

## **The Law and Business of Bitcoin and Other Cryptocurrencies**

Geoffrey Miller  
NYU School of Law

David Yermack  
NYU Stern School of Business

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.

## Syllabus

Unless otherwise announced, classes meet in Furman Hall 210 (law school building) from 2:00-3:50 pm. Certain classes are marked as required only for law students, although Stern students are welcome to attend at their option.

### **(1) September 2, 2014** (not required for Stern students) (GM)

What is money?

- The payment function
- Gifts, barter, specie, currency
- The concept of legal tender

Readings:

- 31 U.S.C.A. § 5103
- Legal Tender Cases
- Norman v. Baltimore & O.R. Co.
- Claire Priest, Currency Policies and Legal Development in Colonial New England
- Robert Natelson, Paper Money and the Original Understanding of the Coinage Clause

### **(2) September 9, 2014** (DY)

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

### **(3) September 16, 2014** (not required for Stern students) (GM)

Bank-created money; the problem of inflation

- Circulating notes
- Deposit accounts
- Money creation through bank lending

- The role of the central bank in bank-created money
- Motivations for inflation
- Central bank independence

Readings:

- 12 U.S.C.A. § 225a
- Veazie Bank v. Fenno
- Carnell Macey and Miller, 38-57
- John B. Taylor, The Effectiveness of Central Bank Independence vs. Policy Rules

**(4) September 23, 2014** (not required for Stern students) (GM)

The instability of bank-created money

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

Readings:

Douglas Diamond & Phillip Dybvig, Bank Runs, Deposit Insurance, and Liquidity  
 Basel III International Framework for Liquidity Risk  
 Basel III Capital Rules Intro

**(5) September 30, 2014** (DY)

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

**(6) October 7, 2014** (GM)

## Other non-bank payment vehicles

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

### Readings:

Milton Friedman, *The Island of Stone Money*

Michael F. Brian, *Island Money*

Loren Gatch, *Local Money in the United States During The Great Depression*

## **(7) October 14, 2014 (DY)**

### 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?
- 

## **(8) October 21, 2014 (DY)**

### 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?

*Guest speaker:* Barry Silbert, founder and CEO of Second Market

**(9) October 28, 2014 (GM)**

Legal treatment of Bitcoin; Money Laundering

Readings:

- Brian Stoeckert and Timothy O'Brien, A "C" change for virtual currency.
- FinCen, Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies
- Statement of Jennifer Shasky Calvery, Director Financial Crimes Enforcement Network, United States Department of the Treasury
- FinCEN Publishes Two Rulings on Virtual Currency Miners and Investors
- Sarah Jane Hughes and Stephen T. Middlebrook, Regulating Cryptocurrencies in the United States: Current Issues and Future Directions
- Catherine Martin Christopher, Whack-a-mole: why prosecuting digital currency exchanges won't stop online money laundering
- SAR Stats technical bulletin, July 2014
- French Senate Finance Commission Report

*Guest Speakers:* Brian Stoeckert, Coin Comply  
Jamal El-Hindi, FinCEN Associate Director for Regulatory Policy and Programs

**(10) November 4, 2014 (DY)**

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

**(11) November 11, 2014**

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

Readings:

- Jacob Hamburger, State Money Transmission Laws vs. Bitcoins: Protecting Consumers or Hindering Innovation?
  - NYDFS Proposed Regulation of Virtual Currencies
  - Bitcoin Foundation, Letter to Benjamin M. Lawsky, Superintendent of Financial Services
    - White & Case Client Alert, New York State Department of Financial Services Proposed Regulatory Framework for Virtual Currency Businesses
    - Cleary Gottlieb Alert Memorandum, New York Proposes Bitlicense Regulations for Virtual Currency Businesses
    - Gibson Dunn, U.S. Developments in Virtual Currencies: FinCEN Administrative Rulings and New York Department of Financial Services Hearings
    - Ben Lawsky: New York Can't Risk Getting Bitcoin Regulation Wrong

Guest Speaker: Daniel Alter, NYDFS

**(12) November 18, 2014 (GM)**

Legal treatment of Bitcoin: Taxation, Inheritance; Consumer Protection

- IRS Virtual Currency Guidance
- Consumer Financial Protection Bureau, Risks to consumers posed by virtual currencies
  - 12 Delaware Code § 5001 set seq.
  - Australian Tax Office, Tax treatment of crypto-currencies in Australia
  - HM Revenue and Customs, Tax treatment of activities involving Bitcoin and other similar cryptocurrencies
    - Danny Bradbury, Europe Inches Towards a Decision on Bitcoin VAT

Guest speaker: Joshua Blank, NYU Law

**(13) November 25, 2014 (not required for Stern students) (DY)**

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?

Guest Speaker: Winklevoss? Bitcoin Foundation person?

**(14) December 2, 2014 (DY)**

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