Comparative Analysis Cryptocurrencies Versus Stocks

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Abstract

As the limit between reality and the digital field seems to blur more and more, and this fusion has an impact on several fields of study, such as accounting and audit, the similarity between cryptocurrencies and the stocks of companies has to be analysed, as investment items. In the absence of comparisons between the cryptocurrency market and the capital market, investors cannot apply the proper accounting treatment for the activity in which they are involved. Consequently, the aim of this article is setting the existing characteristics and correlations between the cryptocurrency market and the securities market. Besides, the authors consider that this article may contribute to the accounting research, providing useful information to investors and regulatory authorities in accounting.

Cryptocurrencies and the prices of stocks are somehow correlated after considering the volatility of cryptocurrency. Many of the factors affecting the prices of stocks also have an impact on the prices of cryptocurrencies. Investors and traders treat cryptocurrency in the same way in which they treat the stocks, so that prices tend to have the same trend. We should be cautious when we invest in cryptocurrencies, as they are still new – the market explores its role as an asset.

At the same time, the analysis and presentation of certain statistical data was pursued, like the number of companies listed at the largest stock exchange operators in the world, the stock exchange capitalization, the number of cryptocurrencies at world level, the market capitalization of cryptocurrencies, resulting in a similarity between the two studied elements.

Keywords: crypto assets, cryptocurrencies, Bitcoin, stocks, capital market, securities market

JEL classification: M40, O39, G11, G12, G15, G32

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➲ Introduction

As the limit between reality and the digital field seems to blur more and more, and this fusion has an impact on several fields of study, such as accounting and audit, the similarity between cryptocurrencies and the stocks of companies has to be analysed, as investment items, in order to highlight the differences and similarities between their characteristics.

Long-term investments in cryptocurrencies or stocks may raise questions in terms of the structure of these assets, because cryptocurrencies are digital assets based on blockchain technology, that are highly volatile, and stocks are low-volatility physical assets that have real value and are issued by a number of corporations (Dodds, 2022).

Since each of these assets offers its own set of unique opportunities and risks, it is necessary for them to be examined in a cryptocurrency versus stocks comparative analysis. It is very important for cryptocurrency investors to understand the differences between these assets and traditional investments such as stocks, which have a solid long-term track record. It is also essential that they evaluate the benefits and risks of the investment they wish to make.

The purpose of the study hereby is to establish the existing characteristics and correlations between cryptocurrencies and stocks. Many researchers have recently explored the connection between cryptocurrencies and the stock market, and their views have been presented in various scientific publications. Although several studies have empirically investigated the association between cryptocurrencies and the stock market, a literature review is important.

The aim of this scientific article is the qualitative review and analysis of the specialist publications regarding the association between cryptocurrencies and the stock market. The key terms used by the authors in the research are *cryptocurrencies*, *crypto assets*, *Bitcoin*, *stocks*, *capital market*, *stock market*, in various combinations. The findings of the analysis aim to highlight the similarities and differences between cryptocurrencies and stocks. Therefore, the authors suggest that the added value of this article is pragmatically reflected by effectively guiding investors, professional accountants, auditors and other intermediaries regarding the business strategy that includes cryptocurrencies and stocks.

➲ Research methodology

The study is a literature review on the association between cryptocurrencies and the stock market.

Motivation and setting up the research topic. The relationship between cryptocurrencies and stocks, together with the differences and similarities between them, have drawn attention of all market players: researchers, professionals in various fields of economic activity, investors, bankers, entrepreneurs and political circles. For this reason, the research topic of the paper hereby is the relationship and differences between cryptocurrencies and stocks. Since not all participants in the crypto asset market properly and fully understand the impact of their activity and how to manage their investment portfolio, we wanted this study to provide a better understanding.

The findings have a series of implications for the current stage of the cryptocurrency and stock market literature, including gaps in the study and several research directions that can be explored in the future.

The authors consider that the study hereby, based on the analysis of scientific publications that focus on the relationship between cryptocurrencies and the capital market, can contribute to accounting research by providing guidance for regulatory bodies in the accounting and investments field, in order to improve legislation, but also for researchers interested in this subject.

Documentation. In order to support the understanding of the definition of concepts and characteristics of cryptocurrencies and stocks on the proposed topic, several specialized publications on the internet, both international and national, were analysed. The materials used for the analysis focus on blockchain technologies, that have recently appeared online, on various graphs showing certain trends over several years and on comparisons between the cryptocurrency market and the stock market.

Research strategy. The research process includes the review and qualitative analysis of publications, the interpretation of specific aspects, the comparison of different authors' opinions and the analysis of several existing trading platforms, in order to clarify theoretical concepts. On the other hand, a content analysis is performed, extracting a number of scientific articles and papers with a similar subject, in order to provide a complete picture of previous results and studies.

Firstly, cryptocurrencies and stocks are defined from a theoretical point of view, after analysing several electronic sources. Besides, the analysis and presentation of certain statistical data were aimed at, such as the number of companies listed on the largest stock exchange operators in the world, the stock market capitalisation, the number of cryptocurrencies worldwide, the market capitalisation of cryptocurrencies, which results in a similarity between the two elements. As a result, the focus was placed on the comparison between cryptocurrencies and stocks, and the pros and cons of owning cryptocurrencies or stocks were analysed, highlighting the most important findings. Finally, the authors' conclusions were presented, accompanied by some future research directions in this field.

Information processing. The data and information have been presented in an aggregated manner in order to gain a point of view on the topic at hand: comparative analysis of cryptocurrencies versus stocks.

Communication of results. The carried-out analysis led to certain conclusions and allowed the formulation of some perspectives on the economic approach to operations with cryptocurrencies and stocks. Also, new study perspectives are provided, taking into account various associations that can be made.

The structure of the paper is as follows: The first section presents the research methodology and the second one analyses the specialised literature in the field and compares the characteristics of cryptocurrencies and stocks. The third part documents opinions for and against their use, and finally, conclusions are offered and new topics for study are opened.

➲ Analysis of specialised literature

As information and research about cryptocurrencies and capital markets circulates fast, it is necessary to analyse the scientific publications that address this topic.

