

T.C.
TURKISH-GERMAN UNIVERSITY
SOCIAL SCIENCES INSTITUTE
INTERNATIONAL FINANCE DEPARTMENT

**AN OVERVIEW OF BUSINESS VALUATION TECHNIQUES
WITH AN IMPLEMENTATION OF THE DISCOUNTED
CASH FLOW METHOD**

MASTER'S THESIS

Çağlar AYAZLI

ADVISOR

Prof. Dr. Mehmet Şükrü TEKBAŞ

ISTANBUL, June 2023

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Çağlar AYZLI

ISTANBUL, June 2023

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ÖZET

İŞLETME DEĞERLEMESİ

Son yıllarda borsaların öneminin büyük ölçüde arttığı görülmüştür. Geçmişe kıyasla yatırımcılar kaynaklarını akıllıca ve fırsatları kaçırmadan değerlendirmek istiyor. Bu nedenle değerlendirme konusu finans dünyası için oldukça önemlidir. Değerlemede en önemli faktör değerlendirme teknikleridir. Değerleme teknikleri potansiyel yatırımcıların bilinçli bir karar vermesine yardımcı olur. Bu çalışmada Ülker Bisküvi Sanayi A.Ş. farklı değerlendirme tekniklerinin uygulanması için tercih edilen firma olmuştur. Değerleme tekniklerinin uygulanması sırasında yöntemlerin artıları ve eksileri belirtilmiştir.

İndirgenmiş nakit akışı yöntemi bu çalışmanın ana değerlendirme tekniği olmuş ve diğer popüler değerlendirme teknikleri ile karşılaştırılmıştır. Ülker Bisküvi Sanayi A.Ş. halka açık bir şirkettir ve Borsa İstanbul'a kayıtlıdır. Çalışmanın sonuçları borsa verileriyle kıyaslanmıştır.

İndirgenmiş nakit akışı yöntemi uygulanması mümkün ve diğer tekniklere göre daha doğru sonuçlar verme olasılığı yüksektir. Ülker Bisküvi Sanayi A.Ş gibi büyük, sürekliliği ve kalıcılığı olan bir şirkete de bu yöntem uygulanmıştır.

Anahtar Kelimeler: Kurumsal finans, değerlendirme teknikleri, indirgenmiş nakit akışı yöntemi.

İSTANBUL, Haziran 2023

ABSTRACT

BUSINESS VALUATION

In the recent decades importance of stock markets increased significantly. More people would like to invest their funds smartly and without wasting opportunities. Therefore, Valuation topic is important to the finance world. That is the point where valuation techniques come in handy and aid potential investors to make a knowledgeable decision. In this study Ülker Bisküvi Sanayi A.Ş. will be the firm of choice for the application of different valuation techniques. During the application of valuation techniques, the benefits and shortcomings of the methods will be also pointed out.

The discounted cash flow method will be the main valuation technique of this study and will be compared to other popular valuation techniques. Ülker Bisküvi Sanayi A.Ş. is a publicly held company and listed on the Stock Market Istanbul. The results of the study will be checked against data from the stock exchange.

The application of the discounted cash flow method is possible and more likely to give accurate results compared to other techniques. Especially when it is applied to a big firm like Ülker Bisküvi Sanayi A.Ş. which is a company with continuity and permanence.

Key Word: Corporate finance, valuation techniques, discounted cash flow method

ISTANBUL, June 2023

LIST OF SYMBOLS AND ABBREVIATIONS

CAPM	: Capital Asset Pricing Model
CF	: Cash Flow
DCF	: Discounted Cash Flows
EBIT	: Earnings Before Interest And Tax
EPS	: Earnings Per Share
EVA	: Economic Value Added
FCF	: Free Cash Flow
FCFE	: Free Cash Flow to Equity
FCFF	: Free Cash Flow to Firm
NOPAT	: Net Operating Profit After Taxes
P/B	: Price / Book
P/E	: Price / Earnings
PV	: Present Value
ROA	: Return on Assets
ROE	: Rate of Return on Equity
TV	: Terminal Value
WACC	: Weighted Average Capital Cost
CF_t	: Cash Flow for Period t
D_0	: Current Dividend Paid
DDM	: Dividend Discount Model
IRR	: Internal Rate of Return

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1. INTRODUCTION

Valuation serves a critical role in many financial decisions. Therefore, it has an important place in the finance sector. Valuation techniques are used for helping with decisions about whether to invest or not to invest in an asset. Currently there are many theories which have a place in the valuation system. However, some of the techniques fare better off compared to others when the circumstances fit. Main goal of this thesis is analyzing firm valuation techniques and applying them in a study. Different methods with their strengths and weaknesses are compared to discounted cash flows method and Ülker Bisküvi Sanayi A.Ş. which is listed on the Istanbul Stock Exchange are valued by using these methods.

The valuation methods inhabit uncertainty, estimations and forecasting. This is an inherent issue of the valuation concept as it deals with future projections. Although valuation methods countian variation and projections, those are still required while investing.

In the first part of this study the concept of value and valuation process are examined and a literature review about valuation techniques is conducted.

In the second part of this study company information is provided to get a grasp on the details of the said company. In this case Ülker Bisküvi Sanayi A.Ş. is the firm of choice. It is also important to take macroeconomic indicators into consideration.

In the third part of this study company analysis is conducted. In financial analysis three types of ratios are examined. Then it is followed by share data and risk and return of the company. This part of the study ends with projections.

In the fourth part of this study empirical study and valuation of the Ülker Bisküvi Sanayi A.Ş. are conducted. The findings of the study are examined in conclusion section.

2. REVIEW OF VALUATION RELATED LITERATURE

2.1. VALUE

Value is an ancient concept. For a long time, people have been interested in finding out how much a good or an asset is worth. Today value can be defined as the amount how much someone is willing to pay for said object.¹ Also, A. Marshal claims that utility received from an asset changes the demand for that good and therefore, utility and cost decide the value of the asset.²

Nominal Value: Nominal value can be referred to as par value of face value. It is a per share amount that is present on financial asset papers.

Book Value: Book value of a company can be found in its financial accounts. Book value shows the net asset value of a company and can be calculated by separating liabilities from assets. However, it is important to understand that book value is not representative of a company's human capital.

Market Value: It is the standing of the company in the stock market exchange. Market value is also referred to as the market capitalization of a company which is listed on the stock market. Market value can be calculated by multiplying the price per share of the company and outstanding shares of the company.

Fair Value: It is the value of an asset which is agreed by willing buyer and seller who is acting with reasonable knowledge about relevant asset under no duress.³ In accounting terms, it is the company's estimated value of its assets and liabilities.

Fair Market Value: It is the value defined by a buyer and a seller acting at arm's length in a free market. Both participants should take part in the transaction willingly without any external pressures.

¹ Black, A. and C.; Dictionary of Economics, London: A & C Black Publishers Ltd, 2006, p.211

² Baumol, William J.; Blinder, Alan S.; Economics: Principles and Policy, 1998 p. 97

³ Pratt, Shannon P.; Valuing Small Businesses and Professional Practices, 1998. p 39

2.2. VALUATION PROCESS

The valuation process is a methodical endeavor which requires planned usage of valuation techniques to value an asset. At the end of this process, it is expected to reach fair value of an asset. As the main goal of this thesis, the following sections of this thesis will concern with the valuation of selected firm, which will reach the fair value of the selected firm.

Valuation process is the way of ascertaining the current worth of a company. These are the common steps of the valuation process.

- Undertaking general analysis of the company
- Undertaking related industry analysis
- Undertaking a financial analysis of the company with ratios
- Applying valuation techniques to the company
- Reaching a conclusion

Thus, the company valuation process can be summarized under three aspects which are company overview, glance at industry and in dept company analysis.

2.3. RECENT DEVELOPMENTS IN THE VALUATION LITERATURE

Valuation is extremely important to analyze firms and markets. However, there are multiple valuation methods to apply according to the firm's specific attributes. It is an analyzing job to decide which method suits best for the different situations.

Kjærsgaard, Mikkel Allen (2013) analyzed Scandinavian airline industry by focusing on SAS and finding best valuation method. The result of the study shows that the best method to value SAS was discounted cash flows, which was also helpful to reveal upcoming problems for the firm.⁴

⁴ Kjærsgaard, Mikkel Allen. "Strategic Analysis and Valuation of Scandinavian Airlines." Master's Thesis 80 (2013).

Penman and Sougiannis (1998) analyze the dividend discount, discounted cash flow and residual income models. Then those methods were put against each other to spot differences. Free cash flows are used for making accurate projections. The authors organized the firms into different portfolios to reduce effects of outliers. They report that the residual income model resulted in fewer differences to current market stock compared to dividend discount model (DDM) or discounted cash flow model (DCF).⁵

Lazzati, Natalia, and Amilcar A. Menichini (2018) claim that a dynamic version of the dividend discount model is a better method to estimate the market prices while same returns cannot be simply explained either by the Fama-French three-factor model or the Fama-French five-factor model.⁶

Ali Atilla Perek- Çağrı Aksoy (2016) claim that one of three valuation approaches should be used to achieve a successful valuation. These are discounted cash flow method, asset-based valuation method and lastly relative valuation methods.⁷

Kraft, Holger, Eduardo Schwartz, and Farina Weiss (2018) study the relationship between firm value and a firm's growth options. By decomposing firm-level volatility into its unsystematic and systematic risk, the result shows that firm level volatility doesn't have significant effect on valuation.⁸

Pablo Fernandez (2007) categorizes firm valuation under three different titles. These are asset-based valuation methods, income-based valuation methods and market-based valuation methods. Most important ones are the income-based valuation methods which encapsulates discounted cash flow method (DCF).⁹

⁵ Penman, et.al "A comparison of Dividend, Cash Flow, and Earnings Approaches to Equity Valuation", op. cit. p.358

⁶ Lazzati, Natalia, and Amilcar A. Menichini. "A dynamic model of firm valuation." *Financial Review* 53.3 (2018): 499-531.

⁷ Ali Atilla Perek- Çağrı Aksoy Hazır, FVAÖK'in Hesaplanması, Finansal Tablo Analizi ve Şirket Değerleme de Kullanımı, İstanbul, Türkmen Kitabevi, 2016, s.152

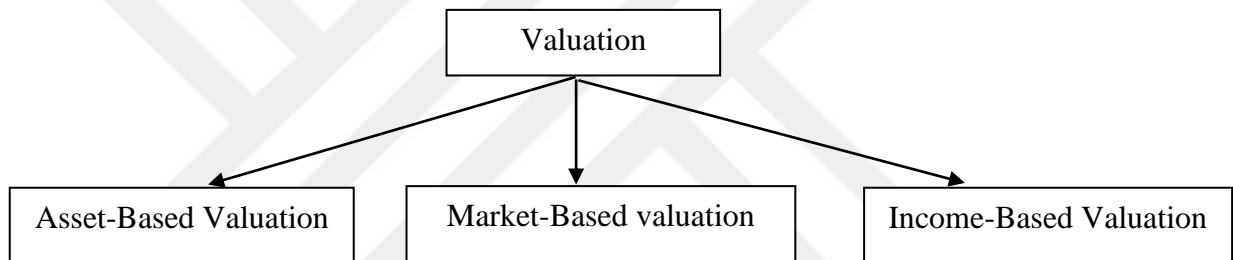
⁸ Kraft, Holger, Eduardo Schwartz, and Farina Weiss. "Growth options and firm valuation." *European Financial Management* 24.2 (2018): 209-238.

⁹ Fernández, Pablo. "Company valuation methods. The most common errors in valuations." *IESE Business School* 449 (2007): 1-27

3. VALUATION TECHNIQUES

Valuation techniques could be classified under three sections. First one is the asset-based valuation. This category involves book value calculation. It concerns with assets and liabilities of the firm. Second section can be referred as market-based valuation. It features relative valuation. Last section is the income-based valuation and main focus of this study. In involves discounted free cash flows.

Table 1 Valuation



3.1. DISCOUNTED FREE CASH FLOWS

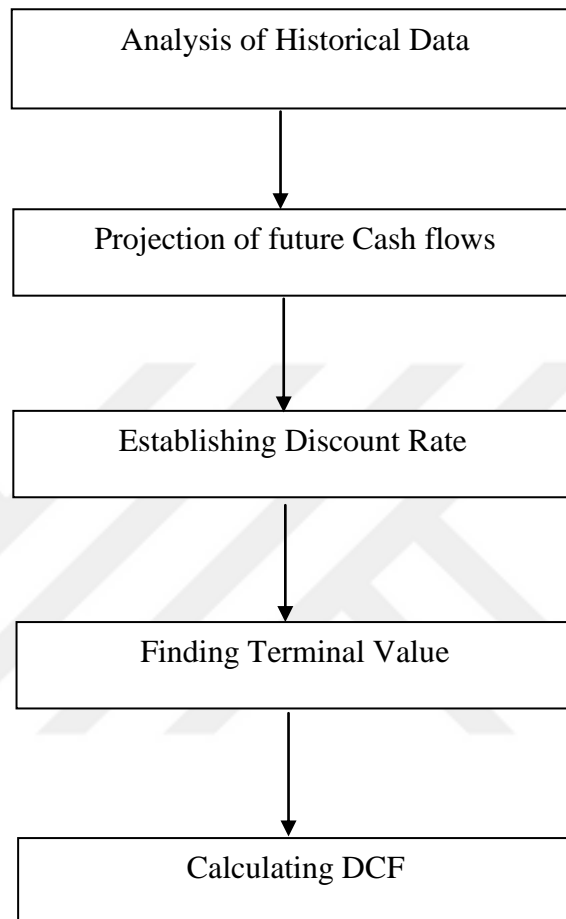
The discounted cash flows method seeks present value of an assets expected cash flows, which shows with discounting rate the risk factor of these cash flows. Therefore, the discounted cash flows method takes money, time, and risk into consideration. The main idea of discounted cash flows assumes that the value of an asset is the anticipation of collecting cash flows in the future.¹⁰

Asset-based valuation methods show the extrinsic value of a company. However, discounted cash flow methods (DCF) highlight the intrinsic value of a company.¹¹

¹⁰ Damodaran, A., 2005. Valuation approaches and metrics: A survey of the theory and evidence. *Foundations and Trends in Finance*, 1(8), 693-784.

¹¹ Lopez, F. J., 2008. Valuation of small business: An alternative point of view. *Journal of Business Valuation and Economic Loss Analysis* 3(1), Article 7.

Table 2 Summary of DCF Method



The Discounted cash flow method could be applied to a company in five steps. The first step starts with analyzing historical data like cash inflows in past years. In the second step it is possible to make projections of future cash flows with the help of historical data. As the third step a discount rate needs to be established. This is crucial when it comes to finding the present value of future cash inflows. One of the ways to reach the discount rate is calculating the internal rate of return. The step fourth is finding the terminal value. Terminal value represents the present value of indefinite cash inflows of the company in perpetuity.¹²

The value of a business is calculated using the following standard formula:

¹² Ross, S. A., Westerfield, R. W., Jaffe, J., & Jordan, B. D. (2016). Corporate finance: Core principles and applications (11th ed.). McGraw-Hill Education, p88-110

$$\text{Value of Business} = \sum_{t=1}^t \frac{CF_t}{(1+r)^t}$$

Where t = Life of the asset

CF_t = Cash Flow in period t

r = Internal rate of return (IRR)/discount rate/market interest rate

Capital Asset Pricing Model (CAPM) is the most popular valuation model to estimate the cost of equity.

$$k_e = r_f + \beta(r_m - r_f)$$

where k_e = Cost of equity

r_f = Risk free rate

r_m = Expected return of the market

B = Beta of the company

The weighted average cost of capital (WACC) could be used as a discount rate for cash flows. It refers to the rate at which a company can acquire debt. In turn it shows the opportunity cost of the capital that is occurred when acquiring assets of the company.¹³

$$WACC = \frac{E}{V} * k_e + \frac{D}{V} * k_d * (1 - T_c)$$

Where E = Market Value of the Equity of the Company

D = Market Value of the Debt of the Company

$V = E+D$

k_e = Cost of Equity

¹³ Pratt, S., 2002. Cost of Capital, Estimation and Applications. John Wiley & Sons, Inc

k_d = Cost of Debt

T_c = Corporate Tax

There are two other methods which are used as well. These are Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE).

