

Bitcoin Data with Indicators in Years 2017-2021

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Abstract: Nowadays, new cryptocurrencies are constantly appearing, their popularity is growing and all this is influenced by the dominant cryptocurrency, which is Bitcoin. Bitcoin and cryptocurrencies generally have a strong impact on economic functioning around the world because people are willing to invest huge sums of money in those currencies. This article analyzes the development of Bitcoin over the last five years, i.e., the years 2017 to 2021. Although investments in cryptocurrencies and Bitcoin are very risky and growth of its value has a sinusoidal curve, in terms of several years Bitcoin value is still growing. The total increase over the last 5 years in price was from \$ 998 to \$ 46,198 and Bitcoin multiplied its value 46.29 times. In the last 5 years, Bitcoin has experienced several huge ups and downs. The aim of this work is to analyze the development of Bitcoin in terms of how the price in the market developed and thus affected the global economy. Likewise, how does the current price affect the business economics? This article shows the development of Bitcoin and lists several indicators that affect its price globally.

Keywords: bitcoin; data; indicators; overview

JEL Classification: F02; F63; M20

1. Introduction

This article describes the development of Bitcoin, what indicators and variables can affect the price and the associated impact on the corporate and global economy. Bitcoin is the most famous cryptocurrency, which originated in 2009. It is also the open-source Internet payment network of the same name, in which Bitcoin is used as a currency. The uniqueness of bitcoin is its full decentralization - there is no central server in the network through which all payments pass. At the same time, it is not subject to any regulatory authority or central bank, so there is no institution that can manipulate the value of Bitcoin (Chaim & Laurini, 2019).

All communication in the network takes place using a computer program that communicates with other participants. Participants are of two kinds - owners of BTC (wallets), and miners. Users send money, pay for products or services, and thus create supply and demand. The miners ensure the functioning of the network and its security, for which they are rewarded by the new Bitcoins. No one but users and miners are in the network (Koutmos, 2018; Wątopek et al., 2021).

A large number of transactions are constantly taking place in the network. These are grouped into blocks. Every 10 minutes, 1 block is created and the blocks put together a blockchain. Blockchain is a public database of all completed transactions, which is regularly updated. This database ensures anonymity and at the same time prevents unauthorized transactions.

Users have their Bitcoins stored in HW or SW wallets. They can create any number of bitcoin addresses in their wallets. The transactions then take place in such a way that the sender enters the required amount of bitcoins, fills in the recipient's bitcoin address and confirms the payment with his key.

Although cryptocurrencies are a relatively risky asset, investors should think carefully about developments over the last 10 years. Cryptocurrencies can serve as a very interesting enrichment of the portfolio with the potential for huge value for money (Jareño et al., 2020; Klein et al., 2018).

As Bitcoin's popularity grows, so does the number of low-quality cryptocurrencies that will never be profitable, so investors must do their own research. There are many cryptocurrencies that have multiplied a hundred or more times in a few years, but there are many more cryptocurrencies that have lost their value. The investment in Bitcoin is considered to be the most stable in the cryptocurrency world, but Bitcoin cannot be expected to be so highly profitable.

In recent years, Bitcoin has gained enormous media and investor attention, and the faster it grows or falls, the more attention grows (Urquhart, 2018; Vidal-Tomás & Ibañez, 2018). The main reason why cryptocurrencies have become so popular is that because they have enabled efficient payments through a decentralized system, there is no political or government control process (Amsyar et al., 2020; Corbet et al., 2020). But there is a critical issue with this aspect. This problem is hackers who are very creative and are constantly trying new methods to steal users' wallets with cryptocurrency. Hackers are targeting a whole range of cryptocurrency investors. More and more people are investing in cryptocurrencies, and so there are many who are unable to secure their funds and are not so familiar with fraudsters' methods (Corbet et al., 2020; Dyhrberg et al., 2018). There is a really large number of fraudsters in the cryptoworld, and even without them, investing in cryptocurrencies would be very risky (Chaim & Laurini, 2019; Fosso Wamba et al., 2020).

