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27 April 2020

Dear Sirs,

This report comprises the result of the Independent Expert Report ("Report"), prepared within the scope of the CMB's Communiqué on Merger and Demerger* article 7, in accordance with the letter of engagement (See Appendix 1) signed between Türkiye Şişe ve Cam Fabrikaları A.Ş. ("Company" or "Şişecam" or "SISE") and PwC Yönetim Danışmanlığı A.Ş. ("PwC") regarding the merger of Trakya Cam Sanayii A.Ş. (TRKCM), Anadolu Cam Sanayii A.Ş. (ANACM), Paşabahçe Cam Sanayii ve Ticaret A.Ş. (PASAB), Denizli Cam Sanayii A.Ş. (DENCM) and Soda Sanayii A.Ş. (SODA) under Türkiye Şişe ve Cam Fabrikaları A.Ş. (together "Companies to Merge"). The study is complete as of our Report date, therefore subsequent events have not been taken into account for the purposes of this Report.

This Report has been prepared based on the information provided by the management of the Companies to Merge in order to determine the merger and share swap ratios with the use of the appropriate valuation methods as of 31 December 2019.

The historical financial and operational information, as well as the financial projections used in this study were provided by the Companies to Merge. The financial statements and other information presented to us within the scope of this study have not been subjected to additional audit or review procedures. It should be noted that PwC does not issue an opinion or any type of assurance regarding the achievability of the projections provided by the management of the Companies to Merge.

This Report is addressed solely to Şişecam management. PwC does not assume responsibility or liability of any nature arising from the use of this Report by third parties. This Report should not be released to any third party without PwC's written consent, except legal institutions and regulatory authorities (Capital Markets Board, etc.). In the event that we consent to the release of this Report, Şişecam assumes full responsibility relating to the use of the Report.

Yours faithfully,

Serkan Aslan

Partner

*Sermaye Piyasası Kurulu Birleşme ve Bölünme Tebliği (II-23.2)

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General Information on the Report (1/9)

Aim of the Study *This study comprises the preparation of the Independent Expert Report relating to the determination of the appropriate merger and share swap ratios for the merger of TRKCM, ANACM, PASAB, DENCM and SODA under SISE in accordance with CMB's Communiqué on Merger and Demerger.*

For the purpose of this assessment, PwC has made no investigation of, and assume no responsibility for the verification of the legal ownership status of the assets belonging to the Companies to Merge. PwC also assumes that there are no hidden or unexpected conditions or encumbrances relating to the ownership that may affect the values of the Companies to Merge.

Fair Value Definition

Throughout the Report, it is vital to distinguish between the terms price and value. Price is what a buyer is willing to pay, which is unlikely to equate with the value attributed to the business by the valuer.

The basis of the valuation for the study in this Report is fair market value. As indicated in CMB's Communiqué III-62.1, it is mandatory to adopt the International Valuation Standards (IVS), published by the Turkish Association of Appraisers and Turkish Capital Markets Association in an assessment of this kind. *IVS defines fair market value as, the estimated price that would be negotiated at the valuation date, in an open and unrestricted market, between a knowledgeable, willing, but not anxious buyer and a knowledgeable, willing, but not anxious seller, acting at arm's length.*

Sources of Information

This Report has been prepared based on the information provided by the management of the Companies to Merge. The audited financial statements for the periods 2017 – 2019, prepared in accordance with TAS/TFRS and the financial reporting regulations of CMB and POB were used as the basis of historical information for Companies to Merge.

The business plans cover the years 2020-2025 for most companies. For mining subsidiaries of Companies to Merge however, the lifecycle of the mine reserves have been taken into account as the determining factor for the projection period. Projection period has been extended until 2034 for ANACM's Eastern Europe investment and until 2085 for SODA's natural soda ash investment in USA which are both explained in detail in the following sections of this Report. The detailed list of information sources is presented in the 'Appendices' section of the Report

It should be noted that PwC does not issue an opinion or any type of assurance regarding the achievability of the projections provided by the management of the Companies to Merge. Our conclusions are dependent upon the completeness and accuracy of the information provided by management of the Companies to Merge, which were reviewed and discussed with the management of the Companies to Merge to the greatest extent possible and the underlying assumptions of the business plans were altered where deemed necessary.

Within the scope of this Report, PwC did not audit the financial statements and other information of the Companies to Merge. Therefore PwC does not express an opinion on the financial statements contained in this Report.

General Information on the Report (2/9)

Use of the Report

This Report is addressed solely to Şişecam management. *PwC does not assume responsibility or liability of any nature arising from the use of this Report by third parties.* This Report should not be released to any third party without PwC's written consent, except legal institutions and regulatory authorities (Capital Markets Board, etc.). In the event that we consent to the release of this Report, Şişecam assumes full responsibility relating to the use of the Report. *The information in the Report has not been by any means prepared as a promise for the future or to reflect the future. In all circumstances, individuals and institutions are advised to carry out their own market analysis and private reviews.*

Valuation Date

The valuation date has been determined as *31 December 2019* within the framework of CMB's Communiqué on Merger and Demerger.

Valuation Approaches

In the valuation assessment, 4 methods have been used: Income Approach("IA"), Market Approach("MA"), Net Asset Approach("NAA") and Stock Market Value ("SMV").

Income Approach (Discounted Cash Flows – "DCF")

In this method, the value of the Companies to Merge are estimated based on the present value of the expected future free cash flows. *Within the scope of Income Approach, the business plans and cash flow estimations after business plan period, provided by the management of the Companies to Merge, have been used.*

With the information provided by the management, discounted cash flow models have been prepared for the Companies to Merge and their operational subsidiaries and affiliates, which include the income / expense, corporate tax burden, capital expenditure and working capital need projections. The net present value of expected future cash flows of the related companies were discounted using a discount rate in line with companies' risk profiles.

After estimating the stand-alone equity values for all the companies within the scope of the Income Approach, the 'Sum of the Parts' method has been used in the calculation of the total value of each Company to Merge. In this method, the estimated equity value for each Company to be Merge is the sum of the company's equity value as well as the value of its stake in its subsidiaries and affiliates.

General Information on the Report (3/9)

Valuation Approaches (Continued)

Market Approach (Comparable Companies and Transactions)

According to comparable companies (“CC”) and comparable transactions (“CT”) methods that can be applied within the framework of Market Approach; *total equity value is estimated based on comparison of the valuation multiples of companies with similar line of business with the Companies to Merge.* Under market approach, the enterprise value is determined as a result of analysis of financial information of comparable public companies and information on publicly announced transactions. The biggest challenge while using this approach is the difficulty of finding reasonable peer companies.

In comparable companies analysis, comparable public companies that have similar operations, profitability and debt-to-equity ratios with the Companies to Merge, and which are understood to be direct competitors of the Companies to Merge in terms of similarity and geographical distribution of activities, are considered. “Enterprise Value (EV) / EBITDA ratio” has been determined as the appropriate valuation multiple to be considered in the valuation. EV/EBITDA ratio has been calculated using 5-year average market values, year-end net debt levels and other meaningful data covering the 2015-2019 periods obtained from the comparable companies. This ratio, which is calculated in average and on an annual basis for a period of 5 years, is considered to represent the average multiple of the sector. The enterprise value was estimated by applying the calculated multiple to the 4-year average EBITDA of the Companies to Merge (adjusted to 2019 prices with inflation indexation) covering the 2019-2022 period. With this method used in determining the EBITDA to which the multiple will be applied, the short-term impact of the COVID-19 outbreak has been included in the EBITDA, thus, the effect of the pandemic on the value has been captured within the scope of the Market Approach.

Comparable transactions method has not been applied due to the fact that the number of public transactions were limited especially given our focus was on the transactions realized in the past 5 years retrospectively and that some of the transactions identified were related to the purchase of minority shares.

While performing the Market Approach for SISE, no separate analysis was conducted to find comparable companies. The total equity value of SISE was estimated by considering the Market Approach results of the direct subsidiaries of SISE in proportion to its ownership rates. For other companies that are direct subsidiaries of SISE and other than the Companies to Merge, the equity values that have been estimated by applying the Income Approach or Net Asset Approach, have been taken into consideration within the scope of the Market Approach. It has been concluded that the application of the Market Approach for the valuation study of Other Companies would not be meaningful due to the fact that the Other Companies are mainly engaged in activities specific to the SISE’s needs.

General Information on the Report (4/9)

Valuation Approaches (Continued)

Net Asset Approach

The Net Asset Approach is based on the assumption that the price to be paid by a buyer for an enterprise will be at least equal to the amount to be obtained by cashing all the assets and liabilities of that enterprise at a certain date or the amount to be spent (depreciated replacement value) to bring the business to its current position.

Net asset values have been estimated based on the consolidated equity amounts presented in the audited financial statements dated 31 December 2019 and prepared in accordance with the TAS / TFRS and the financial reporting regulations of CMB and POB. In this context, adjustments have been made to the book values of consolidated equity for the dividends to be paid / collected as well as certain assets and liabilities.

Stock Market Value

Since the price information that can be obtained from an active stock market can be a meaningful indicator of value, Stock Market Value has been taken into consideration in the valuation studies of the publicly traded companies among the Companies to Merge.

In estimating the value within the context of Stock Market Value, the weighted average share price according to the daily transaction volume of the Companies to Merge has been calculated for the retrospective 1 year period between 30.01.2020 and 31.01.2019, the date when Şişecam management announced the merger to the Public Disclosure Platform (KAP).

Since PASAB is not publicly traded, an estimated stock market value is calculated for purposes of our assessment, by referencing and using the results of the Market Approach. For this special purpose calculation, the EBITDA multiples calculated over the stock market values of the Companies to Merge and the multiples obtained from comparable companies were compared. The ratios obtained from comparing these two sets of multiples for each Company to Merge have been considered as a coefficient to translate Market Approach results of PASAB into Stock Market Value estimation. Details of the calculation are presented in the PASAB section of this Report.

General Information on the Report (5/9)

Currencies Used in the Valuation Assessment

Currencies used in the valuation assessment have been determined separately for each subsidiary and affiliate of the Companies to Merge considering their operational structures and regional sales territories. *Historical cash flows, sales and profitability targets for each company subject to the valuation study, have been separately analysed to determine the most suitable functional currency, having the most impact on the aforementioned parameters.*

Under Income Approach, the enterprise values of the Companies to Merge, their subsidiaries and affiliates; have been estimated in their operational currencies and then converted into TL with the prevailing exchange rates as of the valuation date.

Shareholding Structure Prior to Merger

The Report is based on *the most recent shareholding structures of the Companies to Merge as of the Report date*. It is important to note that share ownership rates may change as the merger progresses, thus the actual pre-merger shareholding can turn out to be different than what is presented in the Report.

Share Buyback Programs

With the statement published on 25 December 2019 on Public Disclosure Platform, Türkiye İş Bankası A.Ş. (Türkiye İş Bankası) has announced its share buyback program that will continue until the end of 2020. The total budget for the share buyback is TL 300m. In this context, Türkiye İş Bankası A.Ş. has purchased SISE shares since the beginning of 2020.

Similarly, SISE buys the shares of its publicly traded subsidiaries since September-October 2019. According to the information provided by the SISE management, it is understood that the share repurchase program might continue if deemed appropriate in the period after the Report date.

General Information on the Report (6/9)

**Communiqué on
Merger and
Demerger No. II-23.2
(II-23.2 sayılı
Birleşme ve Bölünme
Tebliği)**

The merger will be coordinated within the framework of a set of legislative provisions not limited to but including; Capital Markets Law No. 6362, CMB's Communiqué on Merger and Demerger (Serie:II, N 23.2), CMB's Communiqué on Common Principles and Right to Leave on Significant Transactions (Serie:II, N 23.1) (or new communiqué), Turkish Commercial Code No. 6102 and Corporate Tax Law No. 5520. Our Independent Expert Report has been prepared by taking into consideration the CMB's Communiqué on Merger and Demerger.

Merger and Demerger Communiqué / The Independent Expert Report

ARTICLE 7

- (1) An Independent Expert Report is prepared for the purpose of determining the value and share swap ratios of companies that are parties to merger or demerger. *It is obligatory to give an opinion that the share swap ratio is fair and reasonable in that kind of report. At least three valuation methods are taken into account in the preparation of the independent expert opinion, taking into account the detailed analyses of the companies.*
- (2) In the valuation process, the regulations of the Board regarding valuation are taken into consideration.
- (3) If the fair values of the real estates are used as part of the basis forming the opinion of the expert institution, the fair values of the real estates in question are determined by the real estate valuation companies which satisfy the framework of the relevant regulations of the Board. *If there is a real estate valuation report prepared by a real estate valuation company in compliance with the relevant regulations of the Board regarding real estates, this report must be taken into consideration in the preparation of the independent expert opinion.*

General Information on the Report (7/9)

Project Team

The Independent Expert Report has been prepared by a team of 13 experts, of which 5 are executives. A short resume for each executive member is presented below:

Serkan Aslan (Partner): Serkan holds a BS degree in Management Engineering from Istanbul Technical University and an MBA degree from Marmara University. *He leads the PwC Valuation & Modelling team with more than 20 years of experience in the fields of business valuation, financial modelling and feasibility studies. Serkan holds Capital Markets Board of Turkey, Advanced Level 3 License (SPL Registration No: 770, Doc. No: 200544).*

Engin İyikul (Director): Engin graduated from Economics Department of Boğaziçi University in 2009 and joined PwC Valuation & Modelling team. *With more than 10 years of experience at PwC, Engin has specialized in business enterprise valuations and financial modelling services. He also spent more than a year with TMT Valuations team in PwC's London office.*

Eray Kundereli (Director): After graduating from the Business Engineering Department of Istanbul Technical University in 2009, Eray started his career at KPMG Audit department. Joining PwC in 2010, Eray has involved in several local and international projects, specializing in the fields of business valuation (for financial reporting and tax purposes), financial modelling and feasibility studies. *Currently working as Director, Eray has more than 10 years of experience, especially in financial modelling field.*

Serra Türkkan (Senior Manager): Serra graduated from the department of Business Administration at the University of British Columbia. She started her career at PwC Merger and Acquisition Support in 2012 and after working in this department for 2 years, joined PwC Valuation team. *Serra has more than 7 years of experience in the fields of mergers & acquisitions, business valuation, financial modelling and feasibility studies.*

Ahsen Erten (Manager): After graduating from Business Administration Department of Bilkent University in 2013, Ahsen started her career at an investment bank where she gained experience in M&A process, deal closing and post M&A management. Joining PwC Valuation and Modelling Team in 2015, she has specialized in the fields of business valuation (for financial reporting and tax purposes), financial modelling and feasibility studies. *Ahsen has more than 5 years of experience in business valuation, financial modelling services.*

General Information on the Report (8/9)

Our Statement to the CMB

In accordance with the Announcement made pursuant to the Decision of the **Capital Markets Board's** Decision Body dated 11.04.2019 and numbered 21/500, we declare that:

- We are a consultancy firm that employs at least 1 person who has "Capital Markets Board of Turkey, Advanced Level 3 License" or "Derivative License", which operates within the framework of licenses, know-how and similar agreements with foreign companies with which the authorized independent audit institution in the capital market has a membership agreement,
- We have a separate "Valuation and Modeling Services" special unit,
- There are procedures to be used during valuation studies,
- We have control charts or similar documents to be used in customer acceptance, work execution, preparation and signing of the report,
- We have all kinds of knowledge databases, internal circulars, improved know-how and similar infrastructures that constitute the technical infrastructure of valuation studies,
- We have a research infrastructure for obtaining the information needed in valuation studies,
- There is a service contract between Şişecam and our company for the preparation of the Independent Expert Report (see Appendix 1),
- There is no direct and indirect capital and management relations with the company requesting valuation (see page 12: Independence) and,
- Valuation services were not provided to the companies receiving audit assurance services in the same period,

Within the framework of the 3rd article of the Communiqué Regarding the Valuation Standards in the Capital Market, **numbered III-62.1 of the Capital Markets Board** we declare that:

- Valuation activities made pursuant to the capital market legislation are in compliance with the International Valuation Standards published by the Association of Turkish Valuation Experts and the Association of Turkish Capital Markets.