The Free Cash Flow to Firm (FCFF) method is interested in discounting cash flows in an entirety. In the free cash flow to firm method the value of the company is taken as a whole and calculated by subtracting the market value of liabilities from equity.¹⁴

$$\text{FCFF} = \text{EBIT} (1 - \text{Tax rate}) + \text{Depreciation} - \text{Capital expenditure} - \Delta\text{WC}$$

Where EBIT = Earnings Before Interest and Tax

WC = Working Capital

It is possible to find Firm Value with the help of the formula above. Depreciation is a non-cash expense that needs to be added back to the equation. Capital expenditure stands for investments, and it needs to be taken into consideration with the changes in working capital.

The Free Cash Flow to Equity (FCFE) method is interested in discounting cash flows related to the equity. FCFE is calculated by following standard formula:

$$\text{FCFE} = \text{EBIT} (1 - T_c) + \text{Depreciation} - \text{Capital expenditure} - \Delta\text{WC} - (\text{ND} - \text{DR})$$

Where ND = New Debt

DR = Debt Repayments

Equity value can be found by the help of the formula above. This method values only the equity of cash inflows. The free cash flows to equity method concerns the cost of equity. However, FCFF concerns WACC and that is the main difference between those two methods.

¹⁴ Damodaran, A., 2002. Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. New York: 2nd Edition, John Wiley & Sons.

3.2. DISCOUNTING THE DIVIDENDS

The dividend discount model (DCF) is one of the first and most popularly used valuation methods by many. The dividend discount model values directly the equity in a company. It uses dividends as only cash flow to equity. Stocks provide dividend payments and a capital gain for investors. The difference between buying and selling price creates capital gains and it is established by the future dividend payments.

Constant Growth formula can be seen below:

$$\text{Value of Equity} = \sum_{t=1}^{\infty} \frac{D_t}{(1 + k_e)^t}$$

where D_t = Expected dividends in period t

k_e = Cost of equity

The application of the model requires future dividends and the cost of equity. The expected future growth rate is needed to find future dividends. The basic projection is the perpetual growth of a firm. The growth perpetuity formula can be seen below.¹⁵

$$\text{Value} = \frac{D_0(1 + g)}{(k_e - g)}$$

where D_0 = Dividend paid in the previous period

k_e = Cost of equity

g = Expected growth rate

The growth rate can be calculated with retention ratio and cost of equity.

¹⁵ Gordon, Myron J.; Shapiro, Eli; "Capital Equipment Analysis: The Required Rate of Profit", Management Science, 1956, Vol. 3 No. 1, p.104-106

$$g = \text{retention ratio} * k_e$$

where k_e = Cost of Equity

$$\text{retention ratio} = \frac{\text{Earnings} - \text{Dividends}}{\text{Earnings}}$$

g = Expected growth rate

However, expecting or achieving constant dividend growth rate is unlikely. Two staged growth models designed to value equity in a company with two stages of growth. The Model starts with a higher growth rate in the initial period and continues with stable growth in the following period.

$$P = \sum \frac{D_0(1 + g_1)^t}{(1 + k_e)^t} + \sum \left(\frac{D_0(1 + g_1)^t * (1 + g_2)}{(1 + k_e)^n} \right) / (k_e - g_2)$$

where D_0 = Dividend paid in the previous period

k_e = Cost of equity

g_1 = First period growth rate

g_2 = Second period growth rate

Discounted cash flow methods are concerned with value which has future benefits. Therefore, discounted cash flow methods are popular among security analysts, economists, and companies alike. However, there are some occasions where discounted cash flow valuation methods might end up lacking. Companies with negative cashflows are a good example of that.¹⁶

¹⁶ Damodaran, A., 2002. Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. New York: 2nd Edition, John Wiley & Sons.

3.3. ASSET BASED VALUATION

Accounting based valuation method is concerned with valuing each asset of the company to reach a collective value. In summary, the value of each asset owned by the company could be added together to find the value of the company. Accounting-based valuation has two methods. These are book value-based valuation and liquidation valuation. Book value is the most basic form of book value-based valuation. According to book value the statement of financial positions shows reliable prediction of the values of the assets and equity in that company.¹⁷

The other option is Liquidation Value. Liquidation value is the current cash value of assets which it would generate if assets were sold now.¹⁸ However, liquidation costs need to be deducted from the income from the liquidation of the company. To be able to calculate liquidation value adjusted book value is needed. Adjusted Book Value is the net value of a company which shows a fair market value with adjusted assets and liabilities. The formula of liquidation value is given below:

$$\text{Liquidation Value} = \text{Book Value} / \text{Adjusted Book Value} - \text{Liquidation Expense}$$

Enterprise Value (EV) is the measurement of the market value of a company. Three inputs are required to calculate enterprise value. One of the needed inputs is market capitalization. Market capitalization can be calculated by multiplying the share price with outstanding shares. The second required input is total debt. It is the combination of short term and long-term financial debt. The final required input is cash and cash equivalents. Cash equivalents are the liquid assets of a company. The formula of enterprise value can be found below:

$$\text{Enterprise Value} = \text{Market Capitalization} + \text{Total Debt} - \text{Cash \& Cash Equivalents}$$

¹⁷ Damodaran, Aswath; "Valuation Approaches and Metrics", Foundations and Trends in Finance, 2005, Vol. 1 No. 8, pp. 693-784

¹⁸ Damodaran, Aswath; "Valuation Approaches and Metrics", Foundations and Trends in Finance, 2005, Vol. 1 No. 8, pp. 693-784

Equity value can be calculated by multiplication of share price and number of shares. Also, equity value can be defined as the total value of the company for shareholders without any debts too. The formula of equity value can be found below:

$$\text{Equity Value} = \text{Enterprise Value} - \text{Total Debt} - \text{Cash \& Cash Equivalents}$$

3.4. RALATIVE VALUATION METHODS

Relative valuation utilizes the market value of other similar assets to compare with the valued asset. This way the value of an asset can be found relative to similar assets. The price of a similar asset needs to be standardized with the application of common variables. Thus, the value of the assets will be comparable to the variable of the company. Ratios are used as common comparable points. Depending on factors these ratios could be classified under three groups.¹⁹

Relative earnings multiples:

- P/E = Price/Earnings per share ratio

Relative asset valuation multiples:

- P/BV = Price/Book value ratio

Relative Sales Multiples:

- P/S = Price / Sales per share ratio

Relative valuation relies on the market to decide the value of the asset. However, relative valuation could face challenges in the way of not being able to find similar companies.²⁰

¹⁹ Damodaran, A., 2002. Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. New York: 2nd Edition, John Wiley & Sons. p18-21

²⁰ Damodaran, A., 2012. Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. John Wiley & Sons Inc.

3.5. CONTINGENT CLAIM VALUATION

Contingent claim valuation is based on value of the options. Therefore, contingent claim valuation is interlinked with option pricing model. An option is a financial asset which is traded in the stock market. Options as the name inclines depend on certain pre-decided events occurring. In that situation holders of the option can enact their financial rights. However, the application of this method faces challenging situations when there are not fitting options are present in the market.²¹

4. COMPANY INFORMATION

Main purpose of the study is analyzing and valuing Ülker Bisküvi Sanayi A.Ş. listed on BİST 100 with multiple valuation methods. Ülker Bisküvi A.Ş. is one of the biggest producers of cookie and chocolate with production facilities in Turkey and abroad. Also, Ülker Sanayi A.Ş. has a significant part of Turkish market when it comes to snack sector.

During the valuation of Ülker Bisküvi Sanayi A.Ş. to be able value and compare the value of the company Discounted cash flows method and book value method will be used. The results will be analyzed and summarized in the conclusion section. In the valuation of Ülker Bisküvi A.Ş. all the information is taken from 2022, 2021, 2020, 2019 and 2018 end of the year annual reports.

²¹ Damodaran, A., 2002. Investment Valuation: Tools and Techniques for Determining the Value of Any Asset. New York: 2nd Edition, John Wiley & Sons. p17

4.1. BUSINESS HISTORY OF THE ENTERPRISE

Ülker Bisküvi Sanayi A.Ş. founded in year 07.09.1957 in Turkey. Registration number of Ülker Bisküvi Sanayi is 41603 and registered address with the date 10.03.1975 in Turkish Chamber of Commerce is Üsküdar Büyükçamlıca, Kısıklı mahallesi Ferah Caddesi No:1 İstanbul. The main operating activities of the company are producing cookies, cakes, chocolate, crackers, and wafer. Ülker Bisküvi Sanayi A.Ş. has been listed in Borsa İstanbul since 30 October 1996. Ülker Bisküvi Sanayi A.Ş. merged with Anadolu Gıda Sanayi A.Ş. on 31 December 2003 under its own name and went for initial public offering (IPO).

According to company incorporation agreement these are the industrial and financial goals of Ülker Bisküvi A.Ş.:

Article

1- Main goals and activities of the company as follows:

a) Manufacture of all food related finished and semi-finished products. Also, purchase and sale of all related raw materials.

b) Production of all canned foods and marmalades made from fruits and vegetables.

2- Procurement of construction materials to build necessary facilities.

3- a) Procurement of food additives, chemical substances, animal products and their derivatives,

b) Procurement of packaging materials for main products,

4- Procurement of all clothes and textile products and relevant auxiliary materials,

5- a) Exercising legal rights for previous articles in the country and abroad,

b) Entering into contract for the above businesses or other reasons,

c) Procurement of all machines, facilities, tools, equipment, transportation vehicles, instruments, outfits and all kinds of electric and electronic appliances, all kinds of office equipment and materials and tools for all above businesses,

6- Dealing with real or legal persons, buying, and selling company shares,

7- Purchasing and selling properties and dealing with relevant rights for above businesses,

8- Ensuring investors receiving all company related information for the commitments,

9- Ensuring domestic and foreign technical assistance, information, patent, letters patent, license, mark, certificate, trademark, know-how, privilege, and all other intangible rights for the activities of the company,

10- Ensuring freight of company goods or the goods of others in the country and abroad,

11- Procurement of energy or operating an energy producing facility or joining to operate a energy producing facility with a partner,

12- Conduct R&D works for food industry,

13- Dealing with government and private industry tenders,

14- Dealing with long, medium or short-term loans from domestic or foreign markets,

15- Performing all kinds of activities in the free zones,

16- Establish branches, representations, legations, agencies, and communication offices inside country and abroad,

17- Dealing with real and legal persons who is involved with the commercial enterprise,

18- Awarding compensations to the educational institutions, universities, publicly beneficial associations, foundations or such persons or institutions,²²

²² Turkish Trade Registry Gazette, 9 April 2010, number 7540, p.586

4.2. THE IMPORTANCE/POSITION OF THE COMPANY IN THE INDUSTRY

pladis bring iconic confectionery brands of Yıldız Holding like McVitie’s, Ülker, and Godiva under a single umbrella. Pladis continues to increase its global influence. pladis provides for supermarket with goods such as Godiva chocolates, regional brands such as Jacob’s, go ahead!, Carr’s, Flipz, BN, Verkade, and Ülker. pladis pleases consumers with products across the snacks category including sweet and savory biscuits, wafers, cake, chocolate, gum, and candy.

pladis acts on its promise to bring foodstuffs to consumers in various parts of the world and offering a wide spectrum of products to please different consumer expectations and needs. pladis, with a total of more than 300 years of expertise from its brands, has 25 factories in 11 countries and more than 16 thousand employees. pladis is a responsible food company which is working happily to deliver the highest quality products to a potential 4 billion people worldwide.

Ülker is the market leader in the biscuit category in Saudi Arabia and Egypt and ranks third in the chocolate category in Kazakhstan.

4.3. THE COMPANY'S PRODUCTS AND ITS DISTRIBUTION CHANNELS

Ülker A.Ş. continues to be the sector leader with a 35% share of the market. In the snacks category sales volume and revenue growth can be seen below:

Table 3 Ülker Bisküvi Sanayi A.Ş.’s Production Volume

Net Sales by Category (TL Million)				
Year	Chocolate	Biscuit	Cake	Total
2022	12,895	12,123	1,988	27,006
2021	6,028	5,324	770	12,122

Sales Volume by Category (Thousand Tons)				
Year	Chocolate	Biscuit	Cake	Total
2022	222	323	50	595
2021	217	322	44	583

Ülker A.Ş started its operations in a small workshop in Eminönü, Istanbul. However, now it has become a global power with 13* factories in 4 countries.

Table 4 Ülker Bisküvi Sanayi A.Ş.'s Factories

Factory	Production	Established:	Capacity: tons/year
Silivri, Istanbul Factory	Chocolate and chocolate covered biscuit	1995	26,433
Topkapi, Istanbul Factory**	Chocolate, chocolate dough, cocoa powder, chocolate chips, chocolate flakes, and couverture chocolate	1991	345,000
Ankara Factory**	Biscuit, flour	1969	389,876
Karaman Factory**	Flour, biscuit, cake, cracker and chocolate	1986	275,912
Gebze, Kocaeli Factory	Biscuit, chocolate and cake	1997	203,130
Giresun Factory	Hazelnut, hazelnut puree	1995	2,568
Egypt Factory (Hi-Food)	Biscuit	2016	41,451
Kazakhstan Factory	Biscuit, chocolate and cake	1997	31,541
Saudi Arabia Factory (FMC)	Biscuit, chocolate and cake	2016	45,500
Saudi Arabia Factory (IBC)	Biscuit and chocolate	2018	24,000
<i>* The number of factories includes the Onem Gida factories based in Topkapi, Istanbul; Karaman and Ankara.</i>		TOTAL	1,385,411
<i>** Onem Gida factories are present in the existing locations.</i>			

In the table below it is possible to see that majority of Ülker Bisküvi A.Ş. located in Turkey.

Table 5 Production Capacity in Countries

Country	2022	Production Capacity (tons/year)
Turkish		1,242,919
Saudi Arabia		69,500
Egypt		41,451
Kazakhstan		31,541

Ülker Sanayi A.Ş.’s sales increased more than twice last year. However, costs increased in a similar fashion. An inflation and currency exchange rate issue of Turkey is the main reason of this sudden increase.

