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The Impact of Inflation Adjustment on The Financial Performance of Companies: A Study of The Retail and Wholesale Sectors

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Abstract: *In Türkiye inflation adjustment became mandatory in 2023 because the conditions were met. Accordingly, this study aimed to determine the effect of the implementation of Turkish Accounting Standards (TAS) 29 Financial Reporting in High Inflation Economies on the financial performance of companies in Türkiye. The financial performance of retail and wholesale companies traded on Borsa Istanbul (BIST) was assessed by examining their financial statements for 2022 using the Dupont analysis with and without inflation adjustments. The statistical significance of the results was evaluated using the Wilcoxon test. The results showed that the average profits of the sectors decreased, the equity multiplier decreased, the debt ratio increased, and the profitability ratios over sales, assets, and equity decreased. The change of return of equity was statistically significant, with most companies' return of equity decreasing due to inflation. However, the decline was much more significant in the wholesale than retail sector. The financial performance rankings of the companies in the study changed after adjusting for inflation, which suggests that inflation adjustment should be applied in economies with high inflation to ensure accurate company performance assessments and informed management decisions.*

Keywords: TAS 29, Financial Performance, Retail and Wholesale Sectors, Dupont Analysis, Wilcoxon Test

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1. Introduction

The reliability and fair presentation of financial statements are of primary importance because a company's stakeholders need the company's financial statements to make economic decisions about its performance. However, although the preparers of financial statements try to prepare financial statements in accordance with all accounting rules and principles, certain factors, including inflation, can negatively affect the information reported in financial statements.

Defined as a continuous increase in the general level of prices, inflation is a problem that Türkiye has faced since the 1970s (Bilici, 2010: 1-2). High inflation affects companies as well as individuals and societies. The decisions of users of financial statements are also affected by inflation because it distorts financial statements in a number of ways. First, inflation rates and interest rates are closely related in that, inflationary expectations increase investors' risk, thereby causing interest rates to also rise. Rising interest rates increase the cost of using foreign resources. Second, it is difficult to make consistent forecasts during inflationary periods. One of the main problems facing companies in inflationary economies is the lack of capital. More

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capital is needed to pay more for the replacement of goods sold, to increase labor costs and to develop companies. Third, company profits often do not reflect reality when there is inflation in that constantly increasing prices mean that high profits are reported for low-cost sales. This in turn reduces the company's resources. Fourth, high prices make it difficult to replace fixed assets. Finally, the value of fixed assets does not reflect reality (Ceylan, 2001: 17-18).

In order to prevent inflation having a negative effect on financial statements, inflation adjustment can be applied in high inflation economies. In Türkiye, for example, inflation adjustment was reapplied from 2023 due to inflationary conditions. Accordingly, any entity applying Turkish Accounting Standards (TAS) 29 was required to make retrospective adjustments in accordance with paragraphs 40A and 40B of TAS 1 Presentation of Financial Statements. In particular, the entity is required to restate the balance sheet at the end of the current period, the end of the previous period, and the beginning of the previous period (TAS 1, p.40B). Thus, the inflation adjustment was not only made for the 2023 financial statements but also for the 2021 and 2022 financial statements.

Traditional accounting is inadequate in inflationary environments. In such cases, an alternative accounting model known as inflation adjustment is used (Açık, 2010: 352). There are two different approaches to inflation accounting (Poroy Arsoy & Gücenme, 2009).

- Adjusting the recorded historical data for changes in the value of the monetary unit since each item was acquired. This method accounts for changes in the general price level.
- Carrying the recorded historical cost data of each item in the financial statements to their current values. This method addresses the specific price changes of individual items.

The application of inflation adjustment resulted in significant changes to companies' financial statements and profits (Akgemci et al., 2024: 162; Akpınar et al., 2024: 360; Koçak et al., 2023: 1526; Yılmaz, 2023: 941). Accordingly, the present study aims to determine changes in the financial performance of companies in Türkiye registered in the retail and wholesale trade sectors traded on Borsa Istanbul (BIST). To do so, the study compares their original 2022 financial statements with the financial statements for 2022 adjusted according to TAS 29 after the introduction of the inflation adjustment requirement.

The change in the companies' financial performance was evaluated in three stages. First, comparative table analysis was conducted to examine changes in company net profit due to the inflation adjustment. Second, Dupont analysis was conducted to evaluate the financial ratios that should be taken into account in determining financial performance. Third, statistical analysis was conducted to determine the significance of these changes.

The study makes two contributions to the literature. First, while some studies have examined the effects of inflation adjustment on financial statements, very few are based on reported data. In contrast, the present study analyzes financial data reported by companies, so the results reflect each company's actual situation. Second, to the best of our knowledge, no previous study has evaluated the effect of inflation adjustment on financial performance using the Dupont analysis, although it is an important evaluation technique in financial analysis, Overall, the study can contribute to the literature by determining the effect and benefit of inflation adjustment in determining the real performance of each company, thereby contributing to stakeholder evaluations.

The rest of the article is organized as follows. Section 2 analyzes the relevant literature. Section 3 explains the scope of the research, the methodology, and the research questions. Section 4 presents the findings and Section 5 draws some conclusions.

2. Literature

There are many studies on inflation adjustment in the literature. However, the number of studies in which firm performance is determined by firms' actual situation is quite limited. In previous studies, the researchers have generally adjusted non-inflation adjusted financial statements using Turkish Statistical

Institute (TURKSTAT) data and calculated financial ratios based on these financial statements compare company performance. Table 1 summarizes the studies that analyzed the changes in the financial performance of Turkish companies as a result of inflation adjustment.

