Is Bitcoin Really Un-Tethered?

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A Word of Caution

Unregulated Exchanges and Market Manipulation

- **Manipulation of Cryptocurrencies**: Cryptocurrencies are primarily traded on unregulated exchanges
  - This lack of regulation make cryptocurrency markets ripe for manipulation and gaming
- **The $450M “Hack”**: In 2013, Mt. Gox, the leading exchange for Bitcoin, declared bankruptcy due to a hack that resulted in $450M in lost Bitcoin
  - Many believe the “hack” was organized from within or that Mt. Gox was a platform for fraudulent trading
- Today, we will discuss a specific case of market manipulation of bitcoin around the 2017 surge in prices
Tether

Objective

• **Facilitate inter-exchange transactions:** Trading the same coins on different exchanges can result in different prices without an efficient way to transfer funds from one exchange to another
  • Can be done through fiat transactions
  • But exchanges have difficulty establishing relationships with traditional banks

This graph shows the volume of the 15 leading cryptocurrencies that are based on USD, Tether, and on the Bitfinex exchange (Tether-related). For most of the leading cryptocurrencies, over 50% (sometimes near 100%) of transactions occur with Tether. Source: Griffin and Shams (2019)
Tether

Main feature

• **Stable coin:** Tether is supposedly 100% backed by fiat currency. That means for every $1 worth of Tether in circulation, Tether keeps $1 in reserves
  • Ensures the value of Tether is tied to fiat currency, so Tether’s value should not be different across exchanges
    • In 2019, Tether’s price has ranged from $0.99 to $1.02
    • Reduces risks and costs of transferring value across exchanges
  • Tether has since admitted to not holding a fraction of reserves in Bitcoin and other instruments
    • In Feb. 2019, Tether changed language on backing to “traditional currency and cash equivalents” rather than purely USD backing
  • Examples of other USD-backed stablecoins include Circle and TrueUSD
How Tether is Used

Tether is used to transfer USD to BTC

• Unlike other cryptocurrencies with a fixed supply, Tether can be created (by depositing USD into the Tether reserves) on an open blockchain

• Tether is “issued” when it moves from the Tether Authorizer to Bitfinex (an exchange)
  • 50% of all Tether on Bitfinex is transferred by 2 addresses

• Once issued, Bitfinex sends Tether to Bittrex and Poloniex, two of the largest Tether exchanges

• Once in Bittrex and Poloniex, Tether is used to purchase bitcoin and other cryptocurrencies

• Tether is not commonly used to convert cryptocurrencies back into fiat currency

Source: Griffin and Shams (2019)
Economics of Tether

“Pulled” or “Pushed”?

- **Pulled**: Demand for Tether drives variation in prices of cryptocurrencies and Tether itself. Large interest in cryptocurrencies generates high demand for Tether, which drives up value relative to fiat
  - Tether issuance can also be due to facilitate cross-exchange arbitrage
  - How can Tether prices move if it is a stablecoin?

- **Pushed**: Tether can be issued independently of demand. This excess issuance can be used to buy cryptocurrencies, exchange for cash, and supply reserves
  - Creates “artificial demand” for other coins and inflates their prices
  - Benefits early-stage investors in cryptocurrencies (like exchanges!)
  - If investors detect excess issuance, Tether-USD price may collapse

- **What are the consequences of either phenomenon?**
Economics of Tether

Consequences

- **Pulled**: normal functioning market
  - Strong investor demand Tether increases its price (relative to USD)
  - Tether can facilitate arbitrage across exchanges
    - Tether should flow out of exchanges where cryptocurrencies trade at a premium

- **Pushed**: currency manipulation
  - Cryptocurrency prices should increase following large inflows of Tether
  - Tether issuers can provide stability to cryptos (reduce volatility, limit downturns)
    - During crypto downturns, outflow of Tether and purchases of cryptos within an exchange
  - Tether creators who issue regularly scheduled (i.e., end of month) accounting statements to show reserve balances may liquidate cryptocurrency positions at these intervals
    - Cryptocurrency prices may fall due to outflows at these regular intervals

Impact of Tether on Bitcoin Prices

Bitcoin prices increase with Tether flows

- **Flows Affect Prices**: On days when Tether is issued, Bitcoin prices rise when Tether flows to Bittrex and Poloniex
  - Effect is concentrated when the lag BTC return is negative, evidence that Tether is issued to stabilize BTC

- **Effects are huge**: From March 1, 2017 to March 31, 2018, Bitcoin increased in price by 481.8%. Taking out the hours with the greatest 1% of Tether flows, the return over that time is 198.5%
  - Over half of Bitcoin’s returns in that period due to 1% of the time

- **Is this consistent with pulling or pushing?**
  - Pushing! Tether flows affecting BTC prices only when lag BTC returns are negative indicates stabilizing motive
Pulling or Pushing?

Pushing

• Tether flow unrelated to Tether-USD exchange rate
  • Put differently, Tether demand unrelated to price
• BTC prices fall at end-of-month when Tether issuance that month is high
  • When Tether issuance high, Tether may use these funds to buy BTC to create artificial demand
  • Need to liquidate BTC before end of month to show 100% reserves

End-of-month BTC returns by Tether issuance quantiles. Months are assigned into quantiles depending on the total Tether issuance each month. Months with higher Tether issuance have lower EOM returns. Source: Griffin and Shams (2019)
Conclusion

Surveillance, Regulation Necessary in Crypto Markets

• **Bitcoin Price Manipulation**: Large purchases of Bitcoin with Tether on Bitfinex used to stabilize BTC prices during downturns
  • Effect primarily due to one large player on Bitfinex

• **Tether is Pushed**: Tether seems to be issued not to reflect demand
  • Issued and invested in BTC to support price, but then pulled out of BTC in regular intervals to meet full reserve requirements

• **Tether and Bittrex Sued**: Tether and Bittrex currently in a $1T class action lawsuit alleging market manipulation responsible for 50% of the 2017 surge in BTC

• **Prices affected by more than supply and demand!**