■ Stocks

Stocks are securities issued by a joint-stock company, certifying that the holder is the rightful owner of a part of the issuing company's social capital (Francisco, 2022).

From a legal perspective, stocks give the holder the right of ownership over a stock in the company. Shareholders who own one or more stocks of a company have the right, proportionally to the number of stocks they own, to receive dividends from the distributed profits, to participate in the decision-making process within the general meeting of shareholders (GMS) and to participate in the revenues earned from the sale of their stocks in case of liquidation of the company (TradeVille, n.d.).

In terms of capital markets, stocks are financial instruments that concerned parties can buy and sell on an organised and regulated market, i.e. a stock exchange.

Stock owners of different companies can own two kinds of stocks:

Ordinary (common) stocks	Preferred stocks
• Are the most common. • Give the right to receive dividends within the limit of the net profit from the previous year. • Grant the right to express the vote in the GMS meetings. • Assign the right to receive a percentage of the amount resulting from the liquidation of the company's assets, according to the number of stocks held and the ratio to the total number of stocks issued by the company (TradeVille, n.d.).	• Unlike the ordinary ones, they give their holders additional or preferential rights, but usually this aspect is compensated by reducing other rights. For example, the holders of these stocks may be entitled to receive a fixed amount of dividends, regardless of the company's profit or loss in the previous year, or they may receive dividends first, at a higher rate (TradeVille, n.d.). • In case of liquidation of the company, their holders receive dividends before holders of ordinary stocks. • Holders of these stocks do not have the voting rights that holders of ordinary stocks have (Maryville University, n.d.).

In terms of stocks, the participation rate is specifically the weight of shareholders in an existing company. Stock corresponds to a part of a functional company and their price reflects the value of that company (Dodds, 2022). This justifies the investment and provides a basis for its evaluation.

According to Royal and Beers (2023), stock price rises or falls as investors assess the future success of the company. While investors may become bullish about the stocks in the short term, the price of stocks ultimately depends on the company's ability to increase its profits in the long term. This means that a stock increases in the long term due to the success of the underlying company.

Investors can buy stocks from companies that are listed on stock exchanges. They offer the public the opportunity to invest in them by selling stocks in their businesses. Based on the total number of listed companies, it can be inferred from Figure 1 that the Japan Exchange Group is the largest stock exchange operator in the world, with 3,876 listed companies in March 2023. Only six of these are foreign companies, the rest being domestic. The stock exchange with the largest number of foreign companies is Nasdaq, in the US, with 846 listed companies. Although the New York Stock Exchange ranks seventh in terms of the number of companies, it has the largest market capitalisation (Statista Research Department, 2023b).

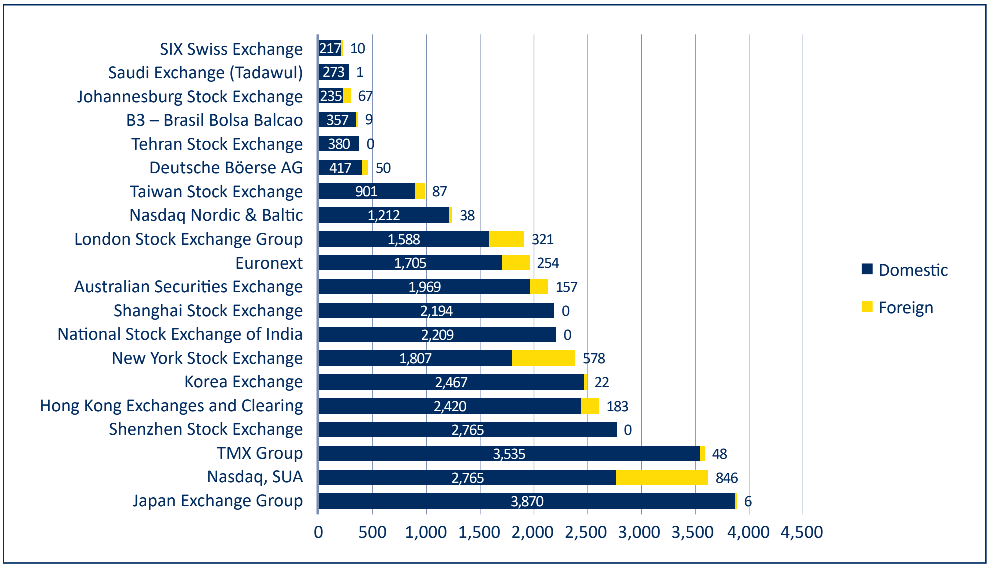

Figure 1. Number of listed companies on the world's largest stock exchanges, 2023

Source: Adapted from Statista Research Department, 2023b.

The New York Stock Exchange is the largest in the world, with a market capitalisation of nearly $ 24.3 trillion in May 2023. According to Figure 2, the next three exchanges are Nasdaq, Shanghai Stock Exchange and Euronext.

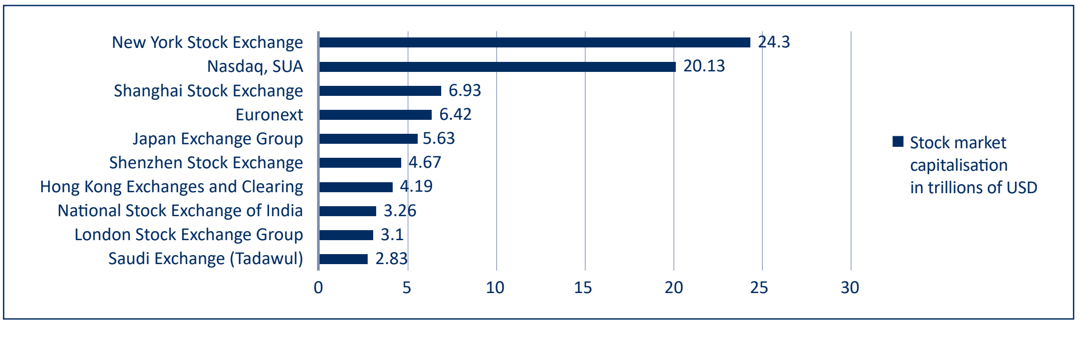

Figure 2. Global stock market operators,
ordered by market capitalisation of listed companies, 2023

Source: Adapted from Statista Research Department, 2023a.

