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Are There Any Relationship Between Tech Firm's Stock Prices and Cryptocurrency's Values?: A Pre and Post Pandemic Period Analysis

Prof. Dr. Ali Rıza Zafer SAYAR
Atılım University, Faculty of Business Administration, Ankara, zafer.sayar@atilim.edu.tr, hhtps://orcid.org/0000-0002-2731-8209

Jehad Bassam Ali ALSHAMALI
Atılım University, Faculty of Business Administration, Ankara,
alshamali.jehad@student.atilim.edu.tr , hhtps://orcid.org/0000-0001-7161-6310

Abstract

This study was conducted to investigate the relationship between the stock prices of technology companies traded on the Nasdaq stock exchange and the values of cryptocurrencies in different periods. Regression and correlation analysis were used in the study. According to the study findings; It is possible to say that there is a positive and strong relationship between technology company stock prices and the values of cryptocurrencies during and after the COVID-19 period. However, no significant relationship was found before the COVID-19. It is evaluated that this situation can be explained by the first liquidity abundance applied in the COVID-19 and post-COVID-19 period and the FED policies towards inflationary pressures experienced at the global level afterwards.

Keywords: Nasdaq, Cryptocurrency, Bitcoin, Ethereum, Stock exchange.

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Teknoloji Şirketlerinin Hisse Senedi Fiyatlarıyla Kriptoparaların Değerleri Arasında Herhangi Bir İlişki Var Mı? : Pandemi Öncesi ve Sonrasına Yönelik Bir Analiz

Prof Dr. Ali Rıza Zafer SAYAR
Atılım Üniversitesi, İşletme Fakültesi, Ankara, zafer.sayar@atilim.edu.tr,
https://orcid.org/0000-0002-2731-8209

Jehad Bassam Ali ALSHAMALI
Atılım Üniversitesi, İşletme Fakültesi, Ankara, alshamali.jehad@student.atilim.edu.tr ,
https://orcid.org/0000-0001-7161-6310

Özet

Bu çalışma; farklı dönemlerde Nasdaq borsasında işlem gören teknoloji şirket hisse senedi fiyatları ile kripto paraların değerleri arasındaki ilişkiyi araştırmak amacıyla yapılmıştır. Çalışmada regresyon ve korelasyon analizi kullanılmıştır. Çalışma bulgularına göre; COVID-19 dönemi ve sonrasında teknoloji şirket hisse senedi fiyatları ile kripto paraların değerleri arasında pozitif yönlü ve kuvvetli bir ilişki olduğunu söylemek mümkündür. Ancak COVID-19 dönemi öncesinde anlamlı bir ilişki bulunamamıştır. Bu durum COVID-19 ve sonrası dönemde uygulanan önce likidite bolluğu ve sonrası global düzeyde yaşanan enflasyonist baskılara yönelik FED politikaları ile açıklanabileceği değerlendirilmektedir.

Anahtar Kelimeler: Nasdaq, Kriptoparalar, Bitcoin, Ethereum, Hisse senedi borsası.

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1. INTRODUCTION

The main purpose of this study is to examine if there is a relationship between the stock prices of technological firms traded in Nasdaq (The National Association of Securities Dealers Automated Quotations Stock Market) and Cryptocurrency, to determine the relationship regression and correlation analysis will be applied, additionally, the investigating about the relationship between the stock prices and cryptocurrency will be carried out in way to separate the analysed data to three group, prior to the Covid Pandemic, during the Covid Pandemic and after the Covid Pandemic.

The Nasdaq Stock Market is an American exchange market located in New York City, Nasdaq founded in February 8, 1971 and consider to be the second biggest market after New York Stock Exchange Market. Nasdaq host the biggest technological firms in the United States and the world in general such as Apple Incorporated, Meta, Alphabet Group (Google), Tesla and Microsoft. It is easy to say that Nasdaq consider the main stock exchange market when it comes to tech firms. (Tretina and Schmidt, 2021).

Nasdaq stock exchange is operated by Nasdaq Incorporated. According to the World Federation of Exchanges, as of August 2022 the market capitalization of listed companies in Nasdaq reached to approximately 18.5 trillion US. Dollars. Coming in the second place after New York Stock Exchange which consider to be the largest stock exchange in the world.

