

EVALUATION OF FINANCIAL PERFORMANCE OF BIST 100 COMPANIES WITH COPRAS METHOD

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Abstract

In this study, the financial performances of the companies in Borsa Istanbul are analyzed using the COPRAS method and the changes and dynamics in the sector are examined. During the periods analyzed, Koza Madencilik maintained its leadership in the mining sector thanks to its strong strategies and sustainable growth policies. Although companies such as Pegasus, Hektaş, Mia Teknoloji, Alarko Holding and Tüpraş exhibited a remarkable financial performance over the years, it was observed that Koza Mining maintained its long-term superiority. Mia Teknoloji, in particular, has shown a significant rise in the technology sector. Anadolu Efes, Mavi Giyim, Turkish Airlines and Sasa polyester are also ranked in the list of important and large-scale companies, but they have been observed to fluctuate economically in some periods. Companies such as Alarko Holding, Oyak Cement and Çelebi, which operate in the energy, construction and logistics sectors, also performed well and found a place in the top 10. This analysis contributes to a better understanding of the importance of financial indicators and the current situation of companies by exhibiting a ranking performance ranking among companies.

Keywords: COPRAS Analysis, Borsa Istanbul Firms, Financial Performance, Türkiye

Jel Codes: G10, G30, G32

Introduction

With the disappearance of economic and geographical borders in our globalizing world, the renewal of economic technological developments and changes in consumer demands and expectations have made institutionalization indispensable for businesses (Tatlı & Üstün, 2018). In this context, accurately assessing the financial performance of businesses is critical for achieving competitive advantage and sustainable growth. While financial performance shapes the strategic decisions of businesses, it also stands out as a guiding tool for investors.

Uncertainties in the economy affect all segments of society and lead to fluctuations in financial markets. This uncertain environment plays an important role, especially in the decision-making processes of investors. Theoretically, the best option for investors in times of heightened uncertainty is a "wait and see" policy. Therefore, investors may postpone their investment decisions and tend to avoid risk in an uncertain environment (Akdağ, 2021). This makes it difficult to accurately measure and compare financial performance.

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Performance evaluation is a multidimensional process for businesses and covers various functions such as production, marketing, and labor force (Seçme, 2022). However, since financial performance analysis generally provides more significant results, it is an area that should be prioritized in order for businesses to create a healthy growth strategy. Accurate financial performance evaluation not only enables the identification of the current situation but also provides critical information for strategic planning for the future.

In order to understand the performance and sustainability of businesses, the data obtained about the business must be evaluated with the financial analysis method. While conducting financial analysis, the company's characteristics such as both past and current financial data, ratios, and liabilities are analyzed (Batchimeg, 2017, 23), and the results obtained are presented to the senior management to contribute to the company's creation of sustainable strategies (Jackova, 2020, 164). While conducting financial performance analysis, the company uses its strengths, which it has determined by understanding its financial data very well, as leverage, and tries to make continuous improvements to make its weaknesses better (Tudose et al., 2022, 120), and as a result of these studies, it creates a sustainable growth environment (United Nations, 2015; European Commission, 2020; Kanzari, 2023,4). In order to identify the risks that businesses may face in advance, minimize the effects of the risk, and prevent businesses from falling into economic difficulties in the future, they should take the necessary precautions and perform risk and cost management (Mayer et al., 2019; Ghazieh et al., 2021, 183). On the other hand, businesses need to make rational decisions about where to use their resources and where to make their investments. When performing financial analysis, the future performance of businesses is estimated (Zahia et al., 2012, 2), and more realistic decisions are made regarding the management of resources and investments by foreseeing possible opportunities or negative situations that the business may encounter. As a result of the financial evaluations it has made so far, the company makes various comparisons by taking into account the situation of its competitors and the sector, and as a result, businesses try to create effective and result-oriented strategies in the sector where competition is intense (Holdford, 2018; Purwant, 2020,175). In order to be an effective actor in the sector and to be in a better position than its competitors, businesses should effectively explain their financial performance to their investments, receivables and employees, thus increasing the trust of all interest groups in the company (Chen et al., 2010,25) and ensuring that they understand better how the company is managed (Fuchs et al., 2021,6). As a result of all these evaluations, decision makers in businesses should have deep knowledge of the company's financial situation, allocate their resources effectively, and prepare and implement a comprehensive action plan that is applicable in the short and long term.

In this study, the performance of the companies in the BIST 100 index will be evaluated with the COPRAS method. COPRAS is one of the tools that provides a strong indicator for ranking alternatives as well as different financial factors. This method, which appears as a multi-criteria decision-making method, helps to make an objective and comprehensive evaluation, especially for those who want to evaluate various financial indicators at the same time.

Analyzing the financial performance of BIST 100 companies through the COPRAS approach will furnish investors with crucial insights, allowing them to make more informed market decisions. This study seeks to enhance comprehension of the financial robustness and competitiveness of companies through sectoral performance comparisons.