General Information on the Report (9/9)

Independence

We confirm that PwC and the PwC partners and staff involved in this project do not have, and do not contemplate, any financial interest in the merger, sales or any other potential transaction of the Companies to Merge. Furthermore, we confirm that the fee to be paid to PwC is not based on or contingent upon the outcome of this study or its use. We also confirm that PwC does not have any direct or indirect capital and management relations with the Companies to Merge, their subsidiaries and affiliates.

The management and staff of the Companies to Merge are potentially in a position of being able to influence the results of this study, intentionally or unintentionally. Such potential impacts are inherent in any study of this kind. PwC has implemented the following measures to ensure that such an influence is minimized:

- Absolute impartiality and independence of all PwC staff,
- The assumptions and forecasts used in this study are based on the business plans provided by the management of the Companies to Merge and have been discussed with the management to the greatest extent possible. The business plans have also been compared to the historical performance of the Companies to Merge and the forecasts published in different public sources; and have been revised if found necessary in order to reach fair and reasonable results.

Matters to be Considered

General (1/2)

The Effects of COVID-19

A series of meetings were held with the management of the Companies to Merge, to discuss the possible effects of the COVID-19 outbreak on business plans and projections, which has been declared as a global pandemic by the World Health Organization ("WHO").

The discussions primarily focused on the current measures taken against the effects of the epidemic such as suspending the production lines and reducing workers' shifts in the production facilities. The effects of these measures on the business plans were discussed for the projection period as a whole, and especially for 2020.

The forecasts of the management regarding the duration and scale of the effects of COVID-19 differ among the Companies to Merge. In the projections, it is taken into consideration that the business segments of the Companies to Merge have different dynamics and that the severity of the COVID-19 outbreak varies between the countries in which they operate.

The potential effects of COVID-19 in the business plans have been considered according to the information obtained from the management of the Companies to Merge. Within this scope, business plan revision suggestions of the management of the Companies to Merge, their subsidiaries and affiliates have been taken into consideration in the study.

In addition to the amendments in business plans, macroeconomic assumptions and discount rates applied in the study have been estimated by taking into account the effects of COVID-19. Detailed information about the revisions made and measures taken by the management are explained on the following pages of the Report.

As of the Report Date, our knowledge about the impact of the COVID-19 outbreak on projections is limited to the information provided by the management of the Companies to Merge. Currently, it is not possible to fully predict the possible effects of the COVID-19 outbreak on business plans and basic assumptions that the study is based on. Therefore, it is likely that there will be other changes in cash flows and valuation results in case unforeseen global developments regarding the epidemic take place and such events trigger possible decisions by the Companies to Merge that change the direction of the projections in a way not accounted for in the study.

Matters to be Considered

General (2/2)

Carbon Border Adjustment Mechanism

The Green Deal, which was announced by the European Union ("EU") in December 2019, contains a number of goals such as carbon regulation at the border, ending the use of coal, reducing the carbon containment of fossil fuels, reorganizing energy taxation in EU countries, providing energy largely from renewable sources. Also, in the schedule of the EU Emissions Trading System, carbon quotas are expected to be tightened for the period after 2021. Within this context, there is a high risk of significant additional financial liabilities for energy and resource intensive industries.

According to the information provided by Şişecam management, the arrangements regarding the EU's Green Deal have been presented to the stakeholders' opinion by 2020. Within the scope of Green Deal, the above-mentioned 'Carbon Border Adjustment Mechanism' ("CBAM") is planned to be implemented. Although the details being unclear, the regulation is expected to impose an additional carbon tax burden per ton in exports to EU countries. It was reported by Şişecam management that the options regarding the implementation scope of CBAM are in the negotiation phase. It is expected that the draft legislation will be completed and presented to the public for opinion in the third quarter of 2020.

According to the Şişecam management, the most prominent option regarding the regulation mechanism is "The application of the EU's Emissions Trading System to imports". Within this scope, the main business segments of the Companies to Merge; Float Glass, Glass Packaging, Glassware and Chemicals may have to carry the burden of additional carbon tax costs.

The possible legislative amendments to be made regarding CBAM have not been taken into account in the study since it is still in the negotiation phase with the stakeholders and it is not possible to fully identify the financial and operational effects of CBAM as of the Report Date and correctly reflect it to the business plans. ***Within this scope, the financial and operational effects that will be clear after the legislation is finalized may cause a change in the cash flows and equity values of the Companies to Merge.***

Matters to be Considered

Matters Regarding the Valuation Study (1/6)

Company Abbreviations

In our Report, company abbreviations have been used for the Companies to Merge, their subsidiaries and affiliates.

While mentioning the Companies to Merge on a **consolidated** basis, “SISE”, “TRKCM”, “ANACM”, “PASAB”, “DENCM” and “SODA” abbreviations have been used. While mentioning the Companies to Merge on a **stand-alone** basis, **the two-letter company codes** of companies assigned by Şişecam have been used. The following tables list the abbreviations used for the Companies to Merge, their subsidiaries and affiliates.

SISE		TRKCM		ANACM	
Company	Company Code	Company	Company Code	Company	Company Code
Türkiye Şişe ve Cam Fabrikaları A.Ş. (Solo)	SC	Trakya Cam Sanayii A.Ş. (Solo)	TR	Anadolu Cam Sanayii A.Ş. (Solo)	AC
Camış Madencilik A.Ş.	MD	Şişecam Otomotiv A.Ş.	SO	OOO Ruscam Glass Packaging Holding	RH
Camış Egypt Mining	ME	Trakya Investment B.V.	HT	OOO Energosystems	RS
Rudnik Krecnjaka Vijenac D.O.O.	VM	TRSG Glass Holding B.V.	TS	OOO Ruscam Management Company	RM
Madencilik Sanayii ve Tic. A.Ş.	MT	Sisecam Flat Glass Holding B.V.	HF	JSC Mina	MN
Şişecam Sigorta Aracılık Hizmetleri A.Ş.	SG	Trakya Glass Bulgaria EAD	TB	CJSC Brewery Pivdenna	UK
Şişecam Dış Ticaret A.Ş.	DT	Sisecam Automotive Bulgaria EAD	BO	Merefa Glass Company Ltd.	UM
Şişecam Enerji A.Ş.	SE	Glasscorp S.A.	GO	Anadolu Cam Investment B.V.	AI
Şişecam Çevre Sistemleri A.Ş.	CV	Trakya Glass Rus AO	RD	Sisecam Glass Packaging B.V.	BS
Camış Ambalaj Sanayii A.Ş.	CA	Automotive Glass Alliance Rus AO	RO	AC Glass Holding B.V.	AG
Camış Elektrik Üretim A.Ş.	EU	Trakya Glass Rus Trading OOO	RT		
SC Glass Trading B.V.	HG	Automotive Glass Alliance Rus Trading OOO	RA		
Çayırova Cam Sanayii A.Ş.	CY	Sisecam Flat Glass Italy S.R.L.	SI		
Cam Elyaf Sanayii A.Ş.	CE	Richard Fritz Holding GmbH	FO		
		Richard Fritz Prototype + Spare Parts GmbH	FP		
		Richard Fritz Spol, S.R.O.	FS		
		Richard Fritz Kft	FK		
		Sisecam Flat Glass India Private Limited	HD		
		Sisecam Flat Glass South Italy S.R.L.	FI		
		Çayırova Cam Sanayii A.Ş.	CY		
		Saint Gobain Glass Egypt S.A.E.	EF		
		Camış Elektrik Üretim A.Ş.	EU		

Source: Şişecam Management

Matters to be Considered

Matters Regarding the Valuation Study (2/6)

Company Abbreviations (cont'd)

In our Report, company abbreviations have been used for the Companies to Merge, their subsidiaries and affiliates.

While mentioning the Companies to Merge on a **consolidated** basis, “SISE”, “TRKCM”, “ANACM”, “PASAB”, “DENCM” and “SODA” abbreviations have been used. While mentioning the Companies to Merge on a **stand-alone** basis, **the two-letter company codes** of companies assigned by Şişecam have been used. The following tables list the abbreviations used for the Companies to Merge, their subsidiaries and affiliates.

PASAB		DENCM		SODA	
Company	Company Code	Company	Company Code	Company	Company Code
Paşabahçe Cam Sanayii ve Tic. A.Ş. (Solo)	PB	Denizli Cam Sanayii ve Tic. A.Ş.	DC	Soda Sanayii A.Ş. (Solo)	SS
Pasabahçe Bulgaria EAD	BP			Şişecam Elyaf Sanayii A.Ş.	ES
OOO Posuda	PR			Oxyvit Kimya Sanayii Ve Tic. A.Ş.	OX
Denizli Cam Sanayii ve Tic. A.Ş.	DC			Sisecam Chem Investment B.V.	HC
Paşabahçe Egypt Glass Manufacturing S.A.E.	EG			Sisecam Bulgaria EOOD	BL
Paşabahçe Mağazaları A.Ş.	PS			Sisecam Soda Lukavac D.O.O.	SL
Pasabahçe Srl	PI			Cromital S.p.A	CO
Pasabahçe (Shanghai) Trading Co. Ltd.	PT			Sisecam Trading Co.	ST
Pasabahçe Spain SL	SP			Sisecam Chemicals USA Plc.	UC
Pasabahçe Glass GmbH	PG			Pasific Soda LLC	UP
Pasabahçe USA Inc.	PA			Solvay Sisecam Holding AG	SH
Pasabahçe Investment B.V.	PH				
Istanbul Investment B.V.	II				
Nude Design Investment B.V.	ND				
Nude Glass Investment B.V.	NG				

Source: Şişecam Management

Matters to be Considered

Matters Regarding the Valuation Study (3/6)

Adjustments in the Historical Financial Statements

The historical financial statements for 2017-2019 period of Companies to Merge used in the valuation study have been analysed and were taken into consideration in the valuation study after necessary adjustments. Adjustments on historical financial statements are classified as following:

- **EBITDA Adjustments:**

Operational profit/loss (EBIT) is defined as;

“Gross Profit from Operations” + “Operating Expenses” + “Other Operational Income / Expense”

Reported EBITDA;

“EBIT” + “Depreciation and Amortization (+)”

As part of EBITDA adjustments, where identified, non-operational / financial income / expenses were separated from the items classified under "Other Operational Income / Expense". In addition, income / expense items that are operational but are one-off and are not expected to continue during the projection period were not taken into account in the valuation study.

TL m		Reported EBITDA	Adjusted EBITDA	Difference	Main Reasons of the Difference
SISE	Consolidated	4,206	4,107	(99)	Income/Expense Adjustments & Consolidation Eliminations
TRKCM	Consolidated	1,304	1,299	(5)	Income/Expense Adjustments
ANACM	Consolidated	1,129	1,118	(11)	Income/Expense Adjustments
PASAB	Consolidated	427	373	(55)	Income/Expense Adjustments & TFRS 16 Adjustment
DENCM	Solo	7	7	0	-
SODA	Consolidated	1,073	1,071	(2)	Income/Expense Adjustments

- **Net Working Capital Adjustments:** The financial statements of the Companies to Merge are analyzed, and balances which are classified within the reported working capital items but are not directly related to the operations are adjusted in net working capital calculation and included in the net debt calculation.
- **Net Debt Adjustments:** These adjustments mainly refer to the asset/liability balances which are reclassified and adjusted from the working capital calculation. These balances have been taken into consideration in the net cash / debt position when calculating the total equity values of the Companies to Merge.

Matters to be Considered

Matters Regarding the Valuation Study (4/6)

Tax Assets

Within the scope of the Income Approach, it is understood that in the valuation studies carried out for the Companies to Merge, their subsidiaries and affiliates; the tax benefits that the companies are entitled to as of the Valuation Date can be qualified as "tax assets" and categorized under 3 groups:

- Previous year financial losses deductible from corporate tax base
- Corporate tax deduction incentive resulting from investments made within the scope of the Decision on State Aid in Investments No. 2012/3305
- R&D discount incentives that SC can benefit from within its own R&D center activities within the scope of Law No. 5746 on Supporting R&D and Design Activities

Within the scope of the valuation study, projections have been made according to the information provided by the management, regarding how the tax assets, which will cause a decrease in the taxable base, can be utilized in the projection period. In the projections, the estimates of companies from the EBIT level to the profit before tax level have been calculated by the information obtained from the management and by taking into account the tax base formed over the years. Calculated tax savings have been discounted with cost of equity forecasts to estimate the value of tax assets. Local tax regulations in the countries where companies operate (outside Turkey) are taken into consideration within the scope of the information provided by the relevant company management. Information on the amount and content of the incentives leading to tax assets are shared in the relevant Report sections for the Companies to Merge.

Matters to be Considered

Matters Regarding the Valuation Study (5/6)

Dividend Payments	Within the scope of the study, dividend distribution decisions taken by the Companies to Merge at their general assemblies as of the report date were taken into consideration in the calculation of the total equity value. According to the announcements made by the relevant companies to Public Disclosure Platform, it is understood that the dividend payments will be made on 02.06.2020. Accordingly, the net effect of dividend payments and dividend income of the Companies to Merge is included in the calculation as equity value adjustment.
Valuation of Investment Purposed Properties	Each year, the fair value of the real estate properties classified as investments estimated by independent valuation companies authorized by the CMB. Within the scope of the study, fair values calculated for such investments by "Harmoni Gayrimenkul ve Danışmanlık A.Ş." were taken into consideration as of 31 December 2019, and these values are assumed to reflect the market value as of 31 December 2019. <i>The accuracy of the valuation studies for investment properties has not been reviewed by PwC. For this reason, PwC does not accept any responsibility for the conclusions made in the relevant studies. Details of the investment properties are presented in the "Appendix" section of the Report.</i>
Discount Rate	<p><i>Weighted Average Cost of Capital ("WACC") is used as the discount rate in the calculation of the DCF within the scope of the Income Approach. WACC has been estimated specifically for each company and in the relevant valuation currency.</i></p> <p>Calculation of 'Risk Free Rate (RFR)', which is an important component of WACC, was performed with the 'indirect' approach. The RFR calculation takes into account the 30-year USA treasury bond yield as the base rate of return. In the indirect approach, the "country risk premium" calculated according to the regions in which the companies operate, and the expected inflation rate difference between the valuation currency and \$ constitute other important parts of RFR. Due to the fact that inflation forecasts change over the years, RFR and therefore estimated WACC rates are also expected to change during the business plan period.</p> <p>The RFR calculation method is explained in detail in the Appendix section of the Report.</p>
Holding Companies / Non-operating Companies	Companies to Merge also own subsidiaries and affiliates that are holding companies and non-operating companies. <i>Net Asset Approach has been adopted in the valuation study of relevant Companies, as DCF method used in the Income Approach is not suitable for these companies.</i>

Matters to be Considered

Matters Regarding the Valuation Study (6/6)

Macroeconomic Assumptions

The macroeconomic assumptions used in the study are grouped under: Inflation rates and exchange rates.

