

The Law and Business of Bitcoin and Other Cryptocurrencies

Fall 2014

Geoffrey Miller
NYU School of Law

David Yermack
NYU Stern School of Business

Description: This new course, to be offered jointly by NYU's Law School and Stern School, will study Bitcoin and other alternative payment mechanisms. Interest in this topic has exploded over the past five years, as Bitcoin and an increasing pool of competitors have risen in value and gained acceptance as payment devices. Advocates for Bitcoin praise it as a superior payment mechanism – one that operates outside the control of governments, is international in scope, is more secure than prior electronic payments vehicles, and carries within it a locked-in protocol for increase in supply which is impervious to inflationary temptations. At the same time, the growth of these innovations has led to heightened concerns about their use. Governments worry that Bitcoin facilitates illegal transactions. Investors and governments worry that these currencies have a highly speculative value and trade in markets which themselves are vulnerable to fraud and theft. Some governments are concerned that private payments systems will undermine efforts to control the value of their currencies. Governments also worry, more fundamentally, that they could lose hundreds of billions of dollars of seigniorage if virtual currencies become the norm. These concerns have triggered actual or threatened regulatory actions: Bitcoin is banned in Russia, strictly regulated in China, and subject to increasing scrutiny in Switzerland and other countries. So far, however, the United States regulators have allowed the experiment to continue without significant regulation. The course will cover topics such as the essential nature of money; the origin and function of Bitcoin; the nature and instability of bank-created money; Bitcoin and monetary economics; other nonbank payment vehicles; Bitcoin as an investment; using Bitcoin as a consumer; using Bitcoin as a business; the legal treatment of Bitcoin; and regulating Bitcoin trading. It is also anticipated that the course will take account of new developments in this rapidly evolving topic.

Course meetings: Tuesdays from 2:00 – 3:50 in Furman Hall 210.

Credit hours: For administrative reasons the course will be offered to Law School students for 2 credits and to Stern School students for 1.5 credits. As a result, 4 of the 14 lectures are designated for "Law Students" and will focus on legal and regulatory material. These classes will take place on September 2, 16, 23, and November 25. While Stern students will be welcome to attend these classes, they are required to attend only the remaining 10 of the 14 class meetings.

Evaluation: Students are expected to complete a term paper of 15-20 pages length. Potential topics will be discussed during the early sessions of the course.

Pre- or co-requisites: None.

Outline of Classes

Class One (Law Students): What is money?

- The fundamental nature of the payment function
- The concept of legal tender
- Traditional payment devices: gifts, barter, specie, currency

Class Two: Where did Bitcoin come from, and how does it work?

- The logic of a peer-to-peer payment system
- Nakamoto's protocol, and how it took hold
- The "mining" process of creating new Bitcoins
- The decentralized governance of Bitcoin
- What problems is Bitcoin supposed to solve?
- Who does Bitcoin appeal to?
- Who is threatened by Bitcoin?
- Competitors to Bitcoin

Class Three (Law Students): Bank-created money

- Circulating notes
- Deposit accounts
- Legal aspects of bank deposits
- Money creation through bank lending
- The role of the central bank in bank-created money
- Motivations for inflation

Class Four (Law Students): The instability of bank-created money

- The nature of a bank run
- Costs (and benefits) of bank runs
- Legal aspects of deposit insurance
- Liquidity regulation
- Capital regulation

Class Five: Bitcoin and monetary economics

- Bitcoin as a stateless currency with no monetary policy
- The weaknesses of fiat currency; Gresham's law
- Bitcoin's appeal to classical monetarists: separating politics from money
- Bitcoin's impact on siegniorage

- Can Bitcoin be debased?
- Bitcoin's long-run problem: deflation after 2140

Class Six: Non-bank payment vehicles

- Bank-affiliated payment systems (e.g., credit cards, PayPal, money funds, Western Union)
- Local currencies (e.g., Ithaca Hour)
- LETS systems
- MMORPG currencies

Class Seven: Is Bitcoin a currency, or something else?

