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Valuation of Cryptocurrency Mining Operations: Open Review

Jose Berengueres,[†*] Internal Reviewers

Abstract. The final version of the paper "Valuation of Cryptocurrency Mining Operations" can be found in Ledger Vol. 3 (2018) 60-67, DOI 10.5915/LEDGER.2018.123. As a "Perspectives" publication, it is subject only to internal review, whose feedback will be referred to collectively as "Internal Reviewers" in this document. After initial review by the Internal Reviewers, it was determined that the submission required minor revisions (1A). The authors responded to their feedback and revised the manuscript (1B). The Internal Reviewers accepted the revisions, thus completing the internal review process. Author's responses are bulleted for clarity.

1A. Review (Initial)

Internal Reviewers:

Does this paper represent a novel contribution to cryptocurrency or blockchain scholarship?:

No

Is the research framed within its scholarly context and does the paper cite appropriate prior works?:

Yes

Please assess the article's level of academic rigor.:

Good (not excellent but a long way from poor)

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*3QaSKaBqR7h8pUQ8bLWBUrnqpAJW1MVUwE

Please assess the article's quality of presentation.:

Good (not excellent but a long way from poor)

How does the quality of this paper compare to other papers in this field?:

Top 20%

Please provide your free-form review for the author in this section.:

The article "Valuation of Crypto-Currency Mining Operations" by J. Berengueres explains the "net coin value" method of evaluating an investment into cryptocurrency mining.

The paper is technically sound and the writing for the most part is clear. What I think needs clarification however is that the NCV makes sense ONLY when one is comparing mining to holding. That is, the model assumes the investor has already decided to take on the risk of holding the cryptocurrency, and thus is only interested in which investment will result in more units of that cryptocurrency (and not what the value of that cryptocurrency will be in $ terms). So this method is much better for decided whether to "mine or hold," but is probably LESS useful than NPV for deciding whether to make an investment in the first place! This point needs to be stressed.

The author should also make it clear that a source of "error" is that the model assumes P0 is constant (I understand that this is necessary).

I recommend that Ledger accepts this article subject to minor revisions.

Other comments:

1. INTRODUCTION

I think the author should either use "holding" or first briefly explain the "HODL" meme before using it.

Commas missing between reference numbers.

NVP -> NPV on line 4

"k represents various fees" -> isn't this as a fraction of the mined coins?

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Is Eq. (4) necessary? Seems sort of obvious. Maybe have this as an inline equation instead of on its own line.

2. VALUATION EXAMPLES

A. GPU Mining case

Is it possible to cite sources for some of these facts? E.g., 10% admin fee,rig hosting fee, etc.

Otherwise, all seems clear.

B. Bitcoin Cash Mining case

The "Sensitivity analysis" is presented as though there is some rigor behind the "s" values, but to me it seems more qualitative than quantitative. I suggest either making it more rigorous, or presenting it in a way that looks more qualitative.

Also, you give a table for the parameters for the bitcoin case but not for the GPU/etheruem case. Why not do both?

C. Benefits of using NCV to evaluate projects

Fig. 3. Black curve is not labelled (free electricity?)

I feel the data here is important but the section is quite brief. Maybe a figure or chart would draw more attention to the important point being made here.

3. OTHER FACTORS

I like how nicely CoP fits into the formulation!

kw -> kW

"Conveniently, AC and heat pumps have Coefficients of Performance (CoP)"

^ awkward

4. CONCLUSION

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Seems fine to me.

1B. Author's Responses

The article "Valuation of Crypto-Currency Mining Operations" by J. Berengueres explains the "net coin value" method of evaluating an investment into cryptocurrency mining.

The paper is technically sound and the writing for the most part is clear. What I think needs clarification however is that the NCV makes sense ONLY when one is comparing mining to holding. That is, the model assumes the investor has already decided to take on the risk of holding the cryptocurrency, and thus is only interested in which investment will result in more units of that cryptocurrency (and not what the value of that cryptocurrency will be in $ terms). So this method is much better for decided whether to "mine or hold," but is probably LESS useful than NPV for deciding whether to make an investment in the first place! This point needs to be stressed.

The author should also make it clear that a source of "error" is that the model assumes P0 is constant (I understand that this is necessary).

- DONE

I recommend that Ledger accepts this article subject to minor revisions.

Other comments:

1. INTRODUCTION

I think the author should either use "holding" or first briefly explain the "HODL" meme before using it.

- ADDED footnote in page 1

Commas missing between reference numbers.

- FIXED

NVP -> NPV on line 4

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- FIXED

"k represents various fees" -> isn't this as a fraction of the mined coins?

- (l-k) REPLACED BY 'Eta'

Is Eq. (4) necessary? Seems sort of obvious. Maybe have this as an inline equation instead of on its own line.

- REMOVED

2. VALUATION EXAMPLES

A. GPU Mining case

Is it possible to cite sources for some of these facts? E.g., 10% admin fee, rig hosting fee, etc.

- citing now, similar to datacenter hosting... --> REMOVED, COULD NOT FIND GOOD SOURCES

Otherwise, all seems clear.

B. Bitcoin Cash Mining case

The "Sensitivity analysis" is presented as though there is some rigor behind the "s" values, but to me it seems more qualitative than quantitative. I suggest either making it more rigorous, or presenting it in a way that looks more qualitative.

- REMOVE / ADDED more rigor

Also, you give a table for the parameters for the bitcoin case but not for the GPU/etheruem case. Why not do both?

- ADD ETH case table

C. Benefits of using NCV to evaluate projects

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Fig. 3. Black curve is not labelled (free electricity?)

- FIXED

I feel the data here is important but the section is quite brief. Maybe a figure or chart would draw more attention to the important point being made here.

- NEW FIGURE 4 compare NCV to NPV

3. OTHER FACTORS

I like how nicely CoP fits into the formulation!

kw -> kW

- FIXED

"Conveniently, AC and heat pumps have Coefficients of Performance (CoP)"

^ awkward

- REMOVED

4. CONCLUSION

Seems fine to me.

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