Table 1. Literature Summary

Author(s) (Year of Study)	Method	Scope and Findings
Özkan (2005)	Ratio Analysis	The study analyzed financial statements for 2001, 2002, and 2003 of companies traded on the IMKB for which financial statements were available both with and without adjustments according to TAS 29. As a result of the study, it was determined that liquidity ratios and net working capital increased positively, profitability varied with company structure; the change in turnover rates was slow.
Keleş (2015)	Ratio Analysis	The study analyzed the 2013 financial statements of one company adjusted for inflation and changes in financial ratios. There was no significant change in liquidity ratios. Among the financial structure ratios, only equity ratio and foreign equity ratio changed. The asset turnover ratio and the inventory turnover ratio changed. Among the profitability ratios, all ratios changed except operating profitability ratio.
Olarewaju et al. (2020)	Factor Analysis and Linear Regressions	The study evaluated the impact of inflation accounting on the organizational decisions and financial performance of retail stores in KwaZulu-Natal. The findings of the study highlighted positive relationships between the variables that were used. Thus, the study recommends that retail stores always consider inflation changes and apply inflation accounting techniques to make adjustments to produce more accurate results in their financial statements.
Kantar et al. (2021)	Ratio Analysis	To determine the effect of inflation on company financial ratios, the study calculated ratios from financial statements for 2013-2018 for weaving, clothing, and leather companies listed on Borsa Istanbul. CPI and D-PPI values were used as adjustment coefficients. Inflation had a negative effect on liquidity ratio, equity ratio, and profitability ratio, calculated as the ratio of profit for the period to sales.
Nugraha et al. (2021)	Panel Data Regression Analysis	The study aimed to determine the effect of inflation, leverage, and company size on profitability in the plantation sub-sector companies listed on the Indonesia Stock Exchange for 2014-2018, either simultaneously or partially. Inflation, leverage, and firm size simultaneously affect profitability. Leverage and company size do not partially affect profitability, while leverage partially affects profitability.
İzmirli Ata (2023)	Panel Data Analysis	Using TURKSTAT data, the study applied inflation adjustment to third-quarter financial statements for 2017-2022 of 26 companies operating in BIST 30 to determine the impact of inflation on company asset and financial structure. The ratio of fixed assets/total assets decreased, there was no significant relationship between inventory/current assets, current assets/total assets and inflation; there was a positive relationship with current liabilities/total resources, equity/total resources, and a negative relationship with long-term liabilities/total resources.
Koçak et al. (2023)	Topsis Method	The study used the general price-current value cost method to adjust for inflation the 2021 financial statements of textile companies traded on BIST. The financial ratios improved while the performance ranking of the companies changed.
Terzi & Şen (2024)	Ratio Analysis, Wilcoxon	To determine the effect of inflation adjustment on financial statements, the study calculated ratios from 123 companies' financial statements from 2022 before and after adjustment, and tested the significance of the change in the ratios using Wilcoxon analysis. Industrial companies' statements were more affected by inflation, which distorted their financial ratios.

Table 1. Literature Summary (Continued)

Author(s) (Year of Study)	Method	Scope and Findings
Akpınar et al. (2024)	Ratio Analysis	The study used ratio analysis to examine the financial statements for 2023 of one company in the BIST food sector with and without inflation adjustment according to TPL. Liquidity ratios remained the same whereas financial leverage ratios, fixed asset turnover, and profitability ratios decreased. The efficiency ratios could not be calculated because no adjustment was made to the profit and loss account.
Akgemci et al. (2024)	Ratio Analysis, Topsis Method	The study analyzes current ratio, liquidity ratio, tangible assets/equity, turnover/assets, net profit/turnover, net profit/equity and asset ratios based on the financial statements of 11 companies trading in the metal goods subsector in BIST for 2021, 2022, and 2023. The inflation adjustment of the financial statements was carried out by the authors. As a result of the study, it was found that the financial performance of some companies changed significantly with the application of inflation adjustment. Companies with more monetary assets than resources were negatively affected by inflation adjustment.
Suhut et. al. (2025)	Qualitative Approach	This study analyzes the role of inflation accounting in increasing the reliability of financial reports during times of high inflation by using Indonesian companies' financial statements. Indonesian companies are unfamiliar with inflation accounting, so no method is applied to adjust for the increasing inflation rate each year. The reliability of financial reports is reduced by the failure to apply inflation accounting. Companies must adjust their financial statements to show correct results.
Coşkuner & Kaygusuzoğlu (2025)	Entropy Based Copras Method	The study compared the financial statements before and after inflation of three companies with the same balance sheet size and profitability. Inflation adjustment changed the recorded performance. Managers were advised to balance the liquidity structure of their assets by keeping inventories under control during inflationary periods and to avoid excessive borrowing.

A number of studies have analyzed company performance using the Dupont analysis. For example, Hao and Choi (2019) identified the factors affecting the operational performance of seven online shopping companies operating in China. They found that companies selling a mix of products had higher asset turnover but lower profit margins than companies selling a single specialized product. In addition, companies selling both online and offline had lower ROA and profit margins than those selling only online.

Ardıç (2019) measured asset turnover rate, return on equity (ROE), return on sales (ROS), and return on assets (ROA) values to determine the financial performance of Tea Enterprises Corporation (ÇAYKUR) in 2015, 2016, and 2017. The analysis showed that the company's financial performance was partially successful in 2015 but worsened significantly in the following two years compared to the previous years.

Güngör (2021) evaluated the financial performance and profitability of companies during the Covid-19 period by conducting a sectoral analysis of the 2018-2020 financial statements of 268 companies operating in BIST. The findings indicated that the financial ratios of companies operating in mining, other chemical products, pharmaceuticals and health, retail and wholesale trade, and restaurants and hotels increased whereas the ratios of travel agencies and tour operators sector fell sharply.

Overall, this review of the literature shows that few studies have analyzed the effect of inflation adjustment on real-sector data. In general, the analyses have been carried out on inflation-adjusted financial statements prepared by the researchers. Furthermore, the effects of inflation adjustment have been assessed using ratio analysis rather than the Dupont analysis. The difference between the present study and these studies is that it measures the change in financial performance based on the financial statements of

companies for 2022 both before and after inflation adjustment using the Dupont analysis. In addition, it uses the Wilcoxon test to determine whether the change is statistically significant or not. Only one previous study conducted in Türkiye has used this method (Terzi & Şen, 2024). Unlike this previous study, which makes a sectoral comparison, the present study makes a more comprehensive evaluation of the companies in a specific sector and compares them with the sector average. In this sense, the study makes a novel contribution to the literature.

3. Data and Methods

3.1. Data Set

This study analyzed the financial statements for 2022 of 22 companies registered in the BIST: 13 in the retail sector and 9 in the wholesale sector. The names and stock exchange codes of the companies analyzed are listed in Table 2.

