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Research Article

A Strategic Study of the Impact of Pandemic on Investment Instruments in the United States: The Case of Gold and Bitcoin

Pandeminin Amerika Birleşik Devletleri'ndeki Yatırım Araçları Üzerindeki Etkisine Yönelik Stratejik Bir Çalışma: Altın ve Bitcoin Örneği

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Abstract

The coronavirus has affected the whole world, especially the economic balances of the countries as well as many sectors, including multinational companies. This situation has led to the questioning of the investment tools of the future. The Bretton Woods agreement in 1944 made countries dependent on the gold-dollar parity of the United States. The USA wants the currencies of other countries to be determined according to the value of gold and dollar. However, the digital money discourses of IMF and the US Government in recent years suggest whether a new investment tool will prevail in the world. Bitcoin, which emerged with the mortgage crisis in 2008, sustained its position after the 2019 pandemic. In this study, the effect of the pandemic on gold and bitcoin indices of the United States of America, which is one of the important determinants of the world market, has been investigated. A statistics package program was used in the study. According to the results of the research, it has been revealed that the pandemic has a positive effect on both gold and bitcoin. The interest in both investment instruments has been observed to be increased considerably, but dissemination of digital money is more focused on politics. It is predicted that this study will contribute to the literature in understanding the impact of the pandemic on investment instruments.

Keywords: *Coronavirus, Covid-19, Digital Money, Bitcoin, Gold*

Jel Codes: *M10, F40, G20*

Özet

Koronavirüs tüm dünyayı etkilemiştir. Ülkelerin ekonomik dengeleri olumsuz yönde bozulmuştur. Çok uluslu şirketler de dahil olmak üzere birçok sektör, bu durumdan olumsuz yönde etkilenmiştir. Bu durum, geleceğin yatırım araçlarının sorgulanmasına yol açmıştır. 1944'teki Bretton Woods anlaşması, ülkeleri Amerika Birleşik Devletleri'nin (ABD) altın-dolar paritesine bağımlı hale getirmiştir. ABD, diğer ülkelerin para birimlerinin altın ile dolar arasındaki değere göre belirlenmesini istemektedir. Son yıllarda Uluslararası Para Fonu (IMF) ve ABD Hükümeti'nin dijital para söylemleri, dünyada yeni bir yatırım aracının hâkim olup olmayacağının sorgulanmasına neden olmuştur. 2008'deki emlak krizi ile ortaya çıkan Bitcoin, 2019 salgınından sonra daha fazla gündemde yer edinmiştir. Bu çalışmada, salgının dünya finansal sistemin önemli belirleyicilerinden biri olan Amerika Birleşik Devletleri'nin altın ve bitcoin endeksleri üzerindeki etkisi araştırılmıştır. Araştırmada istatistik paket programı kullanılmıştır. Araştırma sonuçlarına göre salgının hem altın hem de bitcoin üzerinde olumlu bir etkisi olduğu ortaya çıkmıştır. Her iki yatırım aracına olan ilginin önemli ölçüde arttığı ancak dijital paranın yaygınlaşmasında ABD ve IMF odaklı siyasi bir eğilimin olduğu görülmüştür. Pandeminin yatırım araçlarına etkisinin anlaşılmasında bu çalışmanın literatüre katkı sağlayacağı öngörülmektedir.

Anahtar Kelimeler: *Koronavirus, Covid-19, Dijital Para, Bitcoin, Altın*

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1.Introduction

Epidemics have negatively affected people's lives for centuries. Coronavirus, which emerged at the end of 2019, has captured attention of the whole world. Millions of people have spent a considerable time at their homes. All countries faced great difficulties in finding a solution to this problem with the rapid spread of the epidemic, and thousands of people died due to this epidemic (Abodunrin et al., 2020 :13). The whole world is fighting against this epidemic that has put human life in danger at the same time. It is seen in the literature that the number of studies conducted on the effects of this epidemic on human health has recently increased. The epidemic has affected the social, cultural, political and economic life of people as well as their health. For this reason, it is thought that many studies related to this epidemic are needed in the field of social sciences. Outbreaks directly affect the economy and economic tools. In a study, it was found that outbreaks affect the macroeconomic activities of countries and cause a decrease in the GDP growth rate (Jonung and Roeger, 2006: 4). In another study, it was seen that the SARS pandemic had a negative impact of 18 billion dollars in East Asia (Yoldascan, etc. 2010: 145).

The United States took the lead in the world in terms of number of cases and death rates in the epidemic. The country has been seriously affected economically by the pandemic. Since the sectoral effects of the pandemic were evident, its effect on investment instruments was aimed to be determined in this research. Gold and bitcoin are known as two important rival investment tools. While the European money market played a leading role in the world gold market in the 1980s, it was revealed that the US dollar took the lead in the world gold prices in the 1990s and the following years (Syzdykova, 2018: 4). It has been determined that countries such as Australia, South Africa and Russia, which are known as major gold producers, do not have a certain effect on world gold prices and in a study, it was stated that gold has a protective value against world inflation (Syzdykova, 2018: 5). Despite this advantageous position of gold, it has been observed that the US government and the International Monetary Fund supported digital money projects.

