



*Research article*

**Digital currency price formation: A production cost perspective**

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**Supplementary**

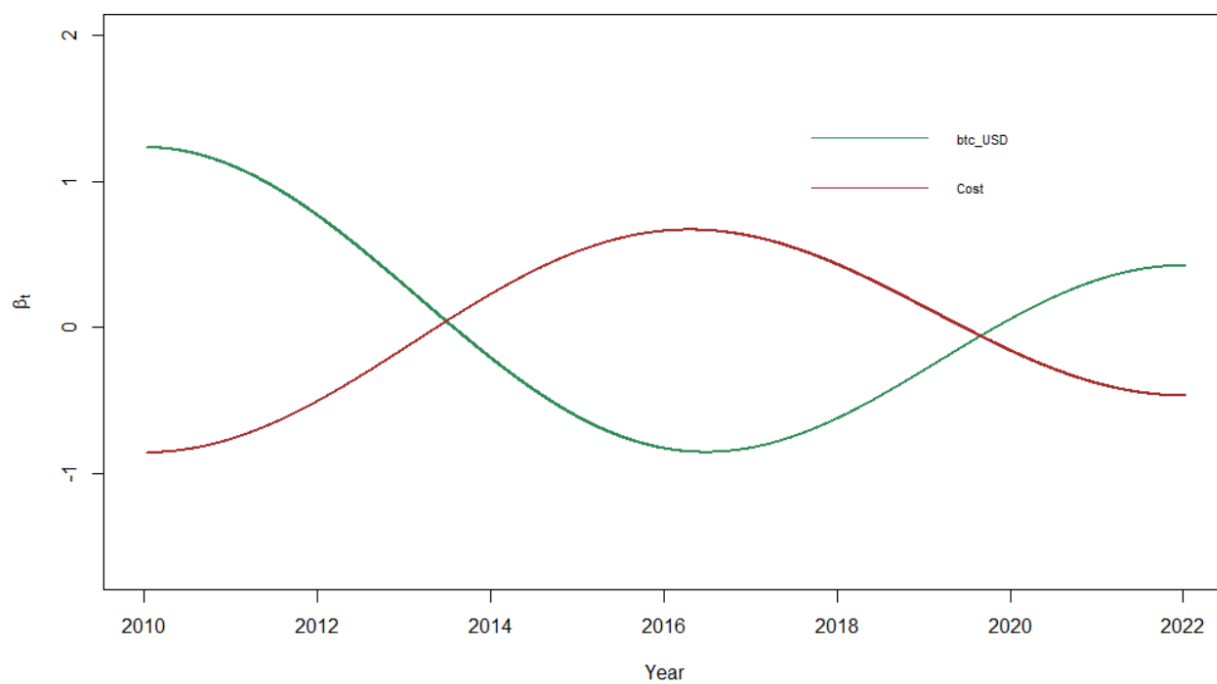
**Appendix**

**Table A1.** Augmented Dickey-Fuller tests.

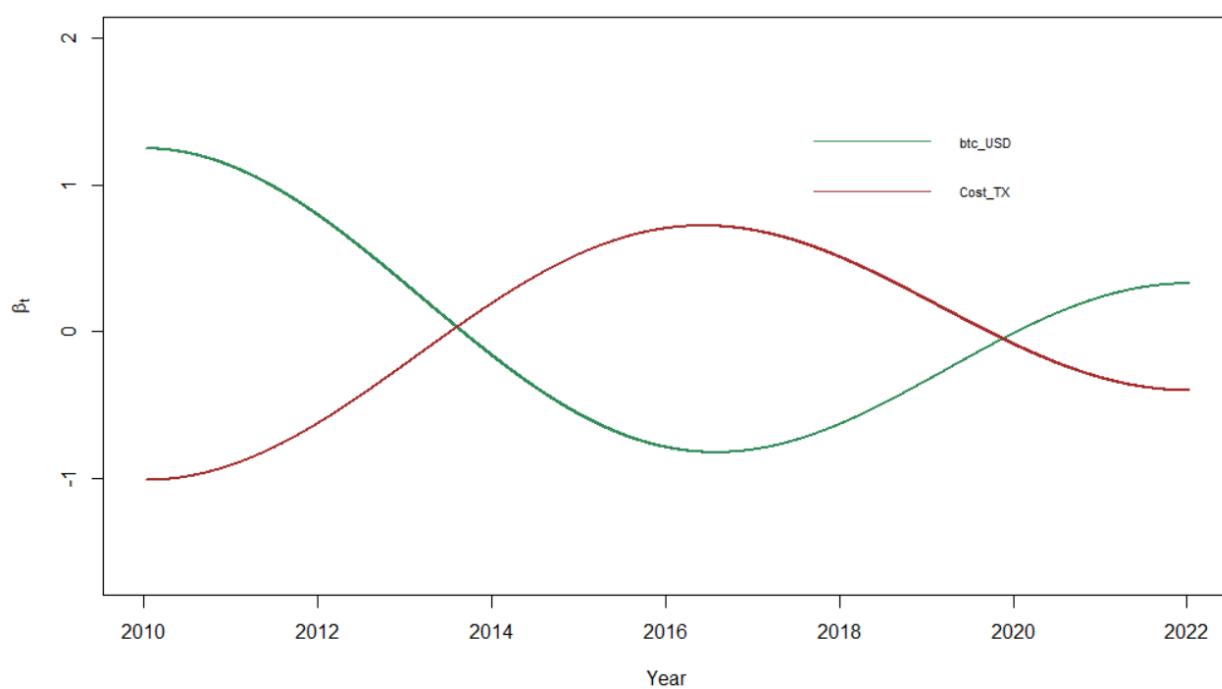
Variables	$\tau$	Residuals of TV-VECM cointegration	$\tau$
$\ln(\text{cost}_t)$	0.8475	$\beta_{1t} \ln(\text{btcf}_t) + \beta_{2t} \ln(\text{cost}_t)$	-2.2256**
$\ln(\text{hash}_t)$	4.3687	$\beta_{1t} \ln(\text{btcf}_t) + \beta_{2t} \ln(\text{cost}_t)$	-4.7979***
$\ln(\text{btcf}_t)$	1.5658	$\beta_{1t} \ln(\text{btcf}_t) + \beta_{2t} \ln(\text{hash}_t)$	-3.2375***
$\ln(\text{cott}_t)$	-0.6529		
Critical values for test statistics			
	1pct	5pct	10pct
tau1	-2.58	-1.95	-1.62

