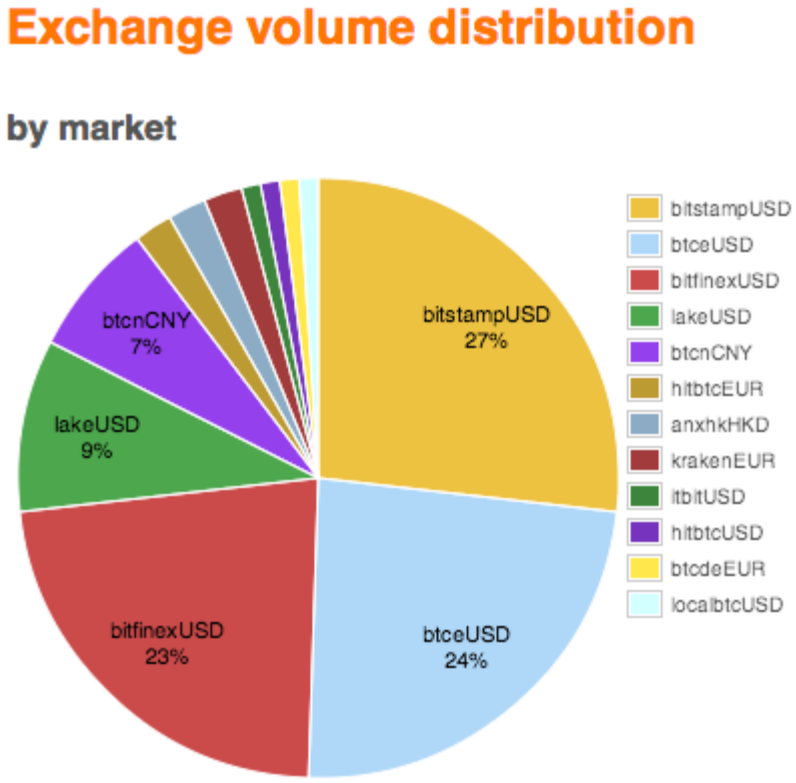
SPILLOVERS IN PRICE VOLATILITY ACROSS BITCOIN/USD EXCHANGES

MANY PLACES TO