In the case of public transactions, companies can sell more than one stock. Issuing new stocks dilutes the value of existing stocks, but allows companies to raise capital. Common reasons for selling additional stocks are to raise funds to expand the business, hire staff, increase production capacity or build facilities. Shareholders can vote for the election of board members and for company policies presented at the GMS. Generally, investors do not have individual decision-making rights regarding the day-to-day management of the company, but if a sufficient number of investors gather, they can influence its direction (Maryville University, n.d.).

In other words, stocks represent ownership of a company (backed by assets and cash flow), while cryptocurrencies are backed by nothing. For a stock to be a successful investment, the underlying company must perform well over time (Royal and Beers, 2023).

■ Cryptocurrencies

The concept of *cryptocurrency* was initially introduced in 2009, when the virtual currency Bitcoin was introduced. From 2009 to the late 2010s, Bitcoin's unique characteristic of not being influenced by the broader economy made it an attractive option for investors seeking a stable investment amid volatile stock markets. However, increasing interest from individual and institutional investors since 2017 has created a link between stock market prices and cryptocurrencies (Sharma *et al.*, 2022).

Cryptocurrencies refer to digital assets that are created and stored using blockchain technology (Dodds, 2022). They are entirely digital and were originally designed to operate independently, without government, banking or any central authority oversight, resulting in a decentralized structure (Frankenfield *et al.*, 2023).

A concise definition of cryptocurrencies is provided by White (2015), who states that they are transferable digital assets that are protected by cryptography. Essentially, cryptocurrencies are data managed by software created and supported by computer science experts. Development issues with software or differences of opinion between developers can raise potential concerns for investors. An example is when Bitcoin Cash appeared, which caused investors to react, and as a result the price of Bitcoin fell by almost $ 600.4 (Sharma *et al.*, 2022).

Unlike stocks, cryptocurrencies are completely digital and have no tangible assets to back their value, with the exception of stablecoins. This affects their viability, value and trading methods. Unlike stocks, which involve a stock of ownership, cryptocurrencies do not possess intrinsic value and do not represent a part of a whole (Dodds, 2022).

The statistics (Figure 3) indicate a significant increase in the number of cryptocurrencies that have appeared in the last nine years. In the last three years alone, from 2019 to 2021, the total number of cryptocurrencies doubled. In short, there were almost 9,000 distinct cryptocurrencies in 2023, although there were more digital currencies in the first months of 2022. It should be noted that the top 20 cryptocurrencies, with high notoriety, are estimated to represent about 90% of the total market (De Best, 2023b).

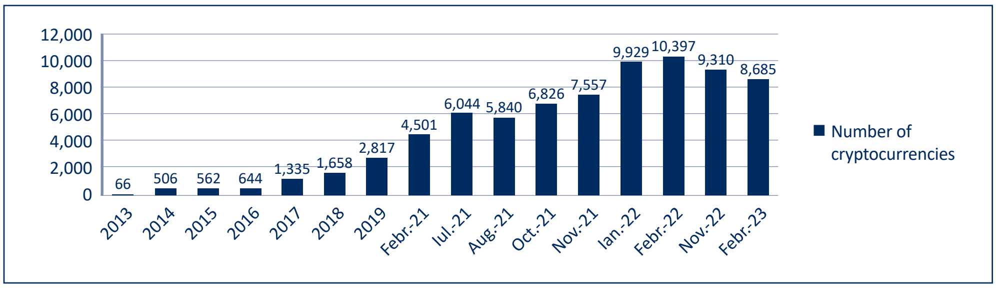

Figure 3. Number of cryptocurrencies worldwide from 2013 to February 2023

Source: Adapted from De Best, 2023b.

In December 2021, among the multitude of cryptocurrencies, the top ten in terms of market capitalisation were Bitcoin (BTC), Ethereum (ETH), Binance Coin (BNB), Tether (USDT), Solana (SOL), Cardano (ADA), XRP, USD Coin (USDC), Polkadot (DOT) and Dogecoin (DOGE) (Jeris *et al.*, 2022).

Analysing Figure 4 it becomes evident that there is an upward trend in the market capitalisation of cryptocurrencies from 2014 to 2023. It is noteworthy that the maximum level of about $ 3 trillion is reached in 2021. In addition, the influence of the COVID-19 pandemic can be seen on online sales, which has boosted online transactions since 2019.

Figure 4. Cryptocurrency market capitalisation worldwide between 2014 and 2023

Source: Capture by CoinMarketCap, 2023.

Although there are thousands of cryptocurrencies, Bitcoin is the first and most popular, accounting for almost two-thirds of the cryptocurrency market capitalisation in 2020. Bitcoin is considered inflation-resistant because it has a limit of 21 million coins that can be created, which leads to a lack of supply. This will limit the inflation that can occur with government-backed currencies (Maryville University, n.d.).

In their paper, Royal and Beers (2023) explain that the fall and rise in the prices of cryptocurrencies is due to the lack of support of tangible assets or cash flows, that is the absence of a physical equivalent into which they can be easily converted. In this way, the only thing driving price movement is speculation based on investors feelings. When it changes, prices follow the same path. Therefore, cryptocurrencies are only driven by the hope that investors will buy them at a higher value in the future.

The value of a cryptocurrency reflects a number of factors, including the current supply and demand for that currency. It can also reflect confidence in the technology behind the currency or in a particular innovation represented by a crypto asset (Dodds, 2022). Cryptocurrencies enable functions such as sending money to other people or using smart contracts that are automatically executed once certain conditions are met (Royal and Beers, 2023).

■ Differences between cryptocurrencies and stocks considering their characteristics

The dynamic association between cryptocurrencies and stock markets has been the subject of numerous international studies. They showed that there are plausible reasons behind the existence of such a relationship. This section looks at the interconnection between cryptocurrencies and stocks.

