The goal of the thesis is to identify factors that drive the price of Bitcoin and the hashrate of the Bitcoin network, which represents the total computing power dedicated to Bitcoin mining, and to explore the relationship between these two variables. In the Bitcoin system, four variables were assumed to be endogenous, thus for each of them, an equation was constructed. This was the case of the Bitcoin price, the hashrate of the Bitcoin network, the total transaction fees paid, and the search volume for the term "bitcoin". The system of four equations was then simultaneously estimated, utilizing the method of Two-stage least squares.

Results revealed several statistically significant explanatory variables of the price and the hashrate, including the money supply of the United States dollar or the number of unique active addresses on the Bitcoin network. The hashrate was shown to drive the price positively, however, the estimated effect of the price on the hashrate was statistically insignificant. It was argued that it might have been caused by exogenous shocks affecting multiple variables, that could not be accounted for in the data. In addition, the factors affecting the hashrate were assessed from the environmental point of view, as the high environmental impact is one of the main points in the criticism of Bitcoin.