- Classical criteria of money: medium of exchange, unit of account, store of value
- Bitcoin's problems: volatility, arbitrage, market incompleteness
- Measures of Bitcoin's adoption in the mainstream economy
- Other views of Bitcoin: an investment security, a transfer service, a commodity
- Which regulators should be watching over Bitcoin?
- Proposed extensions of the Bitcoin algorithm to other financial and legal services

Class Eight: Using Bitcoin as a consumer

- How does a consumer acquire Bitcoins?
- What are "digital wallets"? Are they as secure and liquid as bank deposits?
- What are Bitcoin ATMs?
- Does Bitcoin provide confidentiality, or does it undermine it?
- Which businesses accept Bitcoin, and why?
- Hidden charges and commissions charged by vendors when you pay in Bitcoin
- Bitcoin and sales taxes
- Refunds, returns, and other aspects of routine consumer protection
- Does Bitcoin preclude the use of ordinary consumer credit?

Class Nine: Legal treatment of Bitcoin

- Potential regulation under the securities laws
- Potential regulation under the commodities laws
- Pledging Bitcoin as collateral
- Seizing Bitcoin in court to satisfy fines, judgments, or back taxes

- The emerging regulatory structure and case law in the U.S.

Class Ten: Using Bitcoin as a business

- Accepting Bitcoin as a marketing strategy to attract a certain clientele
- How Bitcoin's payment and verification systems work for ordinary transactions
- Risk management, hedging, and transaction costs for a business
- How do auditors and tax collectors treat Bitcoin transactions?
- Dealing with consumer fraud strategies such as "malleability" and "double spending"
- How should businesses think about credit, refunds, deposits, and other transactions if the customer pays in Bitcoin?
- Impact of the Silk Road case on Bitcoin commerce

Class Eleven: Bitcoin and the capital markets

- The custody, settlement and verification process – Bitcoin vs. standard investments
- Overview of the varied Bitcoin markets around the world
- Benchmarking the trading of Bitcoin: volume, spreads, liquidity, arbitrage
- Bitcoin derivatives and their role in hedging
- Why is there no credit denominated in Bitcoin? Will there be?

Class Twelve: Regulating Bitcoin trading

- Legal regulation of money transfer agents
- Who, if anyone, has authority to regulate Bitcoin trading?
- Capital and margin requirements for traders
- Capitalization requirements for market makers
- Disclosure and transparency requirements
- Vulnerabilities of Bitcoin: hacking, custodianship, default of market makers
- The rise and fall of the Mt. Gox exchange

Class Thirteen (Law Students): International remittances and Bitcoin

- Introduction to international money transfers
- Costs built into the worldwide payments system, compared to Bitcoin transfer costs
- Shadow banks and other alternative payment methods
- Repatriation of overseas profits by a corporation using Bitcoin
- Remittance of overseas earnings by an immigrant using Bitcoin

- Money laundering for narcotics, terrorism, tax evasion, and other purposes

Class Fourteen: Bitcoin as a speculative investment

- The world market for currencies – does Bitcoin fit in at all?
- What intrinsic value would justify investing in Bitcoin?
- Is Bitcoin similar to gold as an asset?
- Bitcoin investment vehicles, such as the Winklevoss Bitcoin Trust
- Risks related to liquidity and market incompleteness
- How does Bitcoin measure up on a risk/return basis?
- Does Bitcoin's trajectory resemble fads and bubbles from financial history?

Reading list

Source documents and websites

bitcoin.org

bitcoinfoundation.org

coindesk.com, especially “A Beginner’s Guide to Bitcoin,” available at coindesk.com/information, and “State of Bitcoin 2014,” available at coindesk.com/bitcoin-2014-report.

Nakamoto, Satoshi, 2008, Bitcoin: A Peer-to-Peer Electronic Cash System, unpublished manuscript, available at bitcoin.org/bitcoin.pdf.

Government materials

European Central Bank, 2012, Virtual Currency Schemes, available at ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf

U.S. Department of the Treasury Financial Crimes Enforcement Network, 2013, Guidance: Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies, release FIN-2013-G001, March 18, 2013, available at fincen.gov/statutes_regs/guidance/pdf/FIN-2013-G001.pdf

U.S. Law Library of Congress Global Legal Research Center, 2014, Regulation of Bitcoin in Selected Jurisdictions, L.L. File No. 2014-010233, available at cdn1.sbnation.com/assets/3952017/2014-010233_Law_Library_of_Congress_Bitcoin_jurisdictional_survey.pdf

U.S. Senate Committee on Homeland Security and Governmental Affairs, Beyond Silk Road: Potential Risks, Threats, and Promises of Virtual Currencies, Hearings held November 18-19, 2013, available at hsgac.senate.gov/hearings/beyond-silk-road-potential-risks-threats-and-promises-of-virtual-currencies

Letter of Sen. Joe Manchin (D-WV) on regulating Bitcoin, February 26, 2014, available at

manchin.senate.gov/public/index.cfm/2014/2/manchin-demands-federal-regulators-ban-bitcoin

and response of Patrick Murck, Bitcoin Foundation General Counsel, February 27, 2014, available at

bitcoinfoundation.org/blog/wp-content/uploads/2014/02/2014-02-27-Letter-to-Senator-Manchin.pdf

Conference of State Bank Supervisors, “Emerging Payments Task Force” forthcoming.