The cryptocurrency market is a complex, self-organised system and can be thought of as a complex network of broker-traders. In such a network, cryptocurrency prices exhibit high volatility and are accompanied by features such as unpredictable fluctuations and uncertainty. Instead, stock exchanges are the most developed economic segments of the financial market, well capitalised, globalised and with long-term trends studied (Soloviev *et al.*, 2019). Thus, a comparative analysis of these market segments is clearly scientific and interesting.

Geopolitically, decisions made in different countries affect stock market and cryptocurrency prices, as trade restrictions and other political actions can impact the supply of materials, labor and transportation. Therefore, people who invest in assets affected by political activities fear price instability and volatility and trade according to their beliefs (Sharma *et al.*, 2022). On the other hand, the difference in absolute size between the global stock and cryptocurrency markets must be considered. As of 2021, global equity issuance was estimated at $ 106 trillion, while the cryptocurrency market was only $ 2.6 trillion (2.5% of the market cap) (Dodds, 2022).

■ Cryptocurrency prices versus stock prices

Interest in Bitcoin and cryptocurrencies as an investment asset class emerged in late 2016, evidenced by a slow and steady rise in its price until 2017, when it surpassed $ 1,000. The price rose to nearly $ 17,000 within a year before stabilizing between $ 3,000 and $ 10,000. In 2020, the COVID-19 pandemic caused great concern among investors, who panicked, as business and the economy slowed down. During the pandemic, many investors pulled out of the stock market and placed their assets in Bitcoin. As a result of high demand, the price of Bitcoin quadrupled by 2021, reaching $ 30,000 in May 2022 (Sharma *et al.*, 2022). As the economy reached pre-pandemic levels, investors were convinced that Bitcoin was a new asset class that could deliver returns in the most austere market conditions.

Subsequently, many companies began to invest in cryptocurrencies, and the performance of Bitcoin during the pandemic stabilized their position and potential, thereby strengthening the value of their stocks in the market. Bitcoin attracted the interest of many private, institutional and corporate investors, who made their first investments. After being traded as a stock by adopters on cryptocurrency exchanges, Bitcoin is now valued as a stock by traders and investors, strengthening its position as an asset class (Sharma *et al.*, 2022).

It is no surprise that cryptocurrency prices are volatile. Figure 5 compares the price of Bitcoin (BTC) to that of the S&P 500 (SPX) and the Nasdaq-100 (NDX). The SPX index measures the performance of large-cap stocks, while the NDX index measures the performance of the 100 largest publicly traded non-financial companies. The figure shows the evolution of SPX, NDX and BTC prices from August 2018 to June 2023. It can be seen that the price of each index rose and fell, but Bitcoin was more volatile, which may indicate that it is not held for long periods of time and is, therefore, treated as a stock by traders and investors (Sharma *et al.*, 2022).

In agreement with other researchers, the authors of this article appreciate that the relationship between the prices of cryptocurrencies and those of stocks may be a coincidence, or it may reflect the fact that the former are indeed following the trend of the latter, but in a much more fluctuating way.

In order to compare returns over time, it is important to note that the graphs overlap. From the data system of the TradingView platform, it can be seen that the price of Bitcoin and the Nasdaq-100 stock index have undergone many changes in the past three years. From the end of 2021 until the middle of 2022, the price of cryptocurrencies rose and fell in a similar way to that of stocks.

The authors believe that both Bitcoin holders and shareholders have experienced price volatility over the past three years. However, it can be noted that the degree of volatility of Bitcoin price is significantly higher.

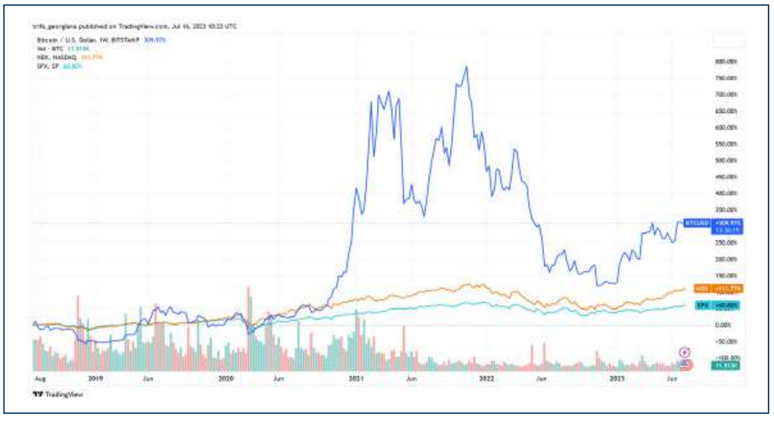

Figure 5. Bitcoin, S&P 500 and Nasdaq-100 price history from August 2018 to June 2023

Source: Authors' processing using the TradingView platform, 2023.

In addition, the authors agree with Nguyen (2022), pointing out that stock and cryptocurrency markets are more interconnected during periods of uncertainty. Despite the recession caused by the pandemic, cryptocurrencies quickly recovered, while the stock market was stuck in a latency phase (Caferra and Vidal-Tomas, 2021). In this regard, the authors conclude that investors are likely to temporarily treat cryptocurrencies the same way they treat stocks.

Cryptocurrencies and stocks are different assets in many ways. For example, investing in cryptocurrencies is not the same as owning stocks in a company, it simply allows you to own a currency that can benefit from price fluctuations. Table 1 and Figure 6 illustrate some of the features that distinguish them.