Table 2. The Name and BIST Code of Companies Analyzed

Retail Sector		Wholesale Sector	
Company name	BIST code	Company name	BIST code
Teknosa İç ve Dış Ticaret A. Ş	TKNSA	Selçuk Ecza Deposu Ticaret ve San. A. Ş	SELEC
Carrefoursa Carrefour Sabancı Tic. Mer. A. Ş	CRFSA	Kuvva Gıda Ticaret ve Sanayi Yat. A. Ş	KUVVA
Ersan Alışveriş Hiz. ve Gıda San. Tic. A. Ş	KIMMR	Doğuş Otomotiv Servis ve Ticaret A. Ş	DOAS
Suwen Teskstil Sanayi Pazarlama A. Ş	SUWEN	Arzum Elektrikli Ev Alt. San. ve Tic. A.Ş.	ARZUM
Migros Ticaret A. Ş	MGROS	Pergamon Status Dış Ticaret A. Ş	PSDTC
Gimat Mağazacılık Sanayi ve Tic. A. Ş	GMTAS	İntema İnş. ve Tes. Mal. Yat. ve Paz. A. Ş	İNTEM
Casa Emtia Petrol Kimyevi ve Tür. San. Tic. A. Ş	CASA	Gen İlaç Sağlık Ürünleri San. ve Tic. A. Ş	GENIL
Vakko Tekstil ve Hazır Giyim Sanayi İşl. A. Ş	VAKKO	TGS Dış Ticaret A. Ş	TGSAS
Şok Marketler Ticaret A. Ş	SOKM	Sanko Pazarlama İthalat İhracat A. Ş	SANKO
Bizim Toptan Satış Mağazaları A. Ş	BIZIM		
Bim Birleşik Mağazalar A. Ş	BİMAS		
Mepet Metro Petrol ve Tesisleri Sanayi ve Tic. A. Ş	MEPET		
Mavi Giyim Sanayi ve Ticaret A. Ş	MAVI		

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The financial statements were obtained from the Public Disclosure Platform. The financial statements for 2022 adjusted for inflation were compared with the financial statements for 2023. Therefore, both the 2022 and 2023 financial statements of the aforementioned companies were analyzed. Companies operating in Türkiye's wholesale and retail sectors were chosen as the data set due to their size and importance to the national economy in terms of employment, production, and consumption (Aktulum & Umut, 2022: 124).

3.2. Methodology and Hypotheses

The study was conducted in three stages. First, the comparative table analysis method was used to determine the change in the net profits of the companies in terms of amounts and ratios. Second, the ratios for the Dupont analysis were calculated to evaluate each company's performance. Third, the statistical significance of the change in net profit margin, return on assets, and return on equity, which are the ratios used to calculate change in financial performance, were evaluated using the Wilcoxon signed ranks test.

The Dupont analysis is one of the most important tools for predicting a company's operating performance. The results indicate the company's earning power (Sheela & Karthikeyan, 2012: 84). The method decomposes return on net operating assets into two different multiplier components: profit margin and asset turnover ratio. These two accounting ratios measure different companies' structures and have different characteristics (Soliman, 2008: 823). Return on assets is expressed by the following formula (Akgüç, 2010: 85):

$$\text{Return on Assets Ratio} = \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Net Profit}}{\text{Sales}} \quad (1)$$

A study conducted by Saunders used the Dupont financial analysis model based on return on equity. The model includes three elements of return on equity: net profit margin, asset turnover ratio, and equity multiplier. Net profit is one of the most important indicators of company success. A high net profit margin means that a company is able to control the cost of producing goods and services and the cost of sales. Asset turnover measures how efficiently a company uses its assets to generate sales, and also indicates how well the company is managed and how resources are used to make sales and invest in assets. The higher the ratio, the better the company's performance. The equity multiplier shows how assets are financed by the company's owners and indicates the level of debt financing (Bhagyalakshmi & Saraswathi, 2020 :355). Return on equity is expressed by the following formula (Akgüç, 2010: 87):

$$\text{Return on Equity} = \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Total Assets}}{\text{Equity}} \quad (2)$$

Table 3 presents the ratios used to evaluate financial performance. The ratios in Table 3 were calculated separately for each company while sector averages were also calculated to reveal differences with the sector average.

Table 3. Ratios Calculated to Evaluate Financial Performance with Dupont Analysis

Asset Turnover	Net Sales / Total Assets
Equity Multiplier	Total Assets /Equity
Net Profit Margin (Return on Sales-ROS)	Net Profit / Sales
Return on Assets (ROA)	Net Profit / Total Assets
Return on Equity (ROE)	(Sales/Total Assets) x (Net Profit/Sales) x Total Assets/Equity

In the third stage, the inflation-adjusted results of the ROS, ROA, and ROE values used in the Dupont analysis were tested for statistical significance compared with the pre-inflation adjusted results. While t-tests are one of the most commonly used tests for comparing two samples, the distribution of the dependent variable values must first meet the assumption of a normal distribution (Bursal, 2019: 65). Otherwise, the Wilcoxon Signed Ranks Test can be used as the non-parametric equivalent of the relevant sample t-test (Baştürk, 2016: 164-165). The Wilcoxon signed-rank test is used to determine whether the difference between two related sets of scores is significant. Unlike other tests, this one takes into account both the direction and the magnitude of the difference scores (Bağatarhan & Nazlı, 2013: 77).

The study examined the following six hypotheses:

- H_1: There is a significant difference between the ROS values before and after inflation adjustment in the financial statements of companies operating in the retail sector.
- H_2: There is a significant difference between the ROA values before and after inflation adjustment in the financial statements of companies operating in the retail sector.
- H_3: There is a significant difference between the ROE values before and after inflation adjustment in the financial statements of companies operating in the retail sector.
- H_4: There is a significant difference between the ROS values before and after inflation adjustment in the financial statements of companies operating in wholesale trade sector.
- H_5: There is a significant difference between the ROA values before and after inflation adjustment in the financial statements of companies operating in wholesale trade sector.

- H_6: There is a significant difference between the ROE values before and after inflation adjustment in the financial statements of companies operating in wholesale trade sector.

4. Findings

The study first measured the impact of inflation on net profit by calculating the difference between net profit before inflation adjustment and net profit after inflation adjustment in terms of amounts and percentages by comperative analysis. Table 4 reports the changes in net profit, asset turnover ratio, and equity multiplier before and after adjusting for inflation.

Table 4. Changes in Net Profit, Asset Turnover Ratio, and Equity Multiplier Before / After Inflation Adjustment