Cryptocurrencies on the other hand are consider to be relatively new as financial instrument, we cannot say that there is one definition for the Cryptocurrency, however it is acceptable to say that cryptocurrency is a digital currency that is not controlled by any central bank or authority and depending on technology called Blockchain technology (Maese et al., 2016)

Cryptocurrencies is depending on a technology called Blockchain technology, which is a technology established on other technology called Distributed Ledger Technology (DLT), DLT provide is a technology that offers a validation mechanism for each transaction without the need of any brokerage or centralized authority, when a new transaction occurred it is validated and added as new block, this is the reason why the technology is called blockchain. (Michael, et al. 2018).

Bitcoin currency which was created by Satoshi Nakamoto in 2008 is the most popular example of cryptocurrency (Nakamoto, 2008). Ethereum on the second hand consider to be the next most popular cryptocurrency, Ethereum was created by Vitalik Buterin and announced to public on 2015.

Bitcoin and Ethereum are consider to be the most important cryptocurrency in term of market cap, As of November 23, 2022 and according to yahoo Finance both Bitcoin and Ethereum have a market cap of 316.329 and 142.884 billion US Dollars respectively, summing up to approximately 459.213 billion US Dollars of market value combined.

Cryptocurrency such as Bitcoin and Ethereum are traded on several platforms such as Binance, the main difference between cryptocurrency trading and stock trading is that cryptocurrencies are traded 24/7, which gives total flexibility for traders, additionally there is no regulator system in cryptocurrency trading such as the regulation implemented by SEC in New York Exchange Market and Nasdaq.

Any financial instrument traded in markets is subject to price fluctuation based on several factors, financial instruments such as stocks and cryptocurrencies' s prices may go up and down based on news, financial position of listed firms traded on stock exchange markets, generalization of using cryptocurrencies, political incidents, global changes, etc.

Technology companies are more interested in cryptocurrencies, they have started to use cryptocurrencies in their purchases and sales, and these companies have too many cryptocurrencies as assets in their balance sheets. For this reason, it is expected that technology company stock prices and cryptocurrency prices will move in the same direction. For example; some of the biggest firms in world such as Microsoft, Intel, NEC and IBM are using the blockchain technology which is the base of cryptocurrency to enrich their portfolios (Karame, 2016).

We are aiming in this study to figure if there is a direct relationship between stock prices of tech firms traded in Nasdaq and Cryptocurrency. The research question addressed in this study is:

- Are There Any Relationship Between Tech Firm's Stock Prices and Cryptocurrency's Values?

2. LITERATURE REVIEW

There is no similar study for measuring the effect of Nasdaq stock market on cryptocurrency, however some studies conducted for measuring relationship between stock market and cryptocurrencies represented by Bitcoin or Ethereum or any other related currency. Due to the fact that cryptocurrency popularity is consider to be relatively new, the studies about cryptocurrency is somehow limited comparing to any other financial subject.

Some Technological firms such as Tesla incorporated, MicroStrategy incorporated are expressing interest in investing in cryptocurrencies, for example Tesla Incorporated had 0 balance of Digital assets as of December 31, 2020, however this number increased to 1,331 million US dollars in March 31, 2021, on the other hand MicroStrategy Incorporated had 0 balance of digital assets as of December 31, 2019, but by time they increased their Digital assets to 1,053,302 thousand US dollars (Luo and Yu, 2022).

The first cryptocurrency to be invented was eCash, which was invented by David Chaum in the United States of America in 1983 (Reiff, 2022), however Bitcoin currency is consider the trigger which started the popularity of cryptocurrencies, Bitcoin was created on 2008 by unknown person named Satoshi Nakamoto and since that date the market cap of bitcoin and cryptocurrencies in general is increasing (Chohan, 2022), below figures demonstrate the bitcoin dominance among cryptocurrencies and total market capitalization from 2013 and 2022.

Figure 1. Total Cryptocurrency Market Cap

As shown in above figure that total market cap of cryptocurrency as of November 29, 2022 is 821,186,317,440 USD comparing to 1,675,730,048 USD in April, 30, 2013. Cryptocurrency market cap reached the peak in November 12, 2021 by 2,839,300,259,045 USD.

Figure 2. Percentage of Total Market Cap

As shown in above figure we can say that Bitcoin and Ethereum consider the major players of Cryptocurrencies with market values exceeding 55% as of November 27, 2022 comparing to 85.79% as of August 16, 2015.