Table 1. Similarities and differences between stocks and cryptocurrencies

Characteristic	Stocks	Cryptocurrencies
SIMILARITIES		
1. Volatility and risks	Both types of assets are volatile and risky. Their value can go up or down and it is impossible to determine when is the best time to buy or sell.	
	Sudden and unexpected changes in stock prices are as old as the stock market. Good news can drive stock prices up, while bad news can drive them down. Stock markets can crash in a single day. It is possible that investors see the value of their portfolios decline, but rarely suffer a total loss. Past performance is no guarantee of future returns, and listed companies must report their financial situation publicly so that investors have access to multiple sources of information to make purchasing decisions. Stocks are generally volatile, but tend to be less volatile than cryptocurrencies. Individual stocks are more volatile than portfolios of stocks, which can be diversified. Some stocks are more volatile than others. For example, growth stocks tend to be more volatile than value or dividend stocks.	The value of cryptocurrencies can change suddenly and drastically, sometimes without warning. While these changes can bring huge profits to cryptocurrency investors, they can also cause significant losses in a very short period. More than 1,600 cryptocurrencies have completely disappeared in recent years. Cryptocurrencies are known for their high volatility, which may be the reason for their high yields. Some people believe that the future of finance lies in cryptocurrencies rather than stocks, while others believe that their nature is too risky to support a full-fledged financial system.
2. The time horizon	The time horizon refers to when investment funds are needed in liquid form. If the investment is short-term, the asset needs to be more secure so that it can be accessed when needed. The more volatile an asset is, the less suitable it is for short-term investors. Generally, experts suggest that investors in risky assets such as stocks need at least three years to ride out the volatility.	
	Stocks are more suitable for investors who can leave their money alone and do not need access to their funds. Generally, it is better that the money stays invested. Investors may move from more aggressive stocks (growth stocks) to safer stocks (dividend stocks) as they need to spend their funds, for example, near retirement.	While stocks are volatile, cryptocurrencies are even more volatile. In 2021, for example, Bitcoin lost more than half of its value in a few months and then rose by 100%. This volatility makes virtual currencies unsuitable for short-term investors. Cryptocurrencies are more suitable for investors who can keep their funds tied up and expect a long-term recovery.

<table>
<tr><th>Characteristic</th><th>Stocks</th><th>Cryptocurrencies</th></tr>
<tr><td rowspan="2">3. Trading</td><td colspan="2">Another similarity between cryptocurrencies and stocks is the way both assets are traded. Digital platforms are beginning to blur the lines between digital assets and financial instruments. Users can seamlessly access and trade stocks and cryptocurrencies by using the same platform.</td></tr>
<tr><td>Stocks are traded on recognized stock exchanges around the world. These exchanges are built to provide security, stability and transparency and process large volumes of transactions every day. Stock exchanges are highly regulated (although the details vary from country to country) and protect buyers and sellers.

Stock exchanges have existed in one form or another for over three centuries, the most famous being on Wall Street, in New York City. In Romania, stocks are traded through the Bucharest Stock Exchange (BVB), with the help of brokerage companies or platforms.</td><td>Cryptocurrency exchanges, on the other hand, are fairly new. Binance, the largest trading platform, was launched in 2017. Coinbase, another major platform, was founded in 2012.

Binance's daily trading volume is about $ 76 billion as of August 2022. At the same time, the trading volume on Nasdaq, which is only a small part of the global exchange, was about three times higher.

More and more companies are accepting cryptocurrencies as payment, similar to currencies, and the financial trading platform Square facilitates crypto transactions. In 2021, El Salvador became the first country to accept Bitcoin as a legal method of payment (Maryville University, n.d.).</td></tr>
<tr><td>4. Transaction costs</td><td>There are commissions and transaction fees for buying and selling stocks. Even investors who buy low-fee, no-fee mutual funds (which are essentially baskets of stocks) must pay fees that cover the fund's operating costs.

Costs for actively managed funds and trading through a brokerage account can be much higher.</td><td>The difference between stocks and cryptocurrencies is not that big, because of the high cost of trading cryptocurrencies. Cryptocurrency trading platforms charge commissions. In addition, there are gas fees, which are costs imposed by the network for various transactions on the blockchain. These fees vary greatly depending on the form of cryptocurrency.

Some networks increase gas charges to speed up transactions. However, some estimates suggest that major markets charge at least 1.5% fees for cryptocurrency transactions.</td></tr>
<tr><td>5. Fraud</td><td colspan="2">Given the attraction of fast money, it is no surprise that both stocks and cryptocurrencies are at risk of fraud. The most common is the pump and dump scam, where unscrupulous people artificially inflate the price of cryptocurrencies through false or exaggerated claims, celebrity "endorsements" or simply through investor greed. As the price rises, fraudsters sell their holdings and, in most cases, they disappear.</td></tr>
<tr><td>6. Common investors</td><td colspan="2">Despite the emerging nature of cryptocurrencies, more and more institutional investors are investing in them, digital assets, blockchain technology and decentralized finance (DeFI). These professional investors need increased transparency, liquidity and regulation of crypto assets, which would be positive for the entire market.</td></tr>
<tr><td colspan="3">DIFFERENCES</td></tr>
<tr><td>7. The right of ownership</td><td>To buy and hold stocks, a securities account is required to manage transactions. This account is verified based on address and other personal details. This provides some protection in the event of identity theft or fraud.</td><td>Cryptocurrencies are anonymous, but less secure. They are stored in crypto wallets, which can be completely virtual, or on USB drives.</td></tr>
</table>