2. Methodology

Information on the current price of Bitcoin and a large number of other cryptocurrencies is constantly public information. The author draws on this information. A csv file has been created for statistical analysis and reporting. The data file is freely available on Kaggle (<https://www.kaggle.com/datasets/raimondextervinluan/bitcoindatamovingaverages>), which is a machine learning and data science database. The data file is published under the "CC0: Public Domain" license. WEKA software was used to display the reports. WEKA is a popular package of machine learning programs written in Java, developed at the University of Waikato, New Zealand. Weka is free software available under the GNU General Public License.

The data file has 1,827 rows, where each row shows one day. The data file then contains the Bitcoin value exactly at the beginning of the day, the daily maximum, the daily minimum, the value at the end of the day, the total amount traded that day, the current Bitcoin stock and also the average for the last 20, 50 and 200 days.

3. Results

Bitcoin has undergone significant development over the last five years. During this time, there have been three major price increases and three major price declines in price developments. The first huge increase to nearly twenty thousand dollars took place in December 2017. The second increase was almost sixty-four thousand dollars per bitcoin in April 2021. The third increase to the largest value to date of sixty-eight thousand dollars per bitcoin took place in November 2021. The work will then be described and shown how this development took place. The following chart, Figure 1, shows the development in 2017.

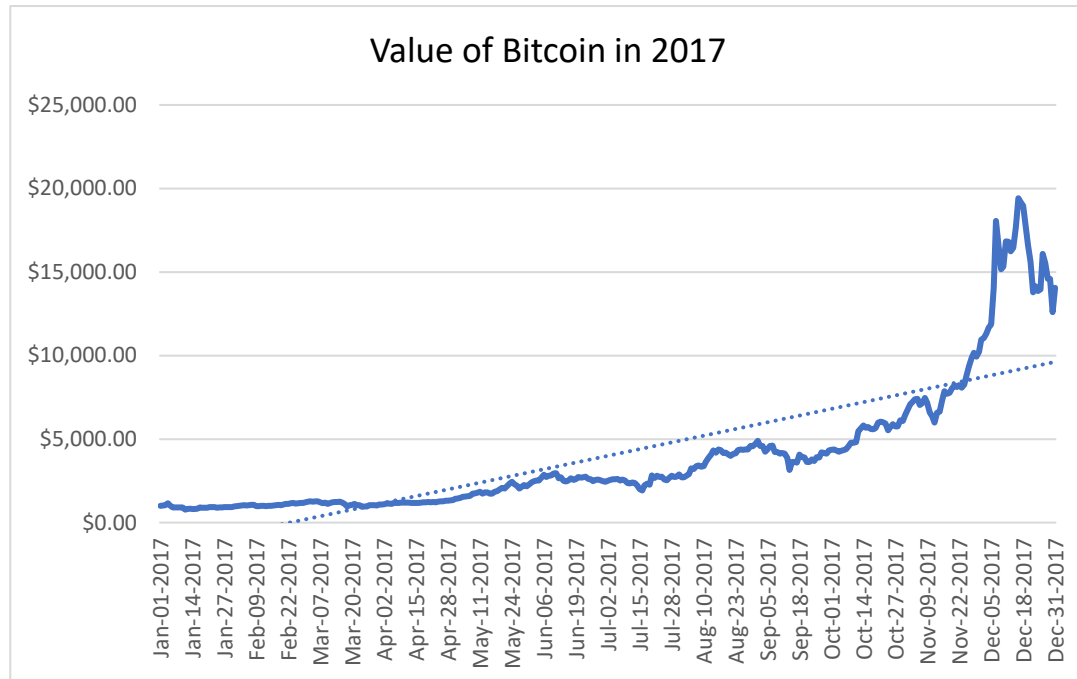


Figure 1. Value of Bitcoin in 2017

The price of Bitcoin as well as other cryptocurrencies is tied to how its price is perceived and what the demand is. If investors believe that the value of Bitcoin is worth a certain value, they will pay, especially if they believe that the value will increase. The value of Bitcoin had a relatively stable growth in 2017 until December, where after a rapid increase, the value began to decline. There is speculation that only a few individuals are responsible for the growth of Bitcoin in 2017, who purposefully and strategically gradually tried to increase the price as much as possible (Dyhrberg et al., 2018; Liu & Tsyvinski, 2021). The increase in 2017 was from \$ 998 to \$ 14,046. This is a 1,407% increase. The maximum in 2017 was \$ 19,417. Figure 2 shows the development in 2018.