Abraham, et al. (2018), created a study in 2018 to examine the relationship between Cryptocurrency and Social Media Platform such as Twitter, they applied a model to determine the relationship between Tweet size and cryptocurrency prices (they used Bitcoin and Ethereum, as indicators for their study since both Bitcoin and Ethereum consider to the largest in term of market cap for cryptocurrencies), they developed a model which predicted the direct of prices of both Bitcoin and Ethereum.

Sami and Abdullah (2020) studied the relationship between cryptocurrency market and stock market in Middle East and North Africa Countries, they found that there is a relationship between both cryptocurrency and stock market of MENA Countries, however this relationship can be divided to two group; group one which represent a negative relationship is between cryptocurrency market and stock market in Gulf Countries which applies strict Islamic laws, Sami and Abdullah studies shows that there is reduction of market performance of 0.15% for each 1% increase in the cryptocurrency market, on the other hand there is a positive relationship between other MENA countries which applies less strict Islamic laws, they found that there is an increase of performance of stock market of these countries of 0.13% for each 1% increase in the cryptocurrency market.

Lahiani and Jlassi (2021) studied the relationship between cryptocurrency and stock market returns of BRICS (Brazil, Russia, India, China and South Africa) and developed countries between 2016 and 2019, this study focused on the leading role of Nasdaq, S&P500 (which is the index for tracking the stock performance of the 500 large companies listed in stock market of the United States of America) and DAX30 (the most actively traded companies in Frankfurt Stock Exchange) in predicting BRICS and developed countries stock market revenues, additionally they found that Bombay Stock Exchange (BSE) is the most predictor of cryptocurrencies, Ethereum and Bitcoin have the leading role in predicting cryptocurrencies returns.

On the other hand, Gil-Alana et al., (2020) studied the relationship between cryptocurrencies and stock market indices, they used Bitcoin, Ethereum, Litecoin, Ripple, Stellar, Tether as representatives of cryptocurrencies and Bond, Dollar, Gold, GSCI, S&P, VIX as representative of Stock Market Indices, they concluded that there is no relationship between cryptocurrencies and stock market indices, they also mentioned that cryptocurrencies are consider to be totally separated financial instruments which provide investors with diversity in their portfolios.

Other studies also been conducted to determine and examine relationship between Nasdaq Stock Market and KOSDAQ (The Korean Securities Dealers Automated Quotations). The examiners determined that the US stock Market consider to have a leading role over the Korean market and also there is a relationship between the US stock market and the Koran one (Michael et al., 2018).

3. THEORIES AND CONCEPTS

Hypothesis: There is a strong positive relationship between the stock price traded on Nasdaq and Crypto Currency

Variables:

Independent Variable: the average stock price of 10 stock prices traded on Nasdaq.

Dependent Variable: The average price of Ethereum and Bitcoin

The independent variable has been calculated by taking the daily average of the largest technological firms traded in Nasdaq, (Apple Inc. Microsoft Corporation, Alphabet Incorporated, Alphabet Inc. Class A, Taiwan Semiconductor Manufacturing Company Ltd., Meta Platforms Inc. Class A Common Stock, NVIDIA Corporation Common Stock, Broadcom Inc. Common Stock, Oracle Corporation Common Stock, ASML Holding N.V. New York Registry Shares).

The dependent variable has been calculated by taking the average price for Bitcoin and Ethereum in the past 4 years.

4. METHODOLOGY

4.1. Overview of Research Methodology

The main purpose of this study is to examine if the stock prices of Technological firms traded on Nasdaq have any relationship with cryptocurrencies prices, for this aim we will be conducting regression and correlation analysis to determine this relation. Three samples' categories have been collected for both stock market and cryptocurrency prices for different periods, regression and correlation analysis will be conducted for each period to determine the R value (Coefficient of Correlation), the result of R value will determine the pattern of the relationship between variables whether it is positive or negative, while the R square value will determine the degree of the relationship whether it is weak or strong.

4.2. Research Methodology

According to Freund et al., (2006). Linear Regression analysis is statistical method using to determine relationship between two variables, dependent and independent. The independent variable (which shows at X-Axis) called Predictor/Explanatory while the dependent variable (which shows at Y-Axis) called outcome.

Linear Regression Analysis can be divided to two categories, the simple regression analysis and multiple regression analysis. In case there is one independent variable or explanatory it is called Simple Linear Regression Analysis, while if we have more than Explanatory/Independent Variable it is called Multiple Linear Regression Analysis.