<table>
<tr><th>Characteristic</th><th>Stocks</th><th>Cryptocurrencies</th></tr>
<tr><td>7. The right of ownership</td><td></td><td>This anonymity can create its own risks, such as hackers compromising the cryptocurrency, forgetting passwords, and losing access to accounts or the USB drive the cryptocurrency is stored on.
Using cryptocurrency wallets is similar to using ATM cards. Just like banking transactions, cryptocurrency transactions store user and account information, but in electronic form. Each wallet owner has a unique digital address to send and receive cryptocurrencies. The difference with bank transactions is that those in cryptocurrency wallets are transmitted to an open-source public ledger. However, virtual currency holders benefit from the cryptographic anonymity of their identity and the legitimacy of their transactions (Jokić et al., 2019).</td></tr>
<tr><td rowspan="2">8. Liquidity</td><td colspan="2">Small markets affect the ability to trade stocks and cryptocurrencies. The ability to trade freely is known as liquidity.
Both stock and cryptocurrency investors can suffer losses if they sell large amounts of assets during periods of low liquidity. However, the low liquidity of the crypto asset market increases the risk for cryptocurrency holders.</td></tr>
<tr><td>Investors find stocks to be highly liquid as there are many active traders on the stock market.</td><td>In the case of cryptocurrencies, liquidity varies considerably from one coin to another. Bitcoin is more liquid than other cryptocurrencies due to the high volume of transactions. This means that there are more buyers and sellers interested in trading it.</td></tr>
<tr><td>9. Regulation</td><td>The stocks are controlled by the regulatory authorities in the field of securities and other regulatory authorities in the country of origin.
Additionally, in the case of stocks traded on an organized stock exchange, the exchange oversees the company and can delist it if something goes wrong. While this is by no means a guarantee, it is certainly more than a guarantee when investing in cryptocurrencies.
There are national bodies, such as the Securities and Exchanges Commission (SEC) in the US, which oversee the stock and securities markets. Regulation by these bodies guarantees a certain degree of transparency for listed companies. In Romania, the equivalent of this body is the Financial Supervisory Authority (ASF).</td><td>Cryptocurrencies are still largely unregulated. This appears to favor some investors in terms of government regulation.
In addition, cryptocurrencies are based on the concept of decentralization, which allows the exchange of values peer-to-peer, without intermediaries. This makes virtual currencies attractive to investors because, unlike traditional stocks, the identity of the sender and receiver of cryptocurrencies is hidden.
The issue of the regulation of cryptocurrencies is constantly evolving, so that they and transactions with them risk facing dramatic transformations or being abolished.</td></tr>
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Characteristic	Stocks	Cryptocurrencies
9. Regulation		The level of investment in cryptocurrencies and their accessibility globally could create more liquidity on the cryptocurrency market than in traditional stocks. Over the next few years, the liquidity of the cryptocurrency market will likely be comparable to that of traditional assets, as investors and market participants may be more willing to hold cryptocurrencies than stocks of listed companies (Gil-Alana *et al.*, 2020).
10. Availability to trade	Exchanges are normally only open during their home country business hours (Monday to Friday) and are closed on public holidays and weekends.	The cryptocurrency market operates around the clock, every day of the year. The 24/7 availability of the cryptocurrency market may be one of the reasons why they are volatile. As decades of stock market research have shown, investors are often driven by emotional impulses and investment behavior. Taking a break can help restore self-control and order.
11. Portfolio management (diversification)	Many investors try to build a diversified portfolio of stocks that perform differently on various markets. Generally, stocks are often correlated with the economy and are influenced by factors such as inflation, unemployment and interest rates. Given the stocks' strong long-term track record, a diversified collection of should make up the bulk of a portfolio, especially if it is a long-term investment. If investing in individual stocks, they should be researched carefully to ensure good returns. When investing in funds, diversified mutual funds with high return potential can be purchased without significant research.	Some supporters of cryptocurrencies believe that they are uncorrelated assets and that this asset class does not react to market events in the same way as traditional securities, namely stocks and bonds. Others believe that virtual currencies can act as a hedge against inflation and can be a valuable counterweight to portfolios that contain a large number of inflation-sensitive assets. Due to the inherent risks of cryptocurrencies, a small allocation in the global portfolio (maximum 5%) is optimal. Even a small allocation could have a significant effect on the portfolio should cryptocurrencies appreciate. Keeping a small allocation also prevents a total loss if the cryptocurrency reaches zero. If cryptocurrencies become a significant part of the portfolio, more money can be reallocated to stocks, reducing its overall risk.
12. Supply	It is a well-known fact that supply and demand have a significant impact on the prices of products and services. These influences also affect stock prices. They are less volatile because the number of stocks outstanding is controlled and ultimately supported by the activity of the issuing company.	Some cryptocurrencies have a limited supply, the most famous being Bitcoin. Thus, the supply of Bitcoin is limited to 21 million coins, in which case if the demand increases, the price will be higher. Other cryptocurrencies are following the example as investors look for investment opportunities, although the number of coins issued is not limited.

Characteristic	Stocks	Cryptocurrencies
13. The purpose	When someone buys a stock, he/she buys a fractional stock in the issuing company.	When someone purchases a cryptocurrency, one does not necessarily acquire a fractional ownership of the blockchain, but only a medium of exchange. This means that, in terms of exchange of value, many cryptocurrencies are designed for transactional purposes and are like a currency.
14. The technology	The technology used in the case of stocks is represented by the software underlying the trading platform.	The last and most important difference between stocks and cryptocurrencies is the blockchain technology that underlies all cryptocurrencies. Many cryptocurrencies allow for additional programmability, turning their nature into "programmable money". Other use cases include smart contracts and DeFi applications, such as DApps (decentralized applications).

Source: Authors' projection after Dodds, 2022; Royal and Beers, 2023; CFI Team, 2023.

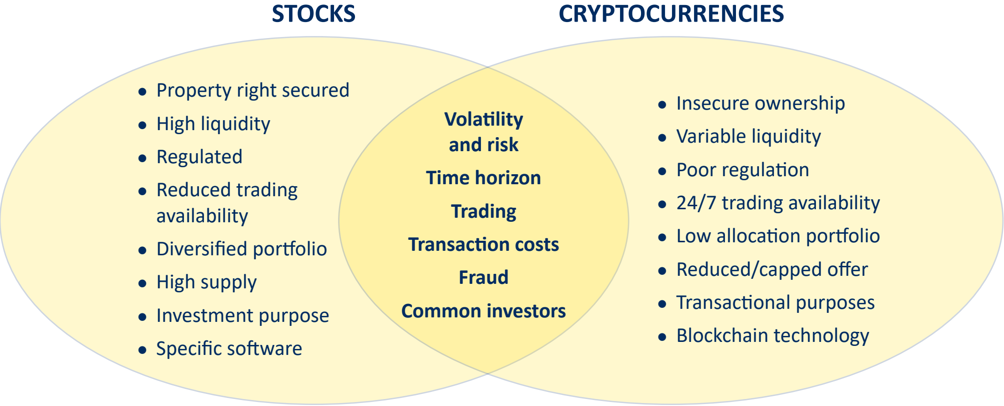

Figure 6. Differences and similarities between cryptocurrencies and stocks

Source: Authors' projection.