The main purpose of this study was to investigate the effect of coronavirus cases in the United States on gold and bitcoin which are known as important investment tools. While there are many studies conducted regarding the effect of the pandemic on the indexes and exchange rates, it has been understood that there are no sufficient studies on bitcoin and gold for the USA. Therefore, this study is thought to be contributing to the literature.

2. Literature Research

The United States of America has been one of the countries most affected by the coronavirus epidemic. With the spread of the epidemic in the country, lockdowns were imposed in many cities, many layoffs were experienced, and office work mostly took place in the form of home-office. Some of the multinational companies such as Apple closed their stores in China (Aslan, 2020: 40). The Covid-19 outbreak was compared with the Great Depression in the 1930s in the USA (Yarova et al.2020: 1). It has been stated that it has had more negative effects on US economy as compared to the Great Depression. Against these negative developments, a two trillion dollar aid package has been called by the US Senate to support employees and businesses (Abodunrin and Others 2020: 20). The Central Bank (FED) cut the interest rate with the decision taken on March 17-18, 2020 in order to mitigate the economic impact of the Covid-19 outbreak and lowered the policy rate to 0-0.25 percent (TR Euronews, 2020). The same bank announced that it will make a monetary expansion of 700 billion dollars in total of which, 500 billion dollars will be given to the treasury and 200 billion dollars to mortgage-backed bonds (TR Euronews, 2020). The S&P 500 index fell 33% on March 23 from its historic peak on February 18 (BBC News, 2020). The government has declared a national emergency to combat the spread of Covid-19.

Crowded public meetings, including cultural and sporting events, were canceled, business and company employees were asked to work remotely, and these social distancing measures reduced the transmission rate of the virus (Asadi, 2020: 93). During the Covid-19 process, there has been an increase in cyber-crimes such as fraud and phishing e-mails, especially for small and medium-

sized businesses (USA Department of Homeland Security, 2020) in USA. The coronavirus pandemic has caused the activities of many sectors to slow down (Kohlscheen, 2020: 1). There have been layoffs by several US companies, including larger ones. The unemployment rate increased by 10 percent between January to April (Brookings Institution, 2020). While the unemployment rate was 3.6% and 4.4% in January and March respectively, this rate was found to be 14.7% in April (Brookings Institution, 2020).

While there are such negative situations in the US markets and sectors, the impact of the pandemic on the country's gold and bitcoin index has formed the basis of the research. The literature study has been enriched with research on gold and bitcoin.

Gold

The value and importance of the gold mine has always preserved its place in the history of humanity (Aksoy and Topcu, 2013: 61). The first gold coin printed by the Lydians, who were around the Aegean region in 550 BC, played an effective role in the establishment of the formation of the socio-economic culture (Özgül, 1992: 26). The atomic number of Gold is 79 and its atomic weight is 196.97 gr. It is a stainless element that can be melt at 1064°C, can be easily processed and has a high value (Öz, 2013: 120). It is colored, soft, malleable and flexible noble metal (Öz, 2013: 121). It has been stated that the People's Republic of China ranks first with 351 tons in world gold production and Kazakhstan ranks last with 27 tons (Fidan, 2016: 27). Although gold was considered more as currency in the past years, today it has taken its place as a very important investment tool and has gained importance in production and industrialization (Aksoy and Topcu, 2013: 61).

Gold, which was the basis of the gold-coin standard monetary system in the Ottoman Empire between 1873-1914, was defined as a reserve instrument fixed to the American dollar with the Bretton Woods system between 1944-1973 (Vural, 2003: 1). Gold-dollar pricing and stability of the US dollar were seen as a priority monetary policy (Bordo and Orphanides, 2013: 450). As a result of an agreement made in Brussels on March 12, 1973, it was stated that the feature of gold as a currency ended in the bond between gold and the US dollar after European countries left their currencies to fluctuate against the US dollar (Aksoy and Topcu, 2013: 61). It was stated that the structure and ideology of the system was created in order to continuously expand economic output and growth (Korten, 1999: 2). So, the basic policy was determined for the stability of the dollar (Bordo and Orphanides, 2013: 450).

It has been seen in many studies in the literature that the Bretton Woods process should be well known to understand the settlement of gold in the market. In Bretton Woods system, the USA was holding the central position in the region with uncontrolled capital and commodity markets in 1950s, because the capital of the collapsed Europe and Japan had flowed to the USA (Dooley et al., 2003: 3). This system paved the way for the American dollar to be accepted as the only national currency that can bind gold and the dollar gained the status of international reserve currency (Öz and Fidan, 2013: 122). It was seen that this fixed exchange rate regime was terminated by President Richard Nixon on August 15, 1971, and it was stated that the floating exchange rate system would be adopted in the following period (Bordo and Eichengreen, 1993: 3). It has been stated that with some European countries leaving their currencies to fluctuate against the US dollar, the dollar-gold fixed reserve situation ended, and the gold took its place as one of the instruments of the central bank, not as an instrument of exchange (Toraman and Başarır, 2011: 2).

