulatory framework that helps investors reduce the harmful effects of the ICO bubble. To accomplish this, regulators must regulate ICOs using an asymmetrically paternalistic framework. This framework assumes that some investors in ICOs, such as the smart money, behave more rationally than others, such as the noise traders. Thus, the optimal regulatory scheme would take those differences into account by helping less rational noise traders make better choices without restricting the freedom of choice of the rational smart money investors.