	CHANGES NET PROFIT				ASSET TURNOVER RATIO		EQUITY MULTIPLIER	
Company	Before inflation adjustment (TL)	After inflation adjustment (TL)	Difference amount (TL)	Change (%)	Before inflation adjustment	After inflation adjustment	Before inflation adjustment	After inflation adjustment
TKNSA	524,927,000	522,865,000	-2,062,000	-0.004	2.769	2.979	8.273	5.962
CRFSA	-186,832,405	1,160,897,000	1,347,729,405	7.214	2.495	1.977	-9.864	4.420
KIMMR	52,805,913	-369,795,087	-422,601,000	-8.003	1.603	1.664	2.352	2.301
SUWEN	169,171,095	224,228,568	55,057,473	0.325	1.312	1.308	2.172	1.953
MGROS	2,579,829,000	9,155,534,000	6,575,705,000	2.549	2.045	1.721	8.906	2.967
GMTAS	187,850,702	-4,185,866	-192,036,568	-1.022	0.669	0.739	1.172	1.193
CASA	58,203,395	138,217,850	80,014,455	1.375	2.000	2.461	1.361	1.457
VAKKO	1,081,275,316	1,680,095,907	598,820,591	0.554	1.086	1.058	2.072	1.891
SOKM	2,379,833,822	6,954,039,535	4,574,205,713	1.922	3.158	2.402	6.553	2.621
BIZIM	278,369,658	689,889,872	411,520,214	1.478	3.499	3.131	8.181	5.014
BİMAS	8,158,851,000	16,599,432,000	8,440,581,000	1.035	2.284	2.215	2.546	2.163
MEPET	25,630,996	22,910,306	-2,720,690	-0.106	2.056	1.919	1.571	1.506
MAVI	1,459,144,000	1,927,210,000	468,066,000	0.321	1.226	1.387	3.164	2.798
RETAIL SECTOR AVERAGE				**-0.522**	**2.016**	**1.931**	**2.958**	**2.773**
SELEC	2,381,369,521	635,706,672	-1,745,662,849	-0.733	2,070	2,121	3.387	2.643
KUVVA	1,222,513	3,444,358	2,221,845	1.817	0.245	0.250	3.656	2.945
DOAS	7,848,073,000	15,864,754,000	8,016,681,000	1.021	2.264	1.784	1.765	1.568
ARZUM	40,619,421	-157,806,264	-198,425,685	-4.885	1.160	1.362	6.564	4.940
PSDTC	32,986,063	16,380,723	-16,605,340	-0.503	0.011	0.012	43.958	43.518
İNTEM	130,579,151	151,317,226	20,738,075	0.159	0.684	0.740	4.529	3.661
GENIL	1,088,391,534	640,617,083	-447,774,451	-0.411	1.479	1.683	1.313	1.278
TGSAS	21,177,399	7,533,576	-13,643,823	-0.644	0.016	0.015	48.67	46.479
SANKO	104,848,743	-309,238,895	-414,087,638	-3.949	2.230	2.629	1.719	1.767
WHOLESALE SECTOR AVERAGE				**-0.903**	**1.129**	**1.177**	**12.841**	**12.089**

As Table 4 shows, on average, inflation adjustment reduced companies' net profit in both the retail and wholesale sectors, by 52% and 90%, respectively. Regarding the retail sector, inflation adjustment increased reported profits in 9 out of 13 retail companies and reduced them in the other 4. BİMAS, MGROS, and SOKM had the largest increase whereas KIMMR had the largest decrease. CRFSA and KIMMR had, respectively, the highest percentage increase and decrease in profits due to inflation adjustment. Notably, inflation adjustment changed CRFSA's reported TL 186,832,405 loss into a profit of TL 1,160,897,000. Overall, inflation adjustment tended to increase net profit for Türkiye's retail sector companies.

Regarding the wholesale sector, inflation adjustment decreased reported profits in 6 of the 9 companies and increased them in the other 3. DOAS had the largest increase in profit, at TL 8,016,681,000, while SELEC had the largest fall in profit, at TL 1,745,662,849. The largest percentage decreases in net profits due to inflation adjustment were for ARZUM (4.88%) and SANKO (3.94%), while the largest percentage increases were for KUVVA (1.81%) and DOAS (1.02%). Notably, all 9 companies reported a net profit for the

period before inflation adjustment. After adjustment, however, 2 companies had a loss while 6 had decreased profits. Only one company had increased profits.

Regarding asset turnover rates, the average decreased from 2.01 to 1.93 for the retail sector and from 1.12 to 1.17 in the wholesale sector. In the retail sector, the rate increased for 4 companies but decreased for the other 9 companies. In the wholesale sector, the rate increased for 7 companies but decreased for the other 2 companies. Overall, inflation adjustment decreased the asset turnover rate for retail sector companies because the value of their assets increased more than their turnover. In contrast, the asset turnover rate after inflation adjustment increased more in the wholesale sector because the companies' assets increased less than those of retail trade sector companies.

The average equity multiplier fell after inflation adjustment in both the retail and wholesale sectors. Regarding retail companies, CRFSA's total equity multiplier shifted from negative to positive after inflation adjustment while the multipliers of MGROS and SOKM decreased significantly from 8.906 to 2.967 and from 6.553 to 2.621, respectively. For wholesale companies, the decreases were much smaller because the increase in equity was higher in the retail than wholesale trade sector.

Table 5 reports the company valuations in terms of the Dupont ratios. As Table 5 shows, average net profit margins (ROS) fell in both sectors, although the decline was more pronounced in the wholesale sector. In the retail sector, the average ROS fell from 8.4% to 5.7% whereas in the wholesale sector it fell from 24.9% to 8.1%. In the wholesale sector, about TL 25 out of every TL 100 of turnover was realized as net profit whereas in inflation-adjusted terms, TL 8 was realized as net profit. The net profit margins increased for 5 retail companies (CRFSA, MGROS, CASA, SOKM, BIZIM, and BİMAS) and 3 wholesale companies (KUVVA, DOAS, and PSDTC) whereas the margins of the other companies decreased. While KIMMR, GMTAS, ARZUM, and SANKO each made a profit on sales, they made a loss after adjusting for inflation, hence their ROA ratios were negative. The most notable decline was in GMTAS, which made a profit of 25.6% before adjusting for inflation, but lost 0.3% afterwards. Although BLUE and TGSAS did not make a loss after adjustment, their net profit fell from 13.8% to 9.2% and from 32.2% to 7.4%, respectively.