Regression analysis can predict the relationship between the predictor (independent variable) and the outcome the dependent variable, regression equation is demonstrated below;

$Y = b_0 + b_1 . X$

Y = represent the dependent variable (the outcome)

b_0 = represent the value of Y when X is zero.

X = represent the independent variable (the predictor)

b_1 = represent the average change in the dependent variable for each one unit increase in the independent variable

On the other hand, correlation analysis provides a unitless number (coefficient of correlation) which indicates the relationship between two variables, where -1 shows there is a negative relationship between X and Y variables, 0 represent that there is no relationship between the two variables and shows that there is a positive relationship between the variables (Crawford, 2006).

In the correlation analysis we calculate two coefficient the coefficient of correlation and the coefficient of determination. The main difference between these two coefficients is; the coefficient of Correlation is used to determine the pattern in the variables, where the coefficient of determination is used to determine the strength of the relationship between the variables (independent and dependent variables) (Brown, 2009).

Below we will be explaining the calculation of each coefficient;

The basic equation for calculation of coefficient of correlation (r value) is,

$r = \frac{\sum xy}{N\sigma x \sigma y}$

$x = (x - \bar{x})$

$y = (y - \bar{y})$

σx = Standard Deviation of series x

σy = Standard Deviation of series y

N = number of pairs of observation

r= coefficient of correlation

The equation for Correlation Coefficient can also be calculated as below;

$r = \frac{N\sum xy - (\sum x)(\sum y)}{\sqrt{\sum x.x - (\sum x)^2}\sqrt{\sum y.y - (\sum y)^2}}$

The equation of Coefficient of determination is simply the square value of the Coefficient of Correlation. For this study we've used Excel to software to calculate the basic regression equation and coefficients of correlation and determination.

4.3. Sampling Method and Volume

Instead of studying all the cases in the population, researchers use sampling in order to understand the population. The sample to be tested has an extreme effect on the research validity and reliability, for productive researches validity. The main purpose of sampling is to create a representative sample that describes the whole population. There are two major types of sampling technique the probability sample, which consider the most preferred technique, and the non-probability sample which is acceptable in case of probability sampling is costly, time-consuming, or impossible (Lawrence Neuman, 2014).

It is difficult to study all cryptocurrencies and all stock prices of technological firms traded on Nasdaq because of that we will be studying the top ten tech firms' stock prices to represent Sample 1 and Bitcoin and Ethereum to represent Sample 2.

The samples to be collected for the aim of our study herein is the stock prices for the top ten tech company traded in NASDAQ, the average of high and low value of each stock price will be taken as reference for this study. The stock prices will be compared with Bitcoin and Ethereum average

high and low prices for each day, accordingly we will have two samples group for this study, **Sample Group 1** is the average of high and low value of stock prices for the top ten tech company traded in Nasdaq, **Sample Group 2** is the average of high and low value prices for Bitcoin and Ethereum. Data of stock prices and Bitcoin and Ethereum daily prices will be collected from www.finance.yahoo.com

Since this study is focusing about the relationship between Tech firms and cryptocurrency, only tech companies will be taking into consideration while determining the ten firms, some firms such as Amazon & Tesla are classified as Consumer Discretionary according to Nasdaq, that's why Amazon & Tesla will not be considered during determining Sample Group.

Cryptocurrency such as Bitcoin and Ethereum operates 7/24, while Nasdaq stock market operates from Monday to Friday (from 9:30 am Eastern Zone to 4:00 pm Eastern Zone) and there is a nine market holidays in year when markets are closed; During this study we will compare stock prices with Bitcoin and Ethereum prices in compliance with Nasdaq 's working hours, holidays and weekend, for example data of bitcoin prices in Labor Day will not be taken into consideration since Nasdaq market is closed in this day, data of cryptocurrency in weekends will not be taken into consideration because of the same reason.

According to Nasdaq data of September 23, 2022, the top ten tech firms according to market cap can be found in below table;

Table 1. Nasdaq's Top Ten Tech Firms According to Market Cap (Sample Group 1)

No	Symbol	Name	Market Cap (USD)
1	AAPL	Apple Incorporated Common Stock	$2,608,056,056,200.00
2	MSFT	Microsoft Corporation Common Stock	$1,774,381,634,186.00
3	GOOG	Alphabet Incorporated Class C Capital Stock	$1,293,573,480,000.00
4	GOOGL	Alphabet Inc. Class A Common Stock	$1,287,964,560,000.00
5	TSM	Taiwan Semiconductor Manufacturing Company Ltd.	$383,095,434,120.00
6	META	Meta Platforms Inc. Class A Common Stock	$377,358,680,954.00
7	NVDA	NVIDIA Corporation Common Stock	$311,648,400,000.00
8	AVGO	Broadcom Inc. Common Stock	$189,819,048,205.00
9	ORCL	Oracle Corporation Common Stock	$174,004,401,150.00
10	ASML	ASML Holding N.V. New York Registry Shares	$173,234,808,000.00

Time Frame:

The data of each stock price will be collected for the following time periods;

1- November 9, 2017 to March 10, 2020 (which represent Period 1)

2- March 11, 2020 to March 2, 2022 (which represent Period 2)

3- March 3, 2022 to September 23, 2022 (which represent Period 3)

The period selection has been done to separate the Covid period, On March 11, 2020 the World Health Organization announced the starts of COVID-19 pandemic (World Health Organization,

2020); while, On March 2, 2022 the New York Governor ends the state make requirements in schools in New York (Governor, 2022).

The first period represents the market's prices for cryptocurrencies and Nasdaq Stock Market prior to the Covid Pandemic. The choice of 2017 as the beginning of the first sample was made in light of the fact that by December of that year, cryptocurrency prices had risen from $1,000 to roughly $20,000, So, we might infer that 2017 was the year of cryptocurrency stardom.

The Covid-Pandemic-related price fluctuations are captured in the second sample group dates. Although there is no set date for the end of the Covid Pandemic, on March 2, 2022, the governor of New York ends the state make requirements in schools in New York. For the purposes of this study, we went through the assumption that this date represents the end date of the Pandemic.

The Third sample group represents the period after the Covid Pandemic, the date of 23 September, 2022 represents the date we 've started collecting data for this study.

4.4. Data Collection and Measurement

As stated previously the data collection will be done through Yahoo Finance official website, first Sample Group 1 is calculated, after gathering the highest and lowest stock prices for the top ten technological firms traded on Nasdaq Stock Market, the average for each stock price will be calculated for each day, following that we will calculate the average price of each day for each average stock price to create the stock basket which represent the Sample Group 1 (the independent variable or the predictor).

Bitcoin and Ethereum daily lowest and highest prices will be collected from Yahoo Finance for each day for the previously described periods. The average daily prices of Bitcoin and Ethereum will calculated, following that the we will calculate the average prices of each day for both Bitcoin and Ethereum to create the cryptocurrency basket which represent the Sample Group 2 (the dependent variable of the outcome).

4.5. Data Analysis & Findings

Regression and Correlation analysis conducted using excel to determine if there is a relationship between the average stock price for the biggest ten technological firm traded in Nasdaq and cryptocurrency prices which is represented by Bitcoin and Ethereum prices.

The samples have been collected for different periods, period one is between November 9, 2017 to March 10, 2020, Period two is between March 11, 2020 to March 2, 2022 and the last period between March 3, 2022 to September 23, 2022. These dates were chosen to divide our research into two sections: before COVID-19 and after COVID-19.

1- The first Period (between November 9, 2017 to March 10, 2020)

For the first period (from November 9, 2017 to March 10, 2020) which represent the period prior to the Covid Pandemic, the Scatter diagram is demonstrated below;

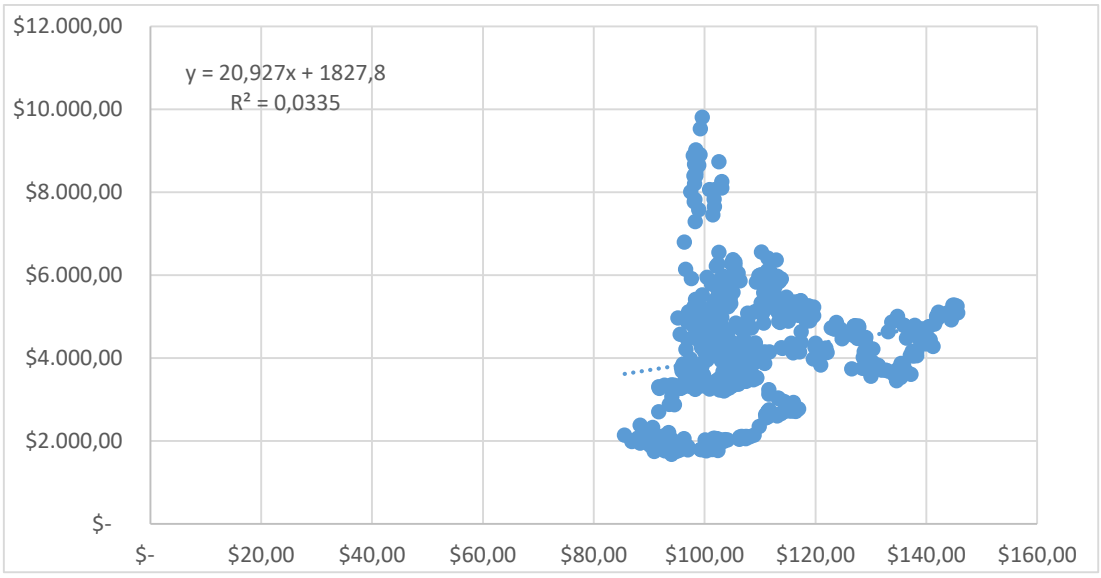

Figure 3. Results of Period 1

According to Scatter and to the calculated R Value (Coefficient of Correlation) 0.183057 it is clear that in this period there is a relationship between X and Y variables, however this relationship is very weak since the R Value is less than 0.5 additionally the R square value Coefficient of determination is 0.0335 which means that this model may explain only 3.5% of the data. Accordingly, we can say that our hypothesis is consider to be wrong and, in this situation, there is no strong positive relation between X and Y variables.

2- The Second Period (March 11, 2020 to March 2, 2022)

For the second period (from March 11, 2020 to March 2, 2022) which represent the period during the Covid Pandemic, in this period many countries around the world applied curfew and working from home policies to reduce the number of cases, the Scatter diagram is demonstrated below;

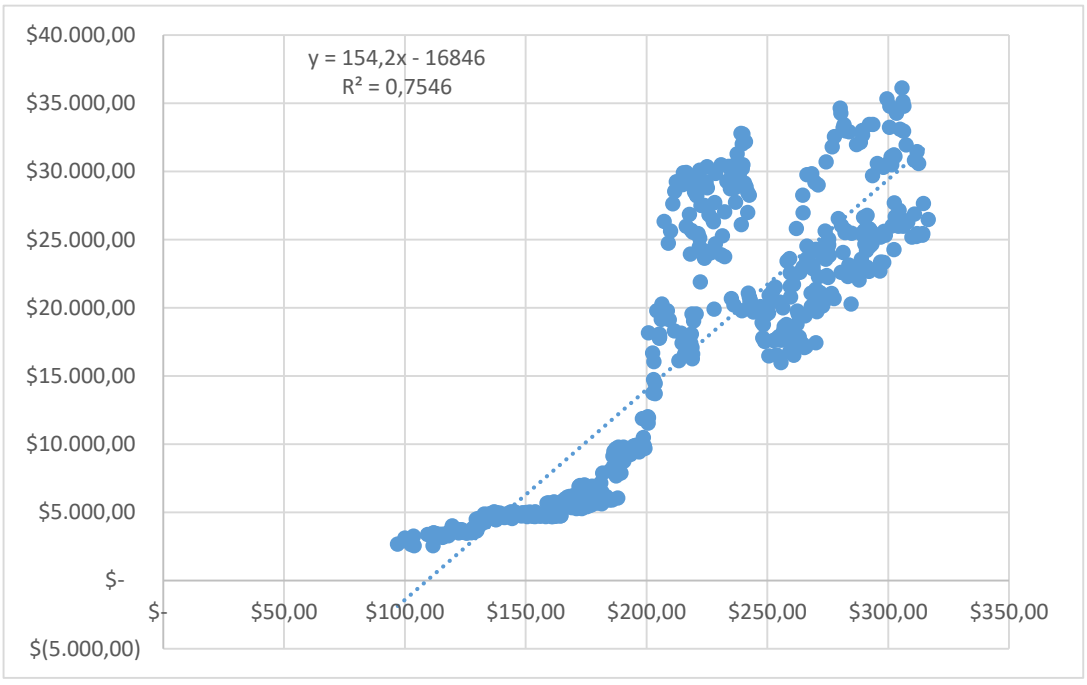

Figure 43. Results of Period 2

According to the Scatter and to the calculated R Value (Coefficient of Correlation) 0.868698563 it is clear that in this period there is a positive relationship between the X and Y variables, and this relationship is strong since the R Value is near one additionally the R square value (Coefficient of determination) is 0.7546 which means that this model may explain 75.46% of the data according to this model. Accordingly, we can say that our hypothesis is consider to be true and, in this situation, there is a strong positive relationship between X and Y variables.