For the 2020-2025 projection period, inflation expectations for countries are based on the *IMF's most recent WEO database (April 2020) as of the report date. Particularly for years 2020-2021, IMF WEO inflation estimations have been used. Forecasts between 2022-2025 also take into account historical data as well as publicly available forecasts.*

While estimating the exchange rates for the projection period, the "Fisher Method" was applied and it was assumed that the change in the exchange rates at the end of the period will vary by the difference between the two currencies' year-end inflation rate expectations. Similar to inflation expectations, for the parities that showed sharp fluctuations in 2020, the first 3 months realizations and April data were analyzed and the year-end and annual parities were estimated independent of the Fisher Method based on market sentiment. In this context, the aforementioned approach was applied in the estimation of the exchange rate of currencies USD, EUR, RUB, CNY, GEL and INR against TL. Fisher Method was effectively used For the period between 2021-2025.

Detailed information on macroeconomic assumptions is provided in the "Appendix" section of the Report.

Investments Accounted for Using the Equity Method

The affiliates of the Companies to Merge that are accounted for using the equity method as of 31 December 2019 were assessed in terms of their operations and cash flow generation potential in the future. Based on that assessment, DCF method or Net Asset Approach were adopted for the valuation of these affiliates and their estimated equity values were taken into account for the total equity values of the Companies to Merge.

SISE		TRKCM		ANACM		SODA	
Company	Company Code	Company	Company Code	Company	Company Code	Company	Company Code
Saint Gobain Glass Egypt S.A.E	EF	Saint Gobain Glass Egypt S.A.E	EF	Camiş Elektrik Üretim A.Ş.*	EU	Pacific Soda LLC	UP
Rudnik Krechnjaka Vijenac D.O.O. VM		Camiş Elektrik Üretim A.Ş.*	EU			Solvay Şişecam Holding AG	SH
Pacific Soda LLC	UP	Çayirova Cam Sanayii A.Ş.*	CY				
Solvay Şişecam Holding AG	SH						

Source: Şişecam Management

(*) Companies which are 100% consolidated on SISE level

Executive Summary

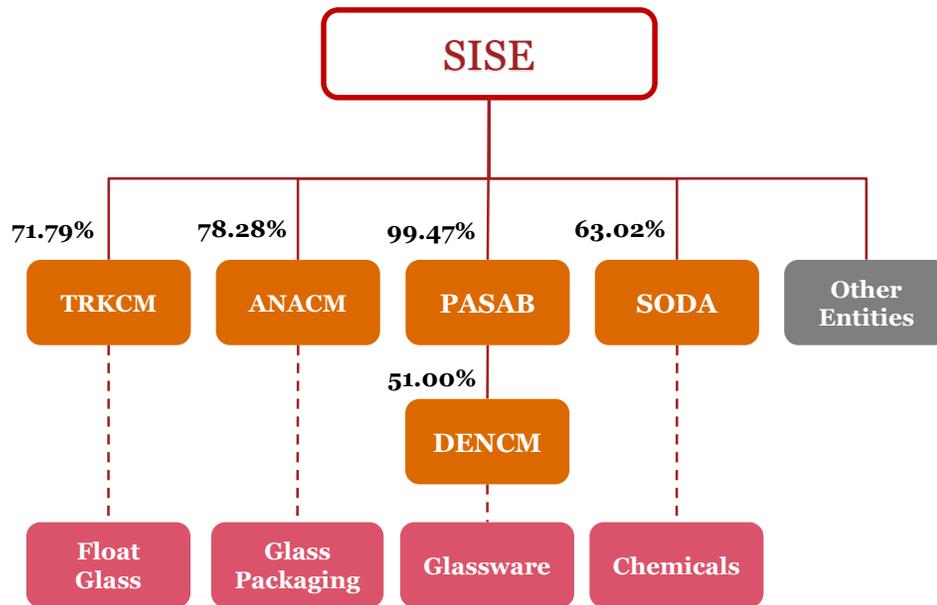
Aim of the Study

The aim of the study is to prepare the **Independent Expert Report** for the determination of the appropriate merger and share swap ratios, in accordance with the CMB's Communiqué on Merger and Demerger, regarding the merger of TRKCM, ANACM, PASAB, DENCM and SODA ("Participants") under SISE ("Host") (all collectively referred to as "Companies to Merge").

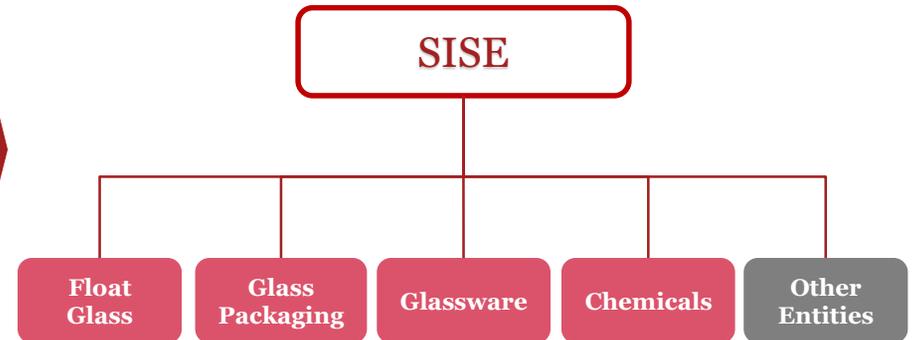
SISE Shareholding Structure	Share
Türkiye İş Bankası	69.05%
Efes Holding A.Ş.	8.23%
Other (Publicly Listed Shares)	22.72%

SISE Shareholding Structure	Share
Türkiye İş Bankası	?%
Efes Holding A.Ş.	?%
Other (Publicly Listed Shares)	?%

Existing Structure



Post-merger Structure



Host

Participant

Business Segments

Source: Şişecam Management

Existing Shareholding Structure

As of Report date, the current existing shareholding structures of the Companies to Merge have been used for the calculation of merger and share swap ratios. All shares except the shares of the host company (SISE) will be taken into consideration in the merger.

TL m	Host		Participant		Participant		Participant		Participant		Participant	
	SISE		TRKCM		ANACM		PASAB		DENCM		SODA	
	Paid Capital	Ratio										
Türkiye İş Bankası AŞ	1,554	69.05%										
Türkiye Şişe ve Cam Fabrikaları AŞ			897	71.79%	587	78.28%	223	99.47%			630	63.02%
Paşabahçe Cam San ve Tic AŞ									8	51.00%		
Efes Holding AŞ	185	8.23%										
Other (Publicly Listed Shares)	511	22.72%	353	28.21%	163	21.72%			7	49.00%	370	36.98%
The Islamic Development Bank							1	0.53%				
Total	2,250	100.00%	1,250	100.00%	750	100.00%	224	100.00%	15	100.00%	1,000	100.00%
Shares Subject to the Merger	2,250	100.00%	353	28.21%	163	21.72%	1	0.53%	7	49.00%	370	36.98%
Shares of SISE	-	-	897	71.79%	587	78.28%	223	99.47%	8	51.00%	630	63.02%

Source: Company Management, PwC Analysis

Merger Ratio

The equity values of the Companies to Merge have been calculated by using 4 different valuation methods. The merger ratios were calculated based on the portion of the equity values corresponding to the shares subject to the merger, obtained from the valuation methods.

Equity Value (TL m)	Income Approach	Market Approach	Net Asset Approach	Stock Market Value
SISE	21,009	22,006	14,480	11,461
TRKCM	8,178	7,764	6,275	3,794
ANACM	6,850	8,245	2,684	2,382
PASAB	405	1,175	2,193	252
DENCM	11	23	65	83
SODA	12,074	11,158	5,497	6,294

Merger Ratio (TL m)	Equity Value	Merger Ratio	Equity Value	Merger Ratio	Equity Value	Merger Ratio	Equity Value	Merger Ratio
SISE (*)	21,009	71.92%	22,006	73.23%	14,480	76.58%	11,461	74.44%
TRKCM	2,307	7.90%	2,190	7.29%	1,770	9.36%	1,070	6.95%
ANACM (*)	1,422	4.87%	1,712	5.70%	583	3.08%	495	3.21%
PASAB	2	0.01%	6	0.02%	12	0.06%	1	0.01%
DENCM	5	0.02%	11	0.04%	32	0.17%	41	0.26%
SODA	4,466	15.29%	4,127	13.73%	2,033	10.75%	2,328	15.12%
Total	29,212	100.00%	30,052	100.00%	18,910	100.00%	15,396	100.00%

Source: Company Management, PwC Analysis

Sample Calculation (*)

TL m	Income Approach	Shares Subject to the Merger	Equity Value Subject to the Merger
SISE	21,009	100.00%	21,009
TRKCM	8,178	28.21%	2,307
ANACM	6,850	21.72%	1,488
ANACM Group B Share Adjustment			(65)
PASAB	405	0.53%	2
DENCM	11	49.00%	5
SODA	12,074	36.98%	4,466
Total			29,212

(*) Since the group B shares of ANACM owned by SISE are privileged, the share of SISE in the total equity value of ANACM is higher than its own ownership rate. The reason for this is the difference in value between the privileged group B shares owned by SISE and the group A shares. This difference in value arises from the privileged right of the Group B shares to receive higher dividend than the group A shares. Therefore, there is a transition between the equity value of SISE's share in ANACM and the equity value of ANACM shareholders other than SISE. The adjustment amount differs for each valuation method. Detailed explanation is provided in the ANACM section of the Report.

Merger Method and the Rationale

As part of the Valuation Assessment, **4** methods have been performed for Companies to Merge. In order to determine the Merger Method; Income Approach, Market Approach, Net Asset Approach and Stock Market Value has been weighted **30%**, **30%**, **20%** and **20%** respectively.

Valuation Methods	Weight	The Rationale for the Merger Method
Income Approach 	30%	<ul style="list-style-type: none"> Income Approach has been given 30% weight due to the fact that it reflects the expected cash generating potential of the Companies to Merge better, it takes into account the effect of COVID-19 and as it also captures the impact from new investment projects.
Market Approach 	30%	<ul style="list-style-type: none"> There are many publicly listed competitors with similar operational and financial structure as Companies to Merge. Market Approach has been given a 30% weight, similar to Income Approach, since market approach results are deemed to represent meaningful sector multiples.
Net Asset Approach 	20%	<ul style="list-style-type: none"> The Net Asset Approach is taken into consideration, as the Companies to Merge carry out capital intensive operations. However, given this method's inability to capture future returns, Net Asset Approach has only been given 20% weight.
Stock Market Value 	20%	<ul style="list-style-type: none"> Considering that the Companies to Merge are publicly listed, are included in BIST30-50 Indices, with considerable liquidity & transaction volume performance and high profile institutional investors, the Stock Market Value based on the weighted average stock market price for the trailing 12 months going back from the merger announcement date has also been taken into account. On the other hand, the Stock Market Value has been given 20% weight since the historical prices do not reflect recent developments.

Source: PwC Analysis

Merger Ratio and Share Capital Based on the Merger Method

We are of the opinion that the merger ratio for SISE, TRKCM, ANACM, PASAB, DENCM and SODA estimated by the Merger Method is **fair and reasonable**.

Valuation Methods	Weight	Merger Ratio	Paid Capital After the Merger	Increase in Paid Capital
Income Approach 	30%	71.92%	3,128 TL m	878 TL m
Market Approach 	30%	73.23%	3,073 TL m	823 TL m
Net Asset Approach 	20%	76.58%	2,938 TL m	688 TL m
Stock Market Value 	20%	74.44%	3,022 TL m	772 TL m
Merger Method	100%	73.43%	3,064 TL m	814 TL m

Source: PwC Analysis

Swap Ratios

The share swap ratio between the shares of Participants the shares of the Host, SISE, has been estimated by considering **fair and reasonable** merger ratio.

TL m	Income Approach		Market Approach		Net Asset Approach		Stock Market Value		Final Merger Method	
	Paid Capital	Ratio	Paid Capital	Ratio	Paid Capital	Ratio	Paid Capital	Ratio	Paid Capital	Ratio
SISE	2,250	1.00000	2,250	1.00000	2,250	1.00000	2,250	1.00000	2,250	1.00000
TRKCM	247	0.70070	224	0.63506	275	0.77999	210	0.59581	238	0.67615
ANACM	152	0.93516	175	1.07459	91	0.55603	97	0.59609	144	0.88239
PASAB	0	0.19338	1	0.53609	2	1.52016	0	0.22047	1	0.53423
DENCM	1	0.07725	1	0.15826	5	0.67700	8	1.08823	2	0.33089
SODA	478	1.29307	422	1.14081	316	0.85413	457	1.23560	429	1.15997
Total	3,128		3,073		2,938		3,022		3,064	

Source: PwC Analysis

- The shareholders of **SISE** that will participate in the merger will get **1.00000 SISE share** *post-merger* for **1 SISE share** based on the Merger Method.
- The shareholders of **TRKCM** that will participate in the merger will get **0.67615 SISE share** *post-merger* for **1 TRKCM share** based on the Merger Method.
- The shareholders of **ANACM** that will participate in the merger will get **0.88239 SISE share** *post-merger* for **1 ANACM share** based on the Merger Method.
- The shareholders of **PASAB** that will participate in the merger will get **0.53423 SISE share** *post-merger* for **1 PASAB share** based on the Merger Method.
- The shareholders of **DENCM** that will participate in the merger will get **0.33089 SISE share** *post-merger* for **1 DENCM share** based on the Merger Method.
- The shareholders of **SODA** that will participate in the merger will get **1.15997 SISE share** *post-merger* for **1 SODA share** based on the Merger Method.

Shareholding Structure After the Merger

SISE's shareholding structure after the merger is presented below, considering the share swap ratio estimates as per the Merger Method and share capital to be reached.

TL m	Income Approach		Market Approach		Net Asset Approach		Stock Market Value		Final Merger Method	
	Paid Capital	Ratio	Paid Capital	Ratio	Paid Capital	Ratio	Paid Capital	Ratio	Paid Capital	Ratio
Türkiye İş Bankası AŞ	1,554	49.66%	1,554	50.56%	1,554	52.88%	1,554	51.40%	1,554	50.70%
Other (Publicly Listed Shares)	1,389	44.41%	1,333	43.39%	1,198	40.76%	1,283	42.46%	1,325	43.24%
Efes Holding AŞ	185	5.92%	185	6.02%	185	6.30%	185	6.12%	185	6.04%
The Islamic Development Bank	0	0.01%	1	0.02%	2	0.06%	0	0.01%	1	0.02%
Total	3,128	100.00%	3,073	100.00%	2,938	100.00%	3,022	100.00%	3,064	100.00%

Source: PwC Analysis

Merger and Swap Ratios TRKCM

The shareholders of TRKCM that will participate in the merger will get **0.67615 SISE shares post-merger** for 1 TRKCM share based on the Merger Method.