EXCHANGE YOUR BITCOINS

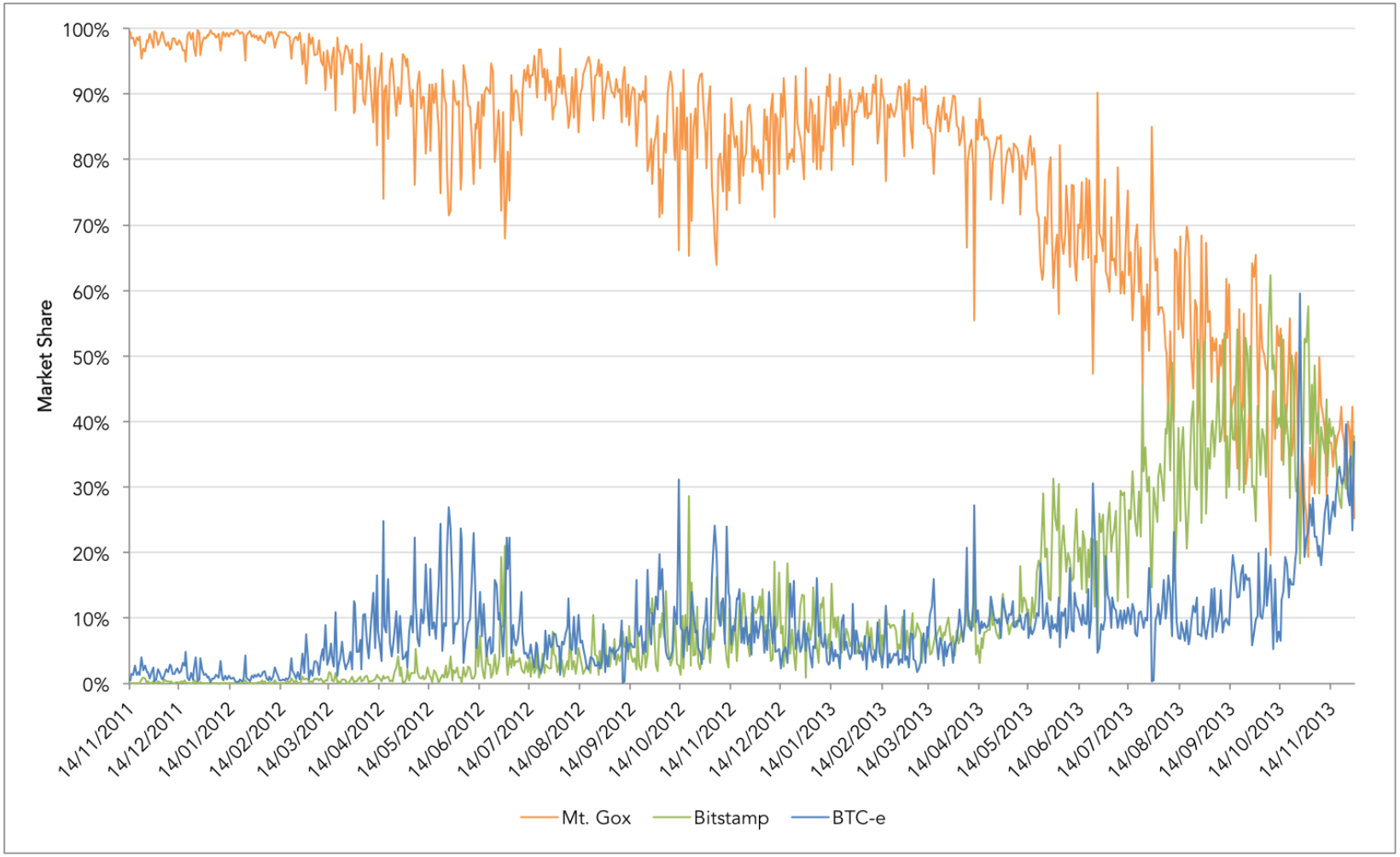


EST 2011

BITSTAMP

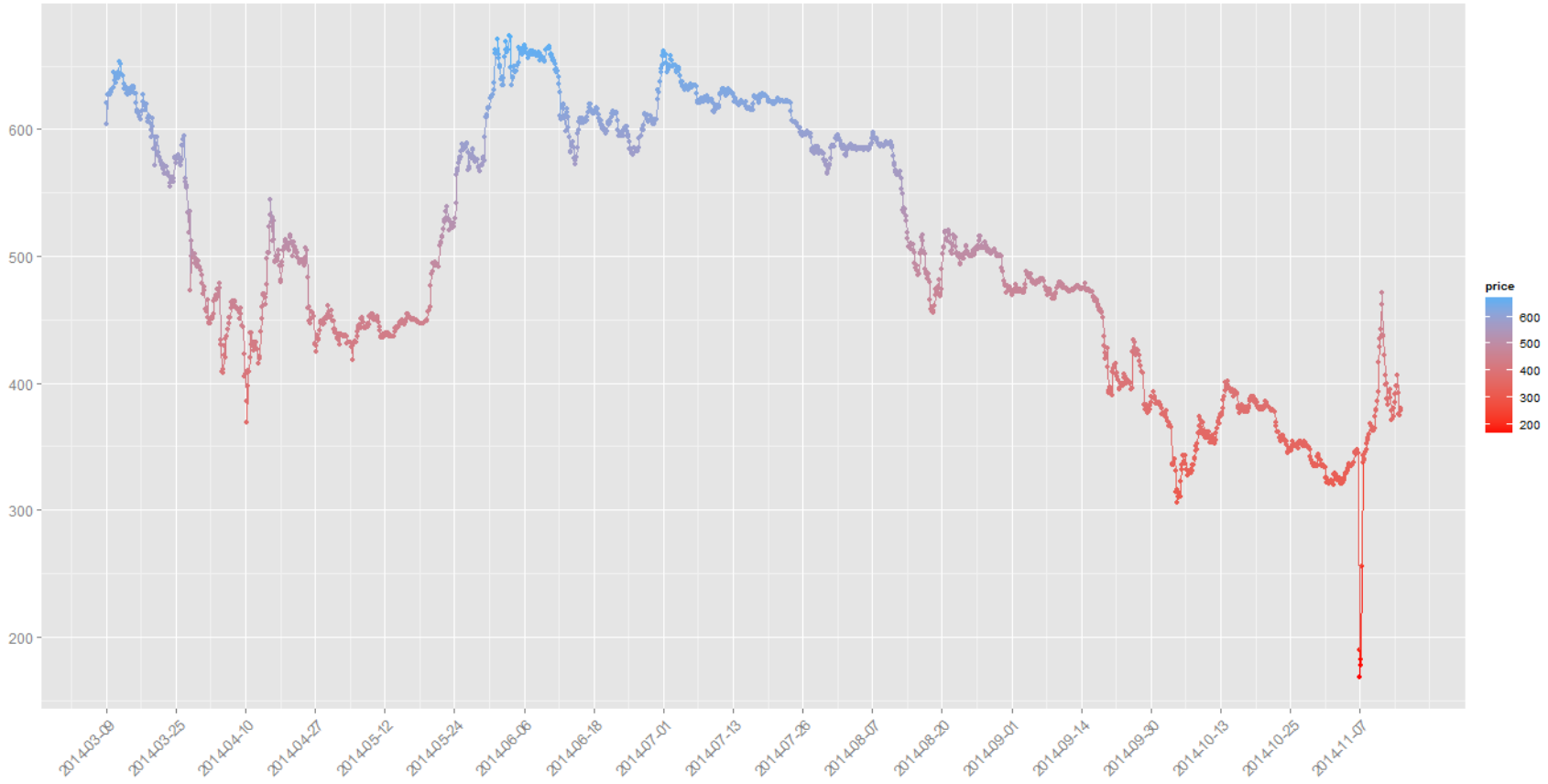