Table 6 Ülker Bisküvi Sanayi A.Ş.’s Sales Volume

ÜLKER SALES VOLUME	2022	2021	2020	2019	2018
Sales_(TL Million)	28,196,847	12,537,080	9,400,861	7,801,120	5,955,508
Cost_(TL Million)	19,788,330	8,924,665	6,757,398	5,663,928	4,395,223
Gross profit_(TL Million)	8,408,517	3,612,415	2,643,463	2,139,192	1,560,285

Table 7 Ülker Bisküvi Sanayi A.Ş.’s Foreign Trade

ÜLKER FOREIGN TRADE DATA	2022	2021	2020	2019	2018
Export_(TL Million)	6,075,450	2,837,277	1,901,206	1,735,435	1,301,496
Import_(TL Million)	4,216,805	3,589,007	470,178	447,562	337,083

<https://ulkerbiskuviinvestorrelations.com/en/financial-and-operational-data/annual-reports.aspx> December2022.(May 2023)

4.4. ORGANIZATION, MANAGEMENT PHILOSOPHY AND POLICIES

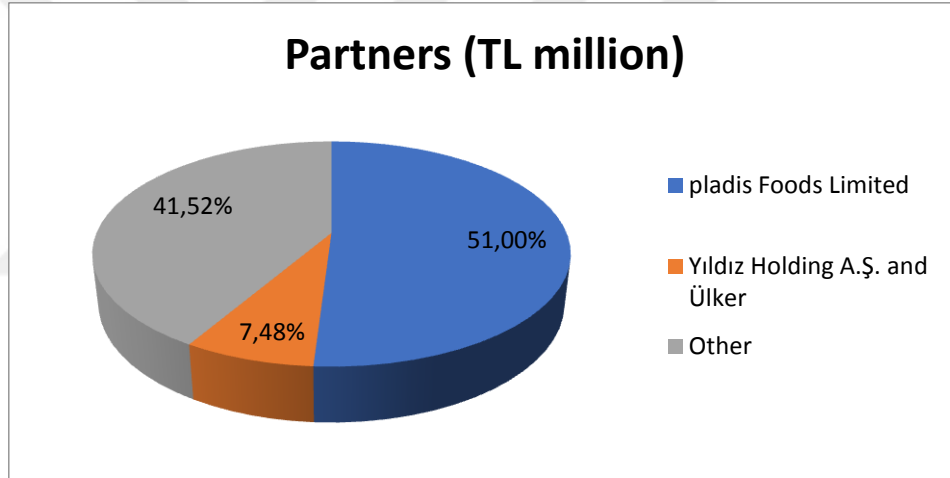
Main partners of the group are Yıldız Holding A.Ş. and pladis Foods Limited. Also, pladis Foods Limited has the controlling share in the partnership. Yıldız Holding A.Ş. is controlled by Ülker family. Ülker is the leading brand in the snacks market of Turkey by far. Ülker Bisküvi Sanayi A.Ş. has the advantage of a reputation from its deep-rooted past. Since 30.12.2022 paid capital has been 342,000,000. - TL. The nominal value of the paid capital is “1” Kuruş divided among 34,200,000,000 shares.

As of 31 December 2022, shares of the partners with more than 5% of the shares are as follows:

Table 8 Ülker Bisküvi Sanayi A.Ş.'s Partners

Partners (TL million)	2022		
	Amount of Shares (x000)	Share Ratio	Number of Shares (x000)
pladis Foods Limited	174,420	51.00%	17,442,000
Yıldız Holding A.Ş. and Ülker Family Members	25,580	7.48%	2,558,000
Other	142,000	41.52%	14,200,000
Total	342,000	100.00%	34,200,000

Figure 1 Partners of Ülker Bisküvi Sanayi A.Ş.



As of 31 December 2022, subsidiaries of Ülker Sanayi A.Ş. within the scope of full consolidation, their main fields of activity and the Company's direct and effective ownership ratios are as follows:

Table 9 Ülker Bisküvi Sanayi A.Ş.'s Subsidiaries

December 31, 2022			
Subsidiaries	Direct Ownership Rate %	Indirect Ownership Rate %	Main Field of Activity
Biskot Bisküvi Gıda Sanayi ve Ticaret A.Ş.	73.90 %	73.90 %	Production
Ulker Çikolata Sanayi A.Ş.	91.70 %	91.70 %	Production
Atlas Gıda Pazarlama Sanayi ve Ticaret A.Ş.	100.00 %	100.00 %	Trade
Reform Gıda Paz. San. ve Tic. A.Ş.	100.00 %	100.00 %	Trade
UI Egypt B.V.	51.00 %	51.00 %	Investment
Hi-Food for Advanced Food Industries	-	51.40 %	Production-Sales
Sabourne Investments Ltd.	100.00 %	100.00 %	Investment
Food Manufacturers' Company	-	55.00 %	Production-Sales
Hamle Company Ltd. LLP	100.00 %	100.00 %	Production-Sales
Ulker Star LLC	-	99.00 %	Sales
UI Mena BV	100.00 %	100.00 %	Investment
Amir Global Trading FZE	-	100.00 %	Sales
Ulker for Trading and Marketing	-	99.8 %	Sales
International Biscuits Company	100.00 %	100.00 %	Production-Sales
Onem Gıda Sanayi ve Ticaret A.Ş.	100.00 %	100.00 %	Production-Sales

<https://ulkerbiskuviinvestorrelations.com/en/financial-and-operational-data/annual-reports.aspx> December2022. (May 2023)

4.5. LABOR PROBLEMS

Ülker Bisküvi A.Ş. claims to contribute to economic, environmental, and social sustainability. Ülker Bisküvi A.Ş. states that they are committed to respecting human rights in all their activities. It is their goal to provide a work environment that respects human rights in accordance with international standards. Ülker Bisküvi A.Ş. claims that employees can express their opinions freely and they are not going to be subjected to discrimination.

Ülker Human Rights Policy (Policy) is based on The Universal Declaration of Human Rights, The United Nations (UN) Global Compact, The UN Convention on the Rights of the Child, International Labor Organization (ILO) Conventions, and OECD Guidelines for Multinational Corporations, UN Guiding Principles on Business and Human Rights and national laws.

This policy defines the ideals of responsibility for human rights in Ülker's activities and business relations. Also, these ideals compass all operations and production facilities of Ülker. These ideals are upheld in contracts made with partners, suppliers and third parties too.²³

4.6. ONGOING AND PLANNED INVESTMENTS

In 2022 Ülker Sanayi A.Ş. made consolidated investments worth 771,400,000 TL to modernize. These investments are below:

- Purchase of packeting machine
- Production machine renovation
- Service tanks renovation
- Purchase of packaging machine
- New production line assembly

5. INDUSTRY ANALYSIS & MACRO ECONOMIC ANALYSIS

The biscuit, chocolate, and confectionery sector is a sub section of the food industry. The definition of biscuit can be referred to as the cereal products cooked by chemical fermentation. The Latin name for biscuit is "bi costus" and in French it is called "bescoit" which also means double baked.

The raw materials needed for production of biscuits are quite many. These are starch, oil, sugar, dextrose, invert sugar and other sugar syrups, honey, malt extract, molasses, salt, water, whey powder, milk, milk powder and egg. Also, those raw materials are supplemented with side materials. The used type of oils is specifically picked for their long shelf life. Biscuits consist of 50%-60% grain. During production instead of fruits and vegetables aromatic essences are used. The usage of aromatic essences is around 0.05%.²⁴

²³ <https://www.ulker.com.tr/documents/Politikalarimiz/ulkerhumanrightspolicy.pdf>

²⁴ [https://www.ankaratb.org.tr/lib_upload/134_Bisk%C3%BCvi_09_01_2013.pdf\(2011\)](https://www.ankaratb.org.tr/lib_upload/134_Bisk%C3%BCvi_09_01_2013.pdf(2011))

In Turkey as of 1924 biscuit, chocolate and confectionery sector was started by production of biscuit type products. Nowadays in more than 40 modern factories 3900 tons of relevant products per year are manufactured. These facilities are spread across Southeast Anatolia, Central Anatolia, and Marmara Region.²⁵

The biscuit, chocolate and confectionery sector is considered to be the sector with the highest value added among all grain-based food sectors. Population growth, increase in young population and subsidization from the government increase the interest in this sector. Therefore, investments have increased in this sector. Turkey has a high unemployment rate and source of labor. According to the performance list of Turkey Development Bank the biscuit, chocolate and confectionery sector is 22. among 110 sectors.

Increase in production volume and limited market capacity in Turkey drive this sector to exporting products. As the demand from foreign countries increases, suppliers try to meet the demand.

5.1. ECONOMIC INDICATORS

5.1.1 Overview

Table 10 Sector's Foreign Trade

COCOA AND CHOCOLATE SECTOR/ SUGAR AND SUGAR PRODUCTS SECTOR FOREIGN TRADE						
TOTAL	COCOA AND CHOCOLATE			SUGAR AND SUGAR PRODUCTS		
YEAR	Export_ \$	Export_Ton	Import_ \$	Export_ \$	Export_Ton	Import_ \$
2022	905,561,148	271,980	579,858,737	2,618,903,365	1,131,593	782,818,380
2021	757,550,316	255,663	706,067,141	2,300,675,875	1,419,710	267,610,429
2020	632,137,484	224,543	606,550,638	1,816,299,475	940,759	346,654,407
2019	649,368,721	232,554	576,714,736	1,796,594,413	914,509	283,469,035

²⁵ <https://dergipark.org.tr/en/download/article-file/627290> KÜBRA ÖNDERDokuz Eylül Üniversitesiİktisadi ve İdari Bilimler Fakültesi

Table 11 Sector's Foreign Trade

COCOA AND CHOCOLATE SECTOR/ SUGAR AND SUGAR PRODUCTS SECTOR FOREIGN TRADE						
TOTAL	Special Trading System					
YEAR	Export_ \$	Ratio	Export_Ton	Import_ \$	Ratio	Balance_ \$
2022	3,524,464,513	13.96%	1,403,573	1,362,677,117	6.67%	2,161,787,396
2021	3,058,226,191	13.80%	1,675,373	973,677,570	5.84%	2,084,548,621
2020	2,448,436,959	13.55%	1,165,302	953,205,045	7.06%	1,495,231,914
2019	2,445,963,134	14.34%	1,147,063	860,183,771	7.09%	1,585,779,363

Table 12 Turkish Agricultural Product Foreign Trade

TURKISH AGRICULTURAL PRODUCT FOREIGN TRADE			
TOTAL	Special Trading System		Foreign Trade
YEAR	Export_ \$	Import_ \$	Balance_ \$
2022	25,246,212,714	20,421,599,290	4,824,613,424
2021	22,156,828,213	16,671,491,576	5,485,336,637
2020	18,068,743,965	13,504,559,590	4,564,184,375
2019	17,052,316,003	12,124,315,098	4,928,000,905

According to Federation of Turkish Food and Beverage Industry Associations' data import and export numbers of agriculture products have been increased consistently in between 2019 and 2022. Under the agriculture products category export and import numbers of Cocoa and Chocolate sector and Sugar and Confectionery sector have increased during the last four years.

However, there is no significant change in the total import and export percentage numbers of agriculture-based products. In 2022 Cocoa and Chocolate sector and Sugar and Confectionery sector's share is 13.96% among export numbers of all agriculture products and 6.67% among import numbers of all agriculture products.²⁶

5.1.2. Global biscuit, chocolate, and confectionery sector

The global biscuit, chocolate, and confectionery sector has its origins in 18. century industrial revolution. In global biscuit production and exportation European Union

²⁶ <https://www.tgdf.org.tr/turkiye-gida-ve-icecek-sektorleri-dis-ticaret-verileri-ots/#>

countries like Germany, Britain, Belgium, Italy, France, Spain, and Netherlands are in leading position. According to data of European biscuit, chocolate, and confectionery union (CAOBISCO) Germany has the highest production among European countries. The consumption of biscuits has been rising in the world. However, in contrary it is decreasing in Europe.²⁷

Table 13 Exporters in the World

TOTAL Exporters US Dollar thousand	2022		2021		2020		2019		2018	
	Exported value in	Exported quantity, Tons	Exported value in	Exported quantity, Tons	Exported value in	Exported quantity, Tons	Exported value in	Exported quantity, Tons	Exported value in	Exported quantity, Tons
World	46,603,486	No Quantity	46,708,386	No Quantity	40,455,460	No Quantity	41,730,399	No Quantity	41,185,397	3,860,352
Germany	7,122,765	1,421,770	6,999,288	1,354,949	6,229,967	1,244,698	6,213,904	1,246,742	6,225,440	1,207,151
Belgium	4,105,072	900,950	4,483,038	972,885	3,849,150	871,768	3,917,733	873,979	3,836,343	822,512
Netherlands	3,002,946	403,630	2,840,207	350,995	2,457,904	312,660	2,666,451	327,277	2,690,587	300,929
Italy	2,733,869	486,782	2,742,408	441,141	2,296,272	387,180	2,312,128	396,506	2,281,940	372,763
Canada	2,561,988	572,586	2,250,306	552,756	2,045,613	527,330	2,073,933	526,854	1,978,030	522,864
U S A	2,377,750	491,194	2,253,693	477,641	1,853,722	407,835	2,207,894	478,224	2,261,141	499,971
China	1,794,493	497,007	1,470,258	409,831	1,143,470	346,338	1,318,973	402,811	1,260,978	395,315
France	1,712,494	377,676	1,798,378	388,541	1,508,758	345,661	1,463,481	326,226	1,661,430	363,153
Türkiye	1,637,512	566,853	1,324,314	518,790	1,041,890	419,349	1,047,243	423,722	950,734	376,711
Spain	1,465,903	1,727,615	1,303,710	1,439	1,039,102	851	1,111,553	975	1,063,470	0
United Kingdom	1,240,115	216,449	1,262,925	219,002	1,248,806	240,736	1,257,327	253,310	1,285,260	242,256
Türkiye	3.51%		2.84%		2.58%		2.51%		2.31%	

Table 14 Importers in the World

TOTAL Importers US Dollar thousand	2022		2021		2020		2019		2018	
	Imported value in	Imported quantity Tons	Imported value in	Imported quantity Tons	Imported value in	Imported quantity Tons	Imported value in	Imported quantity Tons	Imported value in	Imported quantity Tons
World	46,447,676	No Quantity	45,214,564	No Quantity	39,648,471	3,548,682	41,022,039	No Quantity	40,576,020	3,666,381
U S A	6,812,418	1,681,131	5,621,213	1,522,637	4,886,895	1,386,552	4,964,699	1,393,664	4,716,845	1,342,559
United Kingdom	3,472,097	774,772	3,029,659	668,710	2,840,771	677,861	2,719,282	No Quantity	2,754,006	646,922
Germany	3,232,318	697,572	3,404,315	715,627	3,174,236	675,559	3,199,666	705,601	3,205,596	660,053
France	2,920,893	659,242	3,013,068	641,787	2,604,756	567,414	2,591,173	570,275	2,671,813	565,356
Netherlands	2,050,642	464,062	2,033,691	429,490	1,767,005	404,282	1,713,448	412,053	1,751,370	406,888

²⁷ <https://caobisco.eu/> (May 2023)

Canada	1,802,541	407,596	1,634,061	380,364	1,412,405	341,119	1,439,559	351,764	1,475,998	358,100
Belgium	1,388,857	341,289	1,483,332	350,204	1,347,003	343,283	1,324,202	366,142	1,290,291	324,290
China	907,972	150,176	1,043,767	201,998	745,018	155,949	766,642	182,889	692,395	151,270
Spain	903,161	160,851	879,350	155,962	732,681	140,840	788,952	149,949	833,616	156,816
Italy	862,605	187,982	883,720	180,411	771,390	159,330	777,903	165,138	764,309	164,229
Türkiye	198,200	43,687	150,498	29,464	130,593	28,585	158,745	31,806	107,907	23,044
Sri Lanka	13,101	2,736,698	11,801	2,527	6,014	1,491	13,461	2,519	0	0
Türkiye	0.43%		0.33%		0.33%		0.39%		0.27%	

In the table above product groups with number GTIP 1704-1806 import and export figures are shown in between 2018 and 2022 years. Also, relevant figures for production amounts can be viewed. In the years between 2018-2022, an increase of production, export, and import numbers is noticeable. As of 2022 global export number is 46,603,000,000 dollars, import number is 46,448,000,000 dollars. Global export amount is 1.420.770 ton and import amount is 1.681.131 ton.