In the following part of the study, those who work in the field of financial performance using the COPRAS method are included. The main subject of the study, the relationship between the performance of the first 100 companies traded on Borsa Istanbul (DIST) and the performance of BIST, was tried to be measured using the COPRAS (Combinative Distance Based Ranking of Alternative Solutions) method and the results obtained are given.

Literature review

When Multi-Criteria decision-making processes are analyzed, the COPRAS method emerges as a successful approach that provides the weight of each criterion and the evaluation of its alternatives and disadvantages. COPRAS has gained significant recognition in the literature as a validated methodology, especially in areas like financial performance assessment, supplier selection, and investment decision-making. Some of these studies are given below.

Researcher s	Method(s)	Application Area	Results and Recommendations
Esbouei et al (2013)	FAHP, COPRAS	Multi criteria approach	Financial performance ranking of auto parts manufacturers listed in Tehran Stock Exchange was made by applying FAHP (Fuzzy Analytical Hierarchy Process and COPRAS models) based on six financial performance criteria.
Safaei Ghadikolaei et al. (2014).	FAHP, Fuzzy VIKOR, Aras F and Fuzzy COPRAS	Hybrid Approach	Financial performance evaluation of companies operating in the Tehran Stock Exchange (TSE) and in the automotive sector was made according to accounting and economic value criteria, companies were ranked using the Fuzzy COPRAS method, and it was concluded that economic value criteria were more important than accounting criteria.
Özbek et al. (2017)	ARAS and COPRAS	Multi Criteria Approach	İstanbul Menkul Kıymetle Borsası'nda (BIST) yer alan 7 faktoring şirketinin 2013-2016 yıllarına ait finansal verileri üzerinden ARAS ve COPRAS teknikleri kullanarak finansal performansları ölçülerek sıralama yapılmıştır.
Jurevičienė, et al. (2019)	SAW, COPRAS, geometric mean	Multi-Criteria Valuation Methods	SAW, COPRAS and Geometric Mean Method were used to determine the criteria affecting the performance of financial institutions, and it was concluded that the decrease in performance affects the reputation of the financial institution.
Anthony et al (2019)	TOPSIS, COPRAS, DEA, Entropy Shannon and Friedman test	Multi-criteria decision-making methods	They evaluated the financial data of 7 chemical companies operating in India for the period 2010-2018 using TOPSIS, COBRAS and DEA methods, used Entropy Shannon and Friedman tests, and concluded that there was no significant difference

Researcher s	Method(s)	Application Area	Results and Recommendations
Tepeli et al. (2020)	Promethee and COPRAS	Multiple Criteria Decision Techniques	between the values in TOPSIS and COPRAS. In order to determine which of the financial performance ranking methods shows the truth on the companies listed in BIST, they revealed that the Promethee and COPRAS methods provide similar and consistent rankings.
Şahin et al. (2020)	ARAS, COPRAS	Multiple Criteria Decision Techniques	According to the 2018 data of the Turkish construction sector companies listed in BIST, it was concluded that there was a similarity in the financial performances of the companies using COPRAS and ARAS methods, and Edip Gayrimenkul Yatırım ve Ticaret A.Ş. was the company with the best financial performance.
Lalic et al. (2021)	COPRAS	Serbia	They analyzed Serbia's trade efficiency using the COPRAS method.
Unvan and Ergenç (2021)	COPRAS, Fuzzy COPRAS, Entropy- COPRAS	Banking sector, financial performance	COPRAS and Fuzzy COPRAS methods effectively analyzed the financial performance of banks.
Unvan et al. (2022)	COPRAS	Fuzzy Multi- Criteria Decision-Making Technique	According to the reports from the Turkish Banking Association for the period 2014-2018, the financial performances of the banks were measured using the entropy and COPRAS methods.
Trost (2022)	SAW, COBRAS, TOPSIS, PROMETEE II	Multicriteria Decision Analysis	The financial performances of football clubs in the periods of 2018, 2019 and 2020 were evaluated using 5 methods, including the COPRAS method.
Say (2022)	ARAS, COPRAS	Multicriteria Decision Analysis	They ranked the financial performances of technological companies in BIST-XUTEK using ARAS (Additive Ratio Assessment) and COPRAS methods and concluded that the rankings were similar in these two applications.
Medetoğlu et al. (2023)	COPRAS, MOORA	Multiple Criteria Decision Techniques	The financial performances of the enterprises operating in the Paper and Paper Products Printing Sector,

Researcher s	Method(s)	Application Area	Results and Recommendations
Rinkevicius (2023)	CRITIC, COPRAS, Hierarchical Clustering	Sustainable finance	which are listed in BIST, were tried to be measured through financial ratios for the periods of 2016-2021, COPRAS and MOORA methods were used, and it was observed that the two methods created different financial performance rankings. Sweden ranked as the most concerned country regarding sustainable finance among EU nations.
Altun (2023)	OCRA, COPRAS, CRITIC, Spearman Correlation	Borsa Istanbul, publicly listed companies	OCRA and COPRAS effectively measured the financial competitiveness of publicly listed companies.
Serzante et al. (2024)	Pearson correlation, Multiple Linear Regression, Cook's distance method, K- nearest neighbour and COPRAS	Multi Criteria Decision Techniques	In order to use the sustainable performances of the companies, Pearson illumination, Multiple Linear Regression, Cook's distance method, K-nearest neighbors and COPRAS were applied, and it was revealed that there were inconsistencies between those calculated using the COPRAS method.
Elma (2024)	VIKOR, FUCA, MOORA, GRA, COPRAS, SAW and CODAS	Multi Criteria Decision Techniques	He analyzed 34 companies traded in the BIST sustainability index using the VIKOR, FUCA, MOORA, GRA, COPRAS, SAW and CODAS methods with the indices between 2019 and 2021, and found that COPRAS was the method with the lowest capacity.

The literature review reveals that the COPRAS method is used effectively in different fields and provides reliable results in decision-making processes. Especially in various application areas such as financial analysis, supplier selection, green investments, personnel selection, and urban quality of life, COPRAS stands out as an important tool in the evaluation of alternatives. Various studies emphasize the flexibility and accuracy of COPRAS, sometimes showing that its combination with other multi-criteria decision-making methods (COPRAS) provides better results. In addition, COPRAS plays an important role in strategic decision-making by providing decision-makers with more objective and reliable analysis in specific industries and sectoral applications.

Data and methodology

BIST 100, the most important indicator used in the evaluation of BIST, shows the stock transactions that show high performance from the perspective of the market and trading volume

seen by the person. It is seen that the BIST 100 index is seen as the most important indicator because of how effective the sentiments in the stock market are and how much sectoral diversity is reflected (Ünal et al, 2024,833). The BIST 100 index includes the highest value stocks in the market. This index tracks BIST's upward or downward movements. All investors who want to have a general view of BIST's overall performance follow this index (Midas). In this Context, the main objective of this study is to measure the relationship between the financial performance and stock market performance of 100 top-ranked companies listed on Borsa Istanbul (BIST) using the COPRAS (Combinative Distance-based Ranking of Alternatives Solution) method. The study analyzes data from 2014 to 2023, utilizing the yearly financial statements released by the corporations each year. The financial statements are examined using the annual balance sheet and income statement data released on the Public Disclosure Platform (PDP).

In this study, multiple criteria were used to evaluate financial performances. In analyzing these criteria, the COPRAS approach was used to evaluate and rank the financial performance of each company.

The study compares the financial performance of BIST 100 companies by analyzing 10 years of data between 2014 and 2023 and evaluates sector-specific performance. These evaluations can be important data for investors and financial experts. It can also help to understand the correlation between stock market performances.

Table 1: Companies Included in the Sample

Adel Kalemcilik	Coca Cola İçecek	Koç Holding	Rönesans Gayrimenkul Yat.
Anadolu Efes	Çimsa	Kaleseramik	Sabancı Holding
Anadolu Grubu Holding	Çelebi	Kontrolmatik Teknoloji	Sasa Polyester
Agrotech Teknoloji	Cw Enerji	Konya Çimento	Şişe Cam
Akfen GMYO	Doğuş Otomotiv	Koza Madencilik	Smart Güneş Enerjisi Tek.
Akfen Yen. Enerji	Doğan Holding	Koza Altın	Şok Marketler Ticaret
Aksa	Eczacıbaşı İlaç	Kardemir (D)	TAB Gıda
Aksa Enerji	Ege Endüstri	Katılımevim Tas. Fin.	TAV Havalimanları
Alarko Holding	Emlak Konut GMYO	Limak Doğu Anadolu	Turkcell
Alfa Solar Enerji	Enerya Enerji	Mavi Giyim	Türk Hava Yolları
Altınay Savunma	Enerjisa Enerji	Migros Ticaret	Tekfen Holding
Arçelik	Enka İnşaat	Mia Teknoloji	Tümosan Motor ve Traktör
ARD Bilişim Teknolojileri	Ereğli Demir Çelik	MLP Sağlık	Tofaş Oto. Fab.
Aselsan	Europower Enerji	Oba Makarnacılık	Türk Telekom
Astor Enerji	Ford Otosan	Odaş Elektrik	Türk Traktör
Bera Holding	Girişim Elektrik Sanayi	Otokar	Tukaş
Bim Mağazalar	Göлтаş Çimento	Oyak Çimento	Tüpraş
1000 Yatırımlar Hol.	Gübre Fabrik.	Papillon Savunma	Ülker Bisküvi
Borusan Boru Sanayi	Hektaş	Peker GMYO	Vestel Beyaz Eşya
Borusan Yat. Paz.	İş Y. Men. Değ.	Petkim	Vestel
Batı Çimento	Karsan Otomotiv	Pegasus	Yeo Teknoloji Enerji

Çan2 Termik	Kocaer Çelik	Reeder Teknoloji	Zorlu Enerji
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In the study, bank companies such as Akbank, Anadolu Sigorta, Beşiktaş Futbol Yat., Fenerbahçe Futbol, Garanti Bank, T. Halk Bankası, İş Bankası, Şekerbank, T.S.K.B., Türkiye Sigorta, Vakıflar Bankası, Yapı ve Kredi Bankası and companies for which there is no available data, including previous years, were excluded from the sample due to their non-compliance with the analysis criteria and insufficient data. In the sample of this study, enterprises with different financial structures such as financial institutions, insurance companies and sports clubs were also excluded from the sample.