MT.GOX

BTCChina



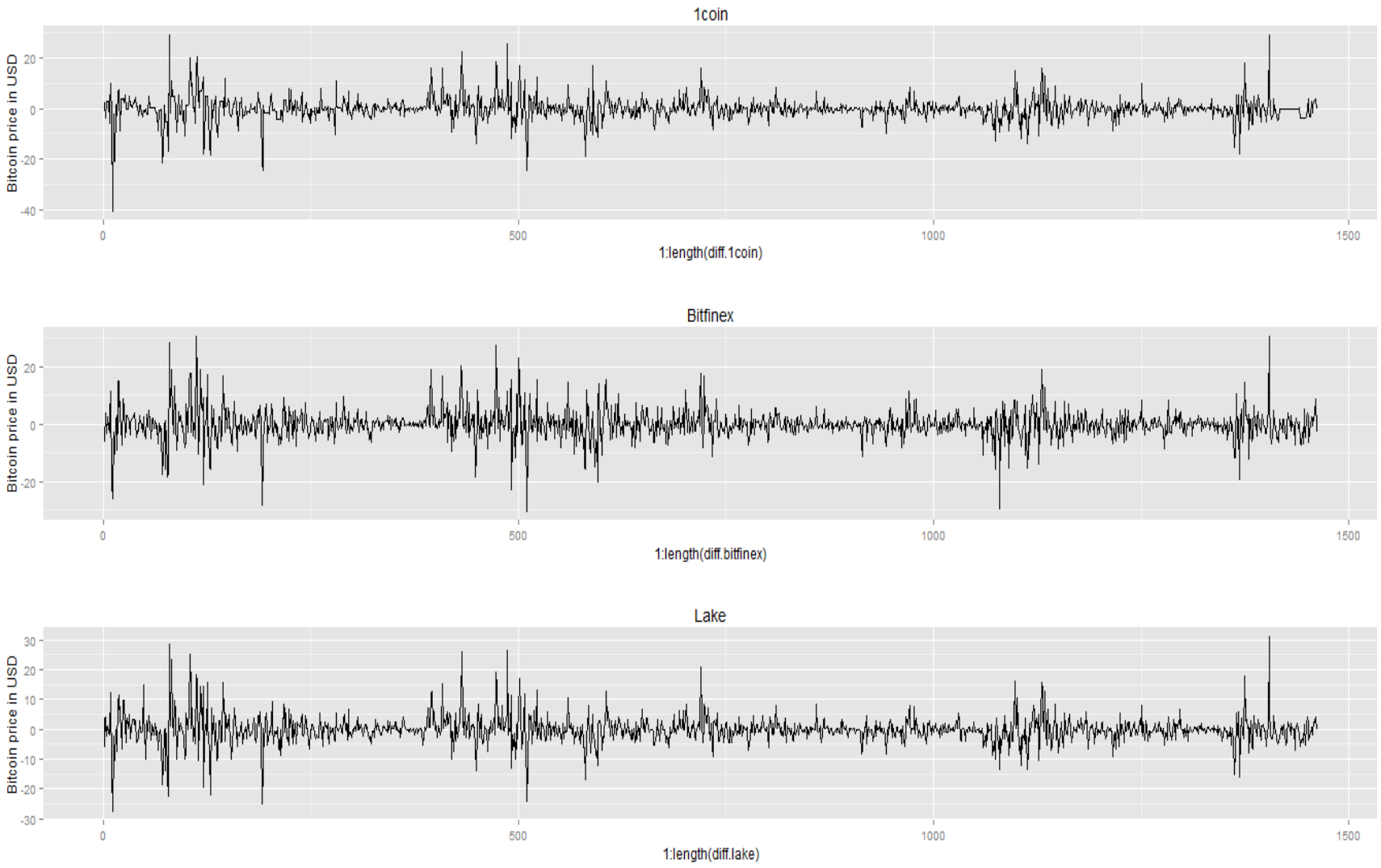
DOES PRICE VOLATILITY LEAK ACROSS BITCOIN EXCHANGES ?