Note: \*, \*\*, and \*\*\* indicate rejection of the null hypothesis at significance levels 10%, 5% and 1%, respectively.

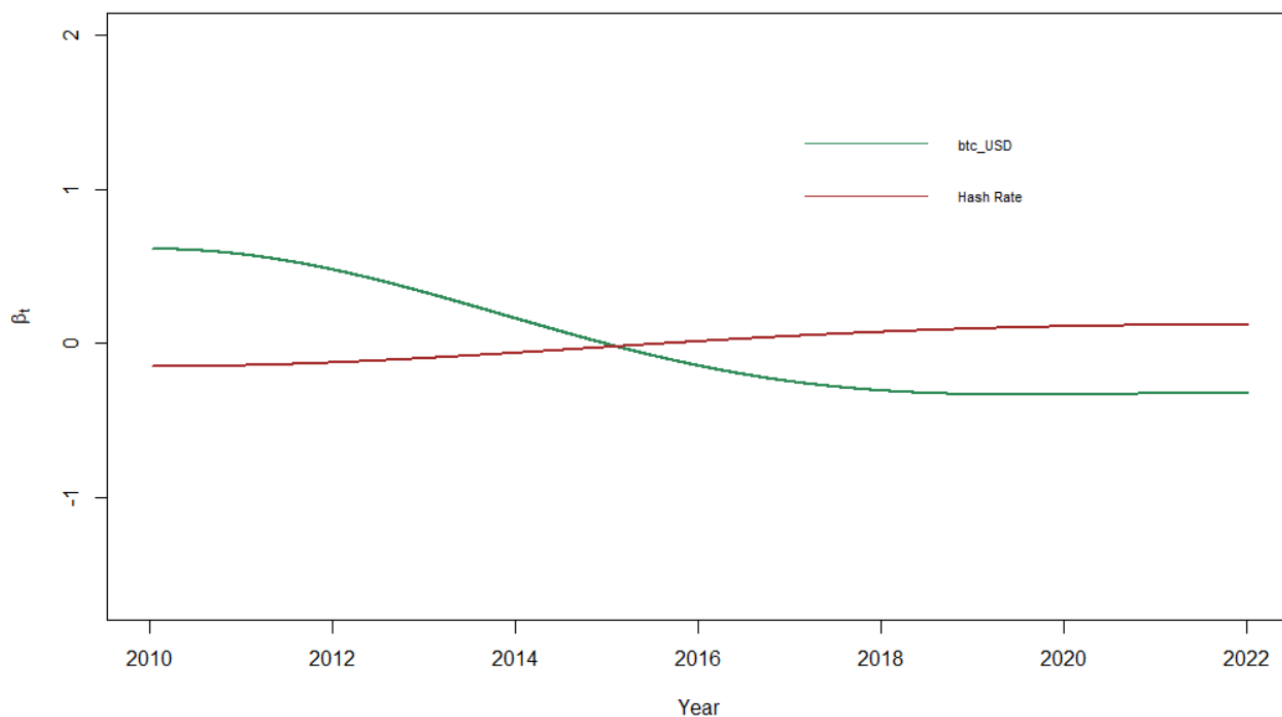
Table 12 shows the results of the Augmented Dickey-Fuller unit root tests for the variables ( $\text{cost}_t$ ,  $\text{hash}_t$ ,  $\text{btcf}_t$ , and  $\text{cott}_t$ , and for the residuals of the cointegration relationships 20 to 22. The value of the test statistic shows that the null hypothesis of a unit root is accepted at all levels of significance for all the variables used in the econometric analysis in Section 4. The test statistic for the residuals of the three time-varying cointegration relationships show that the existence of a unit root is rejected at 5 and 1 percent.



**Fig. A.1.** Estimates of  $\beta_t$  for Chebyshev polynomial order  $m = 2$ -btc-USD/Cost.



**Fig. A.2.** Estimates of  $\beta_t$  for Chebyshev polynomial order  $m = 2$ -btc-USD/Cost\_TX.



**Fig. A.3.** Estimates of  $\beta_t$  for Chebyshev polynomial order  $m = 3$ -btc-USD/Hash Rate.



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