There has been an increase in various studies on the factors that affect gold demand, supply and prices (Çelikdemir and Çetin, 2015: 12). In particular, strong economies such as the USA, Japan, and the European Union have inflation expectations, decreased confidence in the US dollar and wide-ranging crises have caused investors to move away from alternative investment tools and to turn to gold as an investment tool (Elmas and Polat, 2014: 184). Although gold seems to have remained in the background with the development of financial markets and the increase of

alternative investment instruments in the last few years, some reasons such as financial crises, political instability, increase of global terrorism and inter nation tensions in the world made the gold investment important again (Aksoy and Topcu, 2013: 61). In addition to physical gold trading in banks, gold trading is also carried out through accounts (Öz and Fidan, 2013: 124). Gold prices are divided into two parts as supply-side and demand-side factors, however, it is stated that gold prices are determined by increase in gold demand due to the lack of gold supply (Elmas and Polat, 2014: 172).

Bitcoin

While gold has always maintained its importance as an investment tool, it has been seen that digital money, another alternative investment tool, has been mentioned by international financial institutions in recent years. After the Mortgage crisis in 2008, compared to the great depression in 1929, Bitcoin emerged with the decrease in confidence in various currencies, commodities and securities (Yıldırım, 2018: 2332).

Bitcoin, which was created with a digital software in 2008, reached approximately ten thousand users and a transaction volume of 6.5 billion dollars until June 2011 (Yıldırım, 2018: 2332). It was very surprising that Bitcoin came out of nowhere after such a crisis. The world heard about Bitcoin with an article written by Nakamoto (2008) on October 31, 2008, and this digital money system was implemented with the software developed by the same person in 2009. Afterwards, it was understood that the person who was thought to have developed Bitcoin used a fake name as "Satoshi Nakamoto" in these announcements and transactions, that this person may not be of Japanese origin, may be an informatics expert (Ünsal and Kocaoğlu, 2018: 54). His real name could have never been found since the bitcoin began.

The use of electronic money concept has increased rapidly with the devotion and trust of investors to technology (Yıldırım, 2018: 2332). Bitcoin has been abbreviated as "BTC" (Khalilov et al., 2017: 2). In a short period of time, this digital money rivaled the investments made in gold, silver and other precious metals (Yıldırım, 2018: 2341). Being a decentralized system, not being dependent on the established payment system operated by banks, not being dependent on so-called accounts, and not being charged directly for transactions are among the main opinions of those who advocate Bitcoin (Lo and Wang, 2014: 2). Bitcoin has led to the emergence of other digital currencies associated with it in its wide area of use, and in this context, subcoins such as Nextcoin, Darkcoin, Norecoin, Counterparty, Dogecoin, Litecoin and Anocoin entered the markets quickly (Tura, 2018: 3).

It has been observed that Christine Lagarde, one of the former heads of the IMF, expressed the issue of virtual money to the public several times during her term of office. In a statement published by the United Kingdom office of the Reuters news agency, Legarde stated that a necessary geopolitical environment should be created for the development of digital currencies in order to rely on alternative investment instruments (Reuters, 2017). Legarde made the statement that a geopolitical environment was needed for digitalization to become widespread, two years before Covid-19 emerged. The IMF agency stated that virtual currencies will play an important role in cross-border transactions and in countries where the local currency is unstable (Reuters, 2017). Lagarde cited new private payment providers offering e-money from AliPay and WeChat in China to PayTM in India and M-Pesa in Kenya, and stated that these money formats were designed with the digital economy in mind (IMF, 2018). She stated that cryptocurrencies such as Bitcoin, Ethereum and Ripple are stable, cheap and fast, and can respond to what people want and what the economy needs (IMF, 2018). Lagarde stated that various central banks of the world such as Canada, China, Sweden and Uruguay have already adopted these ideas of change (IMF, 2018).

In a study, the short and long-term relationship between gold and Bitcoin was tested, and it was revealed that there was no short-term relationship between the two investment instruments (Yıldırım, 2018: 2340). Thus, it has been observed that the relationship is not mutual and Bitcoin price fluctuations do not affect gold prices, whereas, gold price fluctuations affect Bitcoin prices

in the long term (Yıldırım, 2018: 2341). It has been stated that the most important problem in digital currencies is that there is no strong legal basis that regulates borders, rights and obligations in terms of payment systems (Pirinççi 2018: 51). Despite this, it has been shown that the increasing demand for Bitcoin provides high returns for investors (Yıldırım, 2018: 2341).

The effect of the pandemic on gold and bitcoin was investigated in the methodology section of the research. Findings obtained from the research are discussed in the conclusion section.

2. Methodology

The aim of this study is to investigate the effect of the pandemic on the gold and bitcoin indices in the United States. Regression analysis was used in the methodology of the study. In regression analysis, there is a correlation model between dependent and independent variables and the roles of variables in the cause-effect relationship are revealed in this model (Özdamar, 2018, s. 184). Both the bitcoin and gold defined as dependent variables whereas coronavirus cases defined as independent variable. In simple linear regression analysis, the dependent variable of continuous numerical data type is explained linearly by a single independent variable (Lorcu, 2015: 241). The mathematical correlation model established between the dependent and independent variables in the application of the linear regression model is shown as $Y = \beta_0 + \beta_1 X_1$ (Durucasu, 1997, s. 122). B_0 and B_1 regression in the formula are unknown to the model (Lorcu, 2015: 240). B_0 is the point where the regression line intersects the y-axis and is the regression constant, while B_1 is the regression coefficient and it gives the average amount of change that a one unit change in the independent variable causes in the dependent variable (Lorcu, 2015: 241). The formulas that were used for each variable in this correlation model are shown in Table 1 below.

