

## Course Syllabus

# ECO31: Hard questions on hard money

Dr. Saifedean Ammous

Summer 2019

This course covers the seven research papers written by Dr. Ammous since the publication of *The Bitcoin Standard*. Students who register will be provided with digital copies of the seven papers for this course in pdf, epub, and mobi formats.

The material of these papers applies the framework and concepts introduced in *The Bitcoin Standard* to analyze broader and more complex economic questions. Students will be expected to have read *The Bitcoin Standard* as a prerequisite for taking this course.

The material of this course is new and part of on-going research projects. The exact schedule of topics over this semester is not determined in this syllabus and will be determined as we go along. Further readings are also likely to be added during the course.

Lectures are delivered live, but can be accessed online at any time until the course ends. Students can ask questions and vote on which questions they would like to see addressed at the end of the lecture.

### Topic 1: Bitcoin, central banking, and fractional reserve banking

This paper discusses fractional reserve banking and whether it could emerge in a bitcoin economy. Is fractional reserve banking necessary for a growing economy? Can fractional reserve banking survive in a free market? Drawing on the academic literature on the topic, this paper analyzes fractional reserve banking, whether it could emerge in a bitcoin economy, and what the implications would be. The paper also discusses why central banks are unlikely to adopt bitcoin as a reserve currency. (14,150 words)

Lawrence H. White, *Free Banking in Britain: Theory, Experience, and Debate, 1800–1845*

Rothbard, Murray *The Myth of Free Banking in Scotland*, *RAE* (1988)

Larry J. Sechrest, *White's Free-Banking Thesis: A Case of Mistaken Identity*, *RAE* (1988)

George Selgin, *The Theory of Free Banking* (1988)

Hans-Hermann Hoppe, How is Fiat Money Possible? or, The Devolution of Money and Credit, *RAE*, Vol. 7, No. 2 (1994)

Jesús Huerta de Soto, A Critical Analysis of Central Banks and Fractional-Reserve Free Banking from the Austrian Perspective, *RAE*, Vol. 8, No. 2 (1995)

Jörg Guido Hülsmann, Free Banking and the Free Bankers, *RAE*, Vol. 9, No. 1 (1996)

George A. Selgin & Lawrence H. White, In Defense of Fiduciary Media—or, We are Not Devo(lutionists), We are Misesians!, *RAE*, Vol. 9, No. 2 (1996)

Hoppe, with Hülsmann & Block, Against Fiduciary Media, *QJAE*, Vol. 1, No. 1 (1998)

Stern, G. H., & Feldman, R. J. (2004). *Too big to fail: The hazards of bank bailouts*. Washington, D.C: Brookings Institution Press.

## **Topic 2: Bitcoin monetization scenarios and financial crises**

If Bitcoin were to indeed become a global money, how would that come to be? This paper argues that bitcoin is unlikely to cause hyperinflationary collapse in credit money, because its continuous growth would likely reduce the creation of credit. This paper considers the possibility that bitcoin's growth would be a more orderly technological upgrade that allows for the demonetization of debt and widescale reduction of indebtedness. The paper then discusses how bitcoin's monetary properties make it likely to behave in various types of financial crises. (15,065 words).

### Readings:

De Soto, Jesús Huerta. *Money, Bank Credit, and Economic Cycles*. Auburn, AL: Ludwig von Mises Institute, 2009.

Rothbard, Murray. *Economic Depressions: Their Cause and Cure*.” Auburn, AL: Ludwig von Mises Institute, 2009.

Mises, Ludwig von. *Human Action. The Scholar's Edition*.” Auburn, AL: Ludwig von Mises Institute, 1998. (Chapter XX)

### **Topic 3: Bitcoin mining: energy and security**

How does bitcoin mining work, and why does it have to consume so much energy? This paper explains how bitcoin's difficulty adjustment prices out miners with high electricity costs, making mining bitcoin only reliably profitable at very low costs of electricity. Since Bitcoin can purchase electricity from anywhere in the world, this leads to bitcoin incentivizing the development of stranded & off-grid energy sources, likely leading to cheaper & more abundant energy production. (8,786 words)

#### Readings:

Epstein, Alex. *The Moral Case for Fossil Fuels*.