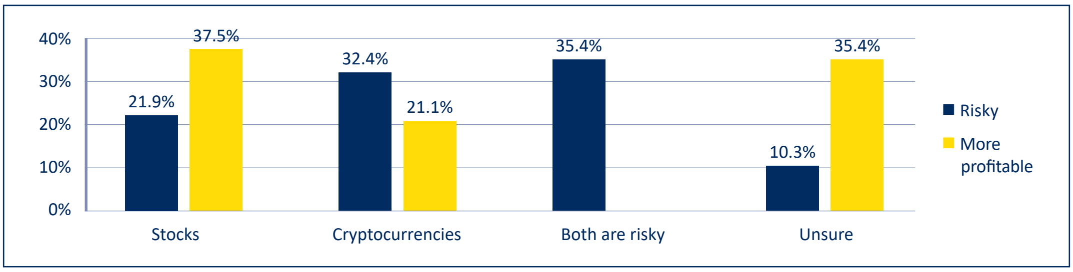

Figure 7. US consumers' opinion about investing in cryptocurrencies versus stocks, 2023

Source: Adapted from De Best, 2023a.

In order to highlight the comparison between stocks and cryptocurrencies, Figure 7 shows the opinions of US consumers on this topic. Investors interviewed had relatively strong opinions about the profitability of the stock market compared to investing in cryptocurrencies. Almost 32% of survey respondents said that cryptocurrencies may have the most risk, while almost 38% preferred the stock market over virtual currencies in terms of profitability (De Best, 2023a).

■ Advantages and disadvantages of investing in cryptocurrencies

The issue of investing in cryptocurrencies or stocks comes down to the pros and cons of each asset type and what is important to the investor's goals and risk tolerance. Table 2 and Figure 8 present the advantages and disadvantages of investing in cryptocurrencies.

Table 2. Advantages and disadvantages of investing in cryptocurrencies

Advantages	Disadvantages
Innovation: Cryptocurrencies represent an exciting new asset class with great potential. They are based on a state-of-the-art technology that develops many digital assets and innovations. **Accessibility:** Cryptocurrencies have no restrictions and can be used by anyone with internet access. **Decentralization:** Since most cryptocurrency systems do not rely on a central authority, these currencies are resistant to censorship and centralized control. **Resistance to inflation:** Cryptocurrencies are not directly influenced by the monetary policy of the central bank, so their prices are much less sensitive to inflation. However, since not all cryptocurrencies are the same, the issuance rate and supply of each crypto asset are important. **Flexibility:** Compared to stocks, investors have more ways to grow their cryptocurrency holdings other than trading. Cryptocurrency investors can benefit from yield encouragement, staking and liquidity provision. Products like Binance Earn are excellent examples of ways to grow the cryptocurrency holdings. **Variety:** There are currently around 9,000 cryptocurrencies available for investment. The value of many tokens is not just monetary. Some cryptocurrencies are governance tokens, which give holders the right to participate in the development of projects and protocols. **Hedging against fiat currency:** For some investors, one of the biggest attractions of cryptocurrencies is their decentralized nature. Since they are not controlled by a central bank or a money-printing government, they do not cause inflation, as fiat currencies do. Cryptocurrencies have been called "digital gold", and some investors hold them believing they will protect them from inflation.	**Unpredictability:** The costs of holding and trading cryptocurrencies are unpredictable as they vary across exchanges and digital currency networks. Hidden costs can occur when completing transactions on different networks. **Price volatility:** The cryptocurrency market is relatively young and subject to price volatility. The potential for short-term gains is very attractive to new investors. However, since cryptocurrencies are not backed by anything, trading prices are determined by the whims of traders. Thus, it must be recognized that one of their disadvantages is the potential for equally dramatic losses. **Poor regulation:** Cryptocurrencies are used legally in many countries, but the lack of specific regulation and compliance with an existing legal framework make it difficult for investors and professionals in the economic and legal fields. There are countries like El Salvador where Bitcoin is accepted or the US where regulations are emerging, but many governments are skeptical of cryptocurrencies. For example, China has flatly banned them. **Custody risks:** Cryptocurrencies like Bitcoin require a private key to access tokens stored in a digital crypto wallet. If the passphrase is forgotten or the physical crypto wallet is lost, access to cryptocurrencies can be lost forever. **Non-guaranteed return:** Like any financial market, crypto has no guaranteed return. While Bitcoin and other altcoins have performed well on the long term, there is no guarantee that they will continue to grow in the future, and there is always the possibility that a short investment period may not produce the expected return. **Cyber security risks:** Despite cryptocurrency enthusiasts' appreciation of the security advantages of digital currencies, there have been cases of hacking involving cryptocurrencies, highlighting the technology's vulnerability to cyber-attacks. As long as cryptocurrency regulation lags behind, such risks will always exist in the cryptocurrency world.

Advantages	Disadvantages
Huge earnings potential: Buying cryptocurrencies has the potential to earn you big profits. Although these profits are the main reason why investors are attracted to digital currencies, the potential for price growth comes with significant risks. **Growing number of coins:** In the early days of cryptocurrencies, there were only a few types of coins available for investment, but speculative interest has changed that. New coins appear regularly, now numbering in the thousands. **Wide interest:** There is a growing interest in cryptocurrencies from investors, companies and governments. Tesla holds Bitcoin on its balance sheet and at one point it used the digital currency for payments. El Salvador adopted Bitcoin as legal tender in 2021, but the International Monetary Fund (IMF) has urged the country to reconsider this decision. Increasing acceptance of digital currencies could be positive for investors.	**No intrinsic value:** Cryptocurrencies have no intrinsic value. In other words, they are not backed by underlying assets or earnings like stocks. Stocks have value because they generate future earnings and are returned to their owners, while cryptocurrencies have no such value.

Source: Authors' projection after Dodds, 2022; Binance Academy, 2022; Royal and Beers, 2023.

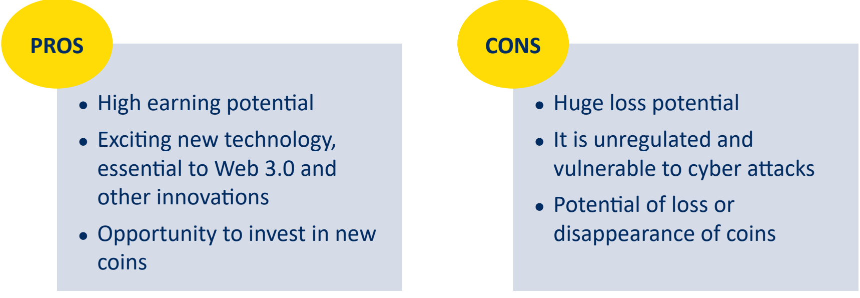

Figure 8. Pros and cons of investing in cryptocurrencies

Source: Authors' projection after Dodds, 2022.