TL m	Status	Paid Capital (*)	Stock Value	Merger Ratio	Swap Ratio
SISE	Acquirer	2,250 A1	18,093 A2	73.43%	1.00000
TRKCM	Acquired	353 B1	1,917 B2	7.78%	0.67615
ANACM	Acquired	163 C1	1,156 C2	4.69%	0.88239
PASAB	Acquired	1 D1	5 D2	0.02%	0.53423
DENCM	Acquired	7 E1	20 E2	0.08%	0.33089
SODA	Acquired	370 F1	3,450 F2	14.00%	1.15997
Total			24,640	100.00%	

	Formula	Calculation (TL m)
Merger Ratio (G)	$\frac{A2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{18,093}{24,640} = 73.43\%$
Share Capital After the Merger (H)	$\frac{A1}{G}$	$\frac{2,250}{73.4\%} = 3,064$
Increase in Share Capital (J)	$H - A1$	$3,064 - 2,250 = 814$
Merger Ratio (TRKCM)	$\frac{B2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{1,917}{24,640} = 7.78\%$
Share Swap Ratio (TRKCM)	$\frac{H * \text{Merger Ratio (TRKCM)}}{B1}$	$\frac{3,064 * 7.78\%}{353} = 0.67615$

Source: The Company Management, PwC Analysis

(*) Paid Capital of Shares Subject to Merger

Merger and Swap Ratios ANACM

The shareholders of ANACM that will participate in the merger will get **0.88239 SISE shares post-merger** for 1 ANACM share based on the Merger Method.

TL m	Status	Paid Capital (*)	Stock Value	Merger Ratio	Swap Ratio
SISE	Acquirer	2,250 A1	18,093 A2	73.43%	1.00000
TRKCM	Acquired	353 B1	1,917 B2	7.78%	0.67615
ANACM	Acquired	163 C1	1,156 C2	4.69%	0.88239
PASAB	Acquired	1 D1	5 D2	0.02%	0.53423
DENCM	Acquired	7 E1	20 E2	0.08%	0.33089
SODA	Acquired	370 F1	3,450 F2	14.00%	1.15997
Total			24,640	100.00%	

	Formula	Calculation (TL m)
Merger Ratio (G)	$\frac{A2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{18,093}{24,640} = 73.43\%$
Share Capital After the Merger (H)	$\frac{A1}{G}$	$\frac{2,250}{73.4\%} = 3,064$
Increase in Share Capital (J)	$H - A1$	$3,064 - 2,250 = 814$
Merger Ratio (ANACM)	$\frac{C2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{1,156}{24,640} = 4.69\%$
Share Swap Ratio (ANACM)	$\frac{H * \text{Merger Ratio (ANACM)}}{C1}$	$\frac{3,064 * 4.69\%}{163} = 0.88239$

Source: The Company Management, PwC Analysis

(*) Paid Capital of Shares Subject to Merger

Merger and Swap Ratios PASAB

The shareholders of PASAB that will participate in the merger will get **0.53423 SISE shares post-merger** for 1 PASAB share based on the Merger Method.

TL m	Status	Paid Capital (*)	Stock Value	Merger Ratio	Swap Ratio
SISE	Acquirer	2,250 A1	18,093 A2	73.43%	1.00000
TRKCM	Acquired	353 B1	1,917 B2	7.78%	0.67615
ANACM	Acquired	163 C1	1,156 C2	4.69%	0.88239
PASAB	Acquired	1 D1	5 D2	0.02%	0.53423
DENCM	Acquired	7 E1	20 E2	0.08%	0.33089
SODA	Acquired	370 F1	3,450 F2	14.00%	1.15997
Total			24,640	100.00%	

	Formula	Calculation (TL m)
Merger Ratio (G)	$\frac{A2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{18,093}{24,640} = 73.43\%$
Share Capital After the Merger (H)	$\frac{A1}{G}$	$\frac{2,250}{73.4\%} = 3,064$
Increase in Share Capital (J)	$H - A1$	$3,064 - 2,250 = 814$
Merger Ratio (PASAB)	$\frac{D2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{5}{24,640} = 0.02\%$
Share Swap Ratio (PASAB)	$\frac{H * \text{Merger Ratio (PASAB)}}{D1}$	$\frac{3,064 * 0.02\%}{1} = 0.53423$

Source: The Company Management, PwC Analysis

(*) Paid Capital of Shares Subject to Merger

Merger and Swap Ratios DENCM

The shareholders of DENCM that will participate in the merger will **get 0.33089 SISE shares post-merger** for 1 DENCM share based on the Merger Method.

TL m	Status	Paid Capital (*)	Stock Value	Merger Ratio	Swap Ratio
SISE	Acquirer	2,250 A1	18,093 A2	73.43%	1.00000
TRKCM	Acquired	353 B1	1,917 B2	7.78%	0.67615
ANACM	Acquired	163 C1	1,156 C2	4.69%	0.88239
PASAB	Acquired	1 D1	5 D2	0.02%	0.53423
DENCM	Acquired	7 E1	20 E2	0.08%	0.33089
SODA	Acquired	370 F1	3,450 F2	14.00%	1.15997
Total			24,640	100.00%	

	Formula	Calculation (TL m)
Merger Ratio (G)	$\frac{A2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{18,093}{24,640} = 73.43\%$
Share Capital After the Merger (H)	$\frac{A1}{G}$	$\frac{2,250}{73.4\%} = 3,064$
Increase in Share Capital (J)	$H - A1$	$3,064 - 2,250 = 814$
Merger Ratio (DENCM)	$\frac{E2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{20}{24,640} = 0.08\%$
Share Swap Ratio (DENCM)	$\frac{H * \text{Merger Ratio (DENCM)}}{E1}$	$\frac{3,064 * 0.08\%}{7} = 0.33089$

Source: The Company Management, PwC Analysis

(*) Paid Capital of Shares Subject to Merger

Merger and Swap Ratios SODA

The shareholders of SODA that will participate in the merger will get **1.15997 SISE shares post-merger** for 1 SODA share based on the Merger Method.

TL m	Status	Paid Capital (*)	Stock Value	Merger Ratio	Swap Ratio
SISE	Acquirer	2,250 A1	18,093 A2	73.43%	1.00000
TRKCM	Acquired	353 B1	1,917 B2	7.78%	0.67615
ANACM	Acquired	163 C1	1,156 C2	4.69%	0.88239
PASAB	Acquired	1 D1	5 D2	0.02%	0.53423
DENCM	Acquired	7 E1	20 E2	0.08%	0.33089
SODA	Acquired	370 F1	3,450 F2	14.00%	1.15997
Total			24,640	100.00%	

	Formula	Calculation (TL m)
Merger Ratio (G)	$\frac{A2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{18,093}{24,640} = 73.43\%$
Share Capital After the Merger (H)	$\frac{A1}{G}$	$\frac{2,250}{\%73.4} = 3,064$
Increase in Share Capital (J)	$H - A1$	$3,064 - 2,250 = 814$
Merger Ratio (SODA)	$\frac{F2}{A2 + B2 + C2 + D2 + E2 + F2}$	$\frac{3,450}{24,640} = 14.00\%$
Share Swap Ratio (SODA)	$\frac{H * \text{Merger Ratio (SODA)}}{F1}$	$\frac{3,064 * 14.00\%}{370} = 1.15997$

Source: The Company Management, PwC Analysis

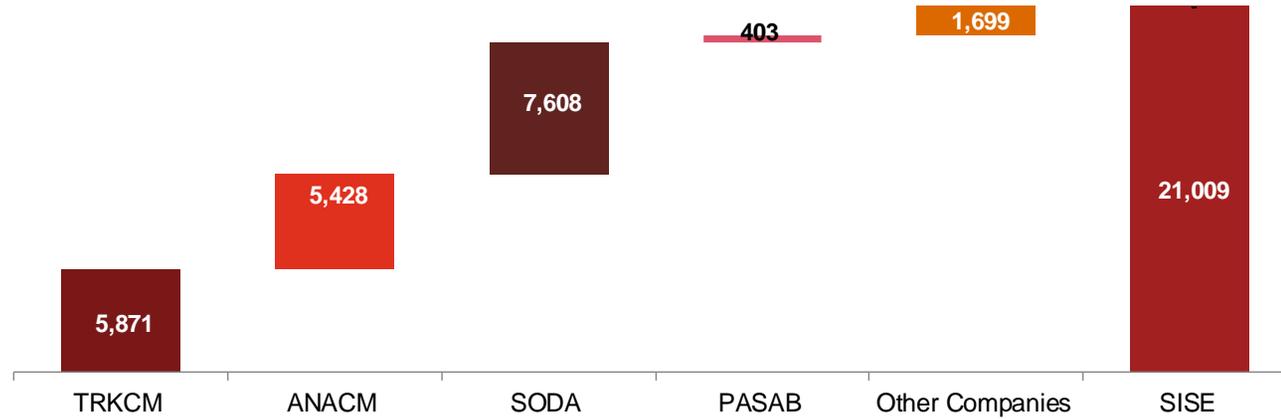
(*) Paid Capital of Shares Subject to Merger

SISE

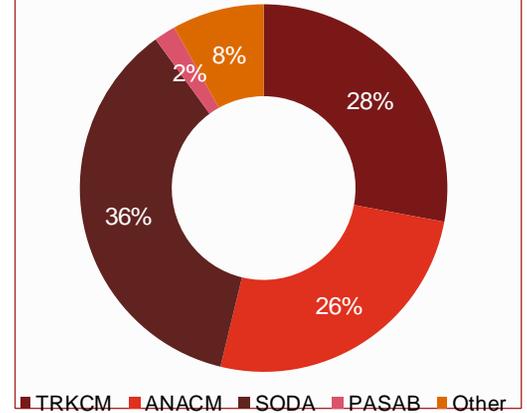
Income Approach

Based on the Income Approach, the total equity value of SISE is estimated to be **TL 21.0bn** as of the valuation date.

Total Equity Value (TL m)



Breakdown of Equity Value



TL m	Main Business Segments				Other Companies												CE,CY, HG*	Total
	TRKCM	ANACM	SODA	PASAB	SC	MD	CA	EU	SE	DT	CV	MT	SG	VM	ME			
Enterprise Value	9,202	8,736	8,190	1,705	565	433	141	43	70	51	22	15	14	9	3	-	29,198	
Net Cash/(Debt)					(807)	107	(4)	42	1	16	26	2	6	-	1	-	(610)	
Investment Properties					302	-	-	-	-	-	-	-	-	-	-	-	302	
Tax Related Assets					43	14	-	-	-	4	2	-	-	-	-	-	62	
Dividend Payment (-)					(320)	-	-	-	-	-	-	-	(3)	-	-	-	(323)	
Dividend Income (+)					386	-	-	-	-	-	-	-	-	-	-	-	386	
Equity Value	8,178	6,850	12,074	405	170	553	137	85	71	71	50	17	17	9	4	864	29,556	
Effective Shareholding Percentage	71.8%	78.3%	63.0%	99.5%	100.0%	100.0%	100.0%	39.5%	100.0%	100.0%	90.0%	100.0%	100.0%	50.0%	99.7%	0.0%	0.0%	
ANACM Group B Share Value Difference**	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	
Equity Value - SISE	5,871	5,428	7,608	403	170	553	137	34	71	71	45	17	17	5	4	576	21,009	

*The equity values of CE, CY and HG are estimated based on Net Asset Approach

** For details, please see the calculation of the share value difference between ANACM stock groups on pages 152, 153 and 154.

Source: Holding Management, PwC Analysis

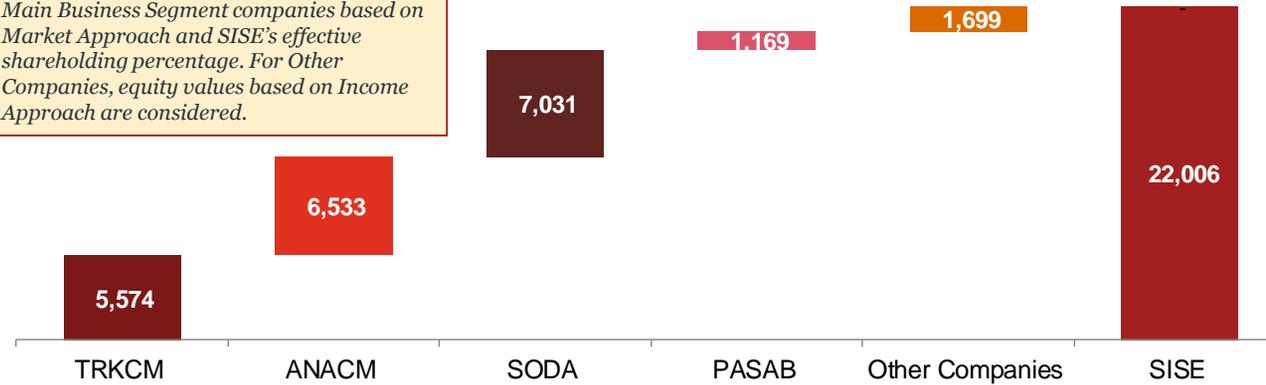
SISE

Market Approach

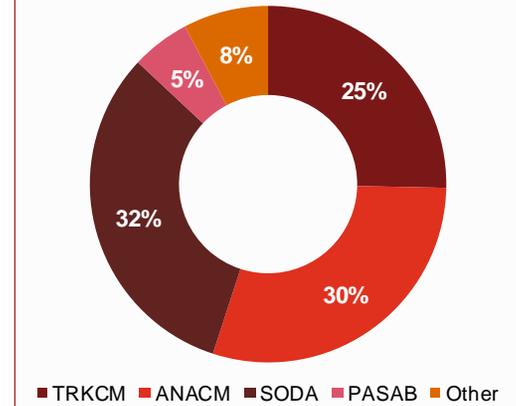
Based on the Market Approach, the total equity value of SISE is estimated to be **TL 22.0bn** as of the valuation date.

Total Equity Value (TL m)

For the estimation of SISE's market value "Sum of the Parts" method is performed by multiplying the estimated equity values of Main Business Segment companies based on Market Approach and SISE's effective shareholding percentage. For Other Companies, equity values based on Income Approach are considered.



Breakdown of Equity Value



TL m	Main Business Segments				Other Companies												CE, CY, HG*	Total
	TRKCM	ANACM	SODA	PASAB	SC	MD	CA	EU	SE	DT	CV	MT	SG	VM	ME			
Enterprise Value	8,787	10,058	7,274	2,475	565	433	141	43	70	51	22	15	14	9	3	-	29,960	
Net Cash/(Debt)					(807)	107	(4)	42	1	16	26	2	6	-	1	-	(610)	
Investment Properties					302	-	-	-	-	-	-	-	-	-	-	-	302	
Tax Related Assets					43	14	-	-	-	4	2	-	-	-	-	-	62	
Dividend Payment (-)					(320)	-	-	-	-	-	-	-	(3)	-	-	-	(323)	
Dividend Income (+)					386	-	-	-	-	-	-	-	-	-	-	-	386	
Equity Value	7,764	8,245	11,158	1,175	170	553	137	85	71	71	50	17	17	9	4	864	30,390	
Effective Shareholding Percentage	71.8%	78.3%	63.0%	99.5%	100.0%	100.0%	100.0%	39.5%	100.0%	100.0%	90.0%	100.0%	100.0%	50.0%	99.7%	0.0%	0.0%	
ANACM Group B Share Value Difference**	-	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	
Equity Value - SISE	5,574	6,533	7,031	1,169	170	553	137	34	71	71	45	17	17	5	4	576	22,006	

*The equity values of CE, CY and HG are estimated based on Net Asset Approach

** For details, please see the calculation of the share value difference between ANACM stock groups on pages 152, 153 and 154.

Source: Holding Management, PwC Analysis

SISE

Net Asset Approach

Based on the Net Asset Approach, the total equity value of SISE is estimated to be **TL 14.5bn** as of the valuation date.

TL m	31.12.2019
Paid Capital	2,250
Adjustment to Share Capital Differences	181
Share Premiums (Discount)	1
Accumulated Other Comprehensive Income/(Expense)	2,092
Accumulated Other Comprehensive Income that may be Reclassified to Profit or Loss	2,286
<i>Currency Translation Differences</i>	2,279
<i>Hedging gains (losses)</i>	5
<i>Gains/(Losses) on Revaluation and Reclassification</i>	2
Restricted Reserves	188
Retained Earnings	5,721
Net Profit or (Loss) for the Period	1,905
Non-Controlling Interests	4,511
Total Equity	19,133
1 Adjustment for Non-Controlling Interests	(4,511)
2 Dividend Adjustment, net*	(324)
3 Other Net Asset Value Adjustments	181
a CY Net Asset Adjustment	6
b CE Net Asset Adjustment	176
Net Asset Value	14,480

- a. Value adjustments related with the profit and tax liabilities after the sale of certain real estates in January 2020
- b. Value adjustments related with fair values of precious metals

*Represents the net effect of dividend adjustments at the consolidated level for SISE. The dividend payments of the subsidiaries are netted off in the consolidated SISE financial statements. The net TL 324m represents the dividend SISE will pay to its shareholders outside the group (TL 320m) and stoppage that will be paid for dividend income from RD (Effective stoppage deduction at SISE level: TL 4m).

Source: Holding Management, PwC Analysis

1 Sermaye Piyasasında Finansal Raporlamaya İlişkin Esaslar Tebliği

The breakdown of the consolidated shareholders equity for SISE, which is prepared in accordance with the CMB's "Principles of Financial Reporting in Capital Markets¹", in line with Turkish Accounting Standards and Turkish Financial Reporting Standards and audited by Güney Bağımsız Denetim ve S.M.M.M. A.Ş. is presented in the adjacent table.

It has been assumed that the shareholders equity that is present in the consolidated and audited 31.12.2019 balance sheet of SISE is an accurate representation of the equity value of the company, for purposes of Net Asset Approach.

The consolidated shareholders equity of SISE as of 31.12.2019 is TL 19,133m, the Net Asset Value is calculated as **TL 14,480m** after the adjustments considered.

1 Adjustment for Non-Controlling Interests:

The non-controlling interests that are presented as part of the consolidated shareholders equity are excluded from the consideration as part of the Net Asset Approach.

2 Dividend Adjustment:

The figure represents the net dividend payment of SISE that is due after 31.12.2019. Net dividend adjustment is included in our assessment with respect to its effect on the net asset value of SISE.

3 Other Net Asset Value Adjustments

CY and CE are included in SISE's financial statements according to full consolidation method.

The equity values of CY and CE is estimated based on Net Asset Approach. Adjustments made to related companies within the scope of Net Asset Approach as of 31.12.2019 are taken into consideration at the consolidated Net Asset Approach level of SISE.

SISE

Stock Market Value

The Stock Market Value for SISE has been based on the weighted average stock market price of the trailing 12 months going back from the merger announcement date, 30.01.2020. The total equity value of SISE estimated from this method is **TL 11.5bn.**

Stock Price and Transaction Volume

Stock Price (TL/lot)
8.00



Source: CapitalIQ, PwC Analysis

Transaction Volume (TL m)

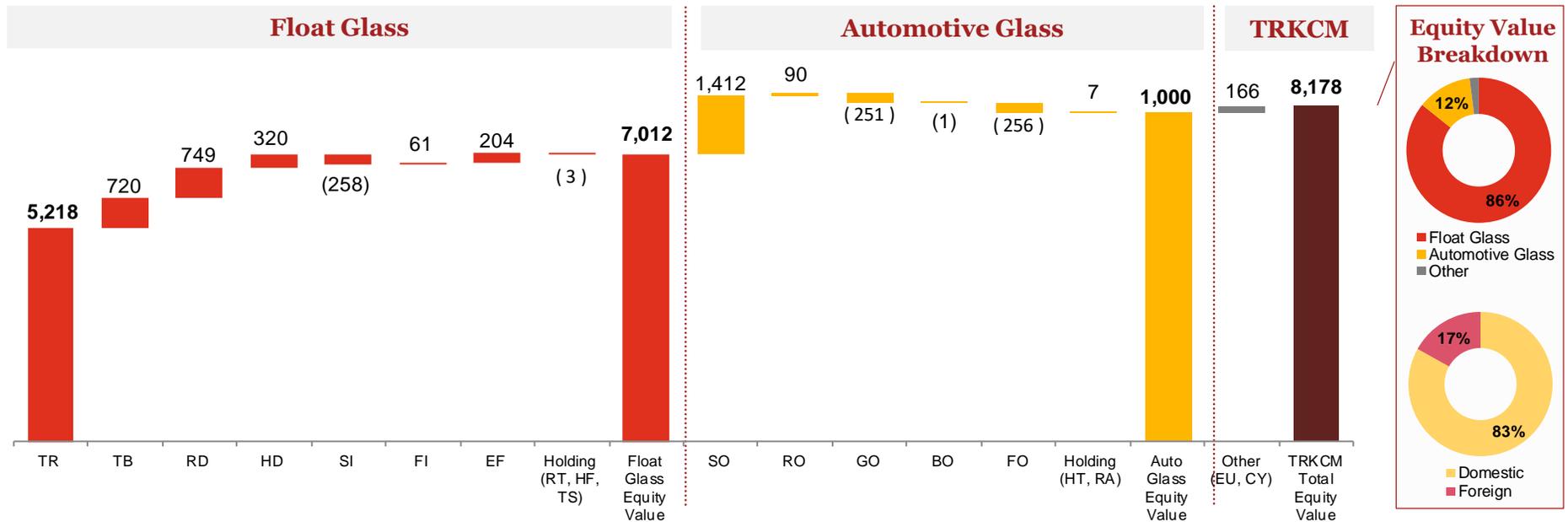
Weighted Avg. Price (TL/lot)

TRKCM

Income Approach

Based on the Income Approach, the total equity value of TRKCM is estimated to be **TL 8.2bn** as of the valuation date.

Total Equity Value (TL m)



TL m	TR	TB	RD	HD	SI	FI	EF	Holding (RT, HF, TS)	Total Float Glass	SO	RO	GO	BO	Fritz (HT, RA)	Holding (HT, RA)	Total Automotive Glass	Other (EU, CY)	Total TRKCM
Enterprise Value	4,977	1,341	840	225	(85)	226	-	-	7,524	1,147	166	172	299	145	-	1,929	-	9,454
Net Cash/(Debt)	143	(620)	377	89	(174)	(174)	-	-	(359)	264	(76)	(424)	(301)	(430)	-	(965)	-	(1,324)
Tax Related Assets	119	-	2	6	-	9	-	-	136	0	0	-	1	0	-	2	-	138
Investment Properties	1	-	-	-	-	-	-	-	1	-	-	-	-	28	-	28	-	28
Dividend Payment (-)	(130)	-	(148)	-	-	-	-	-	(278)	-	-	-	-	-	-	-	-	(278)
Dividend Income (+)	108	-	-	-	-	-	-	-	108	-	-	-	-	-	-	-	-	108
Equity Value	5,218	720	1,070	320	(258)	61	681	(3)	7,809	1,412	90	(251)	(1)	(256)	7	1,000	571	9,380
Effective Shareholding Percentage	100.0%	100.0%	70.00%	100.0%	100.0%	100.0%	30.0%	-	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	-	-	-
Equity Value - TRKCM	5,218	720	749	320	(258)	61	204	(3)	7,012	1,412	90	(251)	(1)	(256)	7	1,000	166	8,178

Source: Holding Management, PwC Analysis

TRKCM

Market Approach

Based on the Market Approach, the total equity value of TRKCM is estimated to be **TL 7.8bn** as of the valuation date.

TL m	FY19	FY20	FY21	FY22	Average*
EBITDA	1,304	948	1,543	2,127	
1 Effective EBITDA**	1,272	926	1,515	2,093	
<i>Inflation Indexation</i>	1.00	1.12	1.25	1.40	
2 EBITDA (Discounted 2019 figures)	1,272	827	1,208	1,496	1,201
<i>EV / EBITDA (x)</i>					7.3x
3 Enterprise Value					8,787
Net Cash/(Debt)					(1,437)
Investment Properties					28
Tax Related Assets					137
Dividend Adjustment, net					(126)
5 Investments Accounted for using the Equity Method					370
<i>Saint Gobain Glass Egypt S.A.E</i>					204
<i>Camış Elektrik Üretim A.Ş.</i>					29
<i>Çayıröva Cam San. A.Ş.</i>					137
6 Other Companies					4
<i>Trakya Investment B.V.</i>					1
<i>Automotive Glass Alliance Rus Trading OOO</i>					6
<i>Trakya Glass Rus Trading OOO</i>					(1)
<i>Şişecam Flat Glass Holding B.V.</i>					(1)
<i>TRSG Glass Holding B.V.</i>					(1)
Equity Value					7,764

Market Approach has been applied following the steps discussed below:

- Actual and forecasted consolidated FY19-FY22 EBITDA figures for TRKCM are taken into consideration after multiplying the respected figures with effective ownership percentages.
- The respective forecasted EBITDA figures have been discounted with TL inflation to 2019, in order to express forecast figures in 2019 prices.
- EV/EBITDA multiple derived from the comparable companies analysis is applied to the average of discounted FY19-FY22 EBITDA figures to estimate the enterprise value.
- In order to estimate the equity value; net cash/debt, investment properties, tax related assets and planned dividend income and payments associated with subsidiaries of TRKCM are also considered. Such equity value adjustments are weighted by the effective ownership of the relevant entities at the TRKCM level.
- The estimated equity values of investments accounted for using the equity method as of 31.12.2019 are also taken into consideration. Equity value of Çayıröva Cam Sanayii A.Ş. is estimated through Net Asset Approach, whereas the value shares in Saint Gobain Glass Egypt S.A.E. are assumed to be equal to book value carried on the consolidated balance sheet of TRKCM. Income Approach has been considered as the only method for the value of the shares in Camış Elektrik Üretim A.Ş..
- Other non-operational companies have been included in the equity value estimation of TRKCM, based on their respective values estimated via the Net Asset Approach as of 31.12.2019.

* EBITDA figure represents the average of FY19-FY22. Adjustment figures that are included in the EV-Equity bridge is year-end figures for the calendar year 2019.

** Consists of EBITDA figures of companies that are included in the Enterprise Value calculation for TRKCM through the Income Approach, multiplied by their effective ownership percentages.

Source: CapitalIQ, PwC Analysis

TRKCM

Net Asset Approach

Based on the Net Asset Approach, the total equity value of TRKCM is estimated to be **TL 6.3bn** as of the valuation date.

TL m	31.12.2019
Paid Capital	1,250
Adjustment to Share Capital Differences	6
Share Premiums (Discount)	0
Gains/(Losses) on Revaluation	648
Accumulated Other Comprehensive Income/(Expense)	1,249
Currency Translation Differences	1,209
Hedge Reserves	40
Restricted Reserves	232
Retained Earnings	2,250
Net Profit or (Loss) for the Period	750
Non-Controlling Interests	412
Total Equity	6,797
1 Adjustment for Non-Controlling Interests	(412)
2 Dividend Adjustment, net*	(135)
3 Adjustment for Investments Accounted for using the Equity Method	25
Net Asset Value	6,275

*Represents the net effect of dividend adjustments at the consolidated level for TRKCM. The dividend payments made to TR by the subsidiaries are netted off at the TRKCM level. The resulting TL 135m consists of the dividend payments (TL 130m) planned to be made by TRKCM to its own shareholders and the withholding tax that will be due from the dividend payment of RD that will be made to TR (effective withholding tax of: TL 5m). The net dividend adjustment presented under the Income Approach and Market Approach is TL 126m. This discrepancy stems from a representation difference, that is, the remaining TL -9m is included in the Income and Market Approaches as part of Çayirova Cam Sanayii A.Ş. valuation result.

Source: Holding Management, PwC Analysis

1 Sermaye Piyasasında Finansal Raporlamaya İlişkin Esaslar Tebliği

The breakdown of the consolidated shareholders equity for TRKCM, which is prepared in accordance with the CMB's "Principles of Financial Reporting in Capital Markets¹", in line with Turkish Accounting Standards and Turkish Financial Reporting Standards and audited by Güney Bağımsız Denetim ve S.M.M.M. A.Ş. is presented in the adjacent table.

It has been assumed that the shareholders equity that is present in the consolidated and audited 31.12.2019 balance sheet of TRKCM is an accurate representation of the equity value of the company, for purposes of Net Asset Approach.

The consolidated shareholders equity of TRKCM as of 31.12.2019 is TL 6,797m, the Net Asset Value is calculated as **TL 6,275m** after the adjustments are considered.

1 Adjustment for Non-Controlling Interests:

The non-controlling interests that are presented as part of the consolidated shareholders equity are excluded from the consideration as part of the Net Asset Approach.

2 Dividend Adjustment:

The figure represents the net dividend payment of TRKCM that is due after 31.12.2019. Dividend adjustment is included in our assessment with respect to its effect on the net asset value of TRKCM.

3 Adjustments for Investments Accounted for using the Equity Method:

Çayirova Cam Sanayii A.Ş., Saint Gobain Glass Egypt S.A.E and Camiş Elektrik Üretim A.Ş. are included in the consolidated financial statements of TRKCM through the equity method. While determining the equity value of the aforementioned companies, the carrying values of the respective companies that are present in the consolidated balance sheet of TRKCM are taken into consideration.

Entry stands for adjustments made for Çayirova Cam Sanayii A.Ş., with respect to estimation of its individual equity value under Net Asset Approach.

