weizenbaum institut

Cryptocurrencies and the Velocity of Money

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Simple mod

Fisher's Equation of Exchange (Fisher, 1911)

$$PT = MV$$

Simple mod

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$$P = \frac{MV}{T}$$

Hypothesis – Proxy – Result

Simple mod

Fisher's Equation of Exchange (Fisher, 1911)

$$P = \frac{MV}{T}$$

- d'Artis Kancs, Ciaian, Miroslava, et al. 2015
- Georgoula et al. 2015
- Bouoiyour and Selmi 2015
- Ciaian, Rajcaniova, et al. 2016
- Ciaian, Rajcaniova, and d'Artis Kancs 2016
- Luis, Fuente, and Perote 2019
- ...

Hypothesis – Proxy – Result

Why using a proxy variable at all?

$$MV = PT$$

$$\downarrow$$

$$V = PT/M$$

Research Questions

- What are the proxy-variables used so far—and how is their quality?
- Can we improve the data quality for including velocity into pricing studies?

Adopted approximations

- Coin days destroyed
  (DeLeo and Stull 2014, Georgoula et al. 2015, Bouoiyour and Selmi 2015, Luis, Fuente, and Perote 2019, ...)
- Coin-turnover
  (Smith 2017)

Recently proposed measures

Simplified:

Bolt and Van Oordt 2016 and Ciaian, d'Artis Kancs, and Rajcaniova 2018:

$$V^{\texttt{msr}}_{\texttt{triv}p} = \frac{\text{"on-chain transaction volume"}}{\text{"total coin supply"}} \tag{1}$$

Recently proposed measures

Adjusted transaction volume:

Kalodner et al. 2017 and Athey et al. 2016:

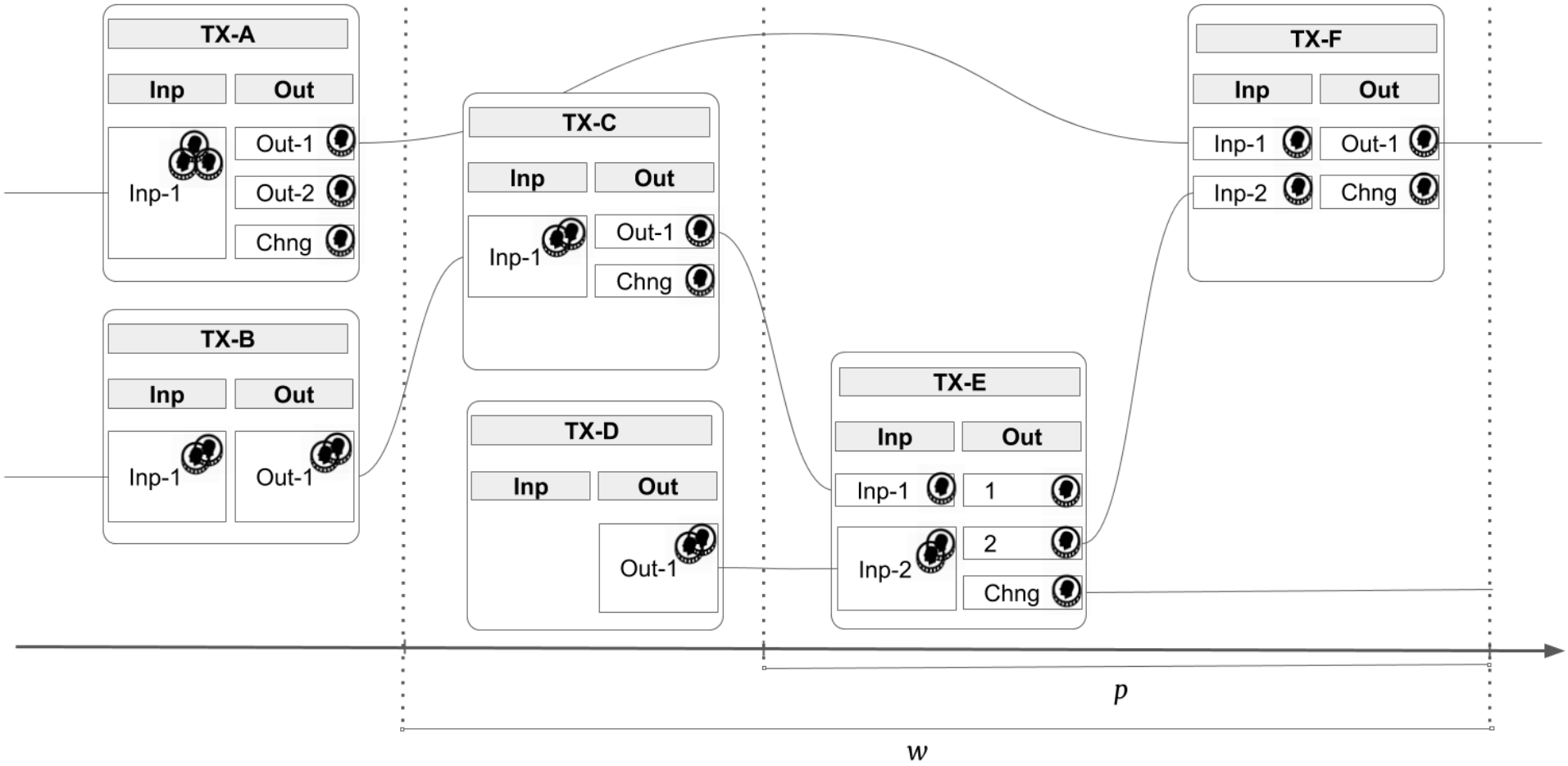
$$V^{\text{msr}}_{\text{total}p} = \frac{\text{"adjusted on-chain transaction volume"}}{\text{"total coin supply"}} \tag{1}$$

Recently proposed measures

Based on money in effective circulation:
Theoretically proposed in Bolt and Van Oordt 2016, operationalized by us :)

$$V^{\text{msr}}_{\text{circ}p} = \frac{\text{"adjusted on-chain transaction volume"}}{\text{"adjusted coin supply"}} \tag{1}$$

Counting Coins …



Counting Coins … at our poster!