In this table Germany is first when it comes to exporting and USA is first in importing. However, as amount Sri-Lanka is the first in importing with 2,736,698. Turkey between 2021 and 2022 has a rising trend. In 2022 export number of Turkey reached to 1,637,512,000,000 dollar which increased share of Turkey in global exporting from 2.31% to 3.51%. When it comes to imports, in 2022 Turkey imported 198,200,000,000-dollar worth of goods and Turkey's share increased from 0.27% to 0.43%. Turkey exported 566,853 tons and imported 43.687 tons.²⁸

The candy industry of global biscuit, chocolate, and confectionery sector releases every year global top 100 list. On the list it is noticeable that most of the important firms are based either in Europe or North America. Firms from Europe and North America have the biggest share of production in this sector. On the top100 list 52% of all sales, which is 64,757,000,000 dollars, belongs to top 7 firms.

Yıldız Holding's parent company, pladis is based in Great Britain. pladis has 16,000 employees and 25 production facilities in 11 countries. pladis is 7. on the list with sales

²⁸ <https://www.trademap.org/Index.aspx> (May 2023)

worth of 3,900,000,000 dollars. Şölen Çikolata based in Gaziantep has 2000 employees and it is 57. on the list with sales worth of 370,000,000 dollars. Elvan Grup has 3500 employees and Elvan Grup is 66. on the list with sales worth of 320,000,000 dollars. Bifa has 2500 employees and Bifa is 72. on the list with sales worth 250,000,000 dollars. Kervan Gıda has 2600 employees and Kervan Gıda is 82. on the list with sales worth of 193,000,000 dollars. In total 100 firms sold 125,595,000,000 dollars' worth of sales.²⁹

Table 15 Candy Industry Top 100 List

Country	\$ million	employees
1. Mars Wrigley (Mars Wrigley, a division of Mars Inc.) (USA)	20,000	34,000
2. Ferrero Group (Luxembourg/Italy)	14,268	37,122
3. Mondelez International (USA)	11,775	79,000
4. The Hershey Company (USA)	8,971	16,880
5. Nestle SA (Switzerland)	8,203	270,000
6. Lindt (Chocoladefabriken Lindt & Sprungli AG) (Switzerland)	4,957	13,500
7. Pladis (UK)	3,966	16,000
8. Haribo GmbH & Co. K.G. (Germany)	3,300	7,000
9. Perfetti Van Melle (Italy/Netherlands)	3,018	17,700
10. General Mills (General Mills) (USA)	2,221	35,000
11. August Storck KG (Germany)	2,000	7,000
12. Orion Corp. (Korea)	1,890	13,000
13. Kellogg Co. (USA)	1,323	31,000
14. Simply Good Foods Co. (USA)	1,097	263
15. Delica AG (Ferrier Chocolate, Chocolat Frey AB) (Switzerland)	1,080	2,360
16. Ezaki Glico (Ezaki Glico Co. Ltd.) (Japan)	1,067	5,360
17. Meiji Co. Ltd. (Japan)	1,058	10,648
18. United Confectionary (United Confectionary Manufacturers) (Russia)	1,055	23,778
19. Clif Bar, (USA)	1,000	1,073
20. Arcor Group (Arcor Group) (Argentina)	974	20,000
21. Morinaga & Co. Ltd. (Japan)	958	1,439
22. Cemoi (France)	951	3,400
23. Cacau Show (Brazil)	909	1,927
24. Lotte Confectionery (Korea)	888	9,168
25. Want Want China Holdings Ltd. (Taiwan)	848	42,572
26. Bourbon Corp. (Japan)	833	5,100
27. 1-800-FLOWERS.COM Inc. (USA)	801	13,300
28. Roshen Confectionery Corp. (Ukraine)	800	10,000
29. Crown-Haitai, a Confectionery Group (Korea)	785	1,500
30. Orkla (Orkla, Confectionery & Snacks Div.) (Norway)	779	3,281
31. Henry Lambertz GmbH & Co. KG (Germany)	773	3,500
32. PIM Brands Inc. (The Promotion In Motion family of companies) (USA)	700	750
33. Hearthside Food Solutions (USA)	661	2,680
34. Cloetta A.B. (Sweden)	650	2,600
35. Bahlsen GmbH & Co. KG (Germany)	632	2,600
36. Baronie Belgium N.V. (Germany/Belgium)	608	1,380
37. Krueger GmbH & Co. KG (Germany)	590	1,000

²⁹ <https://www.snackandbakery.com/candy-industry/2022-Global-Top-100-candy-companies> (May 2023)

Country	\$_million	employees
38. Griesson de Beukelaer GmbH & Co. KG (Germany)	588	2,000
39. Tootsie Roll Industries (USA)	551	2,200
40. Alfred Ritter (Alfred Ritter GmbH & Co. KG) (Germany)	545	1,650
41. Valeo Confectionery (a business of Valeo Foods Group) (Ireland)	539	2,780
42. Universal Robina Corp. (Philippines)	538	10,884
43. Productos Ricolino, S.A.P.I. de C.V. (a business of Grupo Bimbo) (Mexico)	504	5,764
44. Compania Nacional de Chocolates (a subsidiary of Grupo Nutresa S.A.) (Colombia)	493	3,792
45. Katjes Group (Germany)	487	1,500
46. Sunrise Confections (a subsidiary of Mount Franklin Foods) (USA)	480	3,700
47. Empresas Carozzi SA (Chile)	475	5,060
48. Fazer Confectionery (Finland)	464	1,900
49. Canel's SA de CV (Mexico)	450	2,700
50. PepsiCo (PepsiCo) (USA)	441	267,000
51. See's Candies S. (USA)	430	8,500
52. Dulces De la Rosa (Mexico)	429	3,180
53. Delfi Limited (Singapore)	408	2,700
54. Slavyanka Stary (Russia)	400	6,500
55. Colombina S.A. (Colombia)	393	3,633
56. PT. Mayora Indah, Tbk (Indonesia)	390	9,000
57. Solen Cikolata Gida Sa. Ve Tic. (Turkey)	370	2,000
58. Ricola Ltd. (Switzerland)	367	500
59. Strauss Group (Israel)	360	1,887
60. The Millano Group (Poland)	351	1,500
61. Mederer Suswarenervertriebs GmbH (Germany)	350	2,700
62. A. Loacker AG/Spa (Italy)	327	978
63. Grupo CRM Copenhagen & Chocolates (Brasil)	327	1,000
64. Gubor Group (also known as Ruebezahil-Riegelein Group) (Germany)	325	1,500
65. HALBA (a division of Coop Cooperative)(formerly Chocolats Halba/Sunray) (Switzerland)	324	385
66. Elvan Group (Turkey)	320	3,500
67. Natra SA (Spain)	315	1,000
68. UHA Taste Candy (UHA Mikakuto Co. Ltd.) (Japan)	290	408
69. Fini Golosinas Espana, S.L.U. (Spain)	287	2,307
70. Bazooka Candy Brands, division of The Topps Co. Inc. (USA)	278	200
71. Josef Manner & Co. AG (Austria)	258	800
72. Bifa Biscuits & Food Ind. Inc. (Turkey)	250	2,500
73. Just Born Quality Confections (USA)	245	500
74. Hotel Chocolat Group plc (UK)	226	2,000
75. Millennium Chocolate Factory, Malbi Foods LLC (Ukraine)	225	3,000
76. Toms Gruppen A/S (Denmark)	224	933
77. ICAM SpA (Italy)	220	420
78. Zertus UK Holding Ltd. (subsidiary of Zertus GmbH) (Germany)	217	1,130
79. Elah-Dufour S.p.A. (Italy)	200	190
80. Kambly SA (Switzerland)	197	535
81. Jelly Belly Candy Co. (USA)	195	720
82. Kervan Gida Sanayi Ticaret A.S. (Turkey)	193	2,600
83. Ragolds GmbH (Germany)	188	700
84. Second Nature Brands (USA)	188	400
85. Dori Alimentos (Brazil)	185	2,550
86. Vidal Golosinas (Spain)	182	1,300
87. Hlebprom (Russia)	182	3,927
88. Colian Sp. zo.o. (Poland)	177	1,348
89. Neuhaus Holdings (Belgium)	177	285

Country	\$_million	employees
90. R.M. Palmer Candy Co. (USA)	175	850
91. Ismail Industries Ltd. (Pakistan)	166	2,316
92. Kras Food Industry PLC (Croatia)	160	2,349
93. Konti Group (Ukraine)	160	8,097
94. Valor Chocolates (Spain)	152	347
95. American Licorice Co. (USA)	150	500
96. Tiger Brands Ltd. (South Africa)	149	1,500
97. Georgia Nut Co. (USA)	145	600
98. Nellson LLC (USA)	145	1,400
99. R.C. Purdy Chocolates Ltd. (Canada)	140	1,100
100. Wawi-Schokolade AG (Germany)	139	500
Total :	125,595	1,156,586

5.1.3. Biscuit, chocolate, and confectionery sector in Turkey

The biscuit, chocolate, and confectionery sector in Turkey has been started in 1924 and in 1954 volume of production increased significantly. During the 80s new production facilities in Konya, Kayseri and Eskişehir were established.

Nowadays there are more than 40 modern facilities which can produce 3900 tons per year and are in Southeast Anatolia, Middle Anatolia, and Marmara Region. All the firms which operate in this sector are privately owned. Big companies are responsible for 81% of all production and 19% of production is done by SME. Most Biscuit factories are in the city called Karaman. In Karaman 20 firms, which registered in the Union of Chambers and Commodity Exchanges of Türkiye, operate to produce biscuits, wafer, and chocolate. 1/3 of all production in Turkey takes place in this city.³⁰

First chocolate factory in Turkey was founded in 1927. However, industrial chocolate production in Turkey started in 1970s. Chocolate sector in Turkey could be divided in 4 segments which are tablets, coatings, wafer bars and paralines.³¹

Historically Sugar and Chocolate sector in Turkey are entwined with traditional Turkish delight and halva production. The young population and traditional consumption habits keep this sector active and growing.

³⁰ https://www.ankaratb.org.tr/lib_upload/134_Bisk%C3%BCvi_09_01_2013.pdf(2011) (May 2023)

³¹ <https://dergipark.org.tr/tr/download/article-file/186441> Ece Nükhet Özdoğan ISSN:1306-3111: e-Journal of New World Sciences Academy 2008, Volume: 3, Number: 1 Article Number: A0061(May 2023)

Turkey has an advantageous position in confectionery sector because of easy access to raw materials. Also, the production capacity of many big firms is bigger than the demand, which leads to a surplus of products. Therefore, it presents an opportunity for exporting.

The biscuit, chocolate, and confectionery sector in Turkey uses both traditional and modern methods in the manufacture of relevant goods. It became the most important subsector of the food sector. Turkish biscuit, chocolate, and confectionery sector has the most advanced technology in Middle East, Balkans, North Africa, Baltics and Central Asia.

This sector is known for its quality when it comes to the quality. Because of integration with European Union Turkish Food Law is made compatible with European Union standards. Also, in Turkey Food and Agriculture Organization and World Health Organization helped to establish international standards. Many firms in Turkey abide by HACCP or ISO 9000 standards.

In last 10 years sweet biscuit exports from Turkey went to Middle East, Africa and some European Union Countries.³²

Table 16 Confectionery Products Exports

2022	US Dollar thousand	Tons
Iraq	648,317	259,500
U S A	321,655	111,562
Germany	143,030	41,879
Israel	121,143	41,339
Libya Libya, State of ?	119,472	37,713
Yemen	97,870	46,127
United Kingdom	92,537	32,069
United Arab Emirates	80,792	28,692
Lebanon	76,885	28,833
Syrian Arab Republic	60,005	32,147

³²<https://ticaret.gov.tr/data/5b8700a513b8761450e18d81/%C5%9Eeker%20ve%20%C3%87ikolata%20Mamulleri.pdf> (May 2023)

In this sector Ülker Bisküvi Sanayi A.Ş. is the number one with 35% market share.

Ülker A.Ş.:

- Biscuit 40% market share
- Chocolate 39.6% market share
- Cake 20.8% market

The second biggest firm in this sector is Eti Gıda Sanayi ve Ticaret A.Ş. with 7000 employees. Eti Gıda Sanayi ve Ticaret A.Ş. has 9 production facilities, 50 brands and more than 300 different products. In 2017 Eti Gıda Sanayi ve Tic. A.Ş. established its first abroad production facility in Romania. Eti Gıda Sanayi ve Tic. A.Ş. has 190 distributors in Turkey and exports to 40 different countries. Eti Gıda Sanayi ve Tic. A.Ş. is a family company and not publicly traded on the stock exchange. However, it is considered that Eti Gıda Sanayi ve Ticaret A.Ş. being on the top 100 industrial firms list.³³

In 1999 Eti Gıda Sanayi ve Ticaret A.Ş.'s market share is 28%. It is hard to find any recent information as Eti Gıda Sanayi ve Ticaret A.Ş. doesn't release any financial statements.³⁴

In Turkey there are a lot of production facilities related to this sector. However, most of them focused on Konya Karaman. However, it is not only important center in Turkey, but it also has a global prominent position. These are the other lesser known and registered firm located in Konya Karaman:³⁵

- Biskot Bisküvi
- Bifa Bisküvi
- Şimşek Bisküvi
- Saray Bisküvi
- Anı Bisküvi

³³ <https://www.etietieti.com/eti-gida-sanayi-ve-ticaret> (May 2023)

³⁴ <https://www.rekabet.gov.tr/Karar?kararId=52ae613b-d117-4b36-8332-19a7a5808263>(May 2023)

³⁵ <https://www.karamandayatirim.gov.tr/assets/upload/dosyalar/karaman-biskuvi-sekerli-mamuller-cikolata-kakao-ve-kakao-mustahzarlari-sektor-raporu.pdf> (May 2023)

- Modern ikolata
- Hazal Bisküvi
- Azra Bisküvi
- Palmiye Bisküvi
- Döhler
- kom gıda
- ığdem Bisküvi
- Ta Gofret
- Vitamin Kek
- Üel Bisküvi
- Evgin Gofret

Year 2022 was hard period not only for developed countries but also pandemic and conflict in Ukraine affected developing countries negatively. Because of geopolitical situation, rising energy prices and disruptions to supply chains increased the risk, which is a cause of global uncertainty.

In Turkey economic activity suffered as the rest of the global economy. Inflation and currency exchange rates hit Turkish economy hard. Food sector in Turkey encountered these problems and had a negative effect on the growth. However, the biscuit, chocolate, and confectionery sector continued to grow, despite it being a subsector of the food sector.

5.1.4. Interest Policy

Currently Turkey as a country follows an experimental economic policy. Therefore, even in the face of rising inflation interest rates are kept lower than what the market expects. In 2023 there has been general elections which led to changes. However, there is still uncertainty about what will future bring as regard to economic policies.

5.1.5. Inflation

Inflation rate in Turkey was 64.27% for 2022. This sudden rise affected Turkish economy deeply. It is suggested that Turkey's foreign exchange rate and interest rate policy

triggered this sudden uncontrollable increase in inflation rate. In global scale this rise in inflation rate is unmatched. Therefore, it brings risk and uncertainty to Turkish economy.³⁶

5.1.6. Unemployment

Tuik announced unemployment rate as 10.2% for 2022. It is high compared to developed countries. However, it has no negative effects on the biscuit, chocolate, and confectionery sector in Turkey.³⁷

5.2 EXPECTATIONS

5.2.1. Estimated GDP (Growth Rate Estimate)

According to World Bank growth rate for Turkey was announced as 5.6 in 2022. However, it is expected that the growth rate will fall to 3.2 at the end of 2023. Although, in 2023 it is estimated that growth rate might be on downwards trend, in 2024 it is expected that growth rate will be 4.3.³⁸

5.2.2. Estimates for Inflation and Foreign Currency Exchange Rate

The main foreign currency for export and import is USD in Turkey. At the end of 2022 TL-USD exchange rate was almost 20. Currently in 2023 it surpassed 23. Therefore, it is hard to estimate the exchange rate at the end of 2023 or in 2024. In 2022 inflation rate for Turkey was 64.27%. However, Turkish central bank estimated inflation rate as 23.3% at the of 2023, which is a very positive estimate, so there is uncertainty.