In this study, an evaluation was made by looking at the financial status of the companies in BIST 100, the short and long-term assets, long and short-term debts and capital structure of the companies were taken into consideration, and the evaluation was made based on profitability, liquidity, efficiency and financial structure ratios. Since the financial performance of the companies determines their performance in BIST, their stock market performances were not included in this study. In this context, the financial ratios used in this study are shown in Table-2.

Table 2: Financial Ratios Used in the Analysis

	Financial Ratios	Explanation	Formula
Profitability	Gross Profit Margin	“It is the profitability ratio that the profit remaining after subtracting the cost of goods sold (COGS) from revenue (Maverick et al, 2024)”	$\frac{\text{Gross profit}}{\text{Total revenue}}$
	Return on Assets	“To use determine how efficiently a company uses its resources to generate a profit (Hargrave et al,2024)”	$\frac{\text{Operating income}}{\text{Average total assets}}$
	Operating Profit Margin	“gross profit and subtracts all overhead, administrative, and operational expenses (Maverick and Anderson, 2024)”	$\frac{\text{Operating profit}}{\text{Total revenue}}$

	Return on Equity	“a company's profit as a percentage of the combined total worth of all ownership interests in the company (Mitchell et al,2025)”	$\frac{\text{Net income}}{\text{Average shareholders' equity}}$
	Net Profit Margin	“the profit that remains after subtracting both the Cost of Good Sold and operating expenses from revenue (Maverick et al, 2024)”.	$\frac{\text{Net income}}{\text{Total revenue}}$
Liquid	Cash Rate	“To show a firm’s most liquid assets – cash and marketable securities”	$\frac{(\text{Cash} + \text{Short – term marketable investments})}{\text{Current liabilities}}$
	Current Ratio	“To determine a company ability to pay its short-term debt obligations”.	$\frac{(\text{Cash} + \text{Accounts Receivables} + \text{Marketable Securities})}{\text{Current liabilities}}$
	Liquid Ratio	the liquidity of a company by measuring how well its current assets could cover its current liabilities (Folger et all)	$\frac{(\text{Cash} + \text{Cash Equivalents} + \text{Current Receivable} + \text{Marketable Securities})}{\text{Current liabilities}}$
Productivity	Asset Turnover	“to measure the value of a company's sales or revenues relative to the value of its assets (Hayes et	$\frac{\text{Total Sales}}{(\text{Beginning Assets} + \text{Ending Assets})/2}$

		al, 2024).	
	Inventory Turnover Time	“to measure the number of times a company's inventory is sold and replaced over a certain period (Fernando et al,2024)”	$\frac{COGS(Cost Of Goods Sold)}{Average Value Of Inventory}$
	Receivable Turnover Period	“to measure the number of times a company collects its average accounts receivable balance (Murphy, 2024)	$\frac{Net Credit Sales}{Average Account Receivable}$
Financial Structure	Financial Leverage	“the concept of using borrowed capital as a funding source (Hayes et al. 2024)	$\frac{Total Debt}{Total Assets}$
	Total debt equity	“how much debt a company carries compared to the value of the assets it owns (Hayes et al, 2024)	$\frac{Short Term Debt + Long Term Debt}{Total Assets}$
	Equity / Total Assets	“To show total equity within total assets”	$\frac{Equity}{Total Assets}$

Methodology of the study

The COPRAS method, developed by Zavadskas and Kaklauskas at Vilnius Gediminas Technical University in 1996, is a method used to address the challenges of multi-criteria decision making by evaluating both maximum and minimum criteria values. It is also seen as a method that helps to determine values and weights directly and proportionally by evaluating methods such as prioritization and utility of alternatives.

COPRAS has also been widely used in financial performance assessments. For example:

- Performance evaluation of oil production companies (Rabbani et al., 2014),
- Evaluation of hotel projects (Zolfani et al., 2018),
- Financial analysis of construction projects (Zolfani and Zavadskas, 2013).

In financial performance evaluations, the COPRAS method stands out as an effective tool for comparing alternatives and selecting the most appropriate financial strategies.

Step (1) The method consists of steps such as creating the decision-making matrix and determining the weights of the criteria.

$$r_{ij} = \frac{x_{ij}}{\sum_{i=1}^n x_{ij}} \quad (1)$$

x_{ij} denotes the value of criterion i in alternative j of the solution; m represents the number of criteria, and n represents the number of alternatives compared. q_i is the weight of criterion i .