1- The Third Period (March 3, 2022 to September 23, 2022)

For the Third period (from March 3, 2022 to September 2022), this period represent the period after countries such as the Untitled States of America, Countries in Europe and other Middle eastern countries started to relieve Covid Restrictions, the Scatter diagram is demonstrated below;

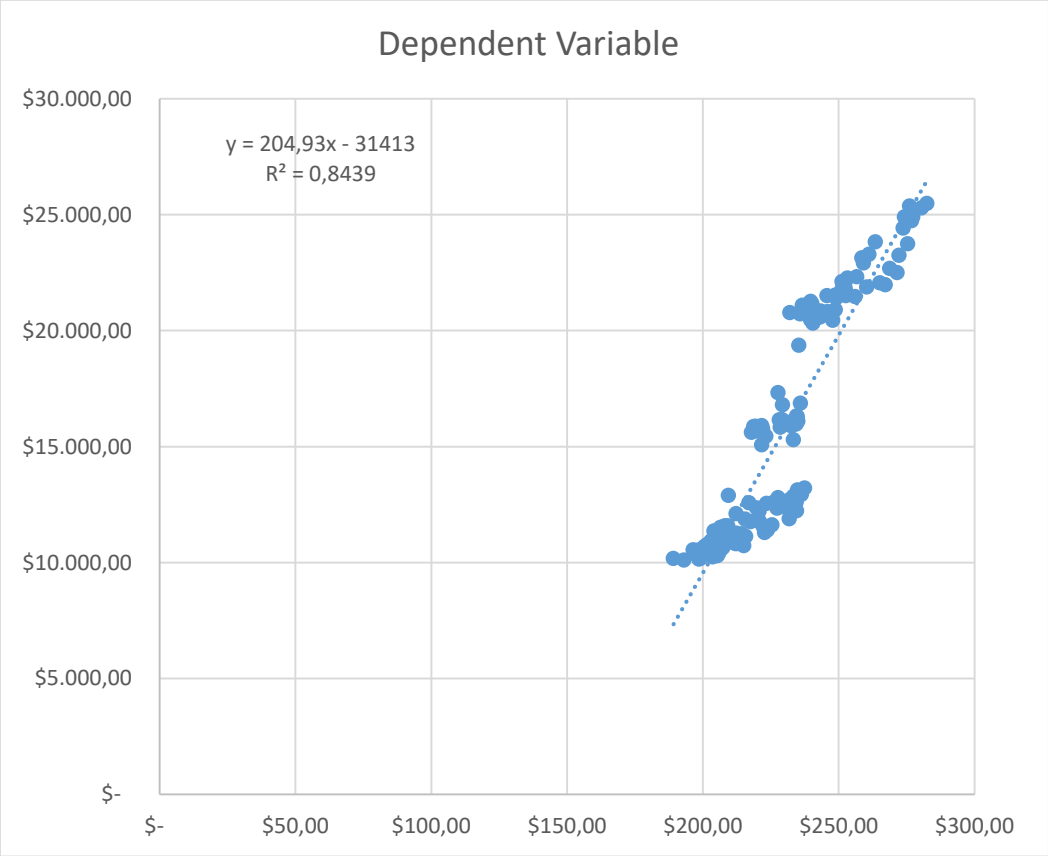

Figure 5.4 Results of Period 3

According to the Scatter and to the calculated R Value (Coefficient of Correlation) 0.918655777 it is clear that in this period there is a positive relationship between the independent variable and dependent variable, and this relationship is strong since the R Value is near one, additionally the R square value (Coefficient of determination) is 0.84392 which means that this model may explain 84.39% of the data according to this model. Accordingly, we can say that our hypothesis is consider to be true and, in this situation, there is a strong positive relationship between tech firm stock prices and Crypto Currency Prices.

5. CONCLUSION & RESULTS

The relationship between the independent variable and dependent variable is varying according to the pre-determined periods, before COVID-19 outbreak we can easily say that there is no significant relationship between tech firms stock prices traded on Nasdaq and Crypto Currencies, however after the COVID-19 outbreak this relationship started to empower and increase until it reached the top in the last 7 months.