Table 1. Formula

1	$Gold = \beta_0 + \beta_{CoV}$
2	$BTC = \beta_0 + \beta_{CoV}$

In regression analysis, the formula $Y = \beta_0 + \beta_1 X_1$ is also shown as $Y = a + b_{yx}X$ in the literature (Özdamar, 2018: 186). Accordingly, the regression equation formation is shown as (1) and (2) below (Özdamar: 2008: 187).

$$b_{yx} = \frac{\sum_{i=1}^{n}(X_i - \bar{X})*(Y_i - \bar{Y})}{\sum_{i=1}^{n}(X_i - \bar{X})^2} = \frac{\sum_{i=1}^{n} X_i Y_i - n*}{\sum_{i=1}^{n} X_i^2 - n*}$$

(1)

and

$$a = \bar{Y} - b_{yx} * \bar{X}$$

(2)

The equation $Y = a + b_{yx} X$ is formed with the values of a and b_{yx} variables above.

With the above formula, the effect of the independent variable on the dependent variable can be measured as a unit. If the independent variable has an effect on the dependent variable, its direction will also emerge while the effect can be negative or positive.

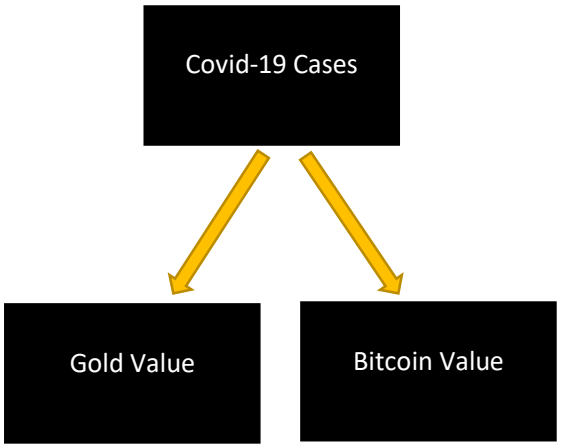
The hypotheses that were made from the correlation model are shown in Table 2. Bitcoin has been abbreviated as BTC.

Table 2. Hypotheses

H_{01}	There is no statistically significant relationship between the number of coronavirus cases and the Gold.
H_1	There is a statistically significant relationship between the number of coronavirus cases and the Gold.
H_{02}	There is no statistically significant relationship between the number of coronavirus cases and the BTC.
H_2	There is a statistically significant relationship between the number of coronavirus cases and the BTC.

The result of the hypotheses will be evaluated by determining whether the coronavirus has an effect on the dependent variables. If the coronavirus has no effect on the dependent variables, H_0 hypotheses will be accepted, and if there is an effect, H hypotheses will be accepted.

The effect of the independent variable on the dependent variable should be shown as a research model. The research model is drawn as shown in the Graph below.



Graph 1. Research Model[1]

The graph of the research model shows the effect of coronavirus on both gold and BTC which is the main subject of the study. Gold and bitcoin prices in the United States of America are based on a study. Accordingly, daily coronavirus data in the USA were considered. The number of coronavirus cases obtained from the data set of the World Health Organization official web site[2] was one of the limitations of the study. Another limitation of the study was the daily data[3] of Gold and BTC which were obtained during the date between 11 March and 15 September 2020.

[1] Drawn by the author

[2] Obtained from https://covid19.who.int/

[3] Gold against dollar and BTC against dollar values data obtained from https://www.investing.com/ official web site.

Normality test, Pearson Correlation test and Regression analyses were applied in this research. The findings of the research are given below.

Findings

Kolmogorov-Smirnov test was used as normality test. The results of this analysis measure the normality of the distributions of the data (Pallant, 2017: 75). The statistically insignificant value obtained (Sig. Value above .05) indicates that the data shows a normal distribution (Pallant, 2017: 75). The most important assumption in the linear regression analysis application was stated as the normal distribution of the Y variable (Özdamar, 2018 :191). Accordingly, the dependent variable should show a normal distribution in a research. In the study, the p value obtained from the Kolmogorov-Smirnov test was found to be ,220 for gold while ,160 for bitcoin. So, according to this result, the data distribution was found to be normal since the p value was greater than .05.

Descriptive statistical results of the dependent variables were also revealed in this study.

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Table 3. Descriptives

	Gold		BTC	
	Statistic	Std. Error	Statistic	Std. Error
Mean	1777,5573	9,79187	9157,0783	129,01901
95% Confidence Interval for Mean Lower Bound	1758,2412		8902,5673	
95% Confidence Interval for Mean Upper Bound	1796,8734		9411,5893	
5% Trimmed Mean	1778,8737		9212,7141	
Median	1740,3300		9302,0000	
Variance	18121,450		3146076,170	
Std. Deviation	134,61594		1773,71818	
Minimum	1471,00		4826,00	
Maximum	2063,19		12282,60	
Range	592,19		7456,60	
Interquartile Range	228,45		2504,05	
Skewness	,123	,177	-,391	,177
Kurtosis	-,628	,352	-,502	,352

Table 3 gives descriptive statistics about variables. The findings obtained show the values that are within the 95% confidence interval of the mean (Pallant, 2017: 75). So, all measures of central tendency and distribution are called descriptive statistics (Özdamar, 2018: 45). The degree of symmetry distortion in a normal distribution is called skewness (Yıldız etc., 1998). The distribution is called right (positive) skewed if it is long-tailed to the right, and left (negative)

skewed if it is long-tailed to the left. The degree of sharpness or roundness of the normal distribution curve is called kurtosis (Yıldız etc., 1998). Skewness is formulated as $\sum^{N}_{i} (X_i - X)^3 / (n-1) * S^3$, while kurtosis as $\sum^{N}_{i} (X_i - X)^4 / (n-1) * S^4$ (Yıldız etc., 1998). Skewness and kurtosis values are expected to be between -1.5 and +1.5 according to Tabashnick and between -2.0 and +2.0 according to George and Mallery (Aykora and Dönmez, 2017: 76). The data in the table meet these value ranges.

After the normality test and descriptive statistical findings, Pearson correlation coefficient analysis should be performed to investigate the relationship between independent and dependent variables (Bursal, 2019: 133). Pearson correlation analysis is a parametric correlation analysis and it is determined by calculating the Pearson relationship coefficient of the variable pairs in the data set (Özdamar, 2018: 202). Pearson correlation analysis formula is given as follows:

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{(\sum X^2 - \frac{(\sum X)^2}{N})(\sum Y^2 - \frac{(\sum Y)^2}{N})}}$$

In the above formula, the Pearson coefficient between the X and Y variables is calculated. In the formula r is always between -1 and 1 inclusive and -1 means perfect negative linear correlation while +1 means perfect positive linear correlation. The correlation coefficient shows the strength and direction of the relationship between variables (Lorcu, 2015 :229).

The results of the correlation findings between the number of coronavirus cases and gold are shown in the table below.

Table 4. Correlations

Variables		Covid-19	Gold	BTC
Covid-19	Pearson Correlation	1	,744**	,602**
	Sig. (2-tailed)		,000	.000
	N	189	189	189
Gold		,744**		
BTC	Pearson Correlation	,602**	1	1
	Sig. (2-tailed)	.000		
	N	189	189	189

****. Correlation is significant at the 0.01 level (2-tailed).**

According to the Correlation Coefficient, the p value was found to be $p \leq 0.05$. Accordingly, the relationship between variables was found to be statistically significant. According to the findings, one unit increase in the number of coronavirus cases per day leads to .744 unit increase in the value of gold. In the same way, one unit increase in the number of coronavirus cases per day leads to .602 unit increase in the value of bitcoin. This increase appears to be significantly high for both variables.

Model summary, coefficients and ANOVA findings were obtained in regression analysis. The Enter method was applied in the regression analysis. The model summary obtained in the analysis is shown in the table below.

Table 5. Model Summary

Model	Value	R	R Kare	Adjusted R Kare	Std. Error of the Estimate
1	Gold	,744[a]	,553	,551	90,23797
	BTC	,602[a]	,363	,359	1419,76501

a. Predictors: (Constant), Covid19USA

When only one independent variable is used, the R value reported in the model summary equals the Pearson correlation coefficient between dependent and independent variables (Bursal, 2018: 150).

The number of coronavirus cases explains 55.3% of the change in the gold ratio. There is a positive relationship between the dependent and independent variables at the level of r = .744. The number of coronavirus cases explains 36.3% of the change in the bitcoin ratio. There is a positive relationship between the dependent and independent variables at the level of r = .602.

The coefficients findings obtained from the regression analysis are shown in the table below.

Table 6.Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Gold	Constant	1584,870	14,267		111,086	,000
	Covid-19	,006	,000	,744	15,211	,000
BTC	Constant	7101,031	224,471		31,635	,000
	Covid-19	,060	,006	,602	10,316	,000

The standardized Beta value in the coefficient table is the measure of the Pearson correlation coefficient, and it takes the same value as R in simple regression analysis (Bursal, 2018: 151).

According to the above table, the constant value for gold was found to be 1584,870 while the regression coefficient b was .006. These values are found as 7101,031 and 0.60 for Bitcoin. If no coronavirus cases were seen, the mean value of gold would be predicted as 1584,870, and the average value of bitcoin to be 7101,031. When only one independent variable is used, the p value obtained for the predictor level of this variable is the same as the p value obtained for Pearson correlation (Bursal, 2018: 151).

Even if the correlation coefficient is close to 1, the significance test is required and the F test can be used for the significance test (Lorcu, 2015: 248).

According to Table 5 model summary, the correlation coefficients were found to be close to 1, however, a significance test was made with the F test. The correlation coefficient (R) value between dependent and independent variables using ANOVA in regression analysis gives the result of the significance test. The table is shown below.

Table 7. ANOVA[a]

Value	Model		Sum of Squares	df	Mean Square	F	Sig.
Gold	1	Regression	1884112,114	1	1884112,114	231,381	,000[b]
		Residual	1522720,532	187	8142,891		
		Total	3406832,646	188			
a. Dependent Variable: Gold, Bitcoin							
b. Predictors: (Constant), Covid19USA							
Bitcoin	1	Regression	214520310,551	1	214520310,551	106,423	,000[b]
		Residual	376942009,470	187	2015732,671		
		Total	591462320,021	188			

According to the table above, the F value was found to be 231,381 for gold and 106,423 for bitcoin while the p value was ≤ 0.05 for both dependent variables. According to the p value in the ANOVA table, it was seen that there was a significant relationship between variables.

Conclusion

The effects of the number of coronavirus cases in the United States on gold and bitcoin have been the main subject of this study. According to the results obtained from the statistical findings of the study, a statistically significant relationship was found between coronavirus and gold and bitcoin. According to these results, the H_{01} and H_{02} hypotheses were rejected and the H_1 and H_2 hypotheses were accepted. The price of gold per ounce appears with the US dollar.

It has been observed that coronavirus cases caused an increase in the US gold market. One unit increase in the virus case causes an increase of 0.744 units in the gold value. It is understood that the relationship between the two variables for this increase can be explained by 55.3%. According to the conclusion here, we may talk about a strong relationship between Covid-19 and gold. The relationship between both variables has emerged as positive. The impact rate on the US gold market has been found to have a close ratio of almost 1 to 1. It was seen that the rate of explanation of the relationship between these two variables was at a good level. Understanding more than 50 percent of the reason for the change in gold with the effect of the virus has shown that there is a serious demand for gold in this country. It has been understood that individuals and investors tend to buy gold in the United States.

It has been observed that coronavirus cases caused an increase in the US bitcoin market. One unit increase in the virus case causes an increase of 0.602 units in the gold value. It is understood that the relationship between the two variables for this increase can be explained by 36.3%. According to the conclusion, we may talk about a strong relationship between Covid-19 and bitcoin. The relationship between both variables has emerged as positive. It is determined that the rate of explanation of the relationship between these two variables is not low. The tendency of individual customers and investors to buy digital money has increased in the pandemic. When gold and bitcoin prices are compared, we see that the pandemic has a greater effect on gold than bitcoin.

Cryptocurrencies are not recognized as currencies in the legislation of a country. On the other hand, they are also considered as commodities in terms of taxation (Gürsoy ve Tunçel, 2020: 2129). Commodity is the general name given to commodities such as gold, silver, barley and wheat that can be traded and cryptocurrencies are getting closer to the concept of commodities (Gürsoy ve Tunçel, 2020: 2129). In order for cryptocurrencies to be considered as secure, they must borrow from the market by buying securities such as treasury bills and public-private sector bonds (Ceylan, 2019: 9). However, since cryptocurrencies do not represent a private share, they

cannot be used as securities (Ceylan, 2019: 10). The role of the banks in the competition between Bitcoin and gold will also be important in the future. The pandemic has also had an impact on the United States Banking and finance industry. In a study, it was seen that the coronavirus affected Bank of America, Fannie Mare, JP Morgan, Prudential Financial Inc and Visa companies positively while New York Mortgage Trust Inc, Wells Fargo negatively (Yetgin, 2020: 57).

Since the Covid-19 process is still a new subject and there are not enough studies in social sciences yet, it is thought that the result of this research will make an immense contribution to the literature. It has been observed that some studies have been conducted on Covid-19 in the literature. In a study, it was revealed that Covid-19 caused a 20% drop in stock exchanges and a 35% drop in markets in the USA (Abodunrin et al.2020: 19). Demand for gold, which is seen as a safe investment tool, has increased in the world during the pandemic process, and on April 14, 2020, the gold ounce price reached a peak value in more than 7 years with 1,746.5 USD (Erdem et al., 2020: 3). Some studies in the literature on digital currencies, which have been on the world's agenda and are an alternative to gold, have been examined since 2008. The fact that a Japanese name, which was announced to the public at the first emergence of Bitcoin, was not a real name and the main architect of the project was not known according to the researches in the literature, is considered to be a negative case in the future of this money. It is clear that the IMF has a digital money strategy. It is considered that the reasons for the establishment of virtual money circulation in the countries, which the IMF mentioned in its reports, articles and statements, and the economic effects or reflections have been mentioned in many places, but there is not enough information flow on the legal ground and conditions and how to integrate with the Central Banks of the countries. The development in technology is known to be a reality which has many benefits that facilitate human life and speed up processes. However, the formation of all legal, economic, political and sociological infrastructural elements must be formed before taking decisions that require milestones concerning individuals, societies and countries.

It is known that the United States of America has political influence over the IMF, which is an international organization. The USA, which strengthened the gold-dollar parity with the Bretton Woods agreement in 1944, made the currencies of all other countries dependent on the dollar. While the USA preserved its gold-dollar parity values, Europe was dependent on the dollar due to high inflation in the 1929 Great Depression and the Second World War. The digital currency is thought to be backed by the US government. As a matter of fact, in the initial months of the spread of the epidemic, the digital wallet project was brought to the agenda in the US House of Representatives. According to this project, US citizens are expected to use the dollar virtually. In this case, the circulation of the dollar around the world will also be virtual. In the announcement of the IMF in the past years, the main plan was expressed as opening a new digital currency to the world circulation. It is planned to use Bitcoin or a similar virtual currency as a financial instrument that is ahead of gold and other investment instruments. Although there is an increase in the value of gold in the pandemic, it is thought that the gold-bitcoin competition here will outweigh the digital money direction in the future for individual customers and investors. Global actors such as the USA are already collecting gold raw materials from various parts of the world. The USA does not want gold to be the investment tool in the world. Because it will not be easy for the gold reserves and processing to be under the monopoly of the USA. With the pandemic process, digitalization has taken a vast place in human life. There has been an increased interest in shopping with credit cards and virtual money. This has laid the foundation of a global use of digital money. However, it is not yet known how digital money will benefit nation states. Moreover, the distrust in the story of the first release of digital money brings some concerns regarding the benefit of this money to humanity. The sudden emergence of Bitcoin after the 2008 Mortgage crisis to reach a high volume and the increase in its value during the pandemic period reinforces these concerns.

Investigating the effects of the pandemic on currencies, precious metals and industry indices in different countries will contribute to a better understanding of the situation of the countries in this process statistically.

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Araştırma Makalesi

A Strategic Study of the Impact of Pandemic on Investment Instruments in the United States: The Case of Gold and Bitcoin

Pandeminin Amerika Birleşik Devletleri'ndeki Yatırım Araçları Üzerindeki Etkisine Yönelik Stratejik Bir Çalışma: Altın ve Bitcoin Örneği

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Genişletilmiş Özet

Giriş

Amerika Birleşik Devletleri salgında vaka sayısı ve ölüm oranlarında dünyada başı çeken ülkeler arasında yer almıştır. Ülke, salgından ekonomik olarak ciddi şekilde etkilenmiştir. Pandeminin sektörel etkileri belirgin olmakla birlikte yatırım araçları üzerindeki etkisi bu araştırmanın ortaya çıkmasına neden olmuştur. Altın ve bitcoin, iki önemli rakip yatırım aracı olarak bilinmektedir. 1980'li yıllarda Avrupa para piyasası dünya altın piyasasında öncü rol oynarken, 1990'larda ve sonraki yıllarda ABD dolarının dünya altın fiyatlarında öncü rol oynadığı belirtilmiştir (Syzdykova, 2018: 4). Büyük altın üreticileri olarak bilinen Avustralya, Güney Afrika ve Rusya gibi ülkelerin dünya altın fiyatları üzerinde belirli bir etkisinin olmadığı ve yapılan bir çalışmada altının dünya enflasyonuna karşı koruyucu bir değer olduğu ifade edilmiştir (Syzdykova, 2018: 5). Altının bu avantajlı konumuna rağmen ABD hükümeti ve Uluslararası Para Fonu'nun dijital para projelerine destek verdiği görülmüştür. Bu çalışmada Amerika Birleşik Devletleri altın ve bitcoin endeks fiyatlarına, koronavirüs vaka sayısının etkisi araştırılmıştır.

Yöntem

Bu çalışmanın amacı, salgının Amerika Birleşik Devletleri'nde altın ve bitcoin endeksleri üzerindeki etkisini araştırmaktır. Çalışmanın metodolojisinde regresyon analizi kullanılmıştır. Regresyon analizinde bağımlı ve bağımsız değişkenler arasında bir korelasyon modeli bulunmaktadır (Özdamar, 2018, s. 184). Bu modelde değişkenlerin neden-sonuç ilişkisindeki rolleri ortaya çıkarılmıştır (Özdamar, 2018, s.184). Basit doğrusal regresyon analizinde sürekli sayısal veri türünün bağımlı değişkeni, tek bir bağımsız değişkenle doğrusal olarak açıklanmaktadır (Lorcu, 2015: 241). Doğrusal regresyon modelinin uygulamasında bağımlı ve bağımsız değişkenler arasında kurulan matematiksel korelasyon modeli $Y = \beta_0 + \beta_1 X_1$ olarak gösterilmiştir (Durucasu, 1997, s. 122). B_0, regresyon çizgisinin y ekseniyle kesiştiği noktadır ve regresyon sabiti iken B_1 regresyon katsayısıdır ve bağımsız değişkendeki bir birimlik bir değişikliğin bağımlı değişkende neden olacağı ortalama değişim miktarını vermektedir (Lorcu, 2015: 241). Buna göre araştırmanın regresyon modeli formülü altın = β_0+ βCoV ve BTC = β_0+ βCoV olarak oluşturulmuştur. Araştırmanın matematiksel bağıntı modeline göre oluşturulan hipotezlerden, H_1 hipotezinde "altın ile koronavirüs vaka sayısı arasında istatistiksel olarak anlamlı bir ilişki var", H_2 hipotezinde "bitcoin ile koronavirüs vaka sayısı arasında istatistiksel olarak anlamlı bir ilişki var" olarak oluşturulmuştur. Amerika Birleşik Devletleri'nde altın ve bitcoin fiyatları araştırmaya dayanmaktadır. Buna göre Dünya Sağlık Örgütü resmi sayfasından alınan ABD'deki günlük koronavirüs verileri araştırmanın sınırlılıkları arasında yer almıştır.

Bunun yanında araştırmanın diğer kısıtlılığını ABD altın ve bitcoin endeks fiyatlarının investing.com kurumsal sayfasından elde edilmesi olmuştur. Çalışmada yer alan veri seti 11 Mart-15 Eylül 2020 tarihleri arasını kapsamış olup, bu süreç 189 güne tekabül ettiğinden, elde edilen veriler için frekans değeri n=189 olarak gösterilmiştir. Araştırmada normallik testi, Pearson Korelasyon testi ve Regresyon analizleri uygulanmıştır.