Stage 2: Computation of the Weighted Normalized Decision Matrix (DD) A weighted normalized decision matrix (DD) is constructed at this stage. This matrix aims to provide dimensionless weighted values through comparison indices. The dimensionless values render all criteria similar to one another.

As a result of this process, all criteria are evaluated on the same scale, and comparison between alternatives becomes possible.

$$d_{ij} = \frac{x_{ij} q_i}{\sum_{i=1}^m \sum_{j=1}^n x_{ij} q_i} \quad (2)$$

Upon completion of this stage, the normalized decision matrix is obtained:

Here DD is the normalized decision matrix containing the dimensionless and weighted criteria values. This matrix enables comparisons between alternatives.

$$P_{ij} = \frac{a_{ij}}{\sum_{j=1}^m a_{ij}}$$

(3)

Step (4) The sum of the dimensionless weighted index values for each criterion x_i (d_{ij}) is always equal to the weight of that criterion (q_i).

$$q_i = \sum_{j=1}^n d_{ij}, i = \overline{1, m}; J = \overline{1, n}; \quad (4)$$

Step 3: Sums of Weighted Normalized Indices In this stage, the sums of the weighted normalized indices representing alternative j are calculated. Alternatives are defined by the indices to be minimized ($S_j - S_j^-$) and the indices to be maximized ($S_j + S_j^+$).

The lower the value of the indices to be minimized (e.g., the cost of renovating a building), the better the achievement of the targets.

The higher the value of the indices to be maximized (e.g., comfort and aesthetics), the better the achievement of the objectives.

$$S^+ = \sum_{i=1}^m d^+_{ij}; S^- = \sum_{i=1}^m d^-_{ij}, J = \overline{1, m}; J = \overline{1, n}; \quad (5)$$

Step 4: Calculating the Relative Weight of Each Alternative The relative importance of each alternative (Q_jQ_j) is determined using positive ($S_j+S_j^{+}$) and negative ($S_j-S_j^{-}$) indices. The relative importance is calculated using the following formula (Antucheviciene et al. 2011:322):

$$Q_j = S + J + \frac{S_{-min} \sum_{j=1}^n S_{-j}}{S_{-j} \sum_{j=1}^n \frac{S_{-min}}{S_{-j}}} \quad (6)$$

Stage 5: Prioritization of Alternatives The relative importance of each alternative (Q_jQ_j) is ranked from greater to lesser importance. The higher the value of Q_jQ_j , the higher the efficiency of the alternative. The higher the value of the overall criterion Q_jQ_j , the higher the efficiency of the alternative.

Stage 6: Assessing the degree of benefit for each alternative Compute the utility degree (N_jN_j) of each option to visually evaluate the efficacy of the choices. The level of utility is assessed by contrasting the alternative under consideration with the most efficient one available. In this case, we categorize all utility values associated with the evaluated option within the range of 0% to 100%. This calculation is a crucial phase in evaluating the efficacy of options and identifying the best suitable option.

$$N_j \left(\frac{Q_j}{Q_{max}} \right) \times 100\% \quad (7)$$

Implementation and findings

In this section of this study, the financial performances of 10 companies in the BIST 100 index are evaluated between 2014 and 2023 using the COPRAS method. While comparing the financial performance, the COPRAS method was used to evaluate the financial performance of the companies in the light of the data obtained from the financial statements reported by the companies on the Public Disclosure Platform (PDP) until 2023, and the companies were ranked according to their performance. The table created according to the COPRAS method is based on the decision matrix created with the data taken between 2014 and 2023 in the rows where BIST 100 companies are included and in the columns where the evaluation factors are included. Performance Index (PI) was analyzed by ranking. Although all companies in the BIST 100 were included in the study, the top 10 companies with the best performance were included in the ranking in order to obtain 10 years of data and to avoid too much space.

Table 3: Rates for 2023 and 2022

2023 Year Rates			2022 Year Rates		
Firms	PI	Ranking	Firms	PI	Ranking
Borusan Yat. Paz.	100	1	Koza Altın	100	1
Koza Altın	28,60963	2	Konya Çimento	89,82127	2
Katılımevim Tas. Fin.	17,00477	3	Ege Endüstri	81,96365	3
Hektaş	5,255156	4	Akfen Yen. Enerji	81,78948	4
Şok Marketler Ticaret	3,171167	5	Alfa Solar Enerji	78,79428	5
Doğan Holding	2,772035	6	Coca Cola İçecek	69,3992	6
Kaleseramik	2,762758	7	Bera Holding	68,98547	7
Kontrolmatik Teknoloji	2,101346	8	Mavi Giyim	67,1263	8

Alarko Holding	2,091352	9	Rönesans Gayrimenkul Yat.	66,63421	9
Emlak Konut GMYO	2,00357	10	Şok Marketler Ticaret	65,18651	10

According to 2023 COPRAS results, Borusan Yat. Paz. (PI: 100), while Koza Altın and Katılımevim show high performance, respectively. Firms such as Şok Marketler and Hektaş exhibit moderate performance, while Alarko Holding, Emlak Konut, and Kontrolmatik are ranked with lower performance. Overall, Borusan is the leader, while the performance of other firms varies depending on sectoral differences and management strategies.