Another major factor influencing the price of Bitcoin is the legislative setting of cryptocurrencies in countries with large GDP. This year, several countries have speculated whether cryptocurrencies are beneficial for them, and even the very speculations and statements of, for example, the country's minister or president can have a very significant effect on the price. In 2018, value development had a declining trend, falling from \$ 14,000 by \$ 10,000 for one Bitcoin to \$ 4,000. On January 26, 2018, the largest cryptocurrency site in Japan was hacked. \$ 530 million was stolen and Bitcoin had a downward curve this year due

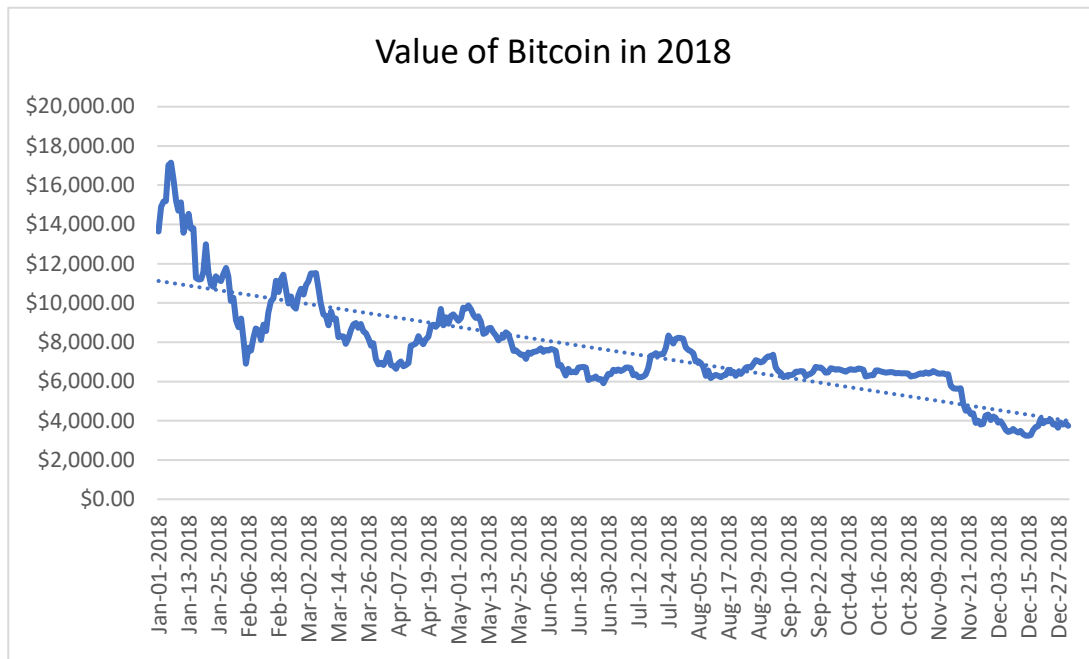


Figure 2. Value of Bitcoin in 2018

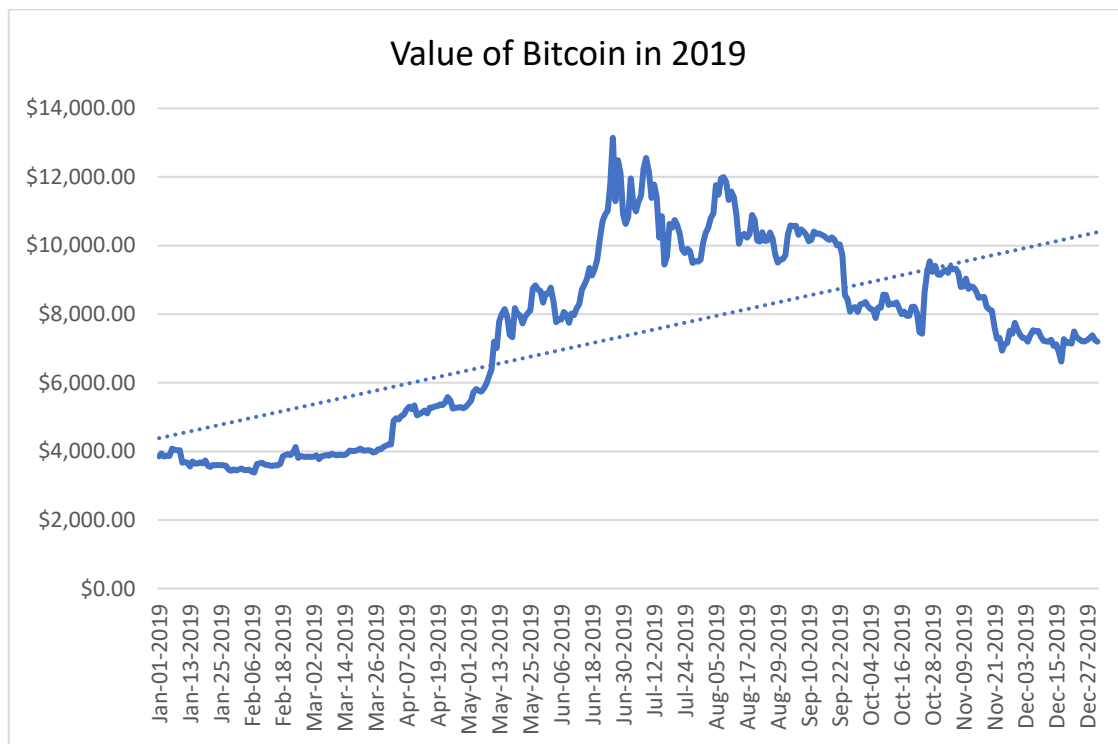


Figure 3. Value of Bitcoin in 2019

to further hacker attacks. This year-round decline has once again raised the doubts and fears of all investors. The decrease in 2018 was from \$ 13,644 to \$ 3,747. This is a loss of 72.54% of the total value in one year. Figure 3 shows the price development in 2019.

Looking at how Bitcoin was designed, there will be a maximum of 21 million Bitcoins. The closer Bitcoin gets to the limit, the more prices are expected to rise. In 2019, the price increased until the middle of the year, and since then the development has been declining, but the value has almost doubled that year from four thousand dollars to eight thousand

dollars. After a year of depreciation, investors began to regain faith and positive sentiment about the blockchain world, and the total daily traded value increased steadily, and so did the value of Bitcoin. This increase in confidence in Bitcoin could be due to less dramatic price fluctuations over several months and also the announcement by several large investors that Bitcoin could cost up to \$ 1 million per Bitcoin in 10 to 20 years. Such huge fluctuations prove a great risk when investing in Bitcoin and an even greater risk when investing in other cryptocurrencies. For this reason, the vast majority of investors advise investing only the amount of money that an individual can afford to lose. The increase in 2019 was from \$ 3,852 to \$ 7,196. This is a 187% increase. The price development in 2020 is shown in Figure 4.