Bulgular

Çalışmada normallik testi olarak Kolmogorov-Smirnov analizi uygulanmıştır. Bu analizin sonuçları, verilerin dağılımlarının normalliğini ölçmektedir (Pallant, 2017: 75). Elde edilen istatistiksel olarak anlamlı olmayan değer (Sig. Değeri .05'in üzerinde), verilerin normal bir dağılım gösterdiğini belirtmektedir (Pallant, 2017: 75). Doğrusal regresyon analizi uygulamasında en önemli varsayım, Y değişkeninin normal dağılımı olarak tanımlanmıştır (Özdamar, 2018: 191). Buna göre bağımlı değişken bir araştırmada normal dağılım göstermelidir. Çalışmada Kolmogorov-Smirnov testinden elde edilen p değeri altın için ,220 ve bitcoin için ,160 olarak bulunmuş, bu sonuca göre p değeri .05'ten büyük olduğundan veri dağılımının normal olduğu saptanmıştır. Çalışmanın Pearson korelasyon bulgularına göre, koronavirüs ile altın ve bitcoin arasında istatistiksel olarak anlamlı ve pozitif yönlü bir ilişki görülmüştür. Regresyon sonuçlarında, model özeti, katsayılar ve ANOVA sonuçları elde edilmiştir. Model özetine göre, koronavirüs vaka sayısının altın değerine etkisine yönelik istatistiksel olarak anlamlı bulunan ilişkinin %55,3 oranında açıklanabilir olduğu anlaşılmıştır. Koronavirüs vaka sayısının bitcoin değerine etkisine yönelik istatistiksel olarak anlamlı bulunan ilişkinin %36,3 oranında açıklanabilir olduğu tespit edilmiştir. Araştırmanın katsayılar sonucuna göre, eğer hiçbir koronavirüs vaka sayısı görülmemiş olsaydı altın için değeri B = 1584,870 iken bitcoin için B = 7101,031 dolar olarak bulunmuştur. ANOVA tablosunda yer alan p değerine göre değişkenler arasında anlamlı bir ilişki olduğu görülmüştür.

Sonuç

Amerika Birleşik Devletleri'ndeki koronavirüs vakalarının sayısının altın ve bitcoin üzerindeki etkileri bu çalışmanın temel konusunu oluşturmuştur. Çalışmanın istatistiksel bulgularından elde edilen sonuçlara göre koronavirüs ile altın ve bitcoin arasında istatistiksel olarak anlamlı bir ilişki saptanmıştır. Bu sonuçlara göre H_{01} ve H_{02} hipotezleri reddedilmiş ve H_1, H_2 hipotezleri kabul edilmiştir. Altın ons fiyatı ABD doları ile belirlenmektedir. ABD altın piyasasında koronavirüs vakalarının altının değerinde artışa neden olduğu görülmüştür. Koronavirüs vaka sayısında bir birimlik artış, altın değerinde 0,744 birim artışa neden olmaktadır. Bu artış için iki değişken arasındaki ilişkinin %55,3 ile açıklanabileceği anlaşılmaktadır. Buradaki sonuca göre Covid-19 ile altın arasında güçlü bir ilişkiden bahsedilebilmektedir. Her iki değişken arasındaki ilişki pozitif yönlü olarak ortaya çıkmıştır. Amerika Birleşik Devletleri'nde bireylerin ve yatırımcıların altın alma eğiliminde oldukları anlaşılmıştır.

Koronavirüs vakalarının ABD bitcoin piyasasında artışa neden olduğu görülmüştür. Koronavirüs vaka sayısındaki bir birimlik artış, bitcoin değerinde 0,602 birim artışa neden olmaktadır. Bu artış için iki değişken arasındaki ilişkinin%36,3 ile açıklanabileceği anlaşılmaktadır. Sonuca göre Covid-19 ile bitcoin arasında güçlü bir ilişkiden bahsedebilmektedir. Her iki değişken arasındaki ilişki pozitif yönlü olarak ortaya çıkmıştır. Pandemide bireysel müşterilerin ve yatırımcıların dijital paraya yönelimi artmıştır.

Altın ve Bitcoin fiyatları karşılaştırıldığında, salgının altın üzerinde bitcoin' den daha büyük bir etkiye sahip olduğunu görülmüştür. Altın asırlardır bilinen bir yatırım aracıdır. Bitcoin ise 2008 yılındaki emlak krizinden sonra birden ortaya çıkmış ve kısa bir süreç içerisinde büyük bir yatırım hacmine ulaşmıştır. Bitcoin ilk ortaya çıkışında, kurucusunun isminin sonradan sahte olduğunun anlaşılması, sanal parada bir merkezi yapının olmaması gibi bazı nedenlerden dolayı sanal paranın tüm dünya piyasalarında hâkim bir araç olma ihtimali henüz şüpheden arınmamıştır.

Pandeminin farklı ülkelerdeki para birimleri, değerli metaller ve endüstri endeksleri üzerindeki etkilerinin araştırılması, bu süreçte ülkelerin durumunun istatistiksel olarak daha iyi anlaşılmasına katkı sağlayacaktır.