

CFA Research Challenge Local Final, Presentation 4 March 2023



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Pavlou**

Recommendation:

BUY



TITC.BR | TITC.AT



Current Price:
€15.58

Target Price:
€18.50

Upside: 18.75%



Raw Materials:

- Limestone
- Marl
- Clay



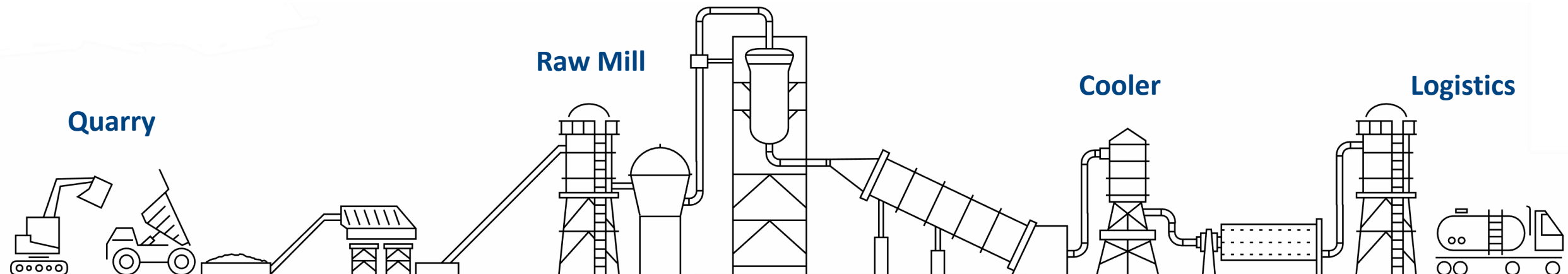
Crushing of raw materials and mixed with minerals



Heated 1500°C in the Kiln to make Clinker



Pozzolana is added to Clinker to make Cement



Quarry

Raw Mill

Cooler

Logistics

Crusher

Heating
Kiln

Cement
Mill



Overview

ESG

Industry-Business

Financial Analysis

Valuation

Risks



A. Environmental, Social & Governance



- 2025 ESG Goals
- 2050 Net-Zero target

REFINITIV®



TITAN's Outperformance

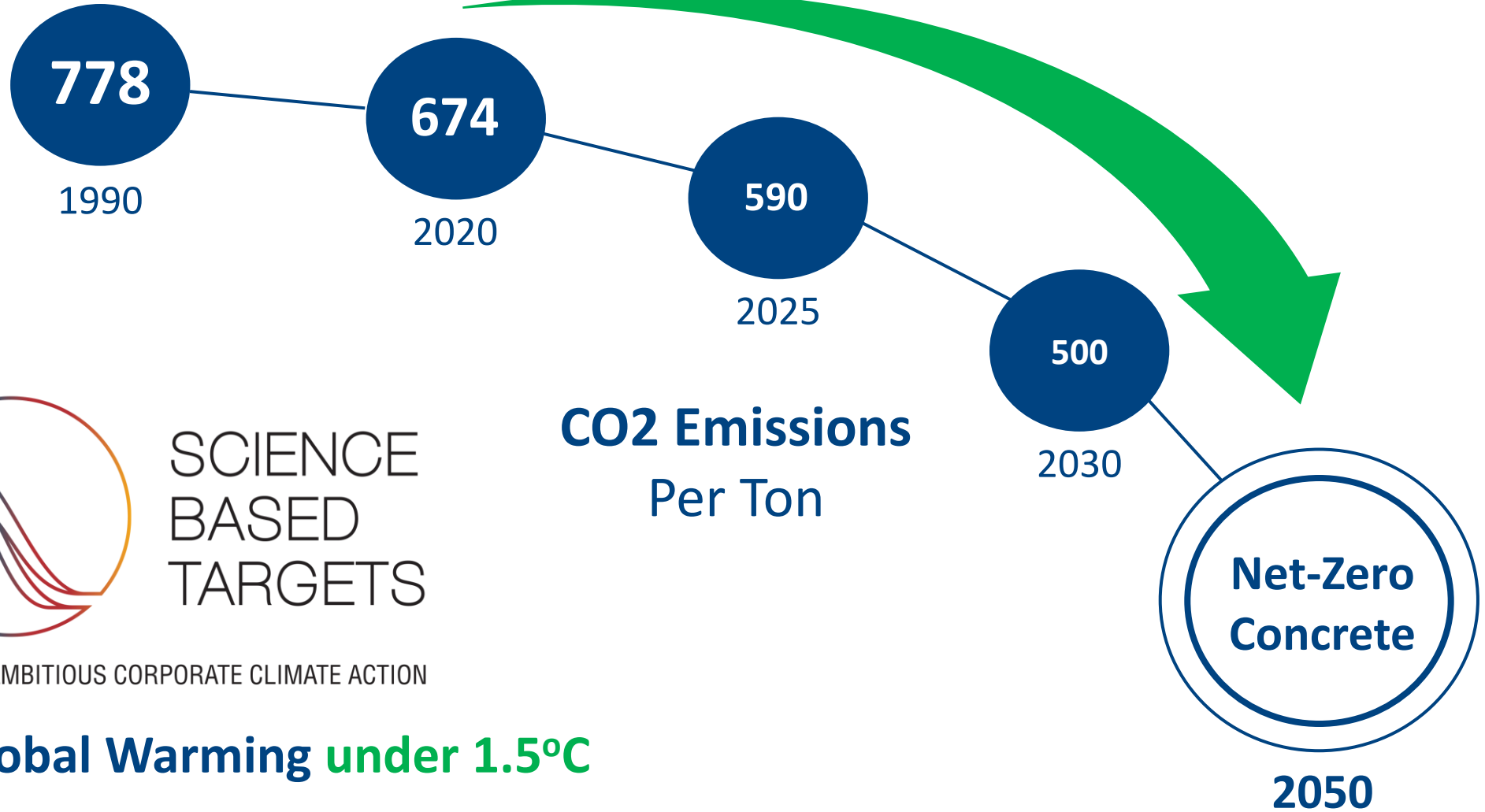


Workforce



Product Responsