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Risk In Iraq Banking System: An Evaluation On Share Values

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Abstract

The low contribution of economic sectors (industry, agriculture and services) to the gross domestic product. The decrease in bank loans to productive sectors, the high risk of banking in productive sectors and the low competitiveness of domestic production. A bank loan is one of the main sources of financing for stimulating and increasing local production. The concept of banking risk management is important. When determining the risk effect, it is necessary to calculate the long-term effects of macroeconomic factors on the banking sector separately. Some researchers dealing with banking risks are well aware that markets do not directly affect banks. Economic, political and social conditions in the banking sector is always the possibility of incurring losses in the future and danger on one side of the last transfer, increasing the likelihood of banking crises affects one side of natural and legal persons, financial market can make it tough. In the study, Derman (2002)'s theories posed and Ulusoy (2008)'s econophysics analysis and financial calculations in the framework of the concept of entropy developed in econophysics using temperature has been studied and the calculations performed in this study have been revealed.

Keywords: Iraq, Banking, Financial Temperature, Financial Entropy

1. Introduction

Banks have undergone rapid development, especially in recent years. 21, also called the information economy. since the beginning of the century, banking risks have begun to manifest themselves. Thanks to the rapidly increasing technological infrastructure, banks have gained the ability to act within the framework of innovation and creativity by establishing easy and fast communication networks. In addition, reducing costs, information and process management, as well as banking operations that are gaining momentum, have brought with them a number of risks. The changes that have taken place in all areas of the world have brought the uncertainties to the forefront. With the emergence of the concept called risk management, the uncertainties into risk has taken its place among the important issues.

In the past, the banking sector, which tries to make decisions under uncertainty, may face unfavorable conditions from time to time. Banks that can convert uncertainty into measurable risk and are able to calculate the risk have made it possible to manage the system together with banking regulations. As is known, the concept of management in particular stands out at this point. For a bank that acts according to market realities and loves risk, risk management is of more importance, unlike a commercial business. The main element that the banking sector buys and sells, or in other words, goods, is money or funds. Since the fund is held as a weighted capital, realizations based on cash and cash-like transactions make it difficult to minimize the threats and risks that will occur in the future. Uncertainty is defined as the inability to fully predict the future. Risk is defined as a numerical expression of uncertainty. Banks are obliged to objectively evaluate the risks that may occur at this point. In addition to calculating the risk, it is necessary to determine the elements that reveal the risk.

2. Literature Review

According to Turşucu (2006), banks aim to maximize profits by transferring their resources to actors in need of funds, while at the same time playing a role in ensuring sustainable macroeconomic stability. According to Kalkan (2007), one

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of the most important components that must necessarily be included in the successful strategy portfolio of banks is the effective management of risks. Gür (2007) prepared by the Basel Committee in the country and the banking regulation and Supervision Agency also explained the use of models supported by Basel II risk management in banks highlighted the importance of these new techniques and measurement and in Turkey in accordance with the road map prepared by the brsa for the use of the preparations made by the banks gave him a place in the study of.

Şahin (2008) found that although structural problems of the banking system persist in his research, the system's resistance to crises and external shocks increases more than in recent crisis periods. According to Ekenel (2009), each of the risk calculation methods has different weaknesses. Therefore, it will be erroneous to use only one of these methods. However, the use of a combination of them can give more accurate results. Thus, the banking sector will be able to engage in healthier and more effective activities.

Ocakçı (2009) study, the importance of credit risk in the banking financial ratios used in the study in order to define which one of the banks is determined to play a role and take more decisive measures need to focus on the Turkish banking sector were evaluated. According to Koçer (2010), developments such as related and impaired lending in banks, breakdownof the financial structure of banks after excessive risk-taking and mismanagement, and the removal of some banks from the system lead to serious problems in the economy. According to Şen (2010), there is no single conclusion for all banks on how effective risk management should be in the reviews. It has been concluded that there is no and cannot be a ready-made prescription for how to effectively manage risk for any country, sector and/or institution and/or bank. Varlık (2010), according to the investment and development banks, Deposits from banks, they didn't deposit as different retail banking services are limited, purchase transactions and public offerings and other capital markets transactions and merger with doing activities such as loan and project funding from abroad through investing since risk perception, it is observed that they are found in different. It states that the risk calculations of each type of bank should be evaluated separately within themselves. Since it is difficult to estimate the damage potential related to operational risks and determine the probability of occurrence of damage to Şahin (2011), the entire type of risk cannot be digitized and therefore its exact measurement cannot be carried out.

According to Bekar (2012), Basel-scale revisions are essential in order to further consolidate the equity structure of the existing regulations by calculating the credit risks of the banks operating in Turkey using the capital adequacy standard ratio tables and calculating the operational risk using the basic indicator method. According to Işık (2014), the negative relationship between the ratio of loans to total loans and return on equity seems to be in harmony with the literature.

3. Overview of the Iraqi Banking System

There are 77 banks in the Iraqi Banking System. From these banks, 7 state banks, 24 commercial banks, 11 Participation Banks operating on the basis of Islamic banking and 18 private banks with external and internal support stand out as the most prominent. 85% of the total deposits are held in state-owned banks, and close to 15% are held in private banks. Acting in accordance with the instructions of the Central Bank of Iraq, the banking sector is trying to act in accordance with the provisions adopted in the Basel criteria in accordance with the Financial Stability Reports it has published. Banks have a liquidity availability as high as 60%. This liquidity asset shows that the sector, which has not yet entered a stable period, cannot invest safely. Although the banking sector is profitable, it cannot reflect its profitability by the hand of capital markets. Even in the Middle East and North Africa, the support provided by the banking sectors in countries that are in a trust environment with interest rates on loans leads to a shift in capital to these areas. When political stability prevails, the golden age for the Iraqi Banking sector will have begun during the restructuring process, and real Sector borrowing will be made in a more secure way.

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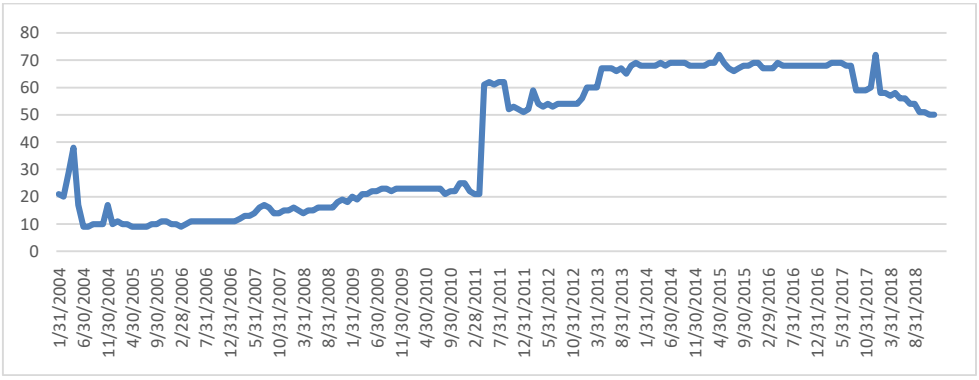

Fig1: Deposit Rates of Iraqi Commercial Banks (Liquid Assets) Source: Central Bank of Iraq [Accessed 18.02.2020]

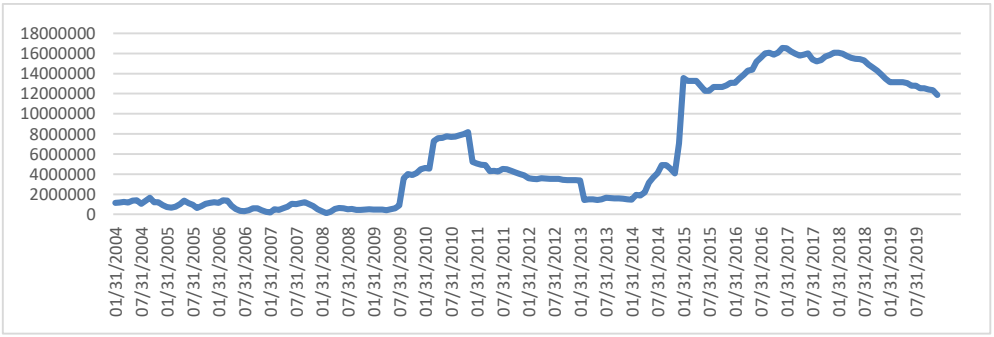

Figure 2: Commercial Banks Treasury Bills Reserve (million Iraqi Dinars) Source: Central Bank of Iraq [Accessed 18.02.2020]

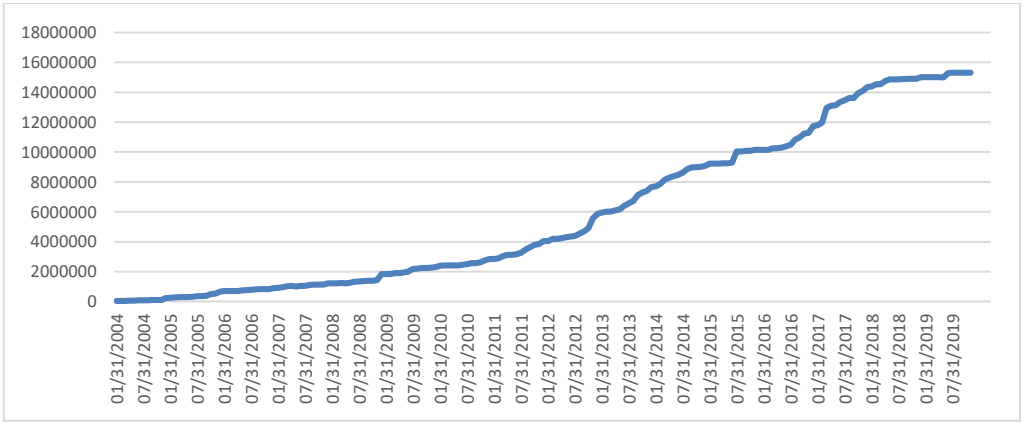

Figure 3: Commercial Banks Paid Capital (in million Iraqi Dinars) Source: Central Bank of Iraq [Accessed 18.02.2020]

There has been a decrease in the increase in Paid-in Capital compared to the years. According to the chart, in 2004, the capital was increased by an average of 20%, which was paid 6 times in the December calendar year, and at the end of 2004 it increased to 120%. The paid-in capital of the banks continued until the end of 2005, and since the beginning of the 2006 financial year, the rise has slowed down. the increase of 30% at the end of 2008 was followed by increases of almost 3% on average among the 13% decommissioned capital increase at the end of 2012. In 2018 and 2019, the upward movement in the paid-in capital of banks has been so limited that it has been neglected.

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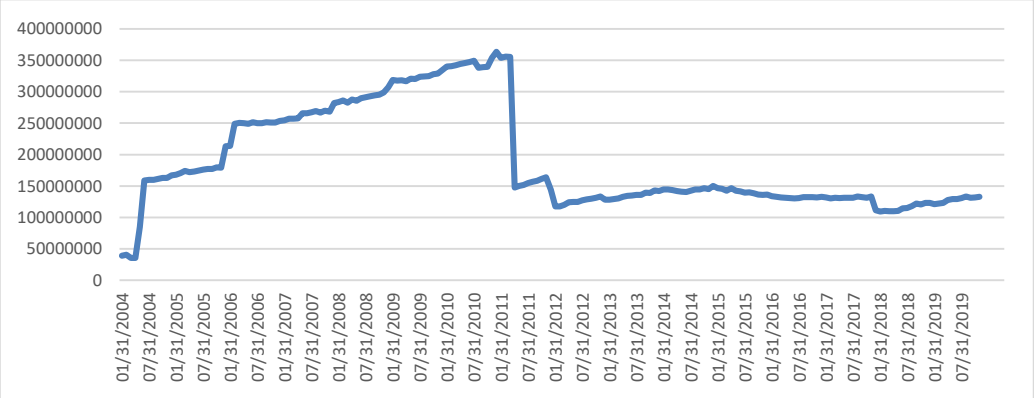

Figure 4: Total Assets (Source) of Iraqi Commercial Banks (million Iraqi Dinars) Source: Central Bank of Iraq [Accessed 18.02.2020]

When the amount of Asset Resources of Iraqi Commercial Banks is examined, data are obtained since 2004. Since that date, there has been a 137% increase in total assets in May 2004, followed by an 87% increase. Again, there is a 20% increase in the reports prepared based on the financial year-end data of 2005. Then there was a 16% increase in Assets in 2006. There was no movement in the assets of the bank's balance sheets until 2011. Increases and decreases remained in the 1% and 2% tranches. in 2011, there was a 60% decline, especially as of April. the decreases of 11% and 12%, respectively, at the end of the 2011 fiscal year and the beginning of the 2012 fiscal year appear to have been reflected in Assets. In December 2017, there was a 16% decline in assets. at the end of 2019, the bank's total assets amounted to 133,017,248 million Iraqi dinars.

4. Banks That Are the Subject of Research

The banks that are the subject of the analysis are as follows:
Iraqi Commercial Bank PSC, (BCOI) is a bank based in Iraq. It provides retail and corporate banking customers with a full range of commercial banking products and services. Iraq PSC Commercial Bank is a private bank with a network of branches, nine of which are located in Baghdad and one in Basra. The main shareholder of the company is Ahli United Bank, which owns more than 70% of the commercial Bank of the Iraqi Psc.

The Islamic Investment and Development Bank of Iraq (BIIB) is a bank based in Iraq. It divides its services into personal accounts, business accounts and special services. Under the personal accounts segment, elite banking offers services such as personal accounts, Credit Cards and Takaful (an Islamic insurance concept based on Islamic transactions). The business accounts segment provides business accounts and Financing solutions. The specialized services segment offers other investments (in particular, long-term investments in public and private companies, such as Kurdistan Bank or Al Wufaqa General contracting, as well as Real Estate investments in the AL Fallujah Mega-land project) and brokerage services.
Iraq Middle East Investment Bank (BIME) is a private bank based in Iraq. A range of services for domestic and foreign investments, credit facilities, short, medium and long-term loans, loans for projects and contracts, domestic and international bank guarantees, transfers, bank and savings accounts, foreign exchange, Cash, stocks and bonds, and corporate banking services, including among others offers. It works with about 20 branches. Also, IMEIB and real estate owned real estate investment and development, tourism, fish, and poultry farms, and stocks and securities companies engaged in hospitals and healthcare providers, among others, works for companies as a major shareholder.

Bank of Iraq SA (NBI), (BNOI) is an Iraq-based private bank engaged in providing banking solutions for clients in the inter-Iraqi and Decanian connected markets. The bank operates through two business divisions: the personal banking division provides products to individual customers such as personal accounts, NBI personal loans and electronic services such as transfers, Debit Cards and online banking. the corporate banking department focuses on professional clients and institutions and offers business accounts, business transfers, trade finance and loans, exchange rates; The bank operates about eight branches. The company is a member of Capital Bank Jordan Group.

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5. The Current Situation in Risk Assessment in the Iraqi Banking System

In the Iraqi banking system, banks hold a large share of the returns of short- and long-term financial instruments along with the functioning oil markets. In addition, the functions and functions they perform in the oil and petrochemical products market are extremely important. US $-related increases/decreases are important in the Iraqi banking system, as they are mainly worked with oil-related financial instruments. In light of the political developments in Iraq, banks have been forced to make highly leveraged transactions. Decoupling and effective management of equity in accordance with their operating profiles can be considered among the basic elements of the banking system. The realization of a number of ratios that are equal to the criteria in terms of capital adequacy has left the Iraqi banking system, which is struggling with political uncertainties, in a difficult position. Regardless of any circumstances; regarding equity, capital adequacy, liquidity regulations and similar regulations, the bank continues its activities within the country in accordance with international markets. Along with the banking crises and liquidity crises in the world, the Iraqi Banking Sector has been forced to take on heavy responsibility that it has been burdened with inside and out. The hot money transitions in the world have left the Iraqi capital market movements in a difficult position on the one hand and caused the decline of profits in the banking sector on the other hand.

The process of change and increasing uncertainty in the Middle East has shown a tendency to increase the interest rates of banks in the Middle East. As a result of changes in the military and political sphere, it has extraordinarily increased the risk to the decision-maker in the financial sector. As is known, risk is a digitized expression of uncertainty. Starting from this definition, the uncertainty based on digitization is an obstacle for banks. From a business point of view, risk-taking skills are at a higher level if the business is a company that sells products or sells services. Based on the fact that the goods sold and bought in the banking sector are money, funds or capital, managing capital is not easy in the banking sector. Moreover, in order to take precautions against problems and dangers that may occur in the future in advance, the banking sector should seriously conduct risk classification. The concepts of systematic, non-systematic and systemic risk in the banking sector remain valid. These concepts will be discussed in the next section. It is clear that they may be vulnerable to new varieties that will consist of details without succumbing, so that a new risk classification should be made for the banking system, especially in Iraq, by classifying uncontrollable risks. In order to eliminate risks in the Iraqi banking system, it is necessary to urgently introduce diversifiable financial instruments into the market. in addition, it is necessary to answer the question of what are the controllable and uncontrollable risks. during the risk classification, definitions of the specific risks of Iraq and the region in which Iraq is located should be made. It should conduct studies on which risk group affects the banking system in this region.

6. The Method and Data of the Research

(Risk Factor Calculation with Microscopic Evaluation for the Banking Sector)

It has been shown in some studies that the volatility σ_i of the yield of any stock in calendar time and the frequency of its exchange are equal to the product of its square root. (Derman, 2002) (Ulusoy, 2008)From here on, the concept of stock temperature has been switched to.

$$\chi_i = \sigma_i \sqrt{V_i}$$

Equality of rights has been achieved.
The right-hand side of the equation here indicates the multiplication equality of volatility and trading frequency in calendar time. The expression here is “reveals the temperature of a stock. Of the two hypotheses mentioned at the beginning of this part of the study, Bose-Einstein Statistics was used according to the calendar time hypothesis. Here it will be discussed whether the risk assessment applies to the Iraqi Banking Share Market using a number of calculation techniques that will be sampled later Calculations related to the temperature concept have been made according to the Derman (2002) approach in order to easily understand the initial study.

September May 2020, the first evaluation was conducted on 1145 trading days and the open session for these days between September 2014 and Dec. The graphs related to these have been interpreted in the next part of the study. Some data were mainly kept for evaluation. With these data, temperature and entropy values were calculated based on the index session

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closing values of the Bank of Iraq related to the volume of transactions made during the session. Transaction volumes and index closing values were processed at the end of each day and supported by graphs, it was tried to determine which days of the index trend there was a risk. In order to reference the possible confusion, the transaction volumes, transaction amounts, and the values of the 4 banks in the Iraqi Banking system were kept ready on a day-by-day basis by repeating these dates for the dates mentioned. If the formula to be used to calculate the temperature is to be divided into two parts, the volatility of returns in calendar time should be calculated in the first part, and a trading frequency should be generated for the market in the second part.

Assuming that there are a fixed number of investors at a given time t, let be a w(t) variable that increases or decreases the wealth of each i investor at each time t, assuming that there are a fixed number of investors at a given time t. Then let's create a variable indicating the total wealth, or in other words, the direction of the market in the investments of market players

$$W(t) = \sum_{i=1}^{n} w_i(t)$$

Tablo 1 : January 2003 First Quarter Sample Table

Date	İşlem	BCOI	Temperature	Entropi
02.01.2003	49.553	10.572,08		
03.01.2003	51.527	10.591,85	92	0,000000
06.01.2003	41.849	10.445,14	278218	2,398535
07.01.2003	46.703	9.980,47	296898	2,447570
08.01.2003	40.357	10.006,76	132689	2,113266
09.01.2003	37.683	9.964,89	73887	1,823959
10.01.2003	53.951	10.238,73	370	0,000000

Each *i* of investors a T_0 Time t_1 , the coefficient of the amount of wealth in the transition to the time $w_i(t) \rightarrow w_i(t+1)$ change. Here it is also for all investors W(t) consists of the value of. In reality, each of these transitions during $w_i(t)$ which the growth rate is the same for tax, social benefits, the economic factor such as interest rates, although, in these studies has been neglected. Increases or decreases numerically, then W(t) the value of the index value at time T is taken

$$r(t) = \ln\left(\frac{W(t+1)}{W(t)}\right)$$

to be in the study if the market yield is. Each process in the time interval W of the variation is quite small. Out here on the volatility of returns in the range is taken as the average of the squares of a time when

$$Volatility = \left[\ln \frac{W_{(t+1)}}{W_{(t)}}\right]^2 / N \qquad (2.1)$$

as emerges. Step N is evaluated as the transition from one session to another step, and each step in the study of N=1 to be taken with the new volatility the formula for calculating

$$Volatility = \left[\ln \frac{W_{(t+1)}}{W_{(t)}}\right]^2 \qquad (2.2)$$

it is to be.

Temperature 2 parts that form the basis for the calculation formula of the first, “the chronological time of the return volatility” part is re-written

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$$Volatility = \left[\ln \frac{index\_value_{(t+1)}}{index\_value_{(t)}} \right]^2 \quad (2.3)$$

The temperature in the calculation of the secondary part, which is called the frequency of operation of the market in the forming section to a variable there is a need.

Operation frequency (trading frequency); processing time (real time) according to the hypothesis, that represent the number of the occurrence of the relevant stock within a certain time period. According to the hypothesis of transactions that occur within the relevant session refers to chronological time. Here is the process in which the assessments are fundamental hypothesis about the frequency of chronological time as the contract number for the sessions or in other words, the number of orders can be seen in terms of the calculation is taken into consideration and an easy 10^{11} using the coefficient normalized to have been.

The end of the session the market operation frequency = $\sqrt{\#of\ contracts_{\ t+1} \times 10^{11}}$ (2.4)

To pick up from here if we make a market in T+1 the temperature at time λ_{T+1}

$$\lambda_{t+1} = \left[\ln \frac{index\_value_{(t+1)}}{index\_value_{(t)}} \right]^2 . \sqrt{\#of\ contracts_{\ t+1} \times 10^{11}} \quad (2.5)$$

the product occurs.

Entropi the concept of temperature as a factor of market trend in the direction of the change was taken as. Bose-Einstein statistics, Bose system entropy (Φ)

$$\Phi = \frac{\varepsilon}{\lambda} . \frac{1}{e^{\frac{\varepsilon}{\lambda}} - 1} + \log\left(1 + \frac{1}{e^{\frac{\varepsilon}{\lambda}} - 1} \right) \quad (2.6)$$

as is calculated. ε = t+1 time on the closing index value λ = if taken as the temperature at the time T Φ = t+1 time the entropy value is calculated as.

Entropy base entropy analysis provides additional information for the trades in the ceiling of cyclic points.

In this study, the entropyof thermodynamics, the second law of an application. As mentioned in the end of all the events in the previous sections, this rule is coming to a stable level.

Assets that are traded in financial markets as it is in humans and other materials have a lifetime of. This life, the assets so far in the positive direction or the negative direction can be explained by movements in the back so. Entropy , when applied to the concept of the stock market, the relevant financial instrument and can move in the direction, the end of the movement in the other direction is an indication.

Performed in simulations entropy ceiling and entropy has been applied to equity market basis points. The concept of rules and a temperature of Bose - Einstein Condensation, together with that by showing weekly, monthly, yearly, not as separate sessions also in temperature and entropy values have been established.

The entropy of accounts in the calculation was made by using transaction frequency, but the processing time will be accepted as being healthy in terms of calendar time based on the time that session.

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Comfortable reading of data evaluation and conclusion in terms of graphics below regarding how to interpret the charts can be viewed. The following graph shows the temperature for the relevant years-stocks closing of the graph with the temperature-entropy graph of the movements were sampled. Compared to the data obtained from the chart so that the temperature will be proportional to the movements up-down oscillations in the case of seems to be. Index, on average, about December when it rises above or below average with an increase in the entropy ceiling or entropy of the base values are obtained.

7. Findings of the research and analysis

(Closing the temperature and Entropy Comparisons)

When evaluating the results of the research are made available daily closing values of the relevant bank's assessments and method specified in the section with over million Iraqi dinars calculations and graphs were created. When considering the value and closing dates on the chart on graphs of temperature temperature values and temperature values are reached, where pre-and post-the daily closing values of shares in the given time interval with the behavior which developed have been evaluated. Entropy-the second type of the values in the graph, which is shown as a comparison closing closing stock values pre-and post-calculated by using temperature - entropy reviewed a comparison of the values. In the literature on financial entropy in this section, which is called entropy of the period of extreme high oncsi that shows the change in the value in which the values and then closing was tried to be achieved. In the last Group shares in the graphic representation alaym the closing entropy reviewed with a comparison of the difference of the closing value. In this section, the value of closing stock of entropy that deviates from the value determined from the degree. Entropy change of-way or that way or was different compared to the stock's closing value has changed again. In this section, the structure and operation of the variable obtained as the classical variable is akin to finance discussed in the beta.

Trade Bank of Iraq PSC (BCOI)

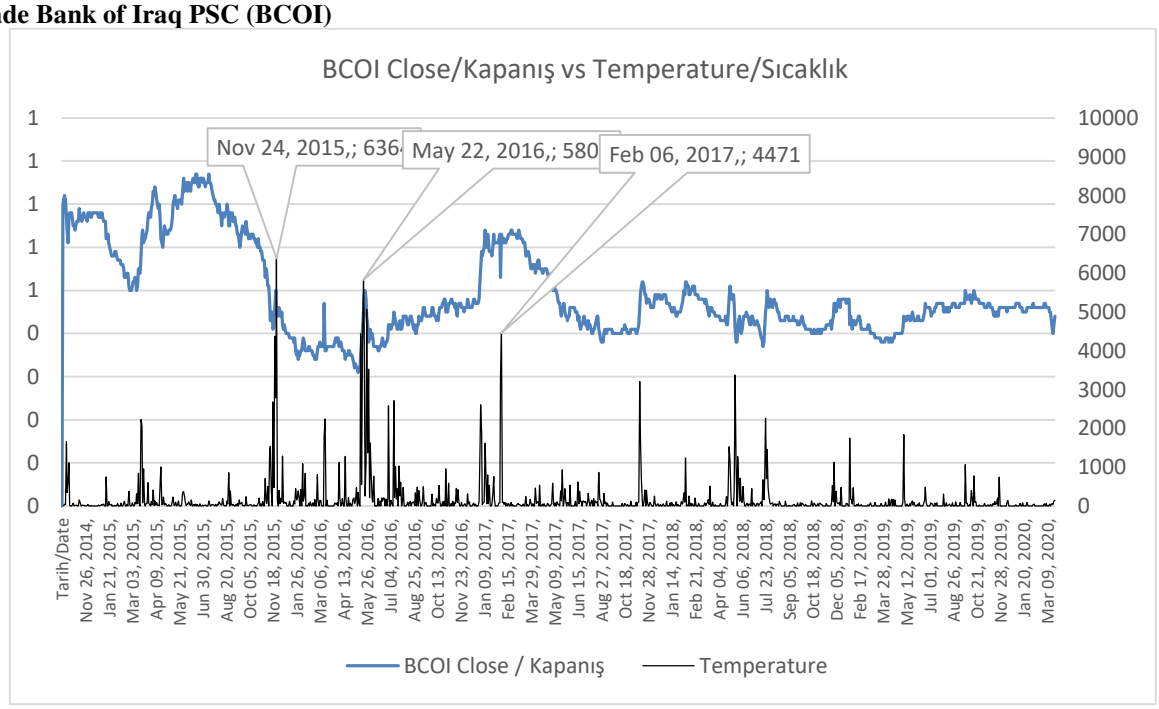

Figure 5: BCOI Closing/Close Temperature/Temperature Comparative

Trade Bank of Iraq, the annual financial statements were examined, of the total revenue at the end of the 10-year period 4620,71 mln from IRD 4248,17 mlnIRD eat has been declining shows. The same Net Profit 1753,98 if mlnIRD 2019 net

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profit by the year 2020, which 836,12 mln shows that the IRD has been declining. Annual net profit margin %were found as 27,52. Cash assets in 2019 41012,74 mln from IRD (5624,48) mln IRD declined. In this process, the change in net cash provided by investment activities cash and Investments has been seen as a negative to be negative. Have seen a decrease in total equity in the debt within the last one year, it is understood that there is a significant increase from the financial statements.

Trade Bank of Iraq on the data available between 2014 and 2020 Figure 5 daily shares with the movements of the comparison of the temperature reveals. When shares are examined, it is observed that the value between 0 and 1 IRD. It is observed that there is a systematic decrease from 2014 onwards. In the graph corresponding 24.11.2015 , 24.05.In 2016 , the share price of 06.02.2017 dates and these dates important dates in the determination takes precedence. Temperature values according to the calculations has shown a significant decrease in temperature after the respective dates. In conjunction with the calculation of the temperature of the stock prices volatility and shows the attenuation.

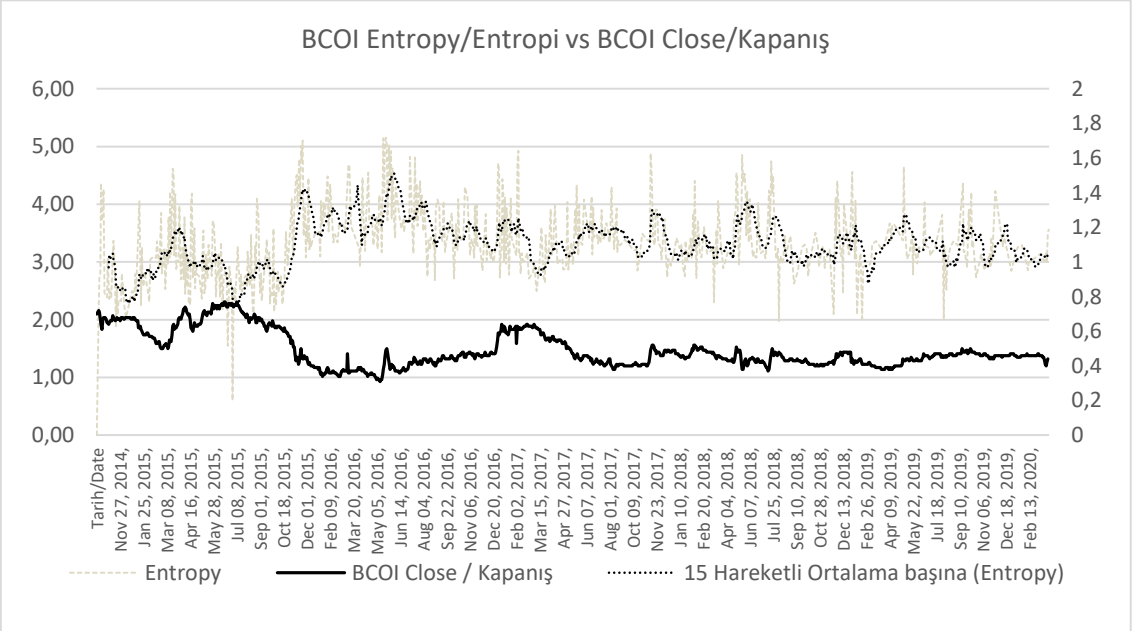

Figure 6 : BCOI Entropy/Entropy Closing/Close Comparative

Figure 6 the closing values of the stock log - entropy gives a comparison of the values. Entropy is concentrated around a value of 3 on average. Figure 6 during peak periods, compared with an increase and a decrease in the entropy value in the increase of oscillation that is easily observed. The price of shares both the oscillation in both pre - entropic behavior of the oscillation in Durgin seems to be. Strong Buy Strong Sell this in the wake of the recession, or in the form can lead us to an analysis.

Figure 7 share your workin kapanis the price, closing related to the entropy created by taking the difference with the value that was created with the closing value of the forward prediction comparison chart. Figure 7 the future of the stock in the 12 months to the process suggests that there might rise. Ascension work 0,30-0,60 range is advancing throughout.

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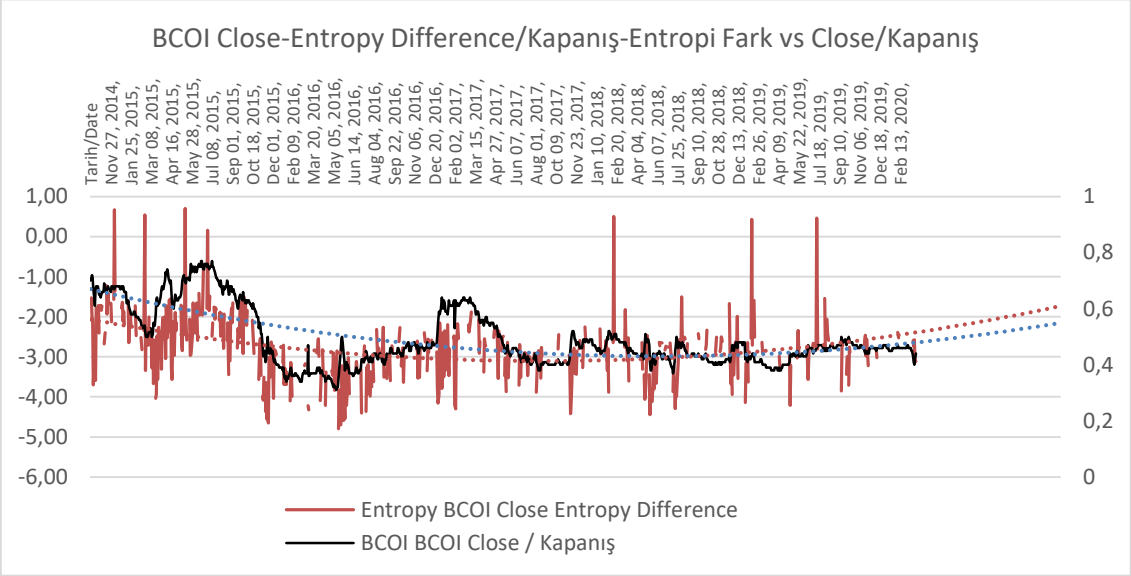

Figure 7 : BCOI Close-Entropy Difference/Closing-Entropy Difference Cose/Closing Comparative

Islamic investment and Development Bank of Iraq (BIIB)

Iraq and the Islamic Investment Bank's annual net profit margin %59,65. The statement of financial position total income in a given year 16203,88 mln from IRD 13121,76 mln IRD has dropped. Net profit 6374 mln IRD 1305.02 while mln IRD declined. Equity increased in the last one year, although there has been an increase in total liabilities. 0.08 per share, net cash flow in the last year, it also can be seen in the financial statements of the IRD. 2019-2020 has been the change in net cash in the form of a return to positive negative. In 2019, net cash change in 41872 mln from IRD (68365) mln has been IRD. Cash from operating activities is negative.Investing activities cash provided by past seems to be negative, although this is an increase compared to the previous year.

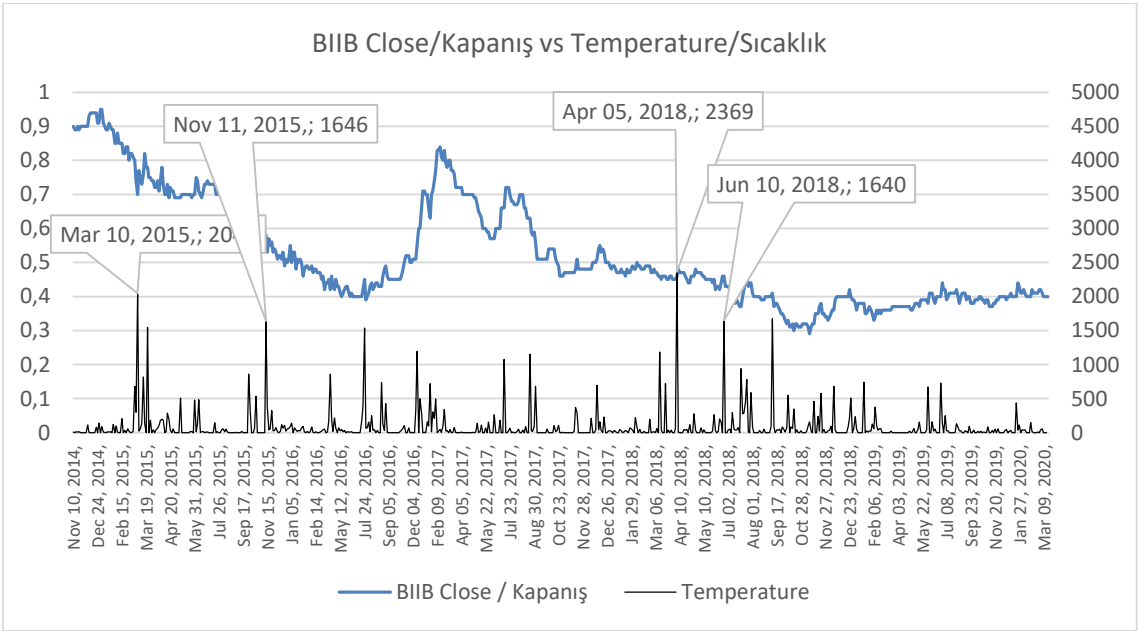

Figure 8: BIIB Closing/Close Temperature/Temperature Comparative

Figure 8 is examined, it is observed that a serious decline in the bank's shares between 2014-2020. 10.03.2015 temperature values, 11.11.2015, 05.04.2018, 10.07.2018, it is observed that extreme increases and decreases in history. Later than

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2018, Extreme of temperature oscillations are not seen. Temperature an increase in the amount of oscillation of the stock volatility increases both are realized.

In Figure 9, when we examined the entropy value of 3 it can be said that it travels around. As they began moving far away from this value, the closing values outside the limits of the shares in predictable increases and decreases were observed. As can be noted, the entropic decrease of emissions, starting from the middle of the occurrence of 2018 compared to the previous period, that is an impingement on the closing price of the shares, it can be observed easily.

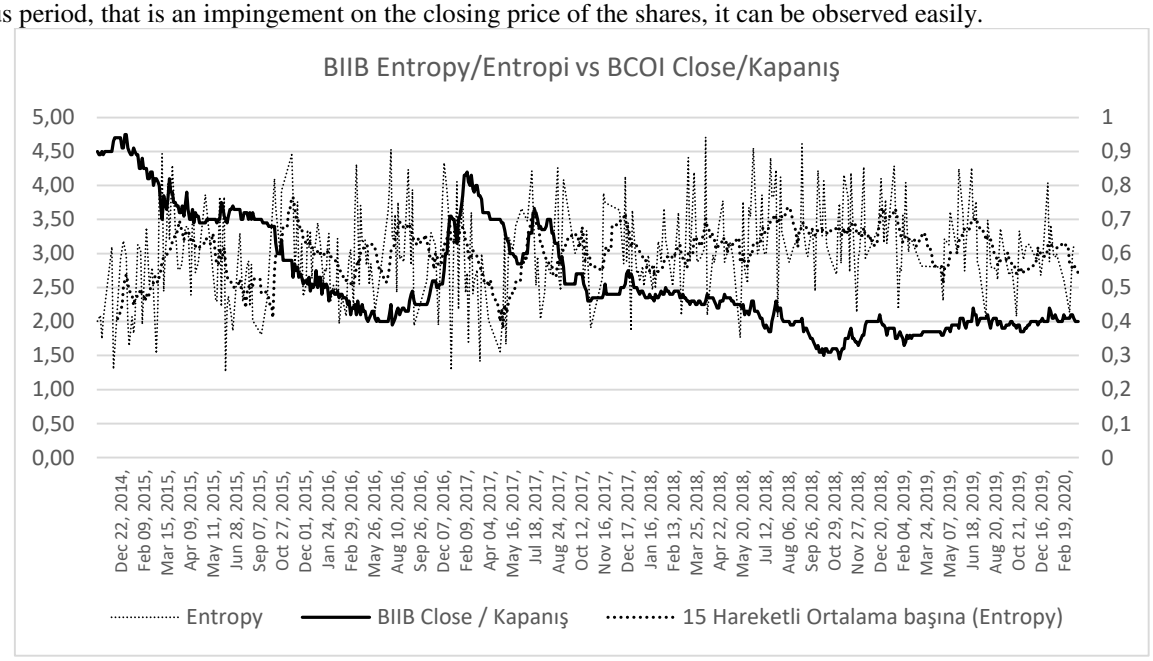

Figure 9: BIIB Entropy/Entropy Closing/Close Comparative

Figure 9 shares the work with the closing of entropy shows the difference in value of shares with a value that shows the relationship between the closing. Important here is that the entropy of the changes between December 2014 and December 2016 is an oscillation between 1.5 and 4.5 high. This oscillation in conjunction with a sudden decrease in the value of closing stock of the Bank, followed by a sudden upward trend is seen as.

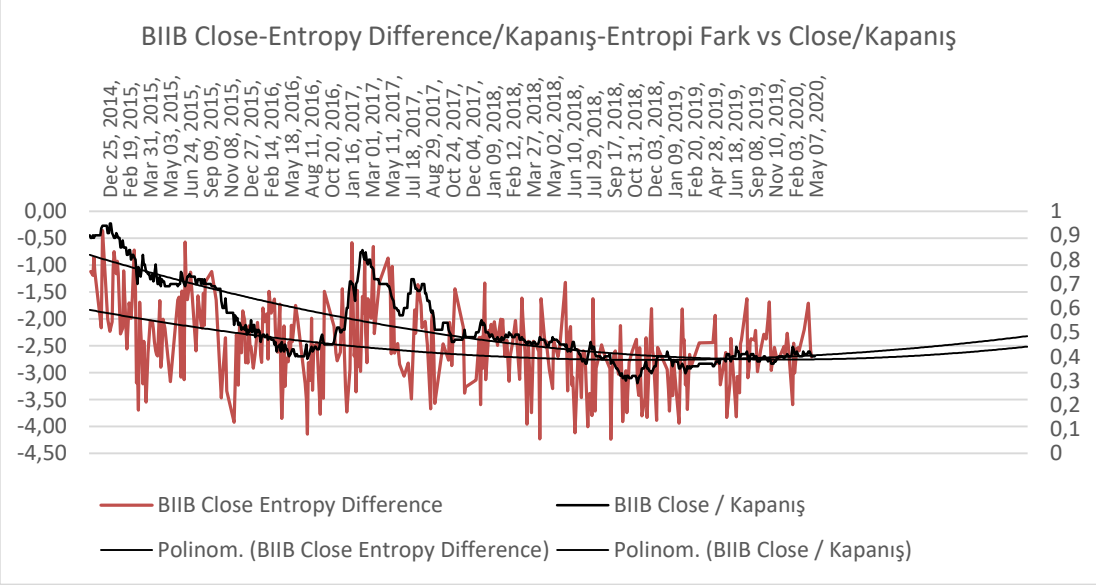

Figure 10: BIIB Close - Entropy Difference / Closing-Entropy Difference Cose / Closing Comparative

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Especially later than 2018, the average 3 began to follow a path to be slightly wavy. Figure 10 07 May 2020 after an annual fluctuations in process described above in the light of possible values on the chart is located. Accordingly, the 200-day closing values between 0.4 and 0.5 are expected to jam according to the movement.

Iraqi Middle East Investment Bank (BIME)

Net profit margin %13.9 bankanin2019 2020 third quarter and third-quarter net profit of comparison when looking at (1046) mln IRD from 2108 mln to IRD appears to have increased. 4294 total income mln from IRD 5479 mln there was an increase of IRD. The bank's total asset size 670.974 mln is IRD. Total liabilities compared to the previous year 457.343 mln IRD from 402.011 mln IRD has slowed down. Total equity increase from the previous year (2019) by 265.439 mln IRD from 268.963 mln IRDto be increased. A falling stock Nakist Flow 0.07 0.02 while HBK IRD IRD were found

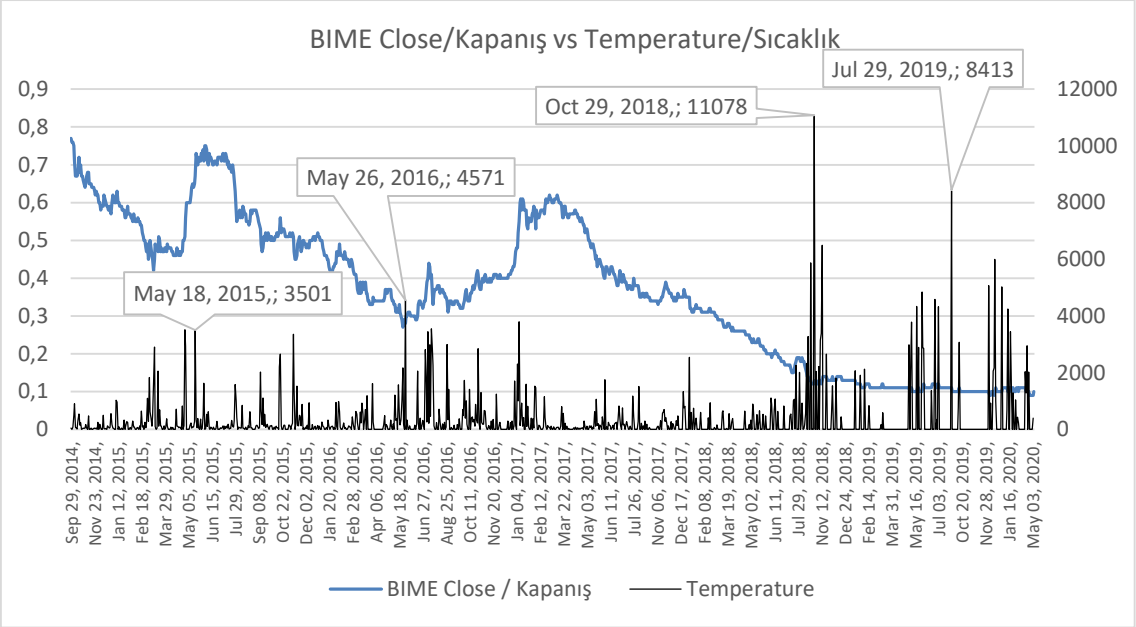

Figure 11: the symbols Closing/Close Temperature/Temperature Comparative

Cash provided by operating activities compared to the previous year shows a considerable drop in the company's cash inflows provided by investing activities is almost negligible. In addition to positive cash provided by financing activities was negative, while in 2020, the previous has returned.

When looking at Figure 11 2014 stock on this side of the downward trend is clear. However, especially in the temperature calculations made on May 18, 2015, 2016 May 26, 2018 October 29, 2019 by July 29, and post-it would not be wrong to say that history is decisive. Between the years of 2016-2017 temperature considering the trend of the variables shown in the graph as mixed, the temperature in the years that followed the rise of constantly breaks down or up continuously, it is likely that it will give. By 2018, confirms the hypothesis that continuation break in the process. In stock 2018 after the narrow trend (jam) and share the same values corresponding to the high temperature after 2020 the trend up again constantly constantly breaks down or shows that can give. Just a gas such as jam) and temperature the values of the stock price after 2020 and a boom (boom) or sudden crashes (crash) subjected to the influence of the kalabilirlig it seems possible.

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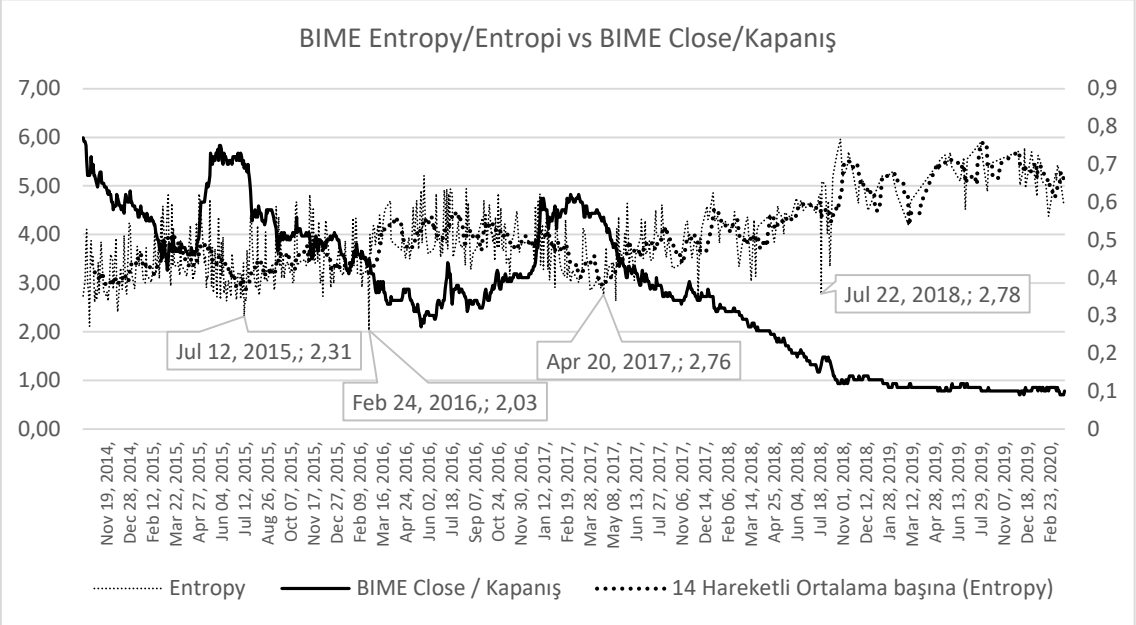

Figure 12: the symbols Entropy/Entropy Closing/Close Comparative

Figure 12 Entropy of refraction in particular July 12, 2015, 2016 February 24, 2017 July 22, 2018 and April 20 are parallel to the developments in the history of shows. Especially after 2018, the share price declined rapidly, parallel to the previous temperature graph entropy, there is an increase in value. So in closing stock values of entropy between the values of openness that might be followed by an excess of the sudden trend change in the precursor.

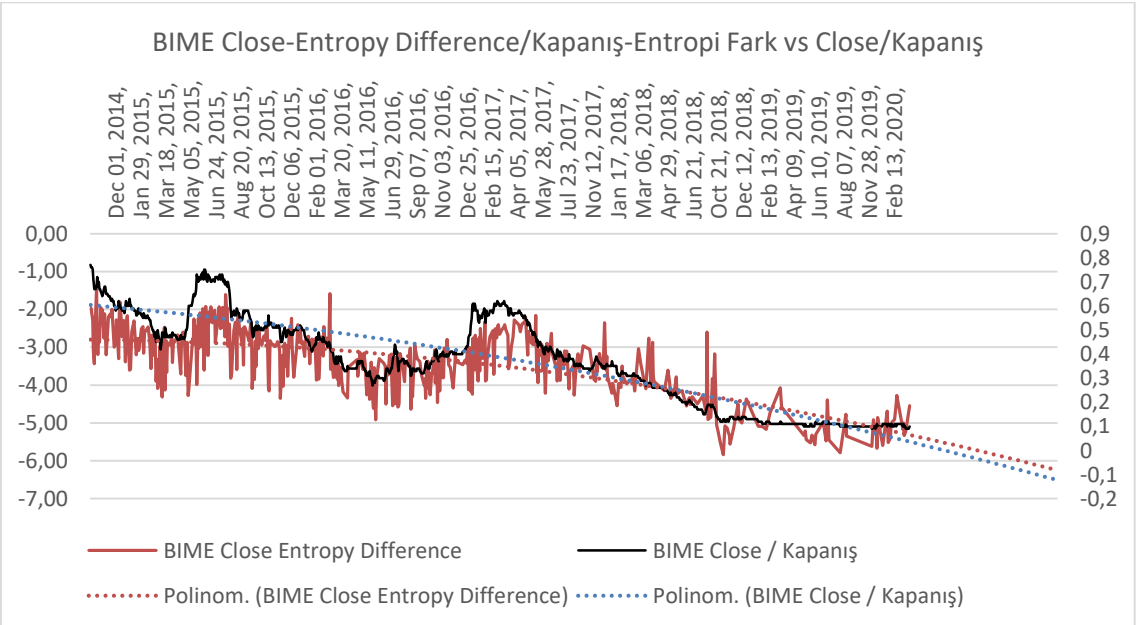

Figure 13: The symbols Close-Entropy Difference/Closing-Entropy Difference Cose/closing the kennelsthe astirmal

Figure 12 and Figure 13 are considered together after 2020 when the trend in the calculation of the bank after the sale of shares could fall further before giving strong could rise after al that seems to be out of the question. IRD is likely to remain for a long time in the vicinity of 0.1. In the calculations classic technical analysis technical indicators the possibility of a sale that it is possible to see at this point is strong. But for a long time at a high volume purchase/sales-defunct Bank of

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the cash flows of the firm after 2020 to organize and produce positive cash flows along with the emergence of possible scenarios between buying seems to be exceptional situations.

National Bank of Iraq (NBI), (BNOI)

The National Bank of Iraq, the most stable banks in the lead. Operating margin %net profit margin for the bank's 43.72 %35.76 it. 2019 total revenue 11216 mln by 2020, the bank IRD 17133 mln to IRD increased. Net profit 1597 mln from IRD 6978 mln IRD increased. Long-term debt to total assets ratio of 0.74 %, which is the company's debt to total assets ratio remained at the same level. Total assets, Total Liabilities, and total shareholders ' equity , respectively 797.670, 535.761, 261.909 mln was in the form of IRD. 0.18 0.07 per share cash flow per share income shares also has been at the level of the IRD IRD.

The change in cash provided by operating activities compared to the previous year to about 62% has increased. The effect of this increase in cash provided by investing activities has made at least the rate. (- 39%) provided by financing activities in the cash rate in 46% showed an increase. In general, all items are collected, when compared to the previous year of the change in net cash 598 % increased it is evident from the financial statements.

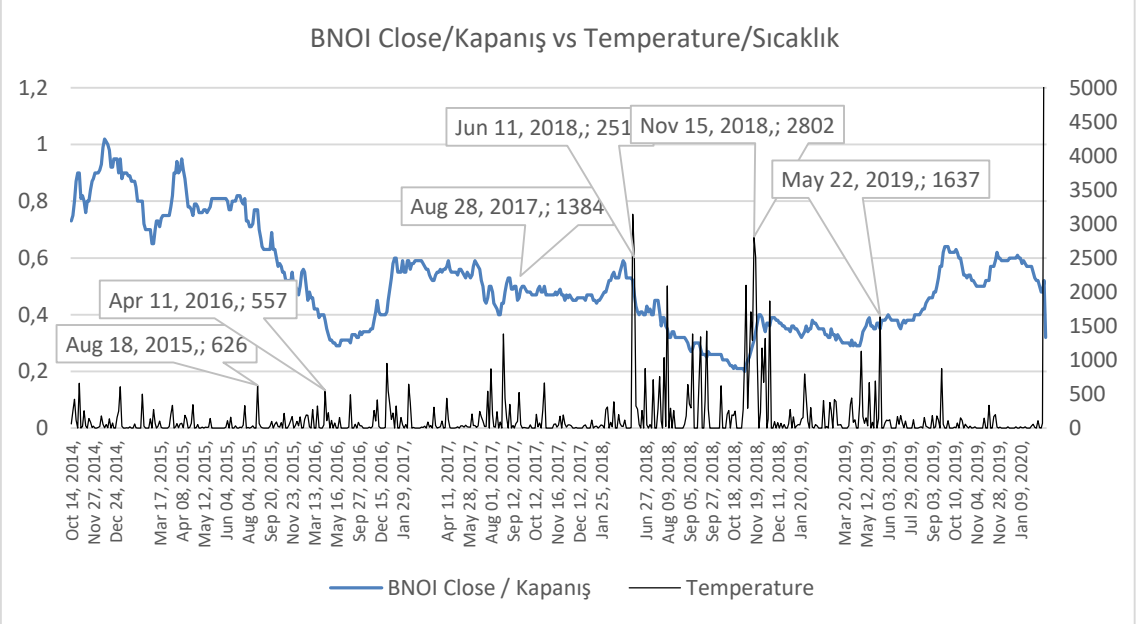

Figure 14: BNOI Closing/Close Temperature/Temperature Comparative

Figure 14 when looking at the critical date of August 18, 2015, 11 April 2016, 28 August 2017, 11 June 2018, 22 May 2019 15 November 2018 and it would not be wrong to say that. 2015 2016 2017 breakage and triggered a sudden temperature increase, especially upward. 2018 January –June like sudden temperature changes between the months of hard hard seems to be the harbinger of the movement up or down. By 2019 that accompanying with the decrease of a specific price range of the stock movements and oscillations trapped in 2020 and subsequent years, the movement provides information on what could be.

Figure 15; when looking at Entropy with the movement of stock price movements (as usual) this inverse relationship is observed. That goes to the expectations of decline trend prior entropy has been an increase in the value of the price of the shares goes again to the expectations of the ascension entropy monitoring resulted in a too complicated looking.

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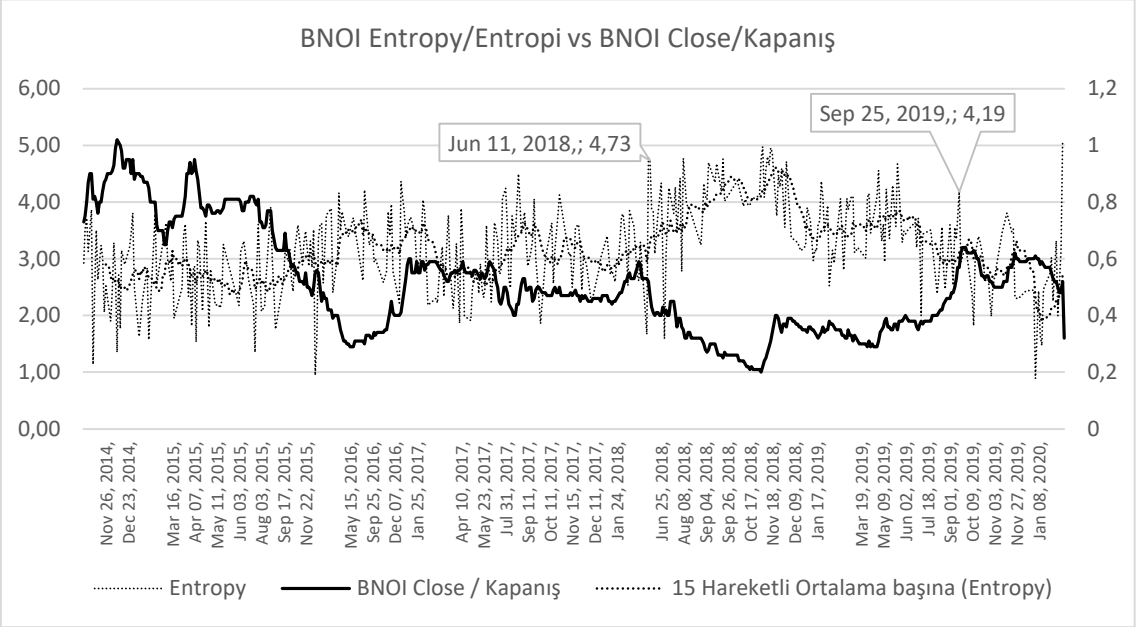

Figure 15: BNOI Entropy/Entropy Closing/Close Comparative

Figure 15 and 16 are examined together stock when mixed entropy oscillation going horizontally for a while, but after a long-term upward trend will be observed. Entropy 2020 after the rise of the price movements and 200-day averages shows that it is compatible with the trend.

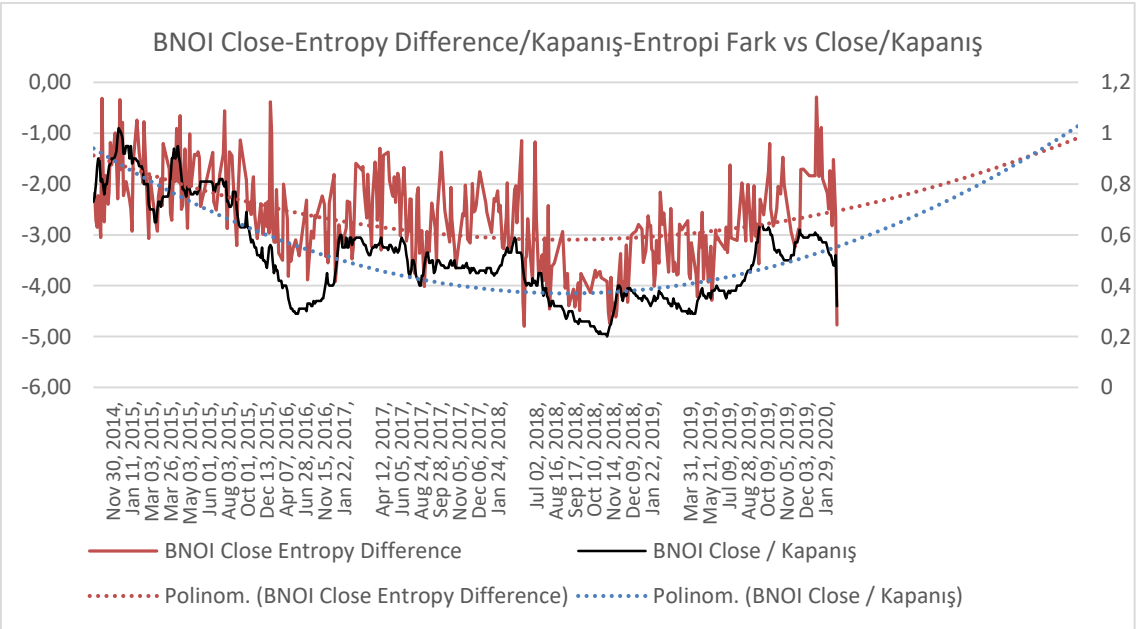

Figure 16: BNOI Close-Entropy Difference/Closing-Entropy Difference Cose/Closing Comparative

8. The Results Of The Research And Evaluatıon

It is normal for the Iraqi Economy to move well and badly from time to time. Within the framework of this normality, which is accepted even by the world, it is seen that the Iraqi banking system is generally motivated by energy

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transformations, especially oil, and foreign interest. On the other hand, considering the following points in the theoretical structure of the analysis, it is possible to repeat the conclusion: when evaluating the results of the research are made available daily closing values of the relevant bank with over million Iraqi dinars graphs and calculations and assessments specified in the method section were created. When considering the graphs, it was evaluated which December the temperature values were reached via the Closing Value and the Temperature graph and which behavior developed during a certain time interval with daily closing values before and after the temperature values. In the second type of chart, which is shown as the entropy-Closing values comparison, the entropy values calculated using temperature were compared before and after the closing values of the shares. In this part, which is also called financial entropy in the literature, it has been tried to reach which direction the closing values change in value before and after periods when the entropy is extremely high. In the graphical representation in the latest group, a comparison of the closing entropy difference between the share days and the closing value was made. In this section, it is aimed to determine the degree to which the closing value of the shares deviates from the entropy value. Again, the closing value of the stock is compared with the entropy change and whether it shows a directional or a different directional change. The obtained variable in this section has similarities in structure and functioning with the Beta variable considered in classical finance.

When looking at the Commercial Bank of Iraq, it is easily observed that the Tuesday values of entropy are increasing during periods when the increase and decrease are intense. Tuesday the swing in the share price and the swing in the entropic behavior before Tuesday seem to be stagnant. This may lead us to an analysis in the form of a STRONG BUY or a STRONG SELL on the back of the recession. A forward-looking forecast chart created by taking the entropy difference related to the closing price of the stock and comparing its value with the closing value shows that the bank's stock may rise in the next 12 months. The rise is moving along the December of 0.30-0.60. As for the Islamic Investment and Development Bank of Iraq, it has started to follow a slightly fluctuating course, especially after 2018, with an average of 3. In the light of the above, it presents the possible values of the fluctuation in the one-year period after May 07, 2020 in graphical form. Accordingly, it is expected that the closing values will be Decoupled between 0.4 and 0.5 according to the 200-day movement. Looking at the analysis of the Iraqi Middle East Investment Bank, the following points stand out: in the trend calculation after 2020, it seems that bank shares may fall further before SELLING and then BUYING STRONGLY, and then rise. It is likely to remain around 0.1 IRD for a long time. In classical technical analysis calculations, it is possible that technical indicators consider the probability of sales to be strong at this point. But for a long time at a high volume purchase/sales-defunct bank to organize and produce positive cash flows to the cash flows of the firm after 2020, along with the emergence of possible scenarios between buying seems to be exceptional situations. When the charts related to the National Bank of Iraq Tuesday are examined together, it is seen that the stock will go horizontal for a while with mixed entropy release values, but then it will enter long-term upward trend. Entropy movements show that price increases are in line with the 200-day averages in 2020 and later.

It is obvious that the developments in the banking sector will develop further with energy investments related to the purchase, sale and evaluation of oil and other energy factors. Dec process seems to have started with the bilateral energy agreements concluded between the Iraqi Government and the US Energy Companies. Opportunities related to the transition from gas to energy, cooperation related to the opening of October oil fields are important. Cash inflows can be provided by the improvement works to be carried out to the power plants supplying the Iraqi areas

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