

Christopher Ongko  
School of Management  
Yuan Ze University  
[s1133958@mail.yzu.edu.tw](mailto:s1133958@mail.yzu.edu.tw)

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Dr. Gang Kou  
Editor-in-Chief, Financial Innovation  
Southwestern University of Finance and Economics

Dear Professor Kou,

I am pleased to submit "Energy Anchoring in Cryptocurrency Markets: Evidence from Natural Experiments" for consideration in Financial Innovation. This manuscript introduces Cumulative Energy Investment Theory as a novel contribution to digital finance valuation frameworks, aligning with your journal's focus on blockchain technology and financial innovations.

Our paper builds upon recent Financial Innovation publications by Zheng et al. (2023), Kang et al. (2025), and Guo et al. (2024), extending the cryptocurrency valuation literature beyond traditional models. By leveraging two natural experiments (China's 2021 mining ban and Ethereum's 2022 Merge), we establish how cumulative energy expenditure creates an anchoring effect that explains 25% of Bitcoin price variation during stable regimes.

The manuscript contributes to financial innovation theory by:

1. Introducing Cumulative Energy Investment Theory as a novel valuation framework for digital assets lacking traditional fundamentals
2. Demonstrating how the geographical distribution of mining operations affects cryptocurrency market efficiency
3. Quantifying how regulatory changes transform digital asset pricing mechanisms through energy cost channels
4. Establishing empirical linkages between physical energy markets and digital financial assets

Our research specifically supports Financial Innovation's emphasis on "financial innovations and their applications in financial systems and markets." The methodology employs quasi-experimental designs that isolate causal mechanisms, including difference-in-differences and structural break analyses with strong statistical significance (Chow test:  $F=22.954$ ,  $p<0.0001$ ).

This manuscript is not under consideration elsewhere, and there are no conflicts of interest to declare. All data used are available upon request. Thank you for your consideration.

Sincerely,  
Christopher Ongko  
School of Management  
Yuan Ze University

## AUTHOR INFORMATION

### Title: Energy Anchoring in Cryptocurrency Markets: Evidence from Natural Experiments

Author: Christopher Ongko

Affiliation: School of Management, Yuan Ze University, Taoyuan City, Taiwan

Email: s1133958@mail.yzu.edu.tw

Corresponding Author: Christopher Ongko

## SHORT BIOGRAPHY

Christopher Ongko is a Master's candidate in Finance & Accounting at Yuan Ze University, where he holds a First Degree Scholarship. His research focuses on cryptocurrency economics, digital asset valuation, and the intersection of energy markets with financial innovation. Christopher combines strong quantitative skills in financial modeling and data analytics with programming expertise in Python and machine learning frameworks. His current work explores how physical constraints and technological infrastructure shape emerging financial technologies and market microstructures, with particular emphasis on empirical approaches using natural experiments.

## DECLARATIONS

### Ethics approval and consent to participate:

Not applicable.

### Consent for publication:

Not applicable.

### Availability of data and materials:

The data that support the findings of this study are available from the corresponding author upon reasonable request. Bitcoin price and Google Trends data are publicly available.

### Competing interests:

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Funding:

No funding was received for conducting this research.

### Authors' contributions:

The sole author is responsible for conceptualization, methodology, analysis, and writing of this manuscript.

### Acknowledgements:

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### Declaration of generative AI and AI-assisted technologies in the writing process:

During the preparation of this work the author used generative AI tools including Claude and/or ChatGPT in order to assist with manuscript drafting, literature synthesis, and improving clarity of presentation. After using these tools, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.