Our world in data: Energy production and changing energy sources

Smil, Vaclav. *World History and Energy*.

Coinshares. Bitcoin Mining Cost.

Simon, Julian. *The Ultimate Resource 2*. Princeton University Press, 1981. (Chapter 1-5 & 11-13.)

### **Topic 4: Fiat money and fiat food**

How has the move to an easy and centrally-planned money in the twentieth century affected the quality of food? This paper outlines several economic mechanisms through which a monetary standard could impact the economic decisions of food producers and consumers. The central planning of interest rates leads to a higher incentive for extensive industrial agriculture that generates short-term profits but depletes the soil in the long term. Government policies have also promoted the mass production of industrial foods which help fight price rises, but compromise food nutrient content and safety. (10,017 words)

#### Readings:

Teicholz, Nina. The Big Fat Surprise.

Price, Weston. Nutrition and Physical Degeneration.

Enig, Mary. The skinny on fats.

Kaayla, Daniel. Soy Lecithin: From Sludge to Profit.

Savory, Allan. How to green the world. TED talk.

Shanahan, Catherine & Luke Shanahan. Deep Nutrition: Why your genes need traditional food.

Hess, John. Harvard's Sugar Pushing Nutritionist. The Saturday Review, August 1978.

### **Topic 5: How to really kill bitcoin**

This paper examines bitcoin's survival chances critically. It begins by examining two of the common ways in which people imagine Bitcoin could be killed, and why they are not very likely: software bugs, government bans, and the failure of fees to generate enough security. I argue that these are unlikely to kill bitcoin because they do nothing to undermine the economic incentives that people have to use bitcoin. To successfully undermine bitcoin one needs to undermine the economic incentive that people have for using it, and two such scenarios are discussed: world governments improving their monetary & financial policies; or a hyperinflationary collapse of national currencies before bitcoin has acquired significant liquidity.

#### Readings:

Schuettinger, Robert L., and Eamonn F. Butler. "Forty Centuries of Wage and Price Controls: How Not to Fight Inflation." Ludwig von Mises Institute, 1979.

Smith, Vernon. Constructivist and Ecological Rationality in Economics.

Auer, Raphael. Beyond the doomsday economics of "proof of work" in cryptocurrencies.

Held, Dan. Bitcoin's Security is Fine.

### **Topic 6: Bitcoin and the developing world**

The significance of bitcoin for the developing world lies in it offering a technical non-political solution to the problem of building a global monetary and financial system. Balance of payment

problems and the pursuant financial crises and hyperinflations that have become a seemingly permanent fixture of many developing countries' modern history are not unrelated to the use of sovereign national currencies as global reserve assets, and the political incentives fostered by the indulgent sovereign lending of financial institutions that face no real accountability or strict funding constraints. (15,150 words)

Readings:

Hayek, Friedrich. “*Monetary Nationalism and International Stability.*” Fairfield, NJ: Augustus Kelley, 1989 (1937).

Todaro, Michael and Stephen Smith. Economic Development. Twelfth Edition. (Particularly chapters 1-4 & 13-15)

Rothbard, Murray. “*America’s Great Depression*”, 5th ed. Auburn, AL: Ludwig von Mises Institute, 2000. (Chapters 5-8)

Perkins, John. Confessions of an economic hitman.

Easterly, William. The Cartel of Good Intentions.

Easterly, William. The Elusive Quest for Growth.

Bartholomew, James. How British universities spread misery around the world.

**Topic 7: The Bitcoin Standard as a scaling solution**

This paper expands on the concept of layered scaling as discussed in The Bitcoin Standard. The popularity of bitcoin as hard money is likely to far exceed its capacity for on-chain transactions, necessitating the development of second layer solutions. Custody and credit allocation are market services that have proven in demand through many monetary and financial system, and there is no reason to assume they will disappear in a bitcoin economy. The economics of second layers are discussed, with specific focus on the Lightning Network, and the factors shaping its growth and evolution. The risks of layered scaling are discussed. (9,514 words)

Readings:

Kendziky, Joe. The Bitcoin Lightning Network: A Technical Primer.

Van Wirdum, Aaron. Understanding the Lightning Network.