³⁶ <https://www.tcmb.gov.tr/wps/wcm/connect/TR/TCMB+TR/Main+Menu/Istatistikler/Enflasyon+Verileri/> (May 2023)

³⁷ <https://data.tuik.gov.tr/Bulten/Index?p=Labour-Force-Statistics-November-2022-49384&dil=2#:~:text=As%20the%20unemployment%20rate%20estimated,men%20and%2012.9%25%20for%20women.&text=The%20number%20of%20employed%20persons,compared%20to%20the%20previous%20month.> (May 2023)

³⁸ <https://www.worldbank.org/en/publication/global-economic-prospects> (May 2023)

5.2.3. Possible effects of the macroeconomic environment on the firm in the future

Global economy had downwards trend in the past years because of reasons like Covid pandemic, conflict in Ukraine and rising overhead costs. Turkish economy felt the effects of this downwards trend. However, historically the biscuit, chocolate, and confectionery sector in Turkey had growth despite external factors. Therefore, it is possible to assume that the biscuit, chocolate, and confectionery sector in Turkey will continue growing.

6. COMPANY ANALYSIS & VALUATION

In this part of the study Ülker Bisküvi San. A.Ş. will be analyzed with the help of financial ratios and valuation techniques will be applied to the data of the company.

6.1. FINANCIAL ANALYSIS

Ülker Bisküvi San. A.Ş.'s financial statements are taken, and ratios are prepared for the past five years. During the valuation of the company, these items are examined and used to make assumptions about the company. These financial statements have been audited by an independent auditing firm according to International Financial Reporting Standards. Financial statements of Ülker Bisküvi San. A.Ş. can be viewed in Appendix A.

Ülker Bisküvi San. A.Ş.'s liquidity ratios, turnover ratios and profitability ratios could be seen below:

Table 17 Ülker Bisküvi Sanayi A.Ş.'s Financial Ratios

ÜLKER BİSKÜVİ SANAYİ A.Ş. AND ITS SUBSIDIARIES					
RATIO ANALYSIS	2022	2021	2020	2019	2018
Short-Term Liquidity Ratios					
Current ratio	1.49	3.06	4.55	1.28	3.46
Quick ratio	1.23	2.58	4.05	1.21	3.17
Cash ratio	0.56	1.54	2.31	0.75	1.83
Long-Term Solvency Ratios					
Total debt ratio	0.80	0.84	0.65	0.61	0.66
Debt-equity ratio	3.93	5.08	1.86	1.59	1.90
Equity multiplier	4.93	6.08	2.86	2.59	2.90
Cash coverage ratio	-0.71	-0.27	-0.65	-0.79	-0.28
Turnover Ratios					
Inventory turnover	-4.82	-3.63	-5.92	-9.46	-14.54
Receivables turnover	3.15	2.36	1.83	3.10	3.07
Total asset turnover	0.74	0.48	0.50	0.61	0.56
Profitability Ratios					
Profit margin	0.01	-0.01	0.13	0.14	0.13
Return on assets (ROA)	0.01	-0.01	0.07	0.09	0.07
Return on equity (ROE)	0.03	-0.04	0.19	0.22	0.21

<https://ulkerbiskuviinvestorrelations.com> December 2022 (May 2023)

Kervan Gıda Sanayi ve Ticaret A.Ş.'s liquidity ratios, turnover ratios and profitability ratios could be seen below:

Table 18 Kervan Gıda Sanayi ve Ticaret A.Ş.'s Financial Ratios

KERVAN GIDA SANAYİ VE TİCARET A.Ş. AND ITS SUBSIDIARIES			
RATIO ANALYSIS	2022	2021	2020
Short-Term Liquidity Ratios			
Current ratio	1.16	1.16	2.06
Quick (Acid-Test) ratio	0.77	0.81	1.62
Cash ratio	0.15	0.18	0.57
Long-Term Solvency Ratios			
Total debt ratio	0.60	0.58	0.40
Debt-equity ratio	1.48	1.39	0.66
Equity multiplier	2.48	2.39	1.66
Cash coverage ratio	-1.72	-1.20	-2.34
Turnover Ratios			
Inventory turnover	-4.58	-3.16	-6.08
Receivables turnover	4.01	2.99	3.16
Total asset turnover	1.12	0.64	0.73
Profitability Ratios			
Profit margin	0.08	0.06	0.12
Return on assets (ROA)	0.09	0.04	0.09
Return on equity (ROE)	0.23	0.09	0.15

<https://www.kervangida.com/>

Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş.'s liquidity ratios, turnover ratios and profitability ratios could be seen below:

Table 19 Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş.'s Financial Ratios

KENT GIDA MAD. SANAYİ VE TİC. A.Ş. AND ITS SUBSIDIARIES			
RATIO ANALYSIS	2022	2021	2020
Short-Term Liquidity Ratios			
Current ratio	1.22	1.54	1.43
Quick (Acid-Test) ratio	1.02	1.37	1.24
Cash ratio	0.07	0.05	0.16
Long-Term Solvency Ratios			
Total debt ratio	0.71	0.41	0.37
Debt-equity ratio	2.47	0.70	0.58
Equity multiplier	3.47	1.70	1.58
Cash coverage ratio	-4.91	-3.19	-3.72
Turnover Ratios			
Inventory turnover	-5.55	-5.41	-5.88
Receivables turnover	3.37	3.89	4.50
Total asset turnover	1.21	1.02	0.97
Profitability Ratios			
Profit margin	0.06	0.13	0.13
Return on assets (ROA)	0.07	0.13	0.12
Return on equity (ROE)	0.26	0.22	0.20

www.kentgida.net (<https://e-sirket.mkk.com.tr/>)

Oylum Sınai Yatırımlar A.Ş.'s liquidity ratios, turnover ratios and profitability ratios could be seen below:

Table 20 Oylum Sınai Yatırımlar A.Ş.'s Financial Ratios

OYLUM SINAI YATIRIMLAR A.Ş. AND ITS SUBSIDIARIES			
RATIO ANALYSIS	2022	2021	2020
Short-Term Liquidity Ratios			
Current ratio	1.72	1.57	2.10
Quick (Acid-Test) ratio	1.53	1.22	1.75
Cash ratio	0.49	0.39	0.67
Long-Term Solvency Ratios			
Total debt ratio	0.42	0.53	0.46
Debt-equity ratio	0.72	1.12	0.84
Equity multiplier	1.72	2.12	1.84
Cash coverage ratio	-3.00	-2.55	-2.04
Turnover Ratios			
Inventory turnover	-8.19	-6.90	-14.11
Receivables turnover	3.15	3.44	3.33
Total asset turnover	0.66	0.96	0.87

Profitability Ratios			
Profit margin	0.10	0.06	0.06
Return on assets (ROA)	0.07	0.05	0.05
Return on equity (ROE)	0.11	0.11	0.09

www.oylum.com/tr

6.1.1. Liquidity Ratios

Liquidity ratios are helpful to estimate if the company in question can pay its debts with its cash and cash equivalents. The global economic downturn visibly affected Ülker Bisküvi Sanayi A.Ş.'s liquidity ratios. From 2021 to 2022 across the table all liquidity ratios decreased significantly. This occasion raises the question if Ülker Bisküvi Sanayi A.Ş. might face difficulties paying its debts. Also, it is notable that Ülker Bisküvi Sanayi A.Ş. is financed by more debt than equity.

6.1.2. Turnover Ratios

Turnover ratios illustrate the length of time a company requires to sell its stock and get money back that it paid for goods in the first place. Across the past 5 years Ülker Bisküvi Sanayi A.Ş. has stable receivables turnover ratio and total asset turnover ratio. However, the inventory turnover ratio of Ülker Bisküvi Sanayi A.Ş. is in fluctuation. Inflation and volatile foreign currency exchange rates might have forced Ülker Bisküvi Sanayi A.Ş. to purchase materials in bulk and keep in stock for a long time.

6.1.3. Profitability Ratios

Profitability ratios focus on how much revenue can the company generate with the resources it has. As Ülker Bisküvi Sanayi A.Ş. ended up with a net loss for shareholders in the last 2 years, Ülker Bisküvi Sanayi A.Ş.'s profitability ratios are historically low. It is possible to see that rising foreign currency exchange rates affected Ülker Bisküvi Sanayi A.Ş.'s net profit/net loss because of immense financial expenses in the last 2 years.

6.1.4. Interpretation of Rates

In ideal circumstances the ratios of a company should be compared against to the rest of the industry to ascertain reasonable assumptions. However, in the Turkey biscuit, chocolate, and confectionery sector has only 4 companies listed on BIST 100 which makes interpretation of ratios difficult because of lack of sample size. Ülker Bisküvi Sanayi A.Ş., Kervan Gıda Sanayi ve Ticaret A.Ş., Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş. and Oylum Sanayi Yatırımlar A.Ş. are those 4 companies. Unfortunately, Ülker Bisküvi Sanayi A.Ş. and Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş. are much bigger firms than Kervan Gıda Sanayi ve Ticaret A.Ş. and Oylum Sanayi Yatırımlar A.Ş., thus difference in their ratios might be artifact of scale discrepancy. Interestingly liquidity ratios of all four firms were close to each other in 2022. Although it is necessary to point out that Ülker Bisküvi Sanayi A.Ş. had experienced a fall in its liquidity ratios in 2022 compared to 2021. It would be reasonable to say that Ülker Bisküvi Sanayi A.Ş. is not resistant to liquidity issues as it was in the past. When turnover ratios for Ülker Bisküvi Sanayi A.Ş., Kervan Gıda Sanayi ve Ticaret A.Ş., Oylum Sanayi Yatırımlar A.Ş. and Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş. are compared, there is not much of a disparity. However, profitability ratios tell a different story. As Ülker Bisküvi Sanayi A.Ş. generated a net loss in the last 2 years, its ratios are lower than historical data. The reason for this might be high financial expenses which are caused by volatile foreign currency exchange rates.

6.2 DATA FOR THE SHARES OF THE COMPANY

In 2022 the weighted average number of common stock outstanding was 34,200,000,000 (1 Kuruş per share) and net loss for the period attributable to equity holders of the parent was 353,101,000 TL. Therefore, earnings per Share (TL 1 worth of shares) were -1.03. Also, for 2021 EPS were -1.36. In the last years no dividends were paid.

6.3. RISK AND RETURN

6.3.1 Risk Free Rate

Risk free rate is, as the name suggests, maximum return without any risk. It is considered that governments can always pay their debts. Therefore, returns of government bonds are usually used at the risk-free rate. Risk free rate is used in the capital asset pricing model (CAPM) to calculate cost of equity. In this study 10-year Turkish government bond (13.09.2023) yield has been chosen as risk-free-rate. 10-year Turkish government bond yield for 13.09.2023 is 25.84 and it has been used as annual return for risk-free-rate.³⁹

6.3.2. Average Return

In this study data of BIST 100 and Ülker Bisküvi Sanayi A.Ş. has been taken with monthly frequency for the last four years. This data has been used to calculate the average annual return for the market, which is 0.6146 and the average annual return for Ülker Bisküvi Sanayi A.Ş. is 0.3411.⁴⁰

6.3.3. Risk (standard deviation, variance)

Table 21 Variance and Covariance

	BIST100	Ülker
Variance	0.0083	0.0128
Covariance	0.0073	

In the world of finance standard deviation and variance can be considered as risk of a data set. The risk of the company and risk of the market are essential to find the beta of a company. Data of BIST 100 and Ülker Bisküvi Sanayi A.Ş., which has been taken with monthly frequency, has been used to calculate variance of Ülker Bisküvi Sanayi A.Ş. and

³⁹ <https://www.bloomberght.com/tahvil/tr-10-yillik-tahvil>

⁴⁰ <https://finance.yahoo.com/>

variance of market. The variance of market is 0.0083 and variance of Ülker Bisküvi Sanayi A.Ş. is 0.0128.

6.3.4. Covariance with the market

A company's covariance with the market shows that statistical relationship between risk of both the company and the market. The variance of market is 0.0083 and variance of Ülker Bisküvi Sanayi A.Ş. is 0.0128. Therefore, Ülker Bisküvi Sanayi A.Ş.'s covariance with the market is 0.0073.

6.3.5. Characteristic Line (β and Alpha)

Figure 2 Characteristic Line

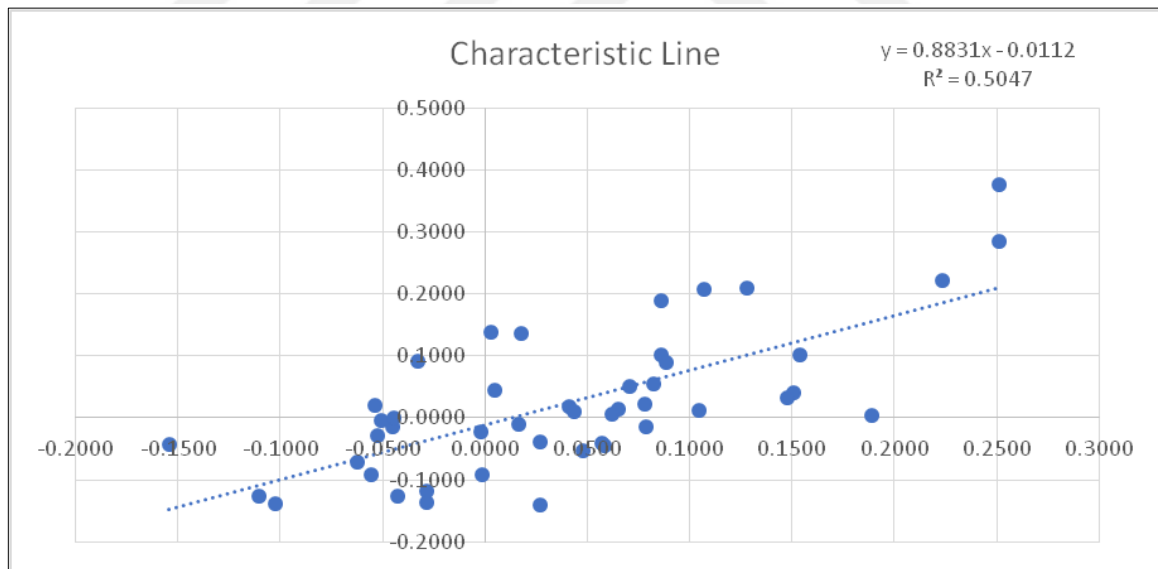


Table 22 Regression

SUMMARY OUTPUT	
<i>Regression Statistics</i>	
Multiple R	0.7104
R Square	0.5047
Adjusted R Square	0.4934
Standard Error	0.0815
Observations	46

ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	0.2975	0.2975	44.8355	0.0000			
Residual	44	0.2919	0.0066					
Total	45	0.5894						
	<i>Coefficients</i>	<i>Std Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>L 95%</i>	<i>U 95%</i>	<i>L 95%</i>	<i>U 95%</i>
Alpha	-0.0112	0.0132	-0.8521	0.3988	-0.0377	0.0153	-0.0377	0.0153
Beta	0.8831	0.1319	6.6959	0.0000	0.6173	1.1489	0.6173	1.1489

Beta of a company shows how closely company's returns follow the general market movement. It is also needed for calculating the cost of equity with the capital asset pricing model (CAPM). To be able to calculate beta of the company, the company's covariance with the market and variance of the market are required. At the end of this calculation the historical beta of the company will be found.

$$\beta(i) : \text{Covariance}(i, m) / \text{Variance}(m)$$

where $\beta(i) = \text{Beta of the Ülker Bisküvi Sanayi A.Ş}$

$\text{Covariance}(i, m) = \text{Covariance of Ülker Bisküvi Sanayi A.Ş and market}$

$\text{Variance}(m) = \text{Variance of the market (BIST 100)}$

Beta of the Ülker Bisküvi Sanayi A.Ş (historical) is 0.88 but this number does not take future estimations into consideration.

