

## Intisari

*Cryptocurrency* telah berkembang dan bertambah populer sejak kemunculan *cryptocurrency* pertama yaitu Bitcoin pada tahun 2009. *Cryptocurrency* diharapkan sebagai salah satu alternatif pengganti mata uang di era industri 4.0 saat ini. Kemunculan *cryptocurrency* bukan hanya membawa kemudahan pada industri keuangan, namun juga menimbulkan permasalahan yang sangat besar disebabkan oleh volatilitas yang sangat tinggi. *Cryptocurrency* dapat diperoleh melalui dua cara, yaitu membeli langsung di pertukaran mata uang kripto dan menambang *cryptocurrency*. Peneliti mengamati faktor-faktor apa saja yang dapat memengaruhi harga *cryptocurrency* serta bagaimana volatilitas *cryptocurrency* itu sendiri. Selain itu, juga menganalisis *cryptocurrency mining* yang diharapkan dapat di implementasikan sebagai penggerak perekonomian daerah melalui *feasibility study* dan survei.

Hasil perhitungan menggunakan metode *Error Correction Model* menjelaskan bahwa dalam jangka panjang variabel volume Bitcoin, harga saham dan harga *crude oil* berpengaruh signifikan terhadap harga Bitcoin sedangkan harga emas tidak berpengaruh secara signifikan. Perhitungan jangka pendek hanya volume Bitcoin dan harga *Crude Oil* yang berpengaruh signifikan terhadap harga Bitcoin, sementara harga Emas dan harga Saham tidak berpengaruh signifikan. Penggunaan metode GARCH terbaik yang dilakukan untuk menghitung volatilitas *cryptocurrency* BTC, ETH, BNB, ADA dan XRP diperoleh hasil bahwa penggunaan GARCH terbaik pada BTC dan ADA adalah menggunakan GARCH (1,1), sedangkan penggunaan GARCH terbaik pada ETH, BNB dan XRP adalah menggunakan GARCH (1,0). Hasil dari *feasibility study cryptocurrency mining* menunjukkan angka *Payback Period* selama 15 bulan, *Discounted Payback Period* selama 16 bulan, *Net Present Value* sebesar Rp 228.767.921,00 dan *Internal Rate of Return* sebesar 8% yang mengindikasikan *cryptocurrency mining* merupakan proyek investasi yang layak untuk dilakukan. Hasil survei yang dilakukan menyatakan bahwa *cryptocurrency mining* dinilai dapat dijadikan sebagai penggerak perekonomian daerah.

Kata Kunci: *Cryptocurrency*, Bitcoin, *Mining*, ARCH/GARCH, *Error Correction Model*, *Feasibility Study*, Perekonomian Daerah.

## **Abstract**

Cryptocurrency has grown and become increasingly popular since the emergence of the cryptocurrency, first namely Bitcoin in 2009. Cryptocurrency is expected to be an alternative to currency in the current 4.0 industrial era. The emergence of cryptocurrencies not only bring convenience to the financial industry but also cause enormous problems due to very high volatility. Cryptocurrency can be obtained in two ways, buying directly on exchanges and mining Cryptocurrency. Researchers observe what factors can affect the price of cryptocurrencies as well as how volatile the cryptocurrency itself is. In addition, they also analyze cryptocurrency mining which is expected to be implemented as a driver of the regional economy through feasibility studies and surveys.

The results of calculations using Error Correction Model method explained that in the long term the Bitcoin volume variable, stock prices, and crude oil price had a significant effect on Bitcoin price while gold price had no significant effect. In the Short-term calculations only Bitcoin volume and crude oil price had a significant effect on Bitcoin price, while gold price and Stock prices had no significant effect. The best use of GARCH method to calculate the volatility of BTC, ETH, BNB, ADA, and XRP cryptocurrencies, showed that the best use of GARCH on BTC and ADA was by using GARCH (1,1), while the best use of GARCH on ETH, BNB, and XRP used GARCH (1,0). The Result of the feasibility study cryptocurrency mining showed a payback period of 15 months, Discounted Payback Period for 16 months, Net Present Value of IDR 228,767,921.00 and Internal Rate of Return of 8% which indicated cryptocurrency mining is an investment project that is worth doing. The results of the survey conducted stated that cryptocurrency mining was considered to be a driving force for the regional economy.

**Keywords:** Cryptocurrency, Bitcoin, Mining, ARCH/GARCH, Error Correction Model, Feasibility Study, Economic Regional.