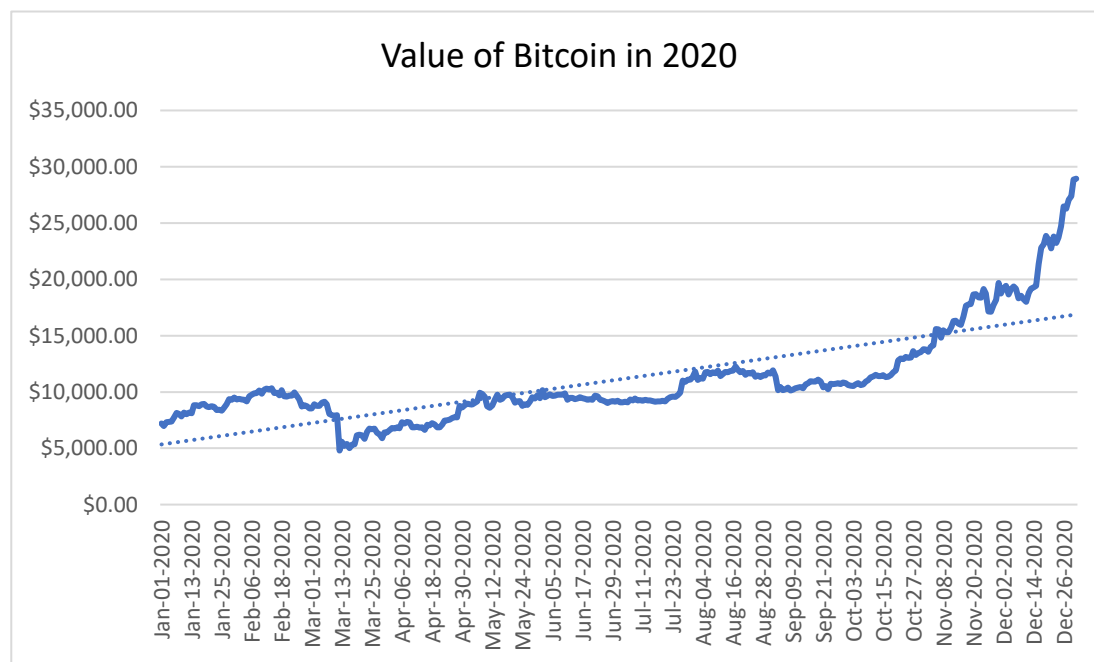


Figure 4. Value of Bitcoin in 2020

In 2020, the world was hit by a covid pandemic. Many funds have been invested to solve this crisis and so the price of cryptocurrencies has stagnated. The price of Bitcoin did not start to rise significantly until November 2020. In 2020, the price of Bitcoin remained stable and by the end of the year the price had risen to almost thirty thousand dollars for one Bitcoin. For this reason, the trend is growing in 2020. The dramatic rise in prices at the end of 2020 may be related to over-savings, as many people still had income during the pandemic, but did not have as many opportunities to buy products and use services, as well as travel restrictions.

The increase in 2020 was from \$ 7,214 to \$ 28,938. This is a 401% increase. The following is a graph of 2021 (see Figure 5).

The trend curve in this chart (Figure 5) is the most stable of all selected years. Even so, the price for one Bitcoin has a slightly rising curve. The increase in 2021 was from \$ 29,329 to \$ 46,198. This is a 158% increase. Overall, between 2017 and 2021, Bitcoin increased in price from \$ 998 to \$ 46,198 and multiplied its value 46.29 times, which is an increase by 4,629%.