Alpha measures the excess return on an investment after adjustments for volatility. Ülker Bisküvi Sanayi A.Ş.'s Alpha is -0.0112

6.3.6. Adjusted Beta

Adjusted beta takes estimations for future into consideration. Thus, during cost of equity calculation the result will be more accurate.

Table 23 Ülker Bisküvi Sanayi A.Ş.'s Adjusted Beta

Beta of Ülker (Historical Beta)	0.88
Beta of Ülker (Adjusted – Estimation of future Beta)	0.92

$$\text{Beta (Adjusted)} = \text{Beta of the company (Historical)} * 2/3 + \text{Beta mean reverting} * 1/3$$

$$0.88 * 2/3 + 1 * 1/3 = 0.92$$

6.3.7. Risk Premium

There are different ways to find a risk premium in order to use in calculation of cost of equity with the capital asset pricing model (CAPM). An easy way to calculate a risk premium is subtracting risk free rate return from the market return. However, there is another way, which is using country risk premium as the risk premium in capital asset pricing model.

Table 24 Turkey's Country Risk Premium (USD)⁴¹

Country	Adj. Default Spread	Equity Risk Premium	Country Risk Premium	Tax Rate	Moody Note
Turkey	7.95%	17.16%	11.22%	23.00%	B3

⁴¹ https://pages-stern-nyu-edu/~adamodar/New_Home_Page//datafile/ctryprem.html

Table 25 Current US Inflation Rates: 2000-2023⁴²

Element	Annual Inflation Rate
2020	1.4
2021	7
2022	6.5
2023*	4.9

Country risk premium of Turkey (TL) can be calculated with risk premium of Turkey (USD), Turkish inflation rate, and US inflation rate is required. New York University professor Aswath Damodaran publishes the countries risk premium table in USD. TUIK states inflation rate of Turkey as 64,27% in 2022.⁴³ And US inflation rate is 6.50% in 2022. Country risk premium (TL) can be calculated with formula below:

Country risk premium(tl)= (Inflation of Tr/Inflation of USD-1)*Country risk premium USD

Country risk premium(tl)= (1+ (64,27%/6,50%)-1) *11,22%=110,94%

6.3.8. WACC & Discount Rate

Table 26 WACC

PARAMETER	
WACC	0.3907
Risk Free Return Rate	0.2584
Cost of Debt	0.3471
Cost of Debt After Tax	0.2673
Risk Premium	0.3562
Beta	0.9221
Cost of Equity	0.5868
Fin. Liab. / (Fin. Liab. + MV Equity)	61.37 %
MV Equity / (Fin. Liab. + MV Equity)	38.63 %

⁴² <https://www.usinflationcalculator.com/inflation/historical-inflation-rates/01,06,2023>

⁴³ <https://data.tuik.gov.tr/Bulten/Index?p=T%C3%BCketici-Fiyat-Endeksi-Aral%C4%B1k-2022-49651&dil=1>

The discount rate used in the study is 0.3851, which is the weighted average cost of capital of the company. During the calculation of the weighted average cost of capital financial asset pricing model is used to find cost of equity which is 0.5868. In this formula data from 31.12.2022 is taken as a basis in determining the risk-free interest rate. Risk-free interest rate is the interest rate of the government bond of 2032, which is 25.84%. In the process of coming up with country risk premium general risk assessments of the said country are taken into consideration. New York University professor Aswath Damodaran publishes the countries risk premium table at certain times. The country risk premium published by Aswath Damodaran isn't used in the calculation of cost of equity as it is more suited for a foreign investor to use. Instead in this study market risk premium is used to calculate the WACC. Market risk premium is 0.36 and it is used in the calculations.

6.4. PROJECTION

This section of the study is the most subjective part, as it will involve assumptions about forecasting future growth rate for the company.

6.4.1. FUTURE INVESTMENTS

Unfortunately, Ülker Bisküvi Sanayi A.Ş. does not share its future investment plans. Therefore, it is necessary to analyze its depreciation expense. When the past data is taken into consideration the average depreciation expense for Ülker Bisküvi Sanayi A.Ş. is 1.68% of the revenue. In this study it is assumed that future investments will be 1.68% of the future revenue.

6.4.2. FORECASTED GROWTH RATE

Table 27 Revenue Growth

	2023P	2024P	2025P	2026P	2027P	2028P	Constant growth phase
Expected Inflation	0.6500	0.3300	0.1520	0.0850	0.0500	0.0500	0.0500
Expected Real Growth	0.2500	0.2250	0.2000	0.1750	0.1500	0.1250	0.1000
Expected Nominal Growth	1.0625	0.6293	0.3824	0.2749	0.2075	0.1813	0.1550

Normally historical data would be useful with making an assumption. However, entire world and especially Turkey experienced 3 extra ordinary years. The highly volatile foreign currency exchange rate, inflation and devaluation made historical data redundant. Because of same reasons Ülker Bisküvi Sanayi A.Ş. had a net loss for last 2 years and didn't pay dividends. However, Ülker Bisküvi Sanayi A.Ş. has received positive cash flows for the last 5 years. Therefore, considering the biscuit, chocolate, and confectionery sector in Turkey has been doing better than other sectors, it could be assumed that future revenues of Ülker Bisküvi Sanayi A.Ş. will grow. In this study to be able make an assumption about future revenue growth inflation will be taken into account. Turkish Republic Central Bank estimates future annual inflation rates of Turkey in OVP 65% for 2023, 33% for 2024, 15.20% for 2025, 8.50% for 2026 and 5% for upcoming years. Ülker Bisküvi Sanayi A.Ş.'s average real growth in the last 5 years is 17.15%. In this case the real growth rate is estimated as 25% for 2023 and it is linearly reduced to 10% in constant growth phase. The expected nominal growth rates are calculated with the help of expected inflation and expected real growth rates. The expected nominal growth rates are used to make an assumption for Ülker Bisküvi Sanayi A.Ş.'s revenue growth.

Table 28 Historical Data

Revenue	2020	2021	2022	% of Revenue (Average)
Cost of Sales	-69.77%	-71.19%	-70.18%	-70.38%
General Administrative Expenses (-)	-2.75%	-2.82%	-2.54%	-2.70%
Marketing Expenses (-)	-9.50%	-8.94%	-8.82%	-9.09%
Research and Development Expenses (-)	-0.25%	-0.32%	-0.31%	-0.29%
Other Operating Income	2.98%	7.15%	3.97%	4.70%
Other Operating Expenses (-)	-2.82%	-4.50%	-1.34%	-2.89%
EBIT				
Tax * (1-t)	13.78%	14.92%	16.00%	14.90%
+ Depreciation	2.02%	1.80%	1.21%	1.68%
+ Noncash change (Amortization)	0.03%	0.03%	0.02%	0.03%
- Capital exp.	-4.77%	-6.33%	-11.26%	-7.46%
- Change in noncash WC	-7.10%	-6.31%	-3.96%	-5.79%
Free Cash Flows to Firm (FCFF)				

Ülker Bisküvi Sanayi A.Ş.'s historical data visualized in table 28. It is possible to see how other items compare to Ülker Bisküvi Sanayi A.Ş.'s revenue. Historical averages are used to make assumptions for future estimations.

6.5. FREE CASH FLOW STATEMENTS

6.5.1. Free Cash Flow to Firm (FCFF)

There are two methods of finding free cash flows and Free cash flow to firm is the popular one and it is used to find value of the firm, therefore it will be used in the final calculations.

Table 29 FCFF

* 1 *	2020	2021	2022
Revenue	9,715,630	12,537,080	28,196,847
Cost of Sales	-6,778,372	-8,924,665	-19,788,330
General Administrative Expenses (-)	-267,314	-353,681	-715,407
Marketing Expenses (-)	-923,064	-1,120,598	-2,486,220
Research and Development Expenses (-)	-24,114	-39,786	-88,643
Other Operating Income	289,555	895,987	1,118,931
Other Operating Expenses (-)	-273,805	-564,347	-378,281
EBIT	1,738,516	2,429,990	5,858,897
Tax * (1-t)	1,338,657	1,871,092	4,511,351
+ Depreciation	196,543	225,794	342,489
+ Noncash change (Amortization)	2,751	4,215	6,285
- Capital exp.	-463,649	-794,067	-3,176,118
- Change in noncash WC	-689,382	-791,342	-1,115,813
Free Cash Flows to Firm (FCFF)	384,920	515,692	568,194

* 2 *	2023P	2024P	2025P	2026P	2027P	2028P
Revenue	58,155,997	94,750,658	130,983,310	166,987,347	201,637,221	238,183,968
Cost of Sales	-40,928,851	-66,683,330	-92,183,035	-117,521,847	-141,907,630	-167,628,388
General Administrative Expenses (-)	-1,572,082	-2,561,315	-3,540,762	-4,514,029	-5,450,690	-6,438,628
Marketing Expenses (-)	-5,283,754	-8,608,556	-11,900,468	-15,171,609	-18,319,718	-21,640,167
Research and Development Expenses (-)	-170,575	-277,909	-384,181	-489,783	-591,413	-698,607
Other Operating Income	2,732,417	4,451,790	6,154,155	7,845,779	9,473,778	11,190,900
Other Operating Expenses (-)	-1,679,000	-2,735,510	-3,781,569	-4,821,028	-5,821,392	-6,876,519

EBIT	11,254,153	18,335,828	25,347,449	32,314,829	39,020,156	46,092,559
Tax * (1-t)	8,665,698	14,118,588	19,517,536	24,882,418	30,045,520	35,491,271
+ Depreciation	976,750	1,591,370	2,199,909	2,804,609	3,386,566	4,000,381
+ Noncash change (Amortization)	16,327	26,601	36,774	46,882	56,610	66,870
- Capital exp.	-4,336,505	-7,065,251	-9,767,004	-12,451,709	-15,035,438	-17,760,611
- Change in noncash WC	-3,366,231	-5,484,432	-7,581,679	-9,665,693	-11,671,324	-13,786,752
Free Cash Flows to Firm (FCFF)	1,956,038	3,186,875	4,405,536	5,616,508	6,781,933	8,011,159

6.5.2. Free Cash Flow to Equity (FCFE)

The free cash flow to equity method is used to find the equity value. However, in this study preference has been made on the side of FCFF method.

Table 30 FCFE

“TL” thousand	2020	2021	2022
FCFE			
Net income	1,268,565	-162,419	199,520
+Depr.	196,543	225,794	342,489
- Capital exp.	463,649	794,067	3,176,118
-Change in WC	-1,074,252	-2,425,350	-3,205,406
-Principal repayment	-7,222,324	-1,705,798	-3,047,800
+Proceed from new debt	9,084,837	1,588,167	2,022,496
Free Cash Flows to Equity	18,382,872	4,988,623	5,641,593

6.5.2. DCF CALCULATION

To be able to finish DCF calculation Terminal value needs to be found. Terminal value represents firm's perpetuity.

$$TV = \frac{FCF_t * (1 + g)}{(r - g)}$$

where FCF_t = Free cash flows in the t period

g = Terminal growth rate

r = Discount rate

Table 31 DCF Calculation

	2023P	2024P	2025P	2026P	2027P	Terminal Value
Free Cash Flows to Firm (FCFF)	1,956,038	3,186,875	4,405,536	5,616,508	6,781,933	39,252,317
Discount Factor	0.7190	0.5170	0.3718	0.2673	0.1922	0.1382
	$1/(1+WACC)^1$	$1/(1+WACC)^2$	$1/(1+WACC)^3$	$1/(1+WACC)^4$	$1/(1+WACC)^5$	$1/(1+WACC)^6$
Discounted CF	₺ 1,406,485	₺ 1,647,708	₺ 1,637,841	₺ 1,501,402	₺ 1,303,592	₺ 5,425,143
DCF Value					₺ 12,922,172	
Cash and Cash Equivalents + ST Financial Investments					₺ 9,465,331	
EV					₺ 22,387,503	

At the end of the DCF calculation Terminal Value has been found. In the next step terminal value and free cash flows have been discounted with WACC of Ülker Bisküvi Sanayi A.Ş. and these numbers have been summed up to reach final DCF value of 12,922,172,000 TL. EV is found 22,387,503,000 by adding DCF value, Cash and cash equivalents and ST financial investments.

6.5.3 SENSITIVITY ANALYSIS

Table 32 Sensitivity Analysis

T	WACC					
	₺ 22,387,503					
G	26%	28%	30%	32%	34%	38%
	₺	₺	₺	₺	₺	₺
5%	30,002,307	27,421,103	25,624,850	24,123,476	22,852,844	20,826,806
10%	33,945,845	30,236,990	27,782,488	25,806,185	24,184,929	21,692,965
15%	41,584,185	35,218,943	31,378,551	28,478,725	26,218,113	22,935,716
20%	62,686,406	46,428,338	38,570,678	33,378,380	29,703,570	24,868,884
25%	522,150,763	99,574,153	61,635,115	45,974,093	37,450,499	28,449,014

It is possible to observe that Ülker Bisküvi Sanayi A.Ş. is vulnerable to changes in cost of equity. An increase in WACC reduces Ülker Bisküvi Sanayi A.Ş.'s enterprise value.

6.6. VALUATION WITH ASSET VALUATION METHOD

To be able to find the value of the firm, book value method from asset-based valuation methods has been used. Net book value is calculated by subtracting all debts from all passives as of 31. December 2022. During liquidation net book value comes in handy to assess the market value of firms and banks. However, it doesn't take future benefits into consideration which is the downside of the technique.

Regardless, net book value is easy to calculate and is handy when data is hard to come by. As of 31.12.2022 according to Ülker Bisküvi Sanayi A.Ş.'s statement of financial positions net book value has been calculated as 7,682,492,000 TL.

Total Passives	:	37,858,791,000 TL
Total Debts (-)	:	(-) 30,176,299,000 TL
(Equity) <u>Net Book Value:</u>	:	7,682,492,000 TL

6.7. VALUATION WITH RELATIVE VALUATION METHOD

In this section of the study Ülker Bisküvi Sanayi A.Ş. will be valued with the relative valuation method which is a market-based valuation method. The main procedure of the relative valuation method is comparing a group of firms which is either like each other or in the same market. During the valuation relevant multiples are calculated from the group of selected firms. The relative value of the company is reached by applying these multiples to date from the company. To be able to achieve consistent and reliable information multiples need to be drawn from big group of companies. However, many competitors of Ülker Bisküvi Sanayi A.Ş. are not listed on BİST 100. Therefore, it is hard to reach their financial statements. It is possible to see competitors of Ülker Bisküvi Sanayi A.Ş. on "Candy Industry global Top 100 list 2022" below:

- 7. pladis (UK) (Ülker is part of pladis)
- 57. Şölen Çikolata Gıda San. Ve Tic. A.Ş.
- 66. Elvan Group
- 72. Bifa Biscuits & Food Ind. Inc. (Turkey)
- 82. Kervan Gıda Sanayi Ve Ticaret A.Ş.