Table 5. Dupont Analysis Results

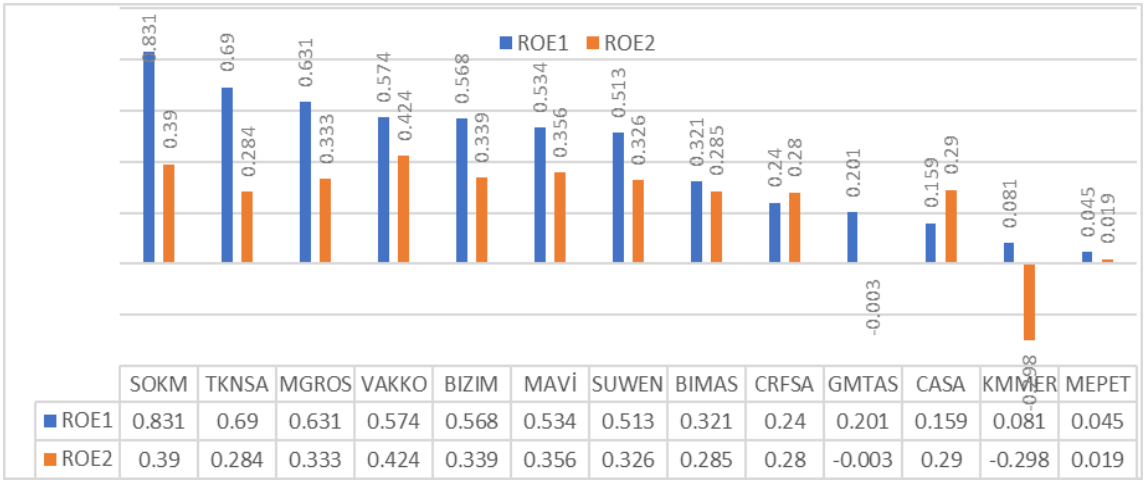
	Return on Sales (ROS)		Return on Assets (ROA)		Return on Equity (ROE)	
RETAIL	**BEFORE**	**AFTER**	**BEFORE**	**AFTER**	**BEFORE**	**AFTER**
TKNSA	0.030	0.016	0.083	0.048	0.690	0.284
CRFSA	-0.010	0.032	-0.024	0.063	0.240	0.280
KIMMR	0.021	-0.078	0.034	-0.130	0.081	-0.298
SUWEN	0.180	0.128	0.236	0.167	0.513	0.326
MGROS	0.035	0.065	0.071	0.112	0.631	0.333
GMTAS	0.256	-0.003	0.171	-0.002	0.201	-0.003
CASA	0.058	0.081	0.117	0.199	0.159	0.290
VAKKO	0.255	0.212	0.277	0.224	0.574	0.424
SOKM	0.040	0.062	0.127	0.149	0.831	0.390
BIZIM	0.020	0.022	0.069	0.068	0.568	0.339
BİMAS	0.055	0.059	0.126	0.132	0.321	0.285
MEPET	0.014	0.007	0.029	0.013	0.045	0.019
MAVI	0.138	0.092	0.169	0.127	0.534	0.356
SECTOR AVERAGE	**0.084**	**0.057**	**0.114**	**0.119**	**0.414**	**0.307**
WHOLESALE	**BEFORE**	**AFTER**	**BEFORE**	**AFTER**	**BEFORE**	**AFTER**
SELEC	0.053	0.007	0.110	0.016	0.374	0.042
KUVVA	0.044	0.066	0.011	0.017	0.040	0.049
DOAS	0.168	0.179	0.380	0.320	0.670	0.502
ARZUM	0.026	-0.054	0.031	-0.073	0.201	-0.363
PSDTC	1.162	0.296	0.012	0.004	0.540	0.161
İNTEM	0.234	0.141	0.160	0.105	0.726	0.383
GENIL	0.200	0.060	0.296	0.101	0.388	0.130
TGSAS	0.322	0.074	0.005	0.001	0.249	0.051
SANKO	0.030	-0.045	0.066	-0.117	0.114	-0.208
SECTOR AVERAGE	**0.249**	**0.081**	**0.119**	**0.041**	**0.367**	**0.083**

The average ROA ratio for the retail sector was similar before and after the correction whereas the wholesale sector's ROA ratio decreased from 11.9% to 4.1%. This indicates that wholesale company assets were unable to generate sufficient profit while the return on assets decreased. Whereas the return on assets increased for 5 retail sector companies, it decreased for the other 8 and for all wholesale sector companies. The most dramatic decline in the profitability ratio of retail sector companies was for KIMMR, from 3.4% to -13%; for the wholesale sector, the largest decline was for SANKO, from 6.6% to -11.7%. In the wholesale sector, the return on assets of SELEC was 11% compared to 1.6%; for GENIL, it was 10.1% compared to 29.6%.

Average return on equity decreased significantly after adjustment in both sectors. For the retail sector, ROE fell from 41.4% to 30.7% and from 36.7% to 8.3% in the wholesale sector. ROE decreased after adjustment for all companies, except for an increase for two retail companies (CRFSA and CASA) and, slightly, for one wholesale company (KUVVA). For investors, it is not desirable to experience a decrease in the return on the capital they have tied up in a company. It is also worth noting that, unless adjusted for inflation, the ROE reported in a company's annual accounts can be highly misleading.

Figure 1 reports the change in the retail companies' ROE values, one of the performance indicators. As Figure 1 shows, SOKM fell from first to second place after the adjustment whereas MEPET rose from last to 11th.

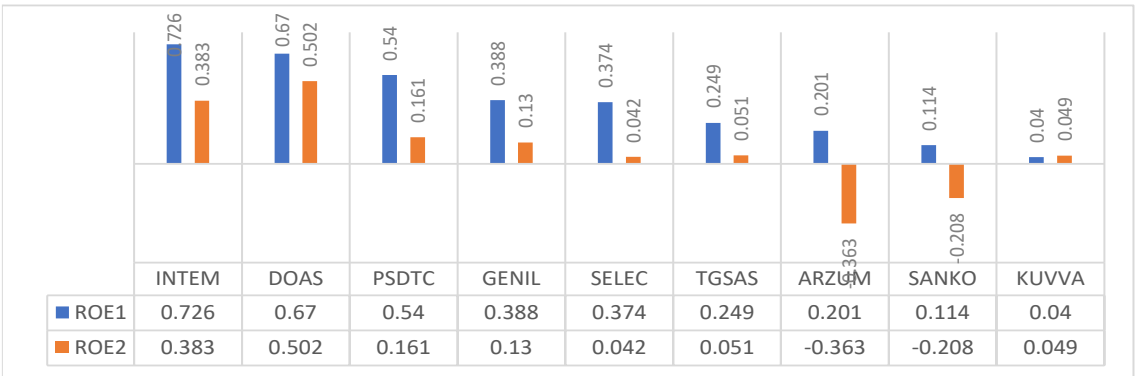
Figure 1. Effect of Inflation Adjustment on ROE Values of Retail Sector Companies



	SOKM	TKNSA	MGROS	VAKKO	BIZIM	MAVİ	SUWEN	BIMAS	CRFSA	GMTAS	CASA	KMMER	MEPET
ROE1	0.831	0.69	0.631	0.574	0.568	0.534	0.513	0.321	0.24	0.201	0.159	0.081	0.045
ROE2	0.39	0.284	0.333	0.424	0.339	0.356	0.326	0.285	0.28	-0.003	0.29	-0.298	0.019

Figure 2 reports the change in the wholesale company ROE values after inflation adjustment. As Figure 2 shows, the ROE values of all companies except KUVVA decreased. INTEM fell from first to second place while KUVVA rose from last place to 6th place after adjustment for inflation.