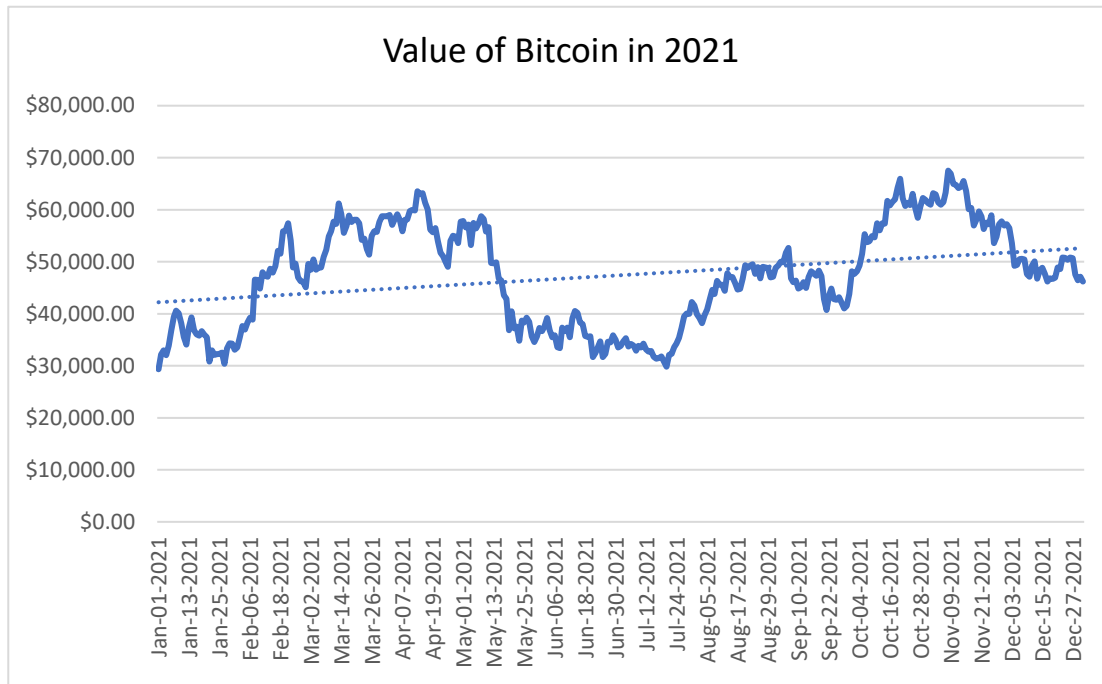


Figure 5. Value of Bitcoin in 2020

Table 1. The development of the Bitcoin price over the last five years by months

Month\Year	2017	2018	2019	2020	2021
January	\$998.33	\$13,644.69	\$3,852.52	\$7,214.71	\$29,329.70
February	\$989.02	\$9,118.23	\$3,471.27	\$9,382.89	\$33,536.48
March	\$1,222.50	\$10,920.66	\$3,832.52	\$8,549.34	\$49,589.98
April	\$1,080.50	\$6,841.73	\$4,200.88	\$6,591.47	\$58,727.65
May	\$1,421.60	\$9,084.64	\$5,390.89	\$8,822.56	\$57,794.46
June	\$2,407.88	\$7,520.81	\$8,598.79	\$10,167.40	\$36,679.41
July	\$2,434.55	\$6,363.38	\$10,635.87	\$9,228.08	\$33,504.93
August	\$2,718.26	\$7,600.56	\$10,369.53	\$11,797.82	\$39,918.96
September	\$4,892.01	\$7,189.71	\$9,719.56	\$11,924.49	\$48,829.97
October	\$4,362.54	\$6,596.43	\$8,299.65	\$10,621.71	\$48,147.57
November	\$6,755.90	\$6,368.62	\$9,229.52	\$13,760.89	\$60,939.36
December	\$10,957.09	\$4,206.22	\$7,405.66	\$18,756.51	\$57,190.98

Table 1 shows that the price for one Bitcoin can vary greatly each month, even by several thousand dollars. Another very commonly used variable in cryptocurrencies is volume and market cap. Volume shows the number of dollars that were traded in a given period. The market cap is then the total amount of money in a given cryptocurrency. For Bitcoin, the volume in 2017 was \$ 2,141,854,403 per day and the market cap was \$ 66,592,811,613. In 2021, the volume rose to \$ 89,267,636,362 per day and the market cap to \$ 889,147,945,205.

4. Discussion

For many years, several new cryptocurrencies have sprung up every month, trying to follow the glory of Bitcoin, but Bitcoin is still the main safest cryptocurrency. There are speculations that Bitcoin could be overcome in a few years by other cryptocurrencies such as

Ethereum, Internet Computer, Terra or Solana, but it is extremely difficult to estimate how prices will develop and it depends on a huge number of variables.

How a given cryptocurrency will increase or decrease depends on how currently investors believe or disbelieve the given cryptocurrency market, how big this market is, what the situation is in the world and also what the current momentum is (Li et al., 2021; Liu et al., 2022; Liu & Tsyvinski, 2021). Momentum is a very important variable. When the value goes up and it is a growing momentum, more people get involved and the price rises further and faster. If a large number of people sell their investments, then there is fear, panic and more people are determined to sell their tokens as well (Chaim & Laurini, 2019; Koutmos, 2018).

As a possible research into the future, further analysis of development prediction using time series or neural networks could be performed from this data. However, prediction of price is complex in this regard and depends on many factors, as has already been seen during the covid pandemic, war, crisis, the reaction of famous people on social networks, fluctuations in investor confidence or the level of panic and fear (Shen et al., 2019; Thies & Molnár, 2018).

Looking at the price development over the last 5 years, it is clear that the price can develop very quickly by several thousand dollars per bitcoin in both directions. Among the main factors influencing the price are the legislation of various countries, influencers, the amount of money invested from investors, the global crisis, wars, the confidence of current Bitcoin holders, the integration of cryptocurrency payments in companies and organizations, and even how celebrities comment on cryptocurrencies in public.

The longer Bitcoin operates in society, the more companies will use it for their day-to-day operations, and thus, whether the price of one Bitcoin rises or falls, it will increasingly affect other cryptocurrencies, other investments and thus the global economy.

Acknowledgments: The work was supported by the internal project “SPEV – Economic Impacts under the Industry 4.0 / Society 5.0 Concept”, 2022, University of Hradec Králové, Faculty of Informatics and Management, Czech Republic”. The author is grateful to the student Martin Matějček who collaborated on data collection and processing, as well as on feedback on the overall concept and editing of the article.

Conflict of interest: none

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