As stated, before the market cap of cryptocurrencies increased from 1,675,730,048 USD in April, 30, 2013 to 821,186,317,440 USD as of November 29, 2022 while reaching the peak in November 12, 2021 by 2,839,300,259,045 USD. This shows that the demand on cryptocurrencies has increased approximately 490 times between 2013 and 2022, and if we examine the period prior the Covid-19 pandemic the market cap of cryptocurrencies was 227,631,260,802 USD as of March 10, 2020, which means that prior to the Pandemic and up to now the market cap of cryptocurrencies increased approximately 3.5 times and if we take into consideration the peak of cryptocurrencies market cap (November 12, 2021), we can say that the market cap increased by approximately 12.5 times. Below table demonstrate the market cap of cryptocurrencies between 2013 and 2022.

Table 2. Limoncello

No	Date	Cryptocurrency Market Cap
1	April 30, 2013	1,675,730,048 USD
2	March 10, 2020	227,631,260,802 USD
3	November 12, 2021	2,839,300,259,045 USD
4	November 29, 2022	821,186,317,440 USD

During the Covid-19 pandemic majority of countries around the world took extraordinary precautions to stop the spread of Covid-19, even some countries announced curfew and enforce working from home policies, and at the beginning of the Pandemic period a lot of stock exchanges around the world reached the bottom, for example the United States Stock Market Index collapsed from 28,992.410 (as of February 18, 2020) to 19,164.7 (as of March 16, 2020), this is approximately 33 % drop of price after announcing the Covid-19 outbreak.

Figure 6. United States Stock Market Index

When comparing the movement of stock prices and cryptocurrencies after March 11, 2020, we can say that the stock exchange markets collapsed while Cryptocurrencies Market Caps increased, this illustrates that investors started to find cryptocurrencies such as Bitcoin, Ethereum, etc. more attractive as financial investments.

Prior and after March 11, 2020, the world changed a lot, during the pandemic period investors looked for more attractive investments, especially when we consider the collapse that stock exchange markets around the world faced and Monetary Policies of the majority of Central Banks such as the US Federal Reserve (FED) which focused more about printing and disturbing money to support people during the curfew and lock-down periods, though this Monetary Policies helped people during the pandemic however it had a significant economic impacts on the long term.

The United State Government passed laws between 2020 and 2021 providing 5.8 trillion USD to support the US economy (Clarida et. al., 2021). This Expansionary monetary policy made investors uneasy, and looking for another investments methods which is not related to central authorities, stock exchange markets or the US Dollar, all these reasons lead investors to invest in cryptocurrencies which increased the demand on such currencies which eventually leaded to increase its market cap.

Following the Covid-19 outbreak the US Fed started increasing the interest to rectify the economy due to its previous unprecedented Expansionary monetary policy which led to global inflation never seen before, the constant increasing of interest is good tool to fight inflation however it is bad for the economy, for this reason investors kept investing in cryptocurrency.

Furthermore, the Russian – Ukraine Wars consider another reason for investing in un-centralized financial instruments such as cryptocurrencies, because of the heated political atmosphere and the potential of nuclear war between the two powerful countries in the world, investors are seeking for un-centralized investments tools.

Nowadays, Technological firms consider to be the biggest in term of market capital, such companies is trying to invest and have a diverse portfolio of investments, to keep its operations and existence, there is no wonder that such firms which also are trading publicly on Nasdaq stock exchange investing in cryptocurrencies to protect themselves from the current uncertainties, some technological firms which are traded on Nasdaq such as Tesla Incorporated and MicroStrategy Incorporated are heavily investing in cryptocurrencies, Square Incorporated which is trading on London Exchange Stock market is also investing in cryptocurrencies (Bouri and Cepni, 2022)

All these examples and more give an indication of what big corporation are doing in the cryptocurrency market, such firms when they invest in these currencies, they increase the demand which eventually lead to an increase in prices, which finally lead to financial gain for all investors.

This study concentrated on the relationship between cryptocurrencies and technology firms, and we discovered that there is a positive correlation between these two variables. Covid-19 altered the political, economic, and social landscape of the world, and one result of this change was the emergence of cryptocurrencies as a promising financial instrument for both small investors and major corporations. To examine the new cryptocurrency era, this study may be expanded in the future to cover more industries, stock exchange marketplaces, and cryptocurrencies.

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