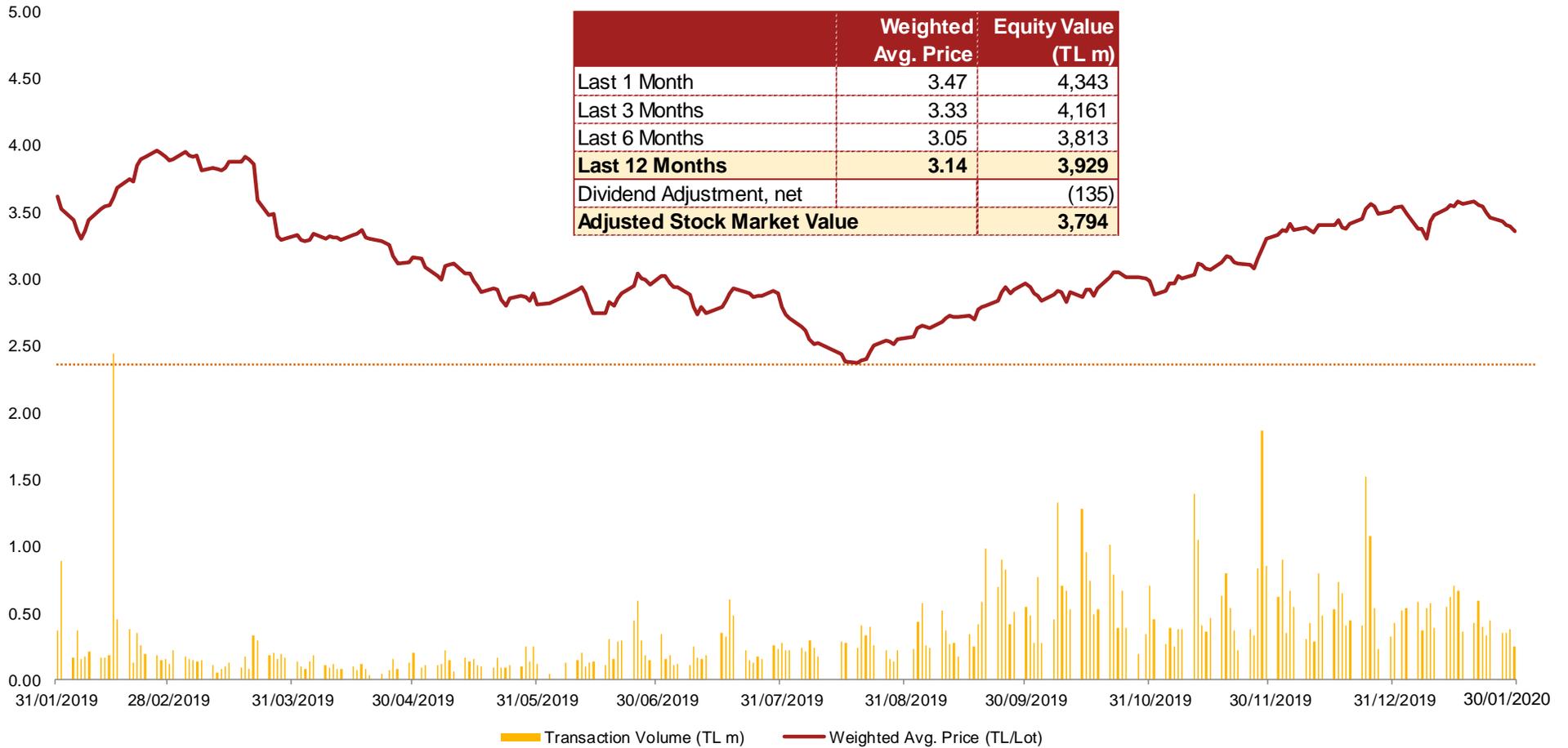
TRKCM

Stock Market Value

The Stock Market Value for TRKCM is based on the weighted average stock market price of quoted TRKCM shares for the trailing 12 months going back from the merger announcement date, 30.01.2020. The total equity value of TRKCM estimated from this method is estimated to be **TL 3.8bn.**

Stock Price and Transaction Volume

Stock Price (TL/lot)



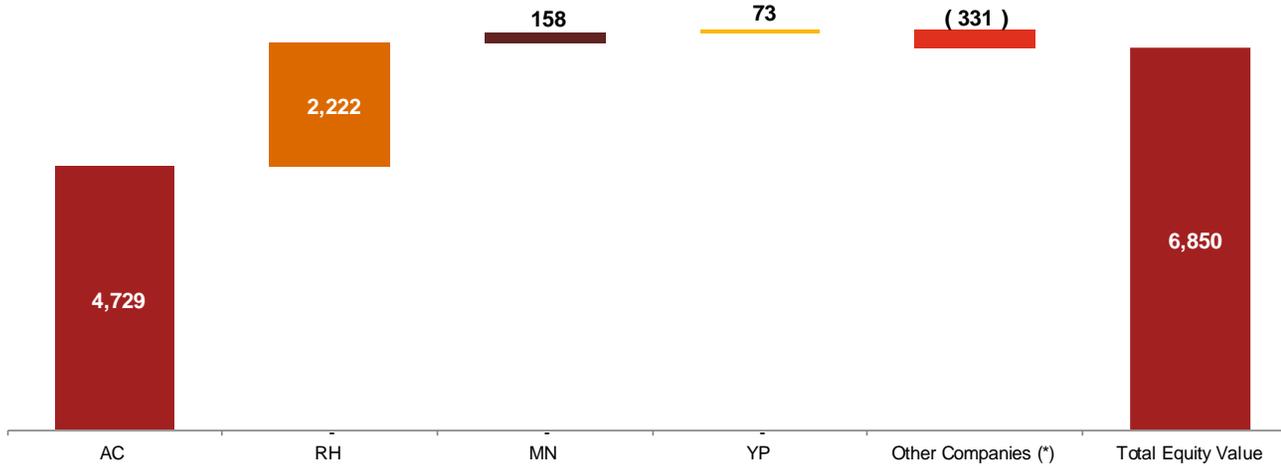
Source: CapitalIQ, PwC Analysis

ANACM

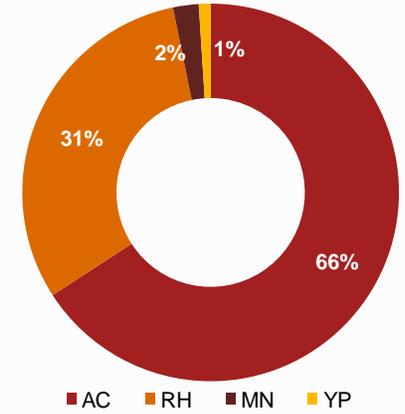
Income Approach

Based on the Income Approach, the total equity value of ANACM is estimated to be **TL 6.9bn** as of the valuation date.

Total Equity Value (TL m)



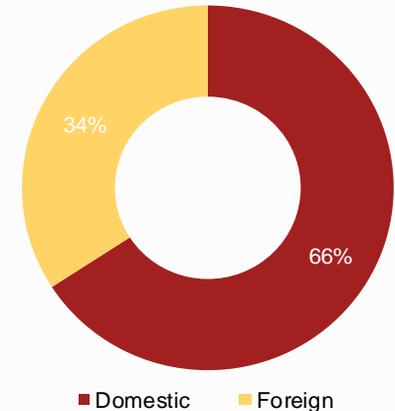
Equity Value Breakdown



TL m	AC	RH	MN	YP	Other Companies	Total
Enterprise Value	5,218	3,263	182	73	-	8,736
Net Cash/(Debt)	(694)	(1,132)	(24)	-	-	(1,850)
Tax Related Assets	273	90	-	-	-	364
Investment Properties	74	-	-	-	-	74
Dividend Payment (-)	(142)	-	-	-	-	(142)
Equity Value	4,729	2,222	158	73	(331)	6,850
Effective Shareholding Percentage	100%	100%	100%	100%	-	
Equity Value - ANACM	4,729	2,222	158	73	(331)	6,850

* Other Companies include Camiř Elektrik, SPVs and non-operational companies. The value estimates for SPVs and non-operational companies are estimated acc. To Net Asset Approach and exclude the impact of investments in subsidiaries, for SPVs.

Source: Holding Management, PwC Analysis



ANACM

Market Approach

Based on the Market Approach, the total equity value of ANACM is estimated to be **TL 8.2bn** as of the valuation date.

TL m	FY19	FY20	FY21	FY22	Average*
EBITDA**	1,118	1,307	1,513	1,738	
1 Effective EBITDA**	1,118	1,307	1,513	1,738	
<i>Inflation Indexation</i>	1.00	1.12	1.25	1.40	
2 EBITDA (Discounted 2019 figures)	1,118	1,167	1,206	1,243	1,184
EV / EBITDA (X)					8.5x
3 Enterprise Value					10,058
Net Cash/(Debt)					(1,850)
Investment Properties					74
Tax Related Assets					364
Dividend Adjustments					(142)
5 Investments Accounted for using Equity Method					22
<i>Camiş Elektrik Üretim A.Ş.</i>					22
6 Other Companies					(353)
<i>AC Glass Holding B.V.</i>					(0)
<i>Anadolu Cam Investment B.V.</i>					(2)
<i>Sisecam Glass Packaging B.V.</i>					(316)
<i>OOO Ruscam Management Company</i>					0
<i>Merefa Glass Company Ltd.</i>					18
<i>CJSC Brewery Pivdenna</i>					(52)
<i>OOO Energosystems</i>					(1)
7 Investment Project					73
Equity Value					8,245

Market Approach has been applied following the steps discussed below:

- Actual and forecasted consolidated FY19-FY22 EBITDA figures for ANACM are taken into consideration after multiplying the respected figures with effective ownership percentages.
- The respective forecasted EBITDA figures have been discounted with TL inflation to 2019, in order to express forecast figures in 2019 prices.
- EV/EBITDA multiple derived from the comparable companies analysis is applied to the average of discounted FY19-FY22 EBITDA figures to estimate the enterprise value.
- In order to estimate the equity value; net cash/debt, investment properties, tax related assets and planned dividend payments are also considered. Such equity value adjustments are weighted by the effective ownership of the relevant entities at the ANACM level.
- The equity values of investments accounted for using the equity method as of 31.12.2019 is taken into consideration for Camiş Elektrik Üretim A.Ş.. Income Approach has been considered as the only method for the value of the shares in Camiş Elektrik Üretim A.Ş..
- Other non-operational companies and SPVs have been included in the equity value estimation of ANACM, based on their respective values estimated via the Net Asset Approach as of 31.12.2019.
- Investment Project's value estimated through Income Approach is also considered as part of the total equity value.

* EBITDA figure represents the average of FY19-FY22. Adjustment figures that are included in the EV-Equity bridge is year-end figures for the calendar year 2019.

** Anadolu Cam, Ruscam and Mina's EBITDA figures are taken into account in Market Approach. Investment Project's value estimated is considered not as part of enterprise value estimate but as an adjustment of the equity value estimate.

Source: CapitalIQ, PwC Analysis

ANACM

Net Asset Approach

Based on the Net Asset Approach, the total equity value of ANACM is estimated to be **TL 2.7bn** as of the valuation date.

TL m	31.12.2019
Paid Capital	750
Adjustment to Share Capital Differences	0
Gains /(Losses) on Revaluation	720
Accumulated Other Comprehensive Income/(Expense)	(182)
Currency Translation Differences	(203)
Hedge Reserves	22
Restricted Reserves	189
Retained Earnings	821
Net Profit or (Loss) for the Period	527
Total Equity	2,826
1 Dividend Adjustment	(142)
Net Asset Value	2,684

The breakdown of the consolidated shareholders equity for ANACM, which is prepared in accordance with the CMB's Communiqué Serial II. No: 14.1 "Principles of Financial Reporting in Capital Markets¹", in line with Turkish Accounting Standards and Turkey Financial Reporting Standards and audited by Güney Bağımsız Denetim ve S.M.M.M. A.Ş. is presented in the adjacent table.

It has been assumed that the shareholders equity that is present in the consolidated and audited 31.12.2019 balance sheet of ANACM is an accurate representation of the equity value of the company, for purposes of Net Asset Approach.

The consolidated shareholders equity of ANACM as of 31.12.2019 is TL 2,826m, the Net Asset Value is calculated as **TL 2,684m** after the adjustments are considered.

1 Dividend Adjustment:

The figure represents the dividend payment of ANACM that is due after 31.12.2019. Dividend adjustment is included in our assessment with respect to its effect on the net asset value of ANACM.

Source: Holding Management, PwC Analysis

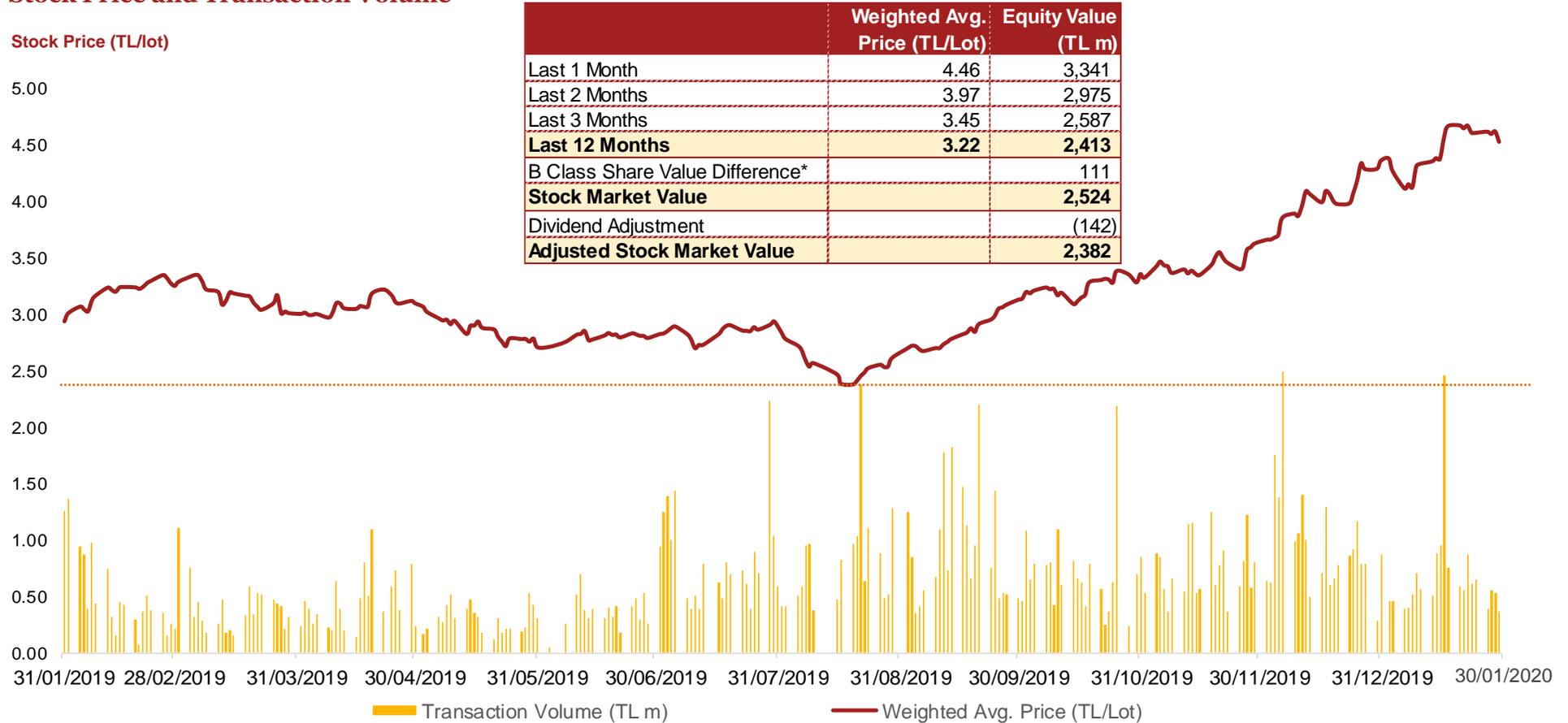
¹ Sermaye Piyasasında Finansal Raporlamaya İlişkin Esaslar Tebliği

ANACM

Stock Market Value

The Stock Market Value for ANACM is based on the weighted average stock market price of quoted ANACM shares for the trailing 12 months going back from the merger announcement date, 30.01.2020. The total equity value of ANACM derived from this method is estimated to be **TL 2.3bn.**

Stock Price and Transaction Volume



* A and B class share values are separately calculated due to an additional expected value arisen from B class shares that is not reflected through stock market prices. The details of the calculations are presented on pages 152, 153 and 154 of the report.