According to the 2022 Year Rates, Koza Altın (PI: 100) is ranked 1st, followed by Konya Çimento (PI: 89.82) in 2nd place. Ege Endüstri (PI: 81.96) ranks 3rd, while Akfen Yen. Enerji (PI: 81.79) takes 4th place. Alfa Solar Enerji (PI: 78.79) is in 5th place, and Coca Cola İçecek (PI: 69.40) holds 6th place. Bera Holding (PI: 68.99) is ranked 7th, with Mavi Giyim (PI: 67.13) in 8th place. Rönesans Gayrimenkul Yat. (PI: 66.63) ranks 9th, and Şok Marketler Ticaret (PI: 65.19) is in 10th place.

Table 4: Rates for 2021 and 2020

2021 Year Rates			2020 Year Rates		
Firms	Pİ	Rankin g	Firms	Pİ	Rankin g
Kardemir (D)	100	1	Koza Madencilik	100	1
Ülker Bisküvi	41,4643276	2	Borusan Yat. Paz.	32,72477	2
Borusan Yat. Paz.	30,004194	3	Kardemir (D)	8,890122	3
Katılımevim Tas. Fin.	7,8147323	4	Mavi Giyim	6,497431	4
Adel Kalemcilik	7,14559341	5	Anadolu Grubu Holding	4,500644	5
Cw Enerji	6,8947642	6	Akfen GMYO	4,182881	6
Migros Ticaret	5,07942455	7	Smart Güneş Enerjisi Tek.	2,727434	7
Şok Marketler Ticaret	5,01916182,9773711	8	Turkcell	2,318784	8
Karsan Otomotiv	2	9	Reeder Teknoloji	2,013391	9
Anadolu Grubu Holding	2,91679035	10	Tüpraş	1,982774	10

According to 2021 COPRAS results, Kardemir (D) (PI: 100) ranks at the top with the highest performance, while Ülker Bisküvi (PI: 41.46) ranks second. Borusan Yat. Paz. (PI: 30.00) is in third place with a strong performance. Katılımevim (PI: 7.81) and Adel Kalemcilik (PI: 7.15) are among the companies with moderate performance. Retail and energy sector companies such as Cw Enerji (PI: 6.89) and Migros Ticaret (PI: 5.08) also show reasonable performance. Şok Marketler Ticaret (PI: 5.02) and Karsan Otomotiv (PI: 2.98) underperform, respectively. Finally, Anadolu Group Holding (PI: 2.92) ranks 10th with an underperformance. Overall, Kardemir is the leader, while the performance of other companies varies according to sectoral differences and management strategies.

According to 2020 COPRAS results, Koza Madencilik (PI: 100) is in the leading position with the highest performance. Borusan Yat. Paz. (PI: 32.72) is in second place with a strong performance, while Kardemir (D) (PI: 8.89) is in third place. Mavi Giyim (PI: 6.50) and Anadolu Grubu Holding (PI: 4.50) are among the companies with moderate performance, while

Akfen REIT (PI: 4.18) ranks 6th with a lower performance. Smart Güneş Enerjisi Tek. (PI: 2.73), Turkcell (PI: 2.32), Reeder Teknoloji (PI: 2.01), and Tüpraş (PI: 1.98) are underperformers, respectively. Overall, while Koza Madencilik maintains its leading position in the sector, the performance of other companies varies across sectors.

Table 5: Rates for 2019 and 2018

2019 Year Rates			2018 Year Rates		
Firms	PI	Ranking	Firms	PI	Ranking
Koza Madencilik	100	Koza Madencilik	Peker GMYO	100	1
Mia Teknoloji	8,967752	Mia Teknoloji	Akfen Yen. Enerji	73,95056553	2
Tekfen Holding	8,6862	Tekfen Holding	Koza Altın	57,37012876	3
Akfen Yen. Enerji	6,755933	Akfen Yen. Enerji	Coca Cola İçecek	48,25090475	4
Hektaş	5,283315	Hektaş	Alarko Holding	44,35830739	5
Konya Çimento	5,096695	Konya Çimento	Ülker Bisküvi	43,84554542	6
Enka İnşaat	4,995066	Enka İnşaat	Aselsan	42,97286528	7
Gübre Fabrik.	4,7677	Gübre Fabrik.	Türk Traktör	40,91753736	8
Sasa Polyester	4,464517	Sasa Polyester	Anadolu Grubu Holding	38,81208598	9
Mavi Giyim	4,172773	Mavi Giyim	Kontrolmatik Teknoloji	37,74591366	10

According to 2019 COPRAS results, Koza Madencilik (PI: 100) ranks first with the highest performance. Mia Teknoloji (PI: 8.97) and Tekfen Holding (PI: 8.69) are ranked second and third, respectively, both showing strong performance. Akfen Yen. Energy (PI: 6.76) and Hektaş (PI: 5.28) are among the companies with moderate performance. Konya Cement (PI: 5.10) and Enka Construction (PI: 4.99) continue to perform, respectively. Gübre Fabrikaları (PI: 4.77) and Sasa Polyester (PI: 4.46) underperform but still maintain their positions in the sector. Overall, Koza Madencilik continues to lead, while the performance of other companies is shaped by sectoral differences.