■ Advantages and disadvantages of investing in stocks

Although stocks may seem outdated compared to cryptocurrencies, investing in stocks versus cryptocurrencies has several advantages, but also some risks. Table 3 and Figure 9 present the advantages and disadvantages of investing in these securities.

Table 3. Advantages and disadvantages of investing in stocks

Advantages	Disadvantages
Reduced fraud: Stocks are volatile and risky, but are generally less vulnerable to hacker attacks. **High accessibility:** Investing in stocks has become easier thanks to the many online platforms and mobile apps available on the market. In addition to the fact that the interfaces of these applications are easy to access and use, they include a wide range of financial services.	**Volatility:** Stock markets are influenced by short-term price changes. If the company is profitable, its stock prices will likely rise. Similarly, if the company makes losses, stock prices will fall. Also, some stocks are more volatile than others. For example, individual stocks may be more volatile. Because of this volatility, stocks are best held as part of a long-term investment plan so that short-term losses can be offset.

Advantages	Disadvantages
Many online brokers do not charge trading fees. This makes it possible to invest in individual stocks or diversify into a basket of stocks through by means of mutual funds. Index funds help keep costs low and build a diversified portfolio. **Regulation:** The value of a stock does not depend only on its digital function, but on the performance of an entity – the company that the stock represents. Therefore, these securities have intrinsic value. Stock exchanges, brokers and companies are regulated by various government agencies. For example, in the US, listed companies must submit information that may affect the value of their stocks to the Securities and Exchange Commission, a government oversight agency responsible for investor protection, or in Romania, to the Financial Supervisory Authority. **Inflation-proof:** Certain types of stocks, such as government bonds, are protected against inflation and act as an inflation hedge. **Variety:** The stocks available to retail investors include a wide range of industries and sectors. Traders can select stocks based on a large number of criteria, including the business model, location of the company and whether or not it pays dividends. **Long history of returns:** Stocks have a long history of solid investment returns. They are volatile on the short term, but are meant to be kept safe on the long term. **Intrinsic value:** Stocks represent ownership of a company, and their long-term value depends on the success of the underlying company. Companies own assets that generate income and cash flow for investors, creating what is called intrinsic value.	**High fees:** In most cases, the fees involved in trading on the stock exchange are relatively high, even compared to cryptocurrency trading. In addition to brokerage fees and commissions, there are other fees when buying or selling stocks. **Non-guaranteed return:** Like any financial market, there is no guaranteed return with stocks. While there are stocks that often outperform alternative investments on the long term, there is a chance that they may not do well over a shorter investment period.

Source: Authors' projection after Dodds, 2022; Binance Academy, 2022.

PROS

- The market is regulated, with many protections for investors.
- They are less vulnerable to cybercrime and hacking.
- They have intrinsic value.

CONS

- Investors may not have the same type of opportunities for huge gains.
- The stock market is very complex and new products present new risks.
- The potential for extreme earnings is lower.

Figure 9. Pros and cons of investing in stocks

Source: Authors' projection after Dodds, 2022.

➲ Conclusions

This study contributes to existing knowledge on the relationship between the cryptocurrency and securities markets. Firstly, the authors defined the concepts of *stocks* and *cryptocurrencies* and explored their evolution for a better understanding of them. Secondly, several studies and articles with the same topic were analyzed. Thirdly, the emphasis was placed on the comparison between cryptocurrencies and stocks, the analysis of key terms, all of which contribute to the understanding of the subject. Fourthly, the pros and cons of owning cryptocurrencies and stocks were tracked, highlighting the most important findings.

Finally, the study provided directions for research that can be addressed in the future. Regarding its possible limitations, they only used existing internet articles with a common topic as a citation base. To gather more evidence on the relationship between cryptocurrencies and the stock market, an analysis with other databases is required. In this regard, we propose to undertake a bibliometric analysis on cryptocurrencies and the stock market using additionally databases such as Google Scholar, Web of Science (WoS) and Orbis.

According to the authors' conclusions, stocks and cryptocurrencies stock certain characteristics, but they are fundamentally different assets. While the first ones give investors a tangible stake in a company (even if it is a small part of that company), cryptocurrencies have no intrinsic value. Moreover, the latter are entirely digital and decentralized, which means that they are not regulated by a central authority or agency to oversee the stock market and maintain investor safety (Dodds, 2022).

The authors draw attention to the fact that investment professionals must be aware of the advantages and disadvantages of all assets in order to be able to use them in the same portfolio. Cryptocurrencies are riskier investments, while stocks offer stability. Digital currencies offer the possibility of greater rewards, but also involve greater risk. Combining the two assets can balance the rewards and risks in an investment portfolio.

Similarities include risk and volatility, similar trading experience, common investor base and risk of being scammed. The differences relate to portfolio, technology, purpose and regulation. In agreement with the CFI Team (2023), the authors believe that, as the cryptocurrency market matures, these two asset classes will become more and more similar, as investors tend to adopt a cryptocurrency-related behavior similar to that regarding stocks.

However, cryptocurrencies are certainly an exciting new investment that offers many opportunities that traditional equity assets do not. Despite the different market capitalizations, certain changes are bringing the two asset classes closer together. As the cryptocurrency market grows, more products and financial derivatives are being developed (CFI Team, 2023). For example, there are Bitcoin and Ethereum futures contracts traded on reputable futures exchanges. This subject can be developed as a topic for further research.

As a direction for future research, the authors suggest studying the impact of different types of cryptocurrencies on the stock market, as most of the studies conducted have focused on Bitcoin currency. In addition, the analysis could be extended to investigate the correlation between Bitcoin and other financial elements such as currencies (fiat currencies), gold or various indices that could influence future investors.

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