Videos

NYDFS Hearing on Virtual Currencies, January 28-29, 2014, available at
totalwebcasting.com/view/?id=nysdfs

Bitcoin flash crash, available at
youtube.com/watch?v=T1X6qQt9ONg&feature=related

Articles and commentary

Alcorn, Thomas, Adam Eagle, and Ethan Sherbondy, 2013, Legitimizing Bitcoin: Policy Recommendations, unpublished manuscript, available at
web.mit.edu/alcorn/www/Legitimising_Bitcoin.pdf

Bal, Aleksandra, 2013, Stateless Money in the Tax System, 7 European Taxation 351.

Becker , Jörg, Dominic Breuker, Tobias Heide, Justus Holler, Hans Peter Rauerm and Rainer Böhme, 2012, Can We Afford Integrity by Proof-of-Work? Scenarios Inspired by the Bitcoin Currency, unpublished manuscript, available at
ssrn.com/abstract=2041492

Bollen, Rhys, 2013, The Legal Status of Online Currencies: Are Bitcoins the Future? Journal of Banking and Finance Law and Practice.

Brito, Jerry, and Andrea A. Castillo, 2013, Bitcoin: A Primer for Policymakers, Mercatus Center, George Mason University, available at
mercatus.org/sites/default/files/Brito_BitcoinPrimer_v1.3.pdf

Bryans, Danton, 2014, Bitcoin and Money Laundering: Mining for an Effective Solution, 89 Indiana Law Journal 441.

Carnell, Macey and Miller, The Law of Financial Institutions (5th ed. 2013).

Grinberg, Ruben, 2011, Bitcoin: An Innovative Alternative Digital Currency, 4 Hastings Science and Technology Law Review 160.

Hanley, Brian P., 2014, The False Premises and Promises of Bitcoin, unpublished manuscript, available at
arxiv.org/ftp/arxiv/papers/1312/1312.2048.pdf

Isom, Jennifer, 2013, As Certain as Death and Taxes: Consumer Considerations of Bitcoin Transactions when the IRS Comes Knocking, unpublished manuscript, available at

ssrn.com/abstract=2365493

Kaplanov, Nikolei M., 2012, Nerdy Money: Bitcoin, the Private Digital Currency, and the Case Against Its Regulation, unpublished manuscript, available at

ssrn.com/abstract=2115203

Knoll, Joshua A., Ian C. Davey, and Edward W. Felten, 2013, The Economics of Bitcoin Mining, or Bitcoin in the Presence of Adversaries, available at

weis2013.econinfosec.org/papers/KrollDaveyFeltenWEIS2013.pdf

Marian, Omri, 2013, Are Cryptocurrencies Super Tax Havens? 112 Michigan Law Review First Impressions 38.

Miller, Geoffrey, Nondeposit Deposits and the Future of Bank Regulation, 91 Michigan Law Review 237 (1992)

Plassaras, Nicholas, 2013, Regulating Digital Currencies: Bringing Bitcoin within Reach of the IMF, 14 Chicago Journal of International Law 377

Segal, David, 2014, Eagle Scout. Idealist. Drug Trafficker? The New York Times, January 18.

Selgin, George, 2013, Synthetic Commodity Money, unpublished manuscript, available at

ssrn.com/abstract=2000118

Trautman, Lawrence J., 2014, Virtual Currencies: Bitcoin and What Now after Liberty Reserve and Silk Road, unpublished manuscript, available at

ssrn.com/abstract=2393537

Velde, Francois R., 2013, Bitcoin: A Primer, Federal Reserve Bank of Chicago Essays on Issues No. 517, December 2013, available at

chicagofed.org/digital_assets/publications/chicago_fed_letter/2013/cfldecember2013_317.pdf

Yermack, David, 2013, Is Bitcoin a Real Currency? unpublished manuscript, available at

ssrn.com/abstract=2361599