According to the 2018 Year Rates, Peker GMYO (PI: 100) holds the top position, followed by Akfen Yen. Enerji (PI: 73.95) in 2nd place. Koza Altın (PI: 57.37) ranks 3rd, while Coca Cola İçecek (PI: 48.25) takes 4th place. Alarko Holding (PI: 44.36) is in 5th place, and Ülker Bisküvi (PI: 43.85) holds 6th place. Aselsan (PI: 42.97) ranks 7th, with Türk Traktör (PI: 40.92) in 8th place. Anadolu Grubu Holding (PI: 38.81) is in 9th place, and Kontrolmatik Teknoloji (PI: 37.75) completes the top 10 rankings.

Table 6: 2017 and 2016 Ratios

2017 Year Rates			2016 Year Rates		
Firms	PI	Ranking	Firms	PI	Ranking

Pegasus	100	1	Koza Madencilik	100	1
Anadolu Grubu Holding	37,44555937	2	Sabancı Holding	39,78455946	2
Çelebi	27,80789379	3	Alarko Holding	28,85358231	3
Tüpraş	25,71514254	4	Pegasus	28,44643524	4
Akfen GMYO	22,22640737	5	Akfen GMYO	22,95545055	5
Coca Cola İçecek	21,98742442	6	Mavi Giyim	21,92636256	6
Mavi Giyim	19,57635787	7	Hektaş	18,85969687	7
Türk Hava Yolları	18,38231736	8	Konya Çimento	17,44696885	8
Kardemir (D)	17,62877675	9	Borusan Yat. Paz.	14,90502564	9
Sasa Polyester	17,4624508	10	Aselsan	14,83410696	10

According to 2017 COPRAS results, Pegasus (PI: 100) ranked first with the highest performance, while Anadolu Group Holding (PI: 37.45) and Çelebi (PI: 27.81) were the strong performers. Tüpraş (PI: 25.72) and Akfen REIT (PI: 22.23) are among the companies with moderate performance, while Coca Cola İçecek (PI: 21.99) shows a similar performance. Mavi Giyim (PI: 19.58) and Turkish Airlines (PI: 18.38) underperform, respectively. Kardemir (D) (PI: 17.63) and Sasa Polyester (PI: 17.46) are at the bottom of the rankings. Overall, Pegasus continues to lead the sector, while the performance of other companies varies across sectors. According to 2016 COPRAS results, Koza Madencilik (PI: 100) is in the leading position with the highest performance. Sabancı Holding (PI: 39.78) and Alarko Holding (PI: 28.85) are among the strong performers, respectively. Pegasus (PI: 28.45) also ranks fourth, while Akfen GMYO (PI: 22.96) and Mavi Giyim (PI: 21.93) are moderate performers. Hektaş (PI: 18.86), Konya Cement (PI: 17.45), and Borusan Yat. Paz. (PI: 14.91) are underperforming. Aselsan (PI: 14.83) is near the bottom of the rankings. Overall, Koza Madencilik continues to lead the sector, while other companies are ranked according to sectoral differences and performance levels.

Table 6: 2015 and 2014 Ratios

2015 Year Rates			2014 Year Rates		
Firms	PI	Ranking	Firms	PI	Ranking
Hektaş	100	1	Ülker Bisküvi	100	1
Alarko Holding	85,44588	2	Koza Madencilik	9,429665	2
Anadolu Efes	66,06617	3	Hektaş	4,742703	3
Koza Madencilik	51,2009	4	Türk Hava Yolları	4,353614	4
Akfen GMYO	44,04635	5	Akfen GMYO	3,549557	5
Pegasus	43,54764	6	Oyak Çimento	3,265952	6
Çelebi	39,57337	7	Anadolu Efes	3,229709	7
Mavi Giyim	34,86377	8	Mavi Giyim	3,086815	8
Coca Cola İçecek	34,2737	9	Tüpraş	2,685574	9
Sasa Polyester	32,25029	10	Alarko Holding	2,190489	10

According to 2015 COPRAS results, Hektaş (PI: 100) ranks first with the highest performance, while Alarko Holding (PI: 85.45) and Anadolu Efes (PI: 66.07) show strong performances, respectively. Koza Madencilik (PI: 51.20) and Akfen REIT (PI: 44.05) are among the mid-level performers, while Pegasus (PI: 43.55) and Çelebi (PI: 39.57) are similarly strong performers. Mavi Giyim (PI: 34.86) and Coca Cola İçecek (PI: 34.27) underperform, respectively, but are still among the major players in the sector. Sasa Polyester (PI: 32.25) is at the bottom of the ranking. Overall, Hektaş is in the leading position, while the other companies have strong performances and make up the rankings.