Figure 2. Effect of Inflation Adjustment on ROE Values of Wholesale Sector Companies



	INTEM	DOAS	PSDTC	GENIL	SELEC	TGSAS	ARZUM	SANKO	KUVVA
ROE1	0.726	0.67	0.54	0.388	0.374	0.249	0.201	0.114	0.04
ROE2	0.383	0.502	0.161	0.13	0.042	0.051	-0.363	-0.208	0.049

Figure 3 reports the change in the ratios subject to the Dupont analysis for the retail sector after adjusting for inflation. As Figure 3 shows, the ROA ratio remained almost unchanged by inflation adjustment whereas the ROS and ROE ratios decreased, particularly the latter.

Figure 3. Dupont Analysis Results for Inflation Adjustment in the Retail Sector

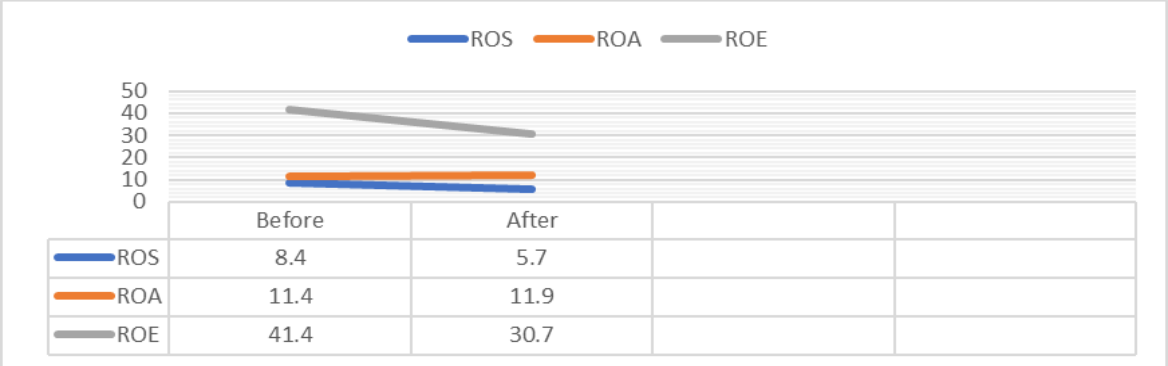
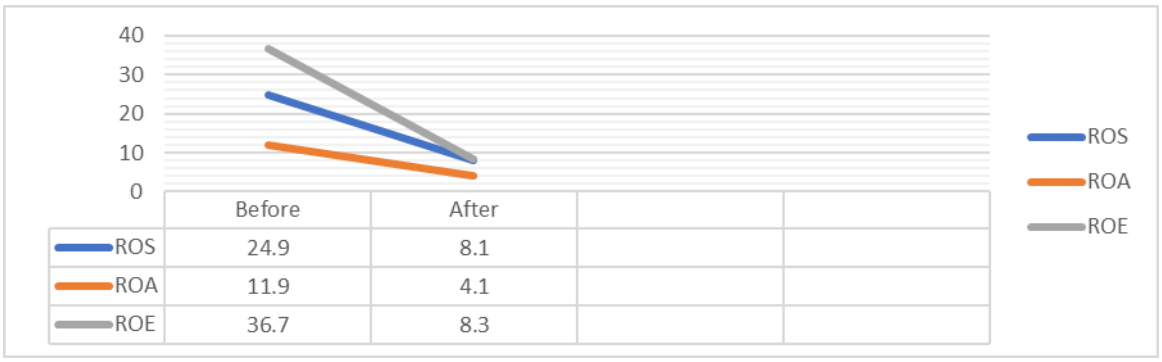


Figure 4 reports the change in the ratios subject to the Dupont analysis for the wholesale sector after adjusting for inflation. As Figure 4 shows, the profitability ratios in the wholesale sector all fell significantly, particularly that of ROE. Taken together, Figures 3 and 4 indicate that the decrease in ROE following inflation adjustment was more significant in the wholesale than retail sector.

Figure 4. Dupont Analysis Results for Inflation Adjustment in the Wholesale Sector



Before testing the statistical significance of the Dupont analysis results, the data were first assessed to determine if they met normality assumptions. The analyses were carried using the SPSS 20 program. Table 6 presents the results of the normal distribution tests.

Table 6. Test of Normality

Variables	Kolmogorov-Smirnova test			Shapiro-Wilk test		
	Statistic	df	Sig.	Statistic	df	Sig.
RetailROSbefore	0.325	13	0.001	0.725	13	0.001
RetailROSafter	0.137	13	0.200*	0.957	13	0.704*
RetailROAbefore	0.132	13	0.200*	0.974	13	0.940*
PerROAafter	0.130	13	0.200*	0.953	13	0.637*
RetailROEbefore	0.190	13	0.200*	0.939	13	0.447*
PerROEafter	0.361	13	0.000	0.759	13	0.002
WholesaleROSbefore	0.308	9	0.014	0.647	9	0.000
WholesaleROSafter	0.190	9	0.200*	0.942	9	0.608*
WholesaleROAbefore	0.207	9	0.200*	0.828	9	0.043
WholesaleROAafter	0.244	9	0.131	0.884	9	0.175*
WholesaleROEbefore	0.132	9	0.200*	0.953	9	0.719*
WholesaleROEafter	0.216	9	0.200*	0.955	9	0.744*

*Normally distributed

As the number of samples was less than 30, the significance (p) value of the Shapiro-Wilk test was examined, which is expected to be p>0.05 for a normally distributed sample. As Table 6 shows, however, 4 data were not normally distributed. The Kurtosis and skewness values, which are expected to range between +1 and -1 for normally distributed data (Ak, 2017: 73-74), were also calculated for each variable. The values ranged beyond these limits, indicating that the data was non-normally distributed. Based on these findings and the small sample size, the Wilcoxon Signed Ranks Test was applied to measure the significance level of the changed values following inflation adjustment.

The Wilcoxon Signed Ranks Test was used to test whether the ROS, ROA, and ROE values changed statistically significantly after adjusting for inflation. The results of this analysis are presented in Table 7.

Table 7. Retail Sector Test Statistics[a]

	Retail ROS after Retail ROS before	Retail ROA after Retail ROA before	Retail ROE after Retail ROE before
Z	-0.866[b]	-0.663[b]	-2.497[b]
Asymp. Sig. (2-tailed)	0.386	0.508	0.013

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks

As Table 7 shows, the change in ROE for the retail sector following inflation adjustment was statistically significant (p=0.013<0.05). There is a significant difference between the ROE values before and after the adjustment, and this supports hypothesis H_3. But the changes in ROS (p=0.386>0.05) and ROA (p=0.508>0.05) were not significant. There is no significant difference between the ROS and ROA values before and after inflation adjustment, and hypotheses H_1 and H_2 are not supported. In other words, while inflation adjustment had no significant effect on the ROS and ROA values of retail sector companies, it had a statistically significant effect on ROE values.