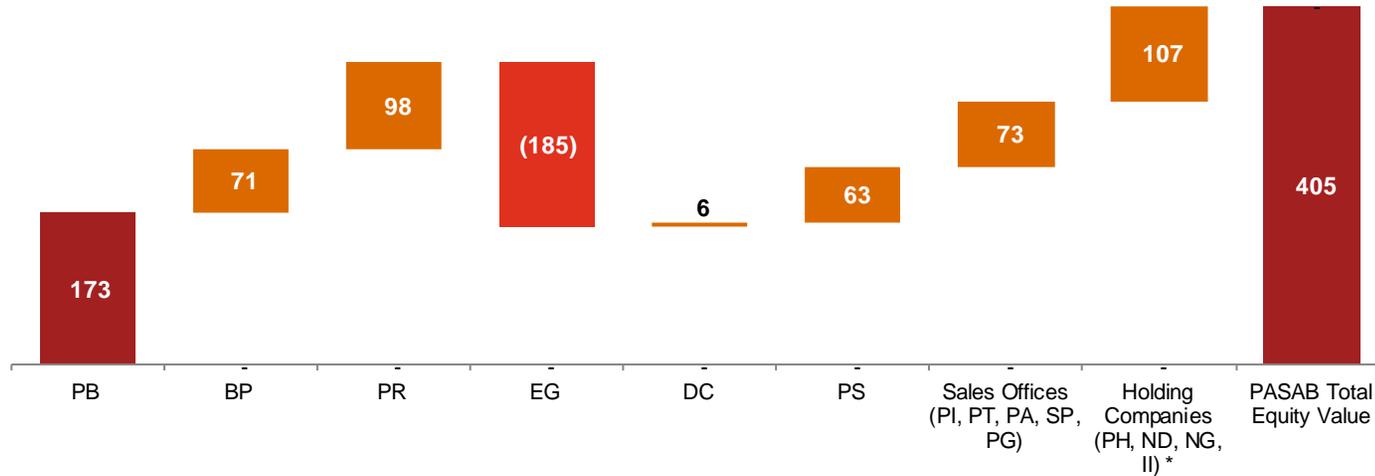
Source: CapitalIQ, PwC Analysis

PASAB

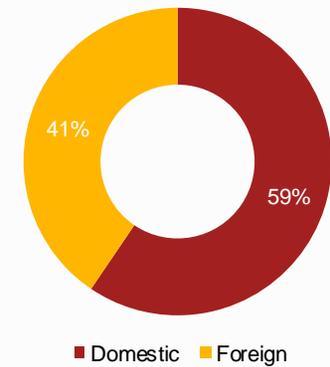
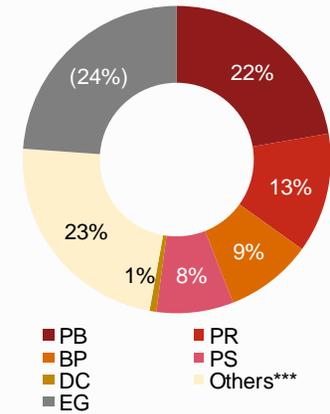
Income Approach

Based on the Income Approach, the total equity value of PASAB is estimated to be **TL 405m** as of the valuation date.

Total Equity Value (TL m)



Equity Value Breakdown



*** Sales Offices and Holding Companies

TL m	PB	BP	PR	EG	DC	PS	Sales Offices	Holding Companies	Total PASAB
Enterprise Value	823	282	347	99	31	84	54	-	1,720
Net Cash/(Debt)	(712)	(212)	(266)	(284)	(20)	(21)	17	-	(1,498)
Investment Properties	8	0	0	0	0	0	0	-	8
Tax Related Assets	53	0	17	0	0	0	3	-	73
Equity Value	173	71	98	(185)	11	63	73	107	410
Effective Shareholding Percent	%100.0	%100.0	%100.0	%100.0	%51.0	%100.0	%100.0	%100.0	
Equity Value- PASAB	173	71	98	(185)	6	63	73	107	405

* Refers to assets and liabilities excluding financial investments.

** Tax assets consisting of tax incentives from investments and carry-forward losses

Source: Holding Management, PwC Analysis

PASAB Market Approach

Based on the Market Approach, the total equity value of PASAB is estimated to be **TL 1.2bn** as of the valuation date.

TL m	FY19	FY20	FY21	FY22	Average*
EBITDA	373	268	442	601	
① Effective EBITDA**	369	272	435	591	
Inflation Indexiation	1.00	1.12	1.25	1.40	
② EBITDA (Discounted 2019 Figures)	369	243	347	423	345
EV / EBITDA (x)					7.2x
③ Enterprise Value					2,475
Net Cash/(Debt)					(1,488)
Investment Properties					8
Tax Related Asset					73
⑤ Other Companies					107
Paşabahçe Investment B.V.					101
Nude Design Investment B.V.					5
İstanbul Investment B.V.					0
Nude Glass Investment B.V.					0
Equity Value					1,175

Market Approach has been applied following the steps discussed below:

- ① Actual and forecasted consolidated FY19-FY22 EBITDA figures for PASAB are taken into consideration after multiplying the respected figures with effective ownership percentages.
- ② The respective forecasted EBITDA figures have been discounted with TL inflation to 2019, in order to express forecast figures in 2019 prices.
- ③ EV/EBITDA multiple derived from the comparable companies analysis is applied to the average of discounted FY19-FY22 EBITDA figures to estimate the enterprise value.
- ④ In order to estimate the equity value; net cash/debt, investment properties and tax related assets of PASAB are also considered. Such equity value adjustments are weighted by the effective ownership of the relevant entities at the PASAB level.
- ⑤ Other non-operational companies have been included in the equity value estimation of PASAB, based on their respective values estimated via the Net Asset Approach as of 31.12.2019.

*EBITDA amount represents the average of MY19-MY22 periods. The amounts added while coming to the share value are the figures for the end of 2019.

** Includes EBITDA amounts multiplied by ownership rates of companies included in the Enterprise Value calculation in the Income Approach.

Source: Capital IQ, PwC Analysis

PASAB

Net Asset Approach

Based on the Net Asset Approach, the total equity value of PASAB is estimated to be **TL 2.2bn** as of the valuation date.

TL m	31.12.2019
Paid Capital	224
Accumulated Other Comprehensive Income/(Expense)	70
Impact of Transactions Including Entities Under Common Control	(12)
Share Premiums (Discount)	166
Gains and (Losses) Revaluation	706
Restricted Reserves	378
Retained Earnings	620
Net Profit or (Loss) for the Period	39
Non Controlling Interests	23
Total Equity	2,216
1 Adjustment for Non Controlling of Interest	(23)
Net Asset Value	2,193

The breakdown of the consolidated shareholders equity for PASAB, which is prepared in accordance with the CMB's "Principles of Financial Reporting in Capital Markets¹", in line with Turkish Accounting Standards and Turkish Financial Reporting Standards and audited by Güney Bağımsız Denetim ve S.M.M.M. A.Ş. is presented in the adjacent table.

It has been assumed that the shareholders equity that is present in the consolidated and audited 31.12.2019 balance sheet of PASAB is an accurate representation of the equity value of the company, for purposes of Net Asset Approach.

The consolidated shareholders equity of PASAB as of 31.12.2019 is TL 2,216m the Net Asset Value is calculated as **TL 2,193m** after the adjustments are considered.

Adjustment for Non-Controlling Interests:

The non-controlling interests that are presented as part of the consolidated shareholders equity are excluded from the consideration as part of the Net Asset Approach.

Source: Holding Management, PwC Analysis

¹ Sermaye Piyasasında Finansal Raporlamaya İlişkin Esaslar Tebliği

PASAB

Estimated Stock Market Value

Due to the fact that PASAB shares are not publicly traded in the stock market, an estimated stock market value is calculated based on the outcome from Market Approach. As a result of related calculations, PASAB's estimated stock market value is calculated as **TL 252m**.

Discount Rate

	Companies to Merge		Comparable Companies		Discount Rate
	EV / EBITDA (x)		EV / EBITDA (x)		
	FY15-FY19 Average		FY15-FY19 Average		
SISE	5.4x	7.5x			28%
TRKCM	4.8x	7.3x			34%
ANACM	4.6x	8.5x			46%
SODA	4.7x	8.0x			42%
DENCM	a.d.	7.2x			a.d.
Average					37%

Although PASAB is not a publicly listed company, an estimate has been made for the stock market value, in order to be consistent in terms of the valuation methods used. For the calculation of the estimated stock market value of PASAB, the market multiples calculated based on the stock market values of the publicly traded Companies to Merge were compared with the multiples obtained from comparable companies. The ratios of these multiples with each other are considered as the **discount rate** between the value obtained from the Market Approach and the Stock Market Value. The arithmetic average of the discount rates of the Companies to Merge is applied to the multiple obtained from comparable companies with the Market Approach for PASAB and the stock market value for PASAB was estimated.

The discount rate was calculated as **37%** by applying the specified calculation method for the publicly traded Companies to Merge. The discount rate was applied to PASAB's EV/ EBITDA multiple obtained from comparable companies and estimated stock market value was calculated as **TL 252m**.

Estimated Stock Market Value (*)

TL m	FY19	FY20	FY21	FY22	Average*
EBITDA	373	268	442	601	
Effective EBITDA**	369	272	435	591	
Inflation Indexation	1.00	1.12	1.25	1.40	
EBITDA (Discounted 2019 Figures)	369	243	347	423	345
Comparable Companies - EV / EBITDA Avr.					(A) 7.2x
Discount Rate					(B) %37
Discounted EV / EBITDA Avr.			(A) x (1 - (B))		4.5x
Enterprise Value					1,552
Net Cash/(Debt)					(1,488)
Investment Properties					8
Tax Related Asset					73
Other Companies					107
Estimated Stock Market Value					252

(*) The estimated stock market value of PASAB does not represent a benchmark in any condition for the stock market value of the company in the case of a public offering. The sole purpose of the estimation is to be used in the merger study.

Source: PwC Analysis

DENCM

Income Approach

Based on the Income Approach, the total equity value of DENCM is estimated to be **TL 11m** as of the valuation date.

TL m	2017	2018	2019	2020	2021	2022	2023	2024	2025	TV	Enterprise Value	TL m
Revenue	82	107	132	104	166	193	223	246	270	292	DCF (2020-25)	(29)
Change (%)	27.5%	30.2%	24.2%	(21.2%)	59.3%	16.4%	15.2%	10.6%	9.6%	8.0%	DCF (>2025)	60
Cost of Sales	(61)	(87)	(111)	(99)	(136)	(154)	(174)	(192)	(209)	(226)	Enterprise Value	31
GP from Trading Activity	21	20	21	5	30	39	49	55	61	66	Net Cash/(Debt)	(20)
GP Margin (%)	25.5%	18.4%	15.8%	4.7%	18.2%	20.1%	21.9%	22.2%	22.6%	22.6%	Adjusted Equity Value	11
Operating Expenses	(15)	(12)	(14)	(14)	(17)	(19)	(21)	(23)	(25)	(27)		
Other Operating Income / Expenses	(0)	1	0	-	-	-	-	-	-	-		
EBITDA	5	9	7	(9)	13	20	28	32	36	39		
EBITDA Margin (%)	6.6%	8.6%	5.5%	(8.8%)	8.1%	10.4%	12.6%	13.0%	13.4%	13.4%		
Depreciation and Amortization (-)	(4)	(4)	(4)	(7)	(8)	(9)	(10)	(11)	(13)	(18)		
EBIT	1	5	4	(17)	5	11	18	21	23	21		
EBIT Margin (%)	1.7%	4.9%	2.7%	(15.9%)	3.1%	5.6%	8.0%	8.4%	8.7%	7.4%		
Tax				-	(1)	(2)	(4)	(4)	(5)	(4)		
Tax Rate (%)				22.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%		
Depreciation and Amortization (+)				7	8	9	10	11	13	18		
Operational Cash Flows				(9)	12	18	24	28	31	35		
Change in NWC				6	(14)	(6)	(7)	(6)	(6)	(5)		
Capex				(39)	(8)	(9)	(10)	(11)	(12)	(18)		
Free Cash Flows				(42)	(10)	3	8	11	14	12		
Discount Rate				21.0%	19.5%	19.0%	18.2%	17.2%	16.2%	15.7%		
Partial Period Factor				1.00	1.00	1.00	1.00	1.00	1.00			
Discount Period				0.50	1.50	2.50	3.50	4.50	5.50			
Cumulative Discount Factor				0.91	0.76	0.63	0.53	0.45	0.39	0.39		
Discounted Cash Flows				(38)	(7)	2	4	5	5	60		

Source: Company Management, PwC Analysis

DENCM Market Approach

Based on the Market Approach, the total equity value of DENCM is estimated to be **TL 23m** as of the valuation date.

TL m	FY19	FY20	FY21	FY22	Average*
1 EBITDA	7	(9)	13	20	
Inflation Indexiation	1.00	1.12	1.25	1.40	
2 EBITDA (Discounted 2019 Figures)	7	(8)	11	14	6
EV / EBITDA (x)					7.2x
3 Enterprise Value					43
Net Cash/(Debt)					(20)
4 Equity Value					23

* EBITDA amount represents the average of MY19-MY22 periods. The amounts added while coming to the share value are the figures for the end of 2019.

Market Approach has been applied following the steps discussed below:

- 1 Actual and forecasted consolidated FY19-FY22 EBITDA figures for DENCM are taken into consideration after multiplying the respected figures with effective ownership percentages.
- 2 The respective forecasted EBITDA figures have been discounted with TL inflation to 2019, in order to express forecast figures in 2019 prices.
- 3 EV/EBITDA multiple derived from the comparable companies analysis is applied to the average of discounted FY19-FY22 EBITDA figures to estimate the enterprise value. Since DENCM manufactures hand-made products only and works directly for PASAB as a subcontractor, there aren't any reasonable direct peer companies for DENCM. Due to this, comparable peer companies and multiples used for PASAB were taken into account for DENCM as well, considering DENCM sells all its product to PASAB as a subcontractor.
- 4 In order to estimate the equity value; net cash/debt of DENCM is also considered.