There are five companies from Turkish market in candy industry global top 100 list. However, only two of them are listed on BIST 100. Ülker Bisküvi Sanayi A.Ş. and Kervan Gıda Sanayi Ve Ticaret A.Ş. are those two companies. Nevertheless, there are two other companies. Those are Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş. and Oylum Sanayi Yatırımlar A.Ş. which can be utilized during the relative valuation. Therefore, Ülker Bisküvi Sanayi A.Ş. is compared with Oylum Sanayi Yatırımlar A.Ş. and Kervan Gıda Sanayi Ve Ticaret A.Ş. which has been listed on BIST 100 since 04.12.2020. However, data of Kent Gıda Maddeleri Sanayi ve Ticaret A.Ş. is an outlier so it is omitted from the calculations.

In this part of the study during relative valuation market value/book value and market value/sales multiples are used. As of 31.12 Data of Kervan Gıda and Oylum Sanayi from 2020, 2021 and 2022 are used to calculate averages of Market Value/Book Value. Then these averages are used to calculate estimated relative value of Ülker Bisküvi Sanayi A.Ş. as of 31.12.2022 and the data can be observed below in the table.⁴⁴

Table 33 Relative Valuation – Market Value

Firm	2022/12 (TL)	Closing Share Price	Equity	Market Value
Ülker Bisküvi Sanayi A.Ş.		43.72	342,000,000	14,952,240,000
Kervan Gıda Sanayi Ve Ticaret A.Ş.		30.00	240,000,000	7,200,000,000
Oylum Sınai Yatırımlar A.Ş.		5.00	85,000,000	425,000,000
Kent Gıda Maddeleri San. Ve Tic. A.Ş. (*)		225.00	220,000,000	49,500,000,000

Table 34 Relative Valuation – MV/BV

Firm	2022/12 (TL)	Market Value	Book Value	MV / BV	Relative Value
Ülker Bisküvi Sanayi A.Ş.		14,952,240,000	7,682,492,000	1.95	14,952,240,000
Kervan Gıda Sanayi Ve Ticaret A.Ş.		7,200,000,000	1,738,705,130	4.14	31,813,296,830
Oylum Sınai Yatırımlar A.Ş.		425,000,000	241,844,414	1.76	13,500,659,560
Kent Gıda Mad. San. Ve Tic. A.Ş. (*)		49,500,000,000	1,191,037,116	41.56	319,287,576,257
Relative Value				2.61	20,088,732,130

According to the relative valuation method the value of Ülker Bisküvi Sanayi A.Ş. is calculated by multiplying the average MV/BV of the other two companies with Ülker

⁴⁴ <https://www.isyatirim.com.tr/> (May 2023)

Bisküvi Sanayi A.Ş.'s book value. Data of Kent Gıda is an outlier, therefore it is not used. As of 31.12.2022 Ülker Bisküvi Sanayi A.Ş.'s relative value is 20,088,732,130 TL.

Kervan Gıda and Oylum Sanayi's data from 2020, 2021 ve 2022 as of end 31.12 is used to find average Market Value/Sales multiples. However, Kent Gıda's data is omitted due to its difference. Same multiples are calculated for Ülker Bisküvi Sanayi A.Ş. with similar data.

Table 35 Relative Valuation – MV/Sales

Firm	2022/12 (TL)	Market Value	Sales	MV / Sales	Relative Value
Ülker Bisküvi Sanayi A.Ş.		14,952,240,000	28,196,847,000	0.53	14,952,240,000
Kervan Gıda Sanayi Ve Ticaret A.Ş.		7,200,000,000	4,840,326,639	1.49	41,942,892,193
Oylum Sınai Yatırımlar A.Ş.		425,000,000	275,539,825	1.54	43,491,571,409
Kent Gıda Mad. San. Ve Tic. A.Ş. (*)		49,500,000,000	5,014,192,441	9.87	278,358,667,507
Relative Value				1.19	33,462,234,534

The value of Ülker Bisküvi Sanayi A.Ş. is calculated by multiplying average MV/Sales of other two companies with Ülker Bisküvi Sanayi A.Ş.'s Sales. Data of Kent Gıda is not used as it is too different from the other three companies. As of 31.12.2022 Ülker Bisküvi Sanayi A.Ş.'s relative value is 33,462,234,534 TL.

7. CONCLUSION

There has been a general shift from focus on profit to maximizing value in the world of corporate finance. Globalization opened new avenues for ambitious investors. However, this development revealed a new problem. Investors want to know the real value of the firms that they plan to invest in. Independent analysts provide this service with the help of internationally recognized valuation methods.

In this study internationally recognized firm valuation methods have been explained. Especially discounted cash flow method (DCF)'s usefulness emphasized. In the application phase of the study Ülker Bisküvi Sanayi A.Ş. and relevant industry have analyzed. Suited valuation methods have been applied to Ülker Bisküvi Sanayi A.Ş. to find the value of the said firm.

This goal in mind, in the first part of the study there are theoretical explanations. A standard literature review has been conducted to see which valuation methods will be suited for Ülker Bisküvi Sanayi A.Ş. to find its accurate value.

In the second part of the study an overview of Ülker Bisküvi Sanayi A.Ş. and relevant industry analysis has been done to comprehend under which kind of circumstances Ülker Bisküvi Sanayi A.Ş. operates.

In the last part of the study three different valuation methods have been applied to Ülker Bisküvi Sanayi A.Ş. to find its value. Summary of these could be seen in the table down below:

Table 36 Valuation Methods - Values

Valuation Methods	Value
Discounted Cash Flows	22,387,503,000
Net Book Value	7,682,492,000
Relative Value – Market Value / Book Value	20,088,732,130
Relative Value – Market Value / Sales	33,462,234,534

In an ideal situation information for calculation of Relative Values should be drawn from the entire industry but only four relevant firms are listed on BIST 100 and being publicly traded, therefore it is hard to reach information about other firms in the industry. Also, the disparity between these four firms is significant, thus results are skewed and this is one of the drawbacks of relative valuation method. The Discounted Cash Flows method takes risk, inflation, and foreign currency exchange rates into consideration. In addition to

that the discounted cash flow method values future benefits. Therefore, it is the most accurate method to use in this situation.

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9. APPENDICES

APPENDIX A: FINANCIAL STATEMENTS

ÜLKER BİSKÜVİ SANAYİ A.Ş. AND ITS SUBSIDIARIES

(Amounts expressed in thousands of Turkish Lira ("TL") unless otherwise stated.)

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

ASSETS	2022	2021	2020	2019	2018
Current Assets	25,174,269	18,764,940	14,701,119	8,720,108	6,391,831
Cash and Cash Equivalents	9,254,834	3,004,834	3,835,520	2,027,599	3,378,761
Financial Investments	210,497	6,414,869	3,639,474	3,057,459	702
Trade Receivables					
- Trade Receivables from Related Parties	4,100,552	2,522,152	2,040,146	2,106,741	1,564,689
- Trade Receivables from Third Parties	3,287,788	2,165,759	1,051,854	259,061	334,397
Other Receivables					
- Other Receivables from Related Parties	1,194,805	545,670	2,163,423	115,619	627
- Other Receivables from Third Parties	362,795	68,732	51,313	37,283	38,554
Derivative Instruments	745,842	1,499	37,340	358,919	323,087
Inventories	4,996,350	3,218,231	1,695,858	592,698	604,554
Prepaid Expenses					
- Due To Related Parties	-	-	-	41,545	36,368
- Prepaid Expenses to Third Parties	423,058	368,875	87,760	42,946	39,690
Current Income Tax Assets	13,507	166,661	8,356	4,583	16,899
Other Current Assets	584,241	287,658	90,075	75,655	53,503
Non-Current Assets	12,684,522	7,478,685	4,790,555	4,071,644	4,278,041
Financial Investments	2,687,204	1,878,478	978,106	946,029	1,340,221
Other Receivables					
- Other Receivables From Related Parties	-	-	-	-	234
- Other Receivables	-	-	369	460	21,036
Investment Properties	-	-	26,145	21,155	2,276,366
Tangible Assets - Property, Plant and Equipment	6,817,011	3,640,893	2,846,826	2,383,177	-
Intangible Assets	-	-	-	-	331,975
- Goodwill	1,122,211	896,538	496,196	388,047	257,758
- Other Intangible Assets	895,475	651,304	363,782	292,188	9,628
Prepaid Expenses	128,632	83,633	48,664	7,602	40,823
Deferred Tax Asset	1,033,989	327,839	30,467	32,986	-
TOTAL ASSETS	37,858,791	26,243,625	19,491,674	12,791,752	10,669,872

LIABILITIES AND SHAREHOLDERS' EQUITY	2022	2021	2020	2019	2018
Current Liabilities	16,887,346	6,134,222	3,230,685	6,800,011	1,844,865
Short-Term Borrowings	925,081	759,909	287,953	150,764	85,519
Short-Term Portion of Long-Term Financial Liabilities	10,476,406	2,103,140	1,134,997	5,088,239	369,129
Trade Payables					
- Trade Payables to Related Parties	1,079,457	475,461	276,004	607,365	520,308
- Trade Payables to Third Parties	3,081,810	1,794,960	999,406	617,233	593,789
Payables Related to Employee Benefits	132,371	76,957	55,028	44,822	33,332
Other Payables					
- Due to Related Parties	-	-	120	113	1,177
- Other Payables to Third Parties	3,025	12,672	5,411	4,994	5,631
Derivative Instruments	22,724	-	1,892	-	-
Deferred Income	82,260	83,754	77,384	11,854	37,351
Current Income Tax Liabilities	261,953	301,535	85,888	68,967	15,214
Short-Term Provisions					
- Short-Term Provisions for Employee Benefits	259,014	135,109	90,690	66,366	51,301
- Other Short-Term Provisions	351,169	287,449	166,658	103,331	90,968
Other Current Liabilities	212,076	103,276	49,254	35,963	41,146
Non-Current Liabilities	13,288,953	15,795,501	9,444,296	1,057,509	5,145,275
Long-Term Borrowings	12,349,131	15,313,776	9,058,346	701,318	4,791,105
Long-Term Provisions					
- Provisions for Employee Benefits	763,769	346,828	228,105	161,010	115,344
Deferred Tax Liability	176,053	134,897	157,845	195,181	238,826
SHAREHOLDERS' EQUITY	7,682,492	4,313,902	6,816,693	4,934,232	3,679,732
Equity Attributable To Equity Holders' of the Parent	5,685,906	2,986,714	6,036,780	4,411,329	3,296,237
Paid-in Capital	342,000	342,000	342,000	342,000	342,000
Share Capital Adjustment Differences	108,056	108,056	108,056	108,056	108,056
Effect of Business Combinations Under Common Control	-4,196,733	-4,196,733	-460,419	-485,419	-498,670
Accumulated Other Comprehensive Income or Expenses					
Not to be Reclassified to Profit or Loss					
- Actuarial Losses	-261,647	-44,479	-37,870	-26,435	-
- Increases on Revaluation of Plant, Property and Equipment	3,085,949	815,379	850,738	647,779	647,779
- Earnings from Investments in Equity Financial Instruments	2,020,802	1,276,228	459,069	422,738	-21,173
Accumulated Other Comprehensive Income or Expenses to be Reclassified to Profit or Loss	-	-	-	817,879	1,099,942
- Foreign Currency Translation Differences	832,293	607,882	22,444	-57,006	-89,429
- Cash Flow Hedging Gains (Losses)	30,446	540	-1,400	3,695	52,481
- Gains from Financial Assets Measured at Fair Value through Other Comprehensive Income					
Restricted Reserves Appropriated from Profit	157,537	157,537	131,587	131,587	131,587
Prior Years' Profit	3,920,304	4,384,636	3,541,181	1,509,952	822,885
Net Profit for the Period	-353,101	-464,332	1,081,394	996,503	700,779
Non-Controlling Interests	1,996,586	1,327,188	779,913	522,903	383,495
TOTAL LIABILITIES AND EQUITY	37,858,791	26,243,625	19,491,674	12,791,752	10,669,872

CONSOLIDATED STATEMENTS OF PROFIT OR LOSS	2022	2021	2020	2019	2018
Revenue	28,196,847	12,537,080	9,715,630	7,803,120	5,955,508
Cost of Sales	-	-8,924,665	-6,778,372	-5,663,928	-4,395,223
	19,788,330				
GROSS PROFIT	8,408,517	3,612,415	2,937,258	2,139,192	1,560,285
General Administrative Expenses (-)	-715,407	-353,681	-267,314	-234,744	-159,664
Marketing Expenses (-)	-2,486,220	-1,120,598	-923,064	-752,076	-598,206
Research and Development Expenses (-)	-88,643	-39,786	-24,114	-19,956	-12,551
Other Operating Income	1,118,931	895,987	289,555	87,331	114,557
Other Operating Expenses (-)	-378,281	-564,347	-273,805	-66,029	-125,337
OPERATING PROFIT	5,858,897	2,429,990	1,738,516	1,153,718	779,084
Income from Investment Activities	3,880,982	6,096,145	2,580,794	1,131,907	1,709,158
Expenses from Investment Activities (-)	-1,607,231	-130,934	-685,234	-11,246	-13,599
OPERATING PROFIT BEFORE FINA INCOME AND EXPENSES	8,132,648	8,395,201	3,634,076	2,274,379	2,474,643
Financial Income	193,054	444,638	613,053	554,695	1,285,301
Financial Expenses (-)	-8,244,096	-8,910,373	-2,670,960	-1,466,132	-2,786,405
(LOSS)/PROFIT BEFORE TAX	81,606	-70,534	1,576,169	1,362,942	973,539
Tax Income/(Expense)	117,914	-91,885	-307,604	-260,517	-185,918
Current Tax Expense	-680,294	-450,711	-354,315	-232,123	-118,197
Deferred Tax Income	798,208	358,826	46,711	-28,394	-67,721
PROFIT/(LOSS) FOR THE PERIOD	199,520	-162,419	1,268,565	1,102,425	787,621
Distribution of the Profit/(Loss) for the Period					
Non-Controlling Interest	552,621	301,913	187,171	105,922	86,842
Equity Holders of the Parent	-353,101	-464,332	1,081,394	996,503	700,779
(Loss)/Earnings Per Share	-1.03	-1.36	3.16	2.91	2.05

CONSOLIDATED STATEMENTS OF PROFIT OR LOSS	2022	2021	2020	2019	2018
Revenue	28,196,847	12,537,080	9,715,630	7,803,120	5,955,508
Cost of Sales	-19,788,330	-8,924,665	-6,778,372	-5,663,928	-4,395,223
GROSS PROFIT	8,408,517	3,612,415	2,937,258	2,139,192	1,560,285
General Administrative Expenses (-)	-715,407	-353,681	-267,314	-234,744	-159,664
Marketing Expenses (-)	-2,486,220	-1,120,598	-923,064	-752,076	-598,206
Research and Development Expenses (-)	-88,643	-39,786	-24,114	-19,956	-12,551
Other Operating Income	1,118,931	895,987	289,555	87,331	114,557
Other Operating Expenses (-)	-378,281	-564,347	-273,805	-66,029	-125,337
OPERATING PROFIT	5,858,897	2,429,990	1,738,516	1,153,718	779,084
Income from Investment Activities	3,880,982	6,096,145	2,580,794	1,131,907	1,709,158
Expenses from Investment Activities (-)	-1,607,231	-130,934	-685,234	-11,246	-13,599
OPERATING PROFIT BEFORE FINA INCOME AND EXPENSES	8,132,648	8,395,201	3,634,076	2,274,379	2,474,643
Financial Income	193,054	444,638	613,053	554,695	1,285,301
Financial Expenses (-)	-8,244,096	-8,910,373	-2,670,960	-1,466,132	-2,786,405