Table 8 presents the results of the Wilcoxon test for the wholesale sector.

Table 8. Wholesale Sector Test Statistics[a]

	Wholesale ROS after Wholesale ROS before	Wholesale ROA after Wholesale ROA before	Wholesale ROE after Wholesale ROE before
Z	-2.310[b]	-2.429[b]	-2.547[b]
Asymp. Sig. (2-tailed)	0.021	0.015	0.011

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks

As Table 8 shows, for the wholesale sector, inflation adjustment significantly changed ROS (p=0.021<0.05), ROA (p=0.015<0.05) and ROE (p=0.011<0.05). There is a significant difference between the ROS, ROA, and ROE values before and after inflation adjustment, and hypotheses H_4, H_5, and H_6 are supported. Accordingly, inflation adjustment had a significant effect on the ROS, ROA, and ROE values of wholesale sector companies.

5. Conclusion

Due to high inflation in Türkiye in recent years, companies have had to make an inflation adjustment in their financial statements from 2023 onwards to reduce the distorting effects of inflation on their reporting performance. Accordingly, companies using international accounting standards must apply TAS 29 Financial Reporting in Hyperinflationary Economies from 2023. Companies applying the standard for the first time must also restate their financial statements at the end of the previous period and at the beginning of the previous period. The present study assessed the impact of inflation adjustment on the financial performance

reported in the financial statements of Turkish companies registered in the BIST retail and wholesale sectors. These statements were not adjusted in 2022 and reported with an adjustment in 2023.

Dupont analysis of the financial statements of Turkish retail and wholesale companies for 2022 before and after inflation adjustment revealed the following six issues:

- Inflation adjustment reduced the reported average net profits of retail and wholesale sectors companies by 52.2% and 90.3%, respectively. This is in line with previous findings that inflation adjustment reduces reported operating profits (Akpınar et al., 2024; Kantar et al., 2021). However, this reduction varies with company structure. In line with Özkan (2005), the profits of 9 out of 13 retail companies increased whereas the profits of 6 out of 9 wholesale companies decreased.
- While inflation adjustment reduced the reported turnover rate in 9 out of 13 retail companies, it only reduced it in 2 out of 9 companies. While the average turnover rate decreased in the retail sector, it increased in the wholesale sector. Regarding the financial data, inflation adjustment had differing effects on the asset turnover ratio in the two sectors: the value of assets of retail companies increased more than those in the wholesale sector. This indicates that the increase in assets in the retail sector could not generate a sufficient increase in turnover.
- The capital multiplier fell slightly in both sectors following adjustment. If the result obtained by dividing assets by equity decreases, it can be said that the company is relying more on financing from foreign sources. As Ceylan (2001) argues, during inflationary periods, companies turn to financing from foreign sources as their capital needs increase.
- Average ROS values decreased significantly in both sectors following adjustment. That is, companies experience a decrease in profitability, which is determined as a percentage of sales, during inflationary periods. The main reason for this is that they cannot control the cost of sales sufficiently during these periods.
- While inflation adjustment slightly increased the average ROA ratio in the retail sector, it significantly decreased it in the wholesale sector. There was an increase in reported profits in the retail sector and a decrease in the wholesale sector after adjusting for inflation. Given the lack of any significant difference in total assets between the two sectors, the ROA results suggest that wholesale companies are less successful than retail companies in controlling their main costs, such as cost of sales, operating expenses, and financial expenses.
- The ROE ratio fell quite noticeably in both sectors following inflation adjustment, although it was much sharper in the wholesale sector. Kantar et al. (2021) reported similar results. It can be said that this decline will be seen as quite negative by investors.

Regarding the results of the Wilcoxon signed rank test, for the retail sector, inflation adjustment only significantly changed the ROE value whereas, for wholesale companies, it significantly changed the ROS, ROA, and ROE ratios. This suggests that, regarding profitability, the wholesale sector is more negatively affected by inflation than the retail sector.

The change of companies' performance after adjusting for inflation was quite significant. This indicates that inflation has a negative impact on decision makers because it makes company financial statements meaningless. As Akgemci et al. (2024) argue, the effect of inflation adjustment indicates that companies that have more monetary assets than monetary resources are negatively affected by inflation adjustment.

The changes that this study revealed in the companies' financial ratios and financial performance rankings due inflation adjustment are significant and important. This shows that it is important to make inflation adjustments in financial statements to enable sound and accurate decisions. It would be much healthier for company managers to make their decisions based on inflation-adjusted financial statements.

The main limitation in the present study is that the research only covers the companies in Türkiye's retail and wholesale sectors and financial statements for one year, 2022 by certain ratio analysis. Another limitation of the study is that the impact of inflation adjustment on sub-sectors was not investigated. Future research should therefore include companies in other sectors or sub-sectors and more recent financial statements. It is furthermore recommended that the effects of inflation adjustment be examined by means of other analytical methods.

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References

Açık, S. (2010). Enflasyonun finansal tablolar üzerindeki etkilerini giderici bir tedbir olarak enflasyon muhasebesi ve Türkiye'deki yasal düzenlemeler. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 8*(2), 345-360.

Ak, B. (2017). Parametrik hipotez testleri. Kalaycı, Ş. (Ed.), *SPSS uygulamalı çok değişkenli istatistik teknikleri (8th ed*.) (ss. 73-82). Dinamik Akademi Yayın Dağ. Ltd. Şt.

Akgemci, A., Kısakürek, M. M., Kulaklı, A. P., & Özçil, A. (2024). Enflasyon düzeltmelerinin firma performansı üzerindeki etkisi: İmalat sektöründe Topsis yöntemiyle bir uygulama. *Denetim ve Güvence Hizmetleri Dergisi, 4(2),* 162-187.

Akgüç, Ö. (2010). *Finansal yönetim (9th ed.).* Avcıol Basın Yayın.