DENCM

Net Asset Approach

*Based on the Net Asset Approach, the total equity value of is estimated to be **TL 65m** as of the valuation date.*

TL m	31.12.2019
Paid Capital	15
Adjustment Share Capital Differences	21
Share Premiums (Discount)	0
Accumulated Other Comprehensive Income/(Expense)	42
<i>Currency Translation Difference</i>	44
<i>Hedge Reserves</i>	(1)
Restricted Reserves	1
Retained Earnings	(8)
Net Profit or (Loss) for the Period	(6)
Net Asset Value	65

The breakdown of the consolidated shareholders equity for DENCM, which is prepared in accordance with the CMB's "Principles of Financial Reporting in Capital Markets¹", in line with Turkish Accounting Standards and Turkish Financial Reporting Standards and audited by Güney Bağımsız Denetim ve S.M.M.M. A.Ş. is presented in the adjacent table.

It has been assumed that the shareholders equity that is present in the consolidated and audited 31.12.2019 balance sheet of DENCM is an accurate representation of the equity value of the company, for purposes of Net Asset Approach.

The consolidated shareholders equity of **TL 65m** as of 31.12.2019 is considered as Net Asset Value of DENCM as of the valuation date.

Source: Company Management, PwC Analysis

DENCM

Stock Market Value

The Stock Market Value for DENCM is based on the weighted average stock market price of quoted DENCM shares for the trailing 12 months going back from the merger announcement date, 30.01.2020. The total equity value of DENCM estimated from this method is estimated to be **TL 83m**.

Stock Price and Transaction Volume

Stock Price (TL/lot)

18.00

16.00

14.00

12.00

10.00

8.00

6.00

4.00

2.00

	Adjusted Avg.Price(TL/lot)	Equity Value (TL m)
Last 1 Month	8.85	133
Last 3 Months	7.63	114
Last 6 Months	6.50	97
Last 12 Months	5.54	83
Adjusted Stock Market Value		83

Due to the fact that DENCM has increased its paid capital, the average equity values were calculated by using the equity values obtained by multiplying the weighted average share price of each transaction day with the number of issued shares available on that transaction day.

Daily equity values before 16.09.2019, the date on which the paid capital increase is valid, were adjusted by adding the increased capital amount of TL 9m to the equity value.

The weighted average price presented in the table is obtained by dividing the average equity value by the current number of shares, 15m.

Denizli Cam has made a paid capital increase in accordance with the decision of the board of directors approved by the CMB on 05.09.2019. The issued capital of the company has increased from TL 6m to TL 15m.

31/01/2019 28/02/2019 31/03/2019 30/04/2019 31/05/2019 30/06/2019 31/07/2019 31/08/2019 30/09/2019 31/10/2019 30/11/2019 31/12/2019 30/01/2020

Source: Capital IQ, PwC Analysis

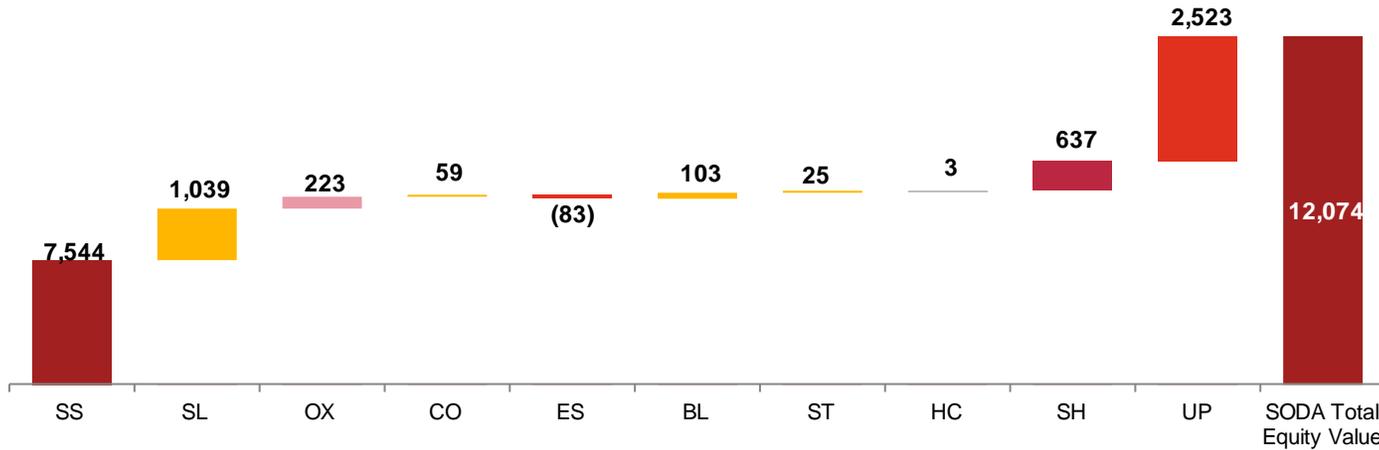
Transaction Volume (TL m) Adjusted Avg.Price(TL/lot)

SODA

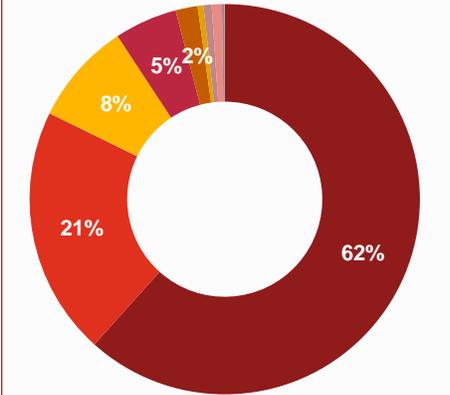
Income Approach

Based on the Income Approach, the total equity value of SODA is estimated to be **TL 12.1bn** as of the valuation date.

Total Equity Value (TL m)

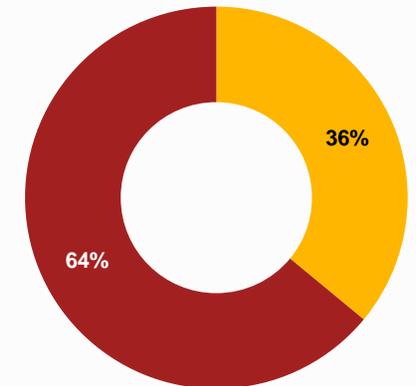


Equity Value Breakdown



■ SS ■ UP ■ SL ■ SH ■ OX
■ CO ■ ES ■ BL ■ ST ■ HC

TL m	SS	SL	OX	CO	ES	BL	ST	HC	SH	UP	Total SODA
Enterprise Value	5,967	1,115	212	51	736	92	16	-	-	-	8,190
Net Cash/(Debt)	1,788	(76)	36	8	(907)	19	8	-	-	-	876
Tax Related Assets	1	-	-	-	88	-	-	-	-	-	89
Dividend Payment (-)	(245)	-	(25)	-	-	(7)	-	-	-	-	(277)
Dividend Income (+)	32	-	-	-	-	-	-	-	-	-	32
Equity Value	7,544	1,039	223	59	(83)	103	25	3	2,548	5,046	16,508
Effective Shareholding Percentage	%100	%100	%100	%100	%100	%100	%100	%100	%25	%50	
Equity Value- SODA	7,544	1,039	223	59	(83)	103	25	3	637	2,523	12,074



■ Domestic ■ Foreign

Source: Holding Management, PwC Analysis

SODA

Market Approach

Based on the Market Approach, the total equity value of SODA is estimated to be **TL 11.2bn** as of the valuation date.

TL m	FY19	FY20	FY21	FY22	Average*
EBITDA	1,071	857	1,060	1,345	
1 Effective EBITDA**	1,071	857	1,060	1,345	
<i>Inflation Indexiation</i>	1.00	1.12	1.25	1.40	
2 EBITDA (Discounted 2019 Figures)	1,071	765	845	961	911
EV / EBITDA (x)					8.0x
3 Enterprise Value					7,274
Net Cash/(Debt)					876
Tax Related Asset					89
Dividend Adjustment, net					(245)
5 Investment Accounted for using Equity Method					3,160
<i>Solvay Şişecam Holding AG</i>					637
<i>Pacific Soda LLC</i>					2,523
6 Other Companies					3
<i>Şişecam Chem Investment B.V.</i>					3
Equity Value					11,158

* EBITDA figure represents the average of FY19-FY22. Adjustment figures that are included in the EV-Equity bridge is year-end figures for the calendar year 2019.

** Consists of EBITDA figures of companies that are included in the Enterprise Value calculation through the Income Approach, which are multiplied by their effective ownership percentages.

Several steps have been taken into consideration for the derivation of the Market Approach:

- Actual and forecasted consolidated FY19-FY22 EBITDA figures for SODA are taken into consideration after multiplying the respected figures with effective ownership percentages.
- The respective forecasted EBITDA figures have been discounted with TL inflation to 2019, in order to express forecast figures in 2019 prices.
- EV/EBITDA multiple derived from the comparable companies analysis is applied to the average of discounted FY19-FY22 EBITDA figures to estimate the enterprise value.
- In order to derive the equity value, net cash/debt, tax related assets and planned dividend income and payments associated with subsidiaries of SODA are also considered. Such equity value adjustments are weighted by the effective ownership of the relevant entities at the SODA level.
- The estimated equity values of investments accounted for using the equity method as of 31.12.2019 are also taken into consideration. Income Approach has been considered as the only method for the value of the shares in Solvay Şişecam Holding AG and Pacific Soda LLC.
- Other non-operational companies have been included in the equity value estimation of SODA, based on their respective values estimated via the Net Asset Approach as of 31.12.2019.

Source: CapitalIQ, PwC Analysis

SODA

Net Asset Approach

Based on the Net Asset Approach, the total equity value of SODA is estimated to be **TL 5.5bn** as of the valuation date.

TL m	31.12.2019
Paid Capital	1,000
Accumulated Other Comprehensive Income/(Expense)	951
Currency Translation Difference	760
Hedge Reserves	7
Tangible Asset Revaluation Increases (Decreases)	184
Gains (Losses) on Remeasurements of Defined Benefit Plans	0
Restricted Reserves	230
Retained Earnings	2,452
Net Profit or (Loss) for the Period	1,109
Non Controlling Interests	-
Total Equity	5,742
1 Dividend Adjustment, net*	(245)
Net Asset Value	5,497

* Represents the net effect of dividend adjustments at the consolidated level for SODA. The dividend payments made to SS by the subsidiaries are netted off at the SODA level. The resulting TL 245m consists of the dividend payment that will be made by SODA to non-group companies and Şişecam.

The breakdown of the consolidated shareholders equity for SODA, which is prepared in accordance with the CMB's "Principles of Financial Reporting in Capital Markets¹", in line with Turkish Accounting Standards and Turkish Financial Reporting Standards and audited by Güney Bağımsız Denetim ve S.M.M.M. A.Ş. is presented in the adjacent table.

It has been assumed that the shareholders equity that is present in the consolidated 31.12.2019 balance sheet of SODA, that has been prepared in accordance with TAS/IFRS is an accurate representation of the equity value of the company.

The consolidated shareholders equity of SODA as of 31.12.2019 is TL 5,742m, the Net Asset Value is calculated as **TL 5.497m** after the adjustments considered.

1 Dividend Adjustment:

The figure represents the net dividend payment of SODA that is due after 31.12.2019. Net dividend adjustment is included in our assessment with respect to its effect on the net asset value of SODA.

Source: Holding Management, PwC Analysis

¹ Sermaye Piyasasında Finansal Raporlamaya İlişkin Esaslar Tebliği

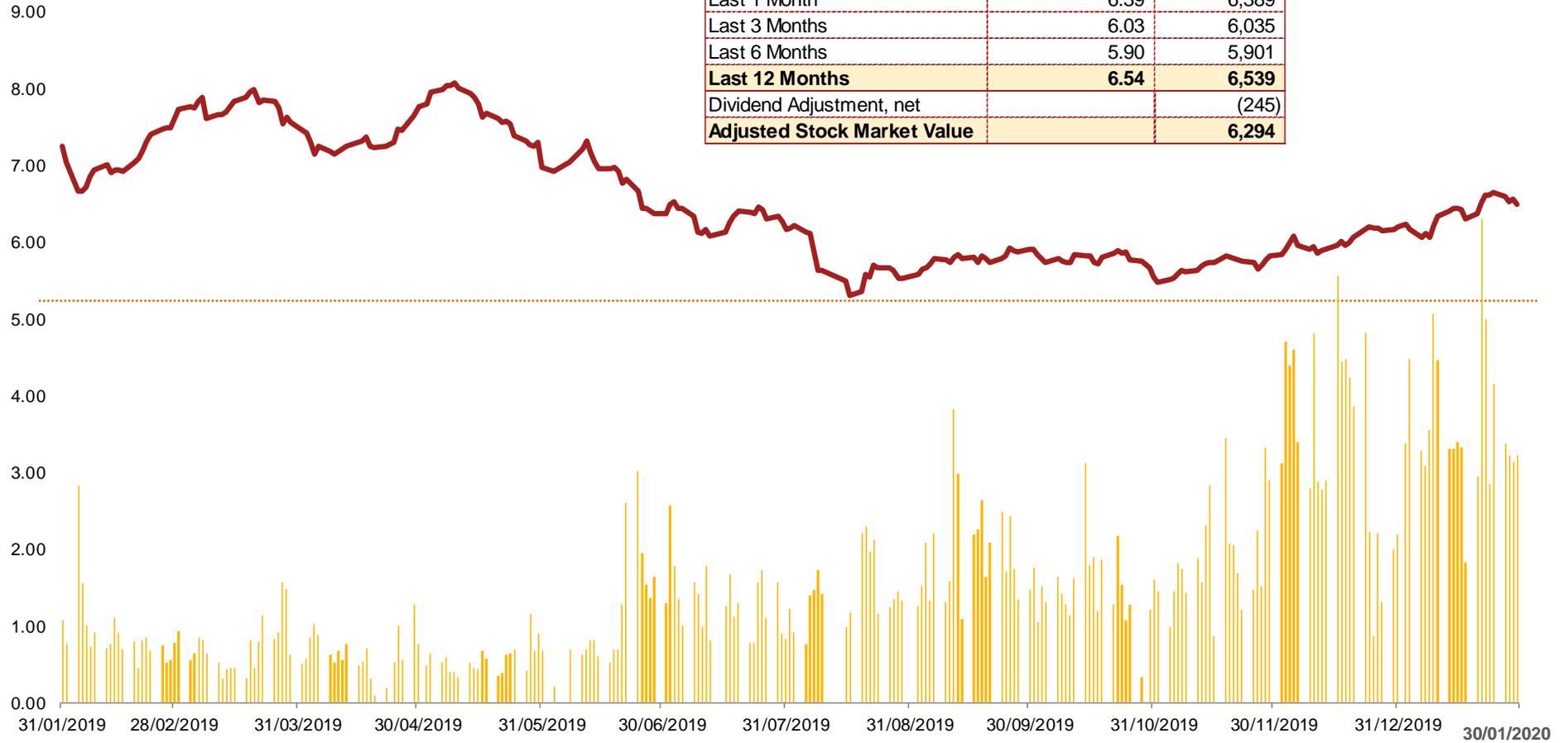
SODA

Stock Market Value

The Stock Market Value for SODA is based on the weighted average stock market price of quoted SODA shares for the trailing 12 months going back from the merger announcement date, 30.01.2020. The total equity value of SODA estimated from this method is estimated to be **TL 6.3bn**.

Stock Price and Transaction Volume

Stock Price (TL/lot)



Source: CapitalIQ, PwC Analysis

Transaction Volume (TL m) Weighted Avg.Price (TL/lot)



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