

Bitcoin and other cryptocurrencies

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1 Intro

We now discuss Bitcoin (฿), a relatively recent innovation to the world's financial markets.

Bitcoin has aspirations to become money/currency.

A currency has three basic functions

- Transactions
- Store of value
- Unit of account

Which of these are facilitated by Bitcoin?

Bitcoin – Issues to be discussed

- How does it work?
 - Cryptographic basis
 - Need for a public basis – infrastructure of computing
 - What does it take to become money?
- What is it used for?
 - Transactions
 - Store of value / Investment asset
- Issues
 - Risk of failure (technical)
 - Systemic risk
 - Regulatory risk

2 Bitcoin values

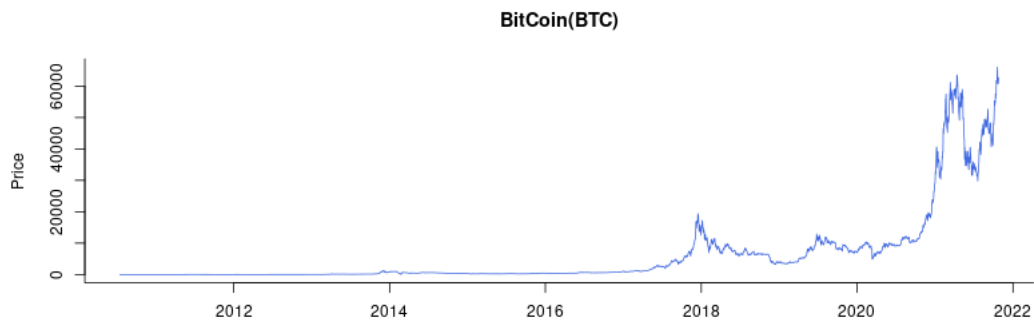
Let us look at a time series of bitcoin values, where we use the “exchange rate” Bitcoin / USD as an indicator of value.

Figure 1 illustrates the time series of this.

3 Bitcoin prices

Are available for download various places. Here is a small R function that pulls the complete daily history starting in 2010.

Figure 1 BTC/USD time series



Time series plot of “exchange rates” Bitcoin/USD

```
library(jsonlite)
library(anytime)
library(xts)

get_btc <- function(){
  hist_btc <-
    fromJSON("https://min-api.cryptocompare.com/data/histoday?fsym=BTC&tsym=USD&allData=true&e=C")
  time <- anytime(hist_btc$Data$time)
  dates <- anydate(time)
  btc_close <- xts (hist_btc$Data$close, order.by=dates)
  return (btc_close)
}
```

4 Literature

Böhme, Christin, Edelman, and Moore (2015)

References

Rainer Böhme, Nicholas Christin, Benjamin Edelman, and Tyler Moore. Bitcoing: Economics, technology, and governance. *Journal of Economic Perspectives*, 29(2):213–238, Spring 2015.