(LOSS)/PROFIT BEFORE TAX	81,606	-70,534	1,576,169	1,362,942	973,539
Tax Income/(Expense)	117,914	-91,885	-307,604	-260,517	-185,918
Current Tax Expense	-680,294	-450,711	-354,315	-232,123	-118,197
Deferred Tax Income	798,208	358,826	46,711	-28,394	-67,721
PROFIT/(LOSS) FOR THE PERIOD	199,520	-162,419	1,268,565	1,102,425	787,621
Distribution of the Profit/(Loss) for the Period					
Non-Controlling Interest	552,621	301,913	187,171	105,922	86,842
Equity Holders of the Parent	-353,101	-464,332	1,081,394	996,503	700,779
(Loss)/Earnings Per Share	-1.03	-1.36	3.16	2.91	2.05

CONSOLIDATED STATEMENTS OF OTHER COMPREHENSIVE INCOME	2022	2021	2020	2019	2018
PROFIT/(LOSS) FOR THE PERIOD	199,520	-162,419	1,268,565	1,102,425	787,621
OTHER COMPREHENSIVE INCOME					
Not to be Reclassified To Profit or Loss	2,845,840	838,130	205,880	134,331	380,902
(Losses) on Remeasurement of Defined Benefit Plans	-303,362	-10,821	-12,592	-7,930	-9,539
Property, Plant and Equipment Revaluation Decreases/(Increases)	2,532,378	-8,237	200,369	-	10,677
Earnings from Investments in Equity Financial Instruments	772,072	900,372	32,077	87,403	399,836
Taxes on Other Comprehensive Income That will not be Reclassified to Profit or Loss					
Losses on Remeasurement of Defined Benefit Plans, Tax Effect	58,897	852	1,809	1,586	452
Property, Plant and Equipment Revaluation (Decreases)/Increases Tax Effect	-193,182	39,175	-20,037	-	-532
Earnings from Investments in Equity Financial Instruments, Tax Effect	-20,963	-83,211	4,254	53,272	-19,992
Items to be Reclassified to Profit or Loss	443,862	931,153	151,208	17,744	60,489
Foreign Currency Translation Differences	413,956	929,183	156,303	66,530	24,033
Gains on Cash Flow Hedges	37,383	2,425	-6,487	-62,546	-
Taxes on Other Comprehensive Income that will be Reclassified to Profit or Loss					
Cash Flow Hedges, Tax Effect	-7,477	-455	1,392	13,760	47,252
Cash Flow Hedges, Deferred Tax Effect	-	-	-	-	-10,796
OTHER COMPREHENSIVE INCOME	3,289,702	1,769,283	357,088	152,075	441,391
TOTAL COMPREHENSIVE INCOME	3,489,222	1,606,864	1,625,653	1,254,500	1,229,012
Distribution of Total Comprehensive Income Non-Controlling Interests	790,030	644,016	263,696	139,408	129,117
Equity Holders of the Parent	2,699,192	962,848	1,361,957	1,115,092	1,099,895

CONSOLIDATED STATEMENTS OF CASH FLOWS	2022	2021	2020	2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES					
Profit/(Loss) for the period	199,520	-162,419	1,268,565	1,102,425	787,621
Adjustments to Reconcile Net Profit for the Period					
Adjustments Related to Depreciation and Amortization					
Depreciation expenses of property, plant and equipment	342,489	225,794	196,543	165,471	145,905
Amortization expenses of intangible assets	6,285	4,215	2,751	5,639	3,399
Adjustments Related to Impairment Loss (Reversal)	9,921	1,167	98	-9,307	4,512
Adjustments for impairment of receivables					
Financial investment value decrease/(increase)	1,521,313	-123,330	-316,724	-302,223	-83
Provision for inventory impairment	22,095	3,714	12,934	14,654	3,043
Adjustments Related to Provisions					
Adjustments Related to Provisions (Reversals) for Employee Benefits					
Provision for employment termination benefits	128,107	108,241	57,429	53,788	39,393
Unused vacation accrual	76,956	28,332	27,799	17,393	14,675
Performance premium accrual	126,260	59,451	54,772	48,488	24,158
Adjustments Related to Provisions (Reversal) for Lawsuits and/or Penalties	-537	3,267	-68	2,227	-108
Adjustments Related to Other Provisions (Reversal)					
Other provisions (net)	64,423	118,648	62,742	11,506	48,311
Adjustments Related to Dividend Income	-	-45	-64	-83	-231
Adjustments Related to Interest (Income) and Expenses					
Adjustments Related to Interest (Income) and Expenses Interest income	-374,246	-392,815	-251,238	-233,928	-190,732
Rediscounted interest expense (net)			190	5,239	7,863
Interest expenses	2,244,130	802,144	467,236	413,353	330,265
Fair Value Increase of Investment Properties			-4,990	-1,115	-4,844
Adjustments Related to Tax (Income)/Expenses	-117,914	91,885	307,604	260,517	185,918
Adjustments Related to Losses (Gains) on Disposals of Non-Current Assets					
Adjustments related to losses/(gains) arising from sale of property, plant and equipment	-32,139	-7,059	-1,390	1,846	1,577
Adjustments Related to Other Items That Cause Cash Flows Arising from Investment or Financing Activities					
Financial liabilities exchange rate change (net)	5,722,278	7,609,228	1,604,604	474,289	1,129,076
Change in foreign currency of financial liabilities (net)	-3,377,617	-5,429,745	-1,312,335	-574,714	-1,492,753
Commission expenses and financial income (net)	84,634	54,363	-13,933	23,795	43,664
Income from derivative instruments (net)	-	-	-	-	-1,901
Other Adjustments to Reconcile Profit/(Loss)					
Rent income	-11,062	-12,217	-8,819	-10,444	-8,576
Net cash before changes in assets and liabilities	6,634,896	2,982,819	2,153,706	1,468,816	1,070,152

CONSOLIDATED STATEMENTS OF CASH FLOWS	2022	2021	2020	2019	2018
Changes in Working Capital					
(Increase)/decrease in trade receivables	-1,071,099	-786,408	-342,778	-37,918	-17,834
(Increase)/decrease in receivables from related parties	-1,578,400	-482,006	-253,302	-491,336	-1,029,696
(Increase)/decrease in inventories	-1,641,677	-1,242,601	-754,202	-2,569	26,665
(Increase)/decrease in other receivables and other assets	-623,412	-443,726	9,616	10,091	63,864
Increase/(decrease) in trade payables	1,013,052	440,281	113,425	-11,802	-88,681
Increase/(decrease) in payables to related parties	603,996	199,457	108,897	144,627	166,843
Increase/(decrease) in other payables and liabilities	92,134	-110,347	44,092	-41,431	11,766
Cash generated from activities	3,429,490	557,469	1,079,454	1,038,478	203,079
Payments Related to Provisions For Employee Benefits					
Employment termination benefit paid	-57,249	-58,899	-27,251	-19,452	-24,098
Unused vacation paid	-40,285	-21,955	-25,270	-15,715	-12,383
Performance premium paid	-65,792	-54,782	-52,648	-35,704	-21,705
Lawsuits Provision Paid	-166	-1,125	-891	-525	-194
Taxes Paid	-566,722	-393,369	-343,498	-171,654	-141,359
Collections from doubtful trade receivables	-	-	131	255	38
Cash generated from operating activities	2,699,276	27,339	630,027	795,683	3,378
CASH FLOWS FROM INVESTING ACTIVITIES					
Cash inflows from sales of property, plant and equipment and intangible assets	69,871	94,721	4,198	7,544	40,142
Cash generated from sales of investment properties	-	26,145	-	-	-
Cash outflows from purchase of property, plant and Equipment	-740,762	-558,319	-218,234	-135,572	-225,281
Cash outflows from purchase of intangible assets	-6,473	-1,389	-2,822	-5,178	-6,862
Changes in non-trade receivables from related parties	-649,135	1,837,753	-1,612,579	758	-199
Dividends received	-	45	64	817,961	231
Interest received	374,246	392,815	251,238	233,928	190,732
Other cash advances given and payables	-44,999	-	-	2,026	-
Other cash advances given and repayments from debts	-	-34,969	-41,014	-17,630	52,001
Cash inflows from the sale of shares or debt instruments of other businesses or funds	6,845,914	423,471	491,169	801,458	-
Cash outflows from the purchase of shares or debt instruments of other businesses or funds	-15,897	-	-	-336,410	-
Cash generated from leases	11,062	12,217	8,819	10,444	8,576
Cash outflows from purchase of subsidiary	-	-3,736,314	-	-	40,747
Net cash (used in)/generated from investing activities	5,843,827	-1,543,824	-1,119,161	1,379,329	100,087

CASH FLOWS FROM FINANCING ACTIVITIES	2022	2021	2020	2019	2018
Cash inflows from borrowings	2,022,496	1,588,167	9,084,837	317,922	389,808
Repayments of borrowings	-3,047,800	-1,705,798	-7,222,324	-345,444	-861,537
Cash inflow from derivate instruments	2,648	47,165	499,476	-	1,901
Interest paid	-2,014,244	-756,749	-393,504	-414,644	-337,130
Dividend paid	-120,632	-373,341	-6,686	-	-101,877
Commission paid	-87,282	-54,699	-34,141	-23,795	-43,664
Change in non-trade payables to related parties	-	-120	16	-1,064	-239,632
Net cash used in financing activities	-3,244,814	-1,255,375	1,927,674	-467,025	-1,192,131
NET CHANGE IN CASH AND CASH EQUIVALENTS	5,298,289	-2,771,860	1,438,540	1,707,987	-1,088,666
EFFECT OF FOREIGN EXCHANGE RATE CHANGE ON CASH AND CASH EQUIVALENTS	951,711	1,941,174	351,907	-679,850	1,277,562
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD	3,004,834	3,835,520	2,045,073	999,462	3,189,865
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD	9,254,834	3,004,834	3,835,520	2,027,599	3,378,761

<https://ulkerbiskuviinvestorrelations.com> December 2022 (May 2023)

APPENDIX B: DATA

Date	Adj Close	Adj Close	BIST100	Ülker
	BIST100	Ülker		
01.02.2019	1,045.2990	18.5428		
01.03.2019	937.8420	15.9819	-0.1028	-0.1381
01.04.2019	954.1560	18.1540	0.0174	0.1359
01.05.2019	905.8970	18.0781	-0.0506	-0.0042
01.06.2019	964.8530	18.3531	0.0651	0.0152
01.07.2019	1,020.8250	17.5469	0.0580	-0.0439
01.08.2019	967.1850	17.0537	-0.0525	-0.0281
01.09.2019	1,050.3300	18.7894	0.0860	0.1018
01.10.2019	984.6850	17.4426	-0.0625	-0.0717
01.11.2019	1,069.0370	20.7338	0.0857	0.1887
01.12.2019	1,144.2500	21.7772	0.0704	0.0503
01.01.2020	1,191.4010	22.1755	0.0412	0.0183
01.02.2020	1,059.9370	19.4060	-0.1103	-0.1249
01.03.2020	896.4370	18.5903	-0.1543	-0.0420

01.04.2020	1,011.1010	22.4980	0.1279	0.2102
01.05.2020	1,055.2050	22.7446	0.0436	0.0110
01.06.2020	1,165.2480	23.0102	0.1043	0.0117
01.07.2020	1,126.9000	25.1340	-0.0329	0.0923
01.08.2020	1,078.6000	21.9512	-0.0429	-0.1266
01.09.2020	1,145.2000	22.0863	0.0617	0.0062
01.10.2020	1,112.4000	19.4822	-0.0286	-0.1179
01.11.2020	1,283.6000	21.4690	0.1539	0.1020
01.12.2020	1,476.7000	22.3563	0.1504	0.0413
01.01.2021	1,473.5000	21.8741	-0.0022	-0.0216
01.02.2021	1,471.4000	19.8873	-0.0014	-0.0908
01.03.2021	1,391.7000	20.3116	-0.0542	0.0213
01.04.2021	1,397.8000	21.2182	0.0044	0.0446
01.05.2021	1,420.5000	21.0253	0.0162	-0.0091
01.06.2021	1,356.3000	20.7400	-0.0452	-0.0136
01.07.2021	1,392.9000	19.9400	0.0270	-0.0386
01.08.2021	1,472.1000	19.1300	0.0569	-0.0406
01.09.2021	1,406.4000	19.1200	-0.0446	-0.0005
01.10.2021	1,522.0000	20.1800	0.0822	0.0554
01.11.2021	1,809.7000	20.2600	0.1890	0.0040
01.12.2021	1,857.7000	17.4300	0.0265	-0.1397
01.01.2022	2,003.2000	17.1800	0.0783	-0.0143
01.02.2022	1,946.2000	14.8500	-0.0285	-0.1356
01.03.2022	2,233.3000	15.3300	0.1475	0.0323
01.04.2022	2,430.6001	16.7100	0.0883	0.0900
01.05.2022	2,547.1001	15.8400	0.0479	-0.0521
01.06.2022	2,405.3999	14.3900	-0.0556	-0.0915
01.07.2022	2,592.3999	14.7300	0.0777	0.0236
01.08.2022	3,171.2000	18.0000	0.2233	0.2220
01.09.2022	3,180.0000	20.4800	0.0028	0.1378
01.10.2022	3,979.0000	26.3000	0.2513	0.2842
01.11.2022	4,977.6001	36.2200	0.2510	0.3772
01.12.2022	5,509.2002	43.7200	0.1068	0.2071
Average				
			0.0407	0.0248
Annual				
			0.6146	0.3411
Variance				
			0.0083	0.0128
Covariance				
			0.0073	

APPENDIX C: RESIDUALS

RESIDUAL OUTPUT			RESIDUAL OUTPUT		
<i>Observation</i>	<i>Predicted Y</i>	<i>Residuals</i>	<i>Observation</i>	<i>Predicted Y</i>	<i>Residuals</i>
1	-0.1020	-0.0361	24	-0.0125	-0.0784
2	0.0042	0.1318	25	-0.0590	0.0804
3	-0.0559	0.0517	26	-0.0073	0.0520
4	0.0463	-0.0310	27	0.0031	-0.0122
5	0.0400	-0.0839	28	-0.0511	0.0376
6	-0.0576	0.0295	29	0.0126	-0.0512
7	0.0647	0.0371	30	0.0390	-0.0796
8	-0.0664	-0.0053	31	-0.0506	0.0501
9	0.0644	0.1243	32	0.0614	-0.0059
10	0.0509	-0.0006	33	0.1557	-0.1518
11	0.0252	-0.0069	34	0.0122	-0.1519
12	-0.1087	-0.0162	35	0.0580	-0.0723
13	-0.1474	0.1054	36	-0.0363	-0.0993
14	0.1017	0.1085	37	0.1191	-0.0867
15	0.0273	-0.0163	38	0.0668	0.0232
16	0.0809	-0.0692	39	0.0311	-0.0832
17	-0.0403	0.1326	40	-0.0603	-0.0312
18	-0.0491	-0.0776	41	0.0574	-0.0338
19	0.0433	-0.0372	42	0.1860	0.0360
20	-0.0365	-0.0814	43	-0.0088	0.1465
21	0.1247	-0.0227	44	0.2107	0.0735
22	0.1216	-0.0803	45	0.2104	0.1668
23	-0.0131	-0.0084	46	0.0831	0.1240