Aktulum, Ü., & Umut, İ. E. (2022). Toptan ve perakende sektöründe faaliyet gösteren firmaların finansal performanslarının karşılaştırmalı analizi. *Turkish Business Journal, 3*(6), 120-139. https://doi.org/10.51727/tbj.1205219

Akpınar, Y., Ciğer, A., Güngör Karyağdı, N., & Kaya, A. (2024). Enflasyon muhasebesi uygulamasının işletmelerin finansal yapıları üzerine etkileri: Oran analizi ile inceleme. *Akademik Araştırmalar ve Çalışmalar Dergisi (AKAD), 16(31),* 360-376. https://doi.org/10.20990/kilisiibfakademik.1510455

Ardıç, M. (2019). Çay İşletmeleri Kurumunun (Çaykur) finansal performansının Dupont finansal analiz sistemi kullanılarak incelenmesi. *Business & Management Studies: An International Journal, 7*(1), 352-372. http://dx.doi.org/10.15295/bmij.v7i1.1072

Bağatarhan, T., & Nazlı, S. (2013). Ebeveyn eğitim programının annelerin ebeveynlik öz - yeterliklerine etkisi. *Sosyal Politika Çalışmaları Dergisi, 7*(31), 67-88. https://doi.org/10.21560/spcd.84068

Baştürk, R. (2016). *Bütün örnekleriyle SPSS örnekli nonparametrik istatistiksel yöntemler* (3rd ed.). Anı Yayıncılık.

Bhagyalakshmi, K., & Saraswathi, S. (2019). A study on financial performance evaluation using DuPont analysis in select automobile companies. *International Journal of Management, Technology and Engineering, 9*(1), 354-362.

Bilici, N. (2010). Enflasyonun mali tablolar üzerindeki etkilerini azaltmak için Türkiye'de uygulanan önlemler. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 2,* 1-2.

Bursal, M. (2019). *SPSS ile temel veri analizleri* (2nd ed.). Anı Yayıncılık.

Ceylan, A. (2001). *İşletmelerde finansal yönetim* (7th ed.). Ekin Kitabevi.

Coşkuner, A., & Kaygusuzoğlu, M. (2025). Enflasyon düzeltmesi uygulamasının işletme performanslarına etkisinin entropi temelli Copras yöntemi ile değerlendirilmesi. *Eskişehir Osmangazi Üniversitesi İktisadi ve İdari Bilimler Dergisi, 20*(2), 327-350. https://doi.org/10.17153/oguiibf.1551779

Hao, Y., & Choi, S.U. (2019). Operating performance of Chinese online shopping companies: An analysis using DuPont components. *Sustainability*, *11*(13), 1-13. https://doi.org/10.3390/su11133602

Güngör, N. (2021). Covid 19'un BIST'te yer alan sektörlerin finansal performanslarına etkisinin Dupont analizi yöntemiyle değerlendirilmesi. *International Journal of Disciplines Economics & Administrative Sciences Studies, 7*(36), 1036-1040. http://dx.doi.org/10.26728/ideas.533

İzmirli Ata, F. (2023). Enflasyonun işletmelerin varlık ve finansal yapılarına etkisi: BİST 30 analizi. *Yaşar Üniversitesi E-Dergisi*, *18*(72), 526-546. https://doi.org/10.19168/jyasar.1290140

Kantar, M. A., Abar, H., & Öndeş, T. (2021). Enflasyonun işletmelerin finansal oranlarına etkisi: BIST imalat sektöründe bir uygulama. *Muhasebe ve Finansman Dergisi* (90), 1-18. https://doi.org/10.25095/mufad.856384

Keleş, D. (2015). TMS 29 Yüksek enflasyonlu ekonomilerde finansal raporlama standardı çerçevesinde finansal tabloların düzeltilmesi ve finansal analiz sonuçları üzerine etkileri. *Uşak Üniversitesi Sosyal Bilimler Dergisi*, *8*(3), 31-52. https://doi.org/10.12780/uusbd.38638

Kamu Gözetimi Muhasebe ve Denetim Standartları Kurumu. (2018). TMS 1 finansal tabloların sunuluşu. https://kgk.gov.tr/Portalv2Uploads/files/Duyurular/v2/TMS/TMS_1_Finansal%20Tablolar%C4%B1n%20Sunulu%C5%9Fu.pdf (Access Date: 10.03.2025).

Kamuyu Aydınlatma Platformu. (2025). https://www.kap.org.tr/tr (Acces Date: 01.03.2025)

Koçak, H., Kısakürek, M. M., & Babacan, A. (2023). Enflasyon düzeltme işlemlerinin işletme performansına etkisi BİST'te bir uygulama. *Üçüncü Sektör Sosyal Ekonomi Dergisi, 58(*2), 1525-1546. https://doi.org/10.15659/3.sektor-sosyal-ekonomi.23.06.2059

Nugraha, N. M., Ramadhanti, A. A., & Amaliawiati, L. (2021). Inflation, leverage, and company size and their effect on profitability. *Journal of Applied Accounting and Taxation*, *6*(1), 63-70. https://doi.org/10.30871/jaat.v6i1.2854

Olarewaju, O., Mbambo, M., & Ngiba, B. (2020). Effects of inflation accounting on organizational decisions and financial performance in South African retail stores. *Problems and Perspectives in Management*, *18*(4), 85-95. https://doi.org/10.21511/ppm.18(4).2020.08

Özkan, T. (2005). Enflasyon muhasebesi uygulamasının firmaların finansal yapıları üzerine etkileri. *Muhasebe ve Denetime Bakış,* (15), 49-72.

Poroy Arsoy, A., & Gücenme, Ü. (2009). The development of inflation accounting in Turkey. *Critical Perspectives on Accounting, 20*, 568-590. https://doi.org/10.1016/j.cpa.2008.01.006

Sheela, S. C., & Karthikeyan, K. (2012). Financial performance of pharmaceutical industry in India using DuPont analysis. *European Journal of Business and Management, 4*(12), 84-91.

Suhut, H. W. H., Fadhila, H. P., Hasibuan, C. H., & Muda, I. (2025). Assessing the reliability of financial reports amid inflation: The role of inflation accounting implementation. *Journal of Modern Accounting and Auditing*, *21*(3), 131-142.

Soliman, M.T. (2008). The use of dupont analysis by market participants. *The Accounting Review*, *83*(3), 823-853. https://doi.org/10.2308/accr.2008.83.3.823

Terzi, S., & Kıymetli Şen, İ. (2024). Enflasyon düzeltmelerinin finansal tablolara etkisi: Borsa İstanbul üzerinde araştırma. *Ahi Evran Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, *8*(2), 126-148.

Yılmaz, İ. (2023). Finansal tablo kullanıcıları açısından enflasyon muhasebesinin önemi: BİST enerji sektörü üzerine örnek bir uygulama. *Karamanoğlu Mehmetbey Üniversitesi Sosyal ve Ekonomik Araştırmalar Dergisi, 25*(45), 930-944.