According to 2014 COPRAS results, Ülker Bisküvi (PI: 100) ranked first with the highest performance, while Koza Madencilik (PI: 9.43) and Hektaş (PI: 4.74) showed strong performances. Turkish Airlines (PI: 4.35) and Akfen REIT (PI: 3.55) are among the moderate performers, while Oyak Cement (PI: 3.27) and Anadolu Efes (PI: 3.23) perform similarly. Mavi Giyim (PI: 3.09) and Tüpraş (PI: 2.69) underperform but are among the major players in the sector. Alarko Holding (PI: 2.19) is at the bottom of the ranking. Overall, Ülker Bisküvi is in the leading position, while other companies exhibit different levels of performance with sectoral differences.

Conclusion

The COPRAS results of the last 10 years comprehensively reveal how the financial performance of Borsa Istanbul firms has shaped over time and the effects of sectoral dynamics on their rankings. Analyses on an annual basis show that certain firms sustain their strong performance over the long term, while others experience annual performance fluctuations due to sectoral changes and market conditions.

From 2014 to 2023, Koza Madencilik sustained its industry leadership, achieving the top position in the rankings annually. This company has effectively established its robust position in the mining sector and its sustainable growth methods, allowing it to lead the COPRAS rankings by sustaining high financial metrics. Koza Madencilik, which led the industry in 2016, 2017, 2020, 2021, 2022, and 2023, sustained its performance by markedly distinguishing itself from competitors in the sector. The primary variables contributing to this include the company's robust management methods, investor confidence, and efficient expansion initiatives in the market.

In 2017, companies like Pegasus (PI: 100) excelled; however, Koza Madencilik's strong performance did not preclude its resurgence in subsequent years. In 2015, Hektaş established a robust position in the sector, while Koza Madencilik reinforced its leadership with long-term initiatives. Prominent and sizable corporations like Sabancı Holding and Alarko Holding have consistently been key participants in the sector, demonstrating robust performance over the years and securing leading positions in the rankings.

Koza Mining maintained its sector leadership by ranking high from 2014 until 2023. The company, which continues to maintain its strong position in the mining sector, continues to maintain its sustainable growth methods effectively, and it is seen that the company continues to be in the top rankings in 2016, 2017, 2020, 2021, 2022 and 2023. The company's strong management and good values in its financial indicators are considered to contribute to this leadership.

Pegasus came to the forefront in 2017, but in other years, Koza Mining again dominated and ranked high. In 2015, Hektaş achieved a strong position. When the strong performance and ranking of companies such as Sabancı Holding and Alarko are examined, it is seen that they are among the stable companies in the sector.

It is seen that Mia Technology and Tekfen Holding found a place among the top 10 companies with their performances in 2019. In addition, the fact that a renewable energy-oriented company such as Akfen is in the ranking in 2019 shows that their growth based on sustainable and environmentally friendly techniques is important.

In addition, leading companies in the sector such as Anadolu Efes, Mavi Giyim, Sasa Polyester, Tüpraş, Turkish Airlines and Coca-Cola İçecek were also included in the ranking, but their performance varied. These companies have faced various financial hurdles each year, and their performance has fluctuated due to sectoral changes and economic volatility. A reputable brand such as Anadolu Efes earned a prominent place in the ranking by developing strategies in line with changes in consumer demand in the beverage sector and global economic conditions.

Alarko Holding and Tüpraş are notable value companies with strong performances in 2016, 2017 and 2020. It is seen that the companies found a place in the top 10. Mavi Giyim ranked in the top ten from 2014 to 2017 and again in 2019.

In 2014 Ülker Bisküvi, in 2015 Hektaş, in 2016 Koza Madencilik, in 2017 Pegasus, in 2018 Paker GMYO, in 2019 Koza Madencilik, in 2020 Koza Madencilik, in 2021 Kardemir, in 2022 Koza Gold and in 2023 Borusan Yat Paz. It is seen that the companies are in the first place. It is noteworthy that the company that ranked first the most in the last 10 years is Koza Mining.

This study examines how the COPRAS method is used to evaluate the financial health and ranking of the companies in the BIST 100, to show the status of the companies in the index by ranking them among each other and to contribute to their development.

The study seeks to guide the development of sectoral strategies and the implementation of sustainable growth policies to support the financial performance of companies listed on Borsa Istanbul. In particular, it is evaluated that the performance values of critically important companies such as mining, energy, technology and logistics can increase with the increase of incentives. At a time when the technology sector is in the midst of a period of semi-successful and rapid growth, the fact that technology companies are ranked in the top 10 is seen as an important added value for the country. In addition, it is an important indicator that energy companies will find a place in the top 10, especially in 2022. Companies in Borsa Istanbul should develop resilience plans against market changes and ensure that their financial situation is more predictable by providing financial incentives for long-term investments. It should be kept in mind that the development and growth of companies in Borsa Istanbul will increase Turkey's competitiveness in financial markets and continue to grow in a sustainable and stable manner.

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