IRREGULAR TIME SERIES DATA

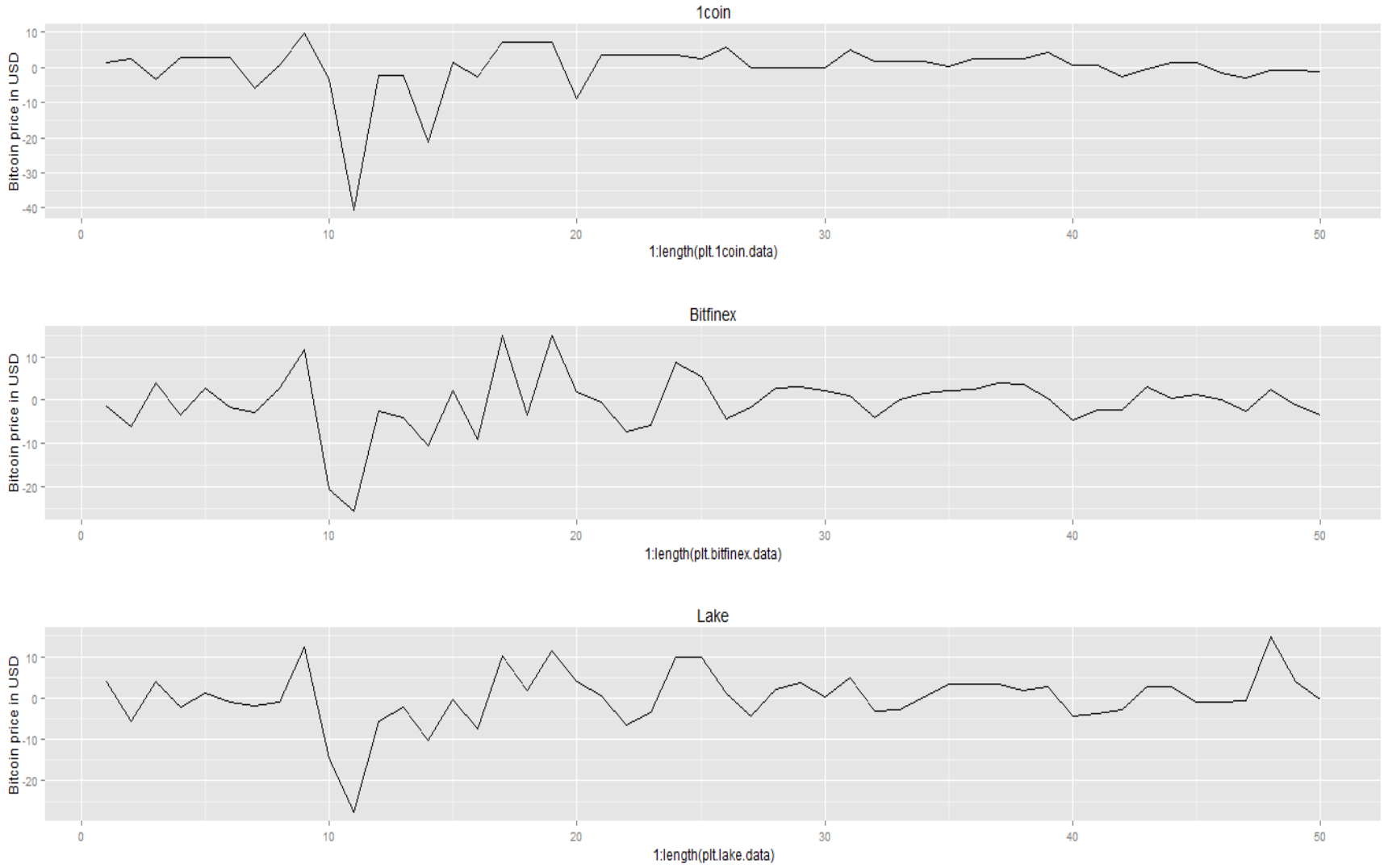


Bitcoin price for 1coin exchange (bitcoincharts.com)

WITH IMPUTATION, EXCHANGES LOOK SIMILAR ...



... BUT ZOOM IN, AND DIFFERENCES APPEAR.



THE GARCH MODEL

$$\sigma_t^2 = a_0 + \sum_{i=1}^{q} a_i \epsilon_{t-i}^2 + \sum_{i=1}^{p} \mathrm{B}_i \sigma_{t-i}^2$$

- Next period's variance σ_t^2 depends on last period's squared residuals $\forall i$: ϵ_{t-i}^2 and previously forecasted variances $\forall i$: σ_{t-i}^2
- Multivariate GARCH: assess spillovers between several time series. (CCC vs. DCC)
- R package: "rmgarch"

EXPECTED RESULTS + DIRECTION

- Higher spillover from large → small
- Less spillover from small → small
- Challenge: find ideal extent of intra-daily averaging

QUESTIONS?


Load/Verify Balance
Bitcoin Address
1P9t6tnMjBBFpPEaf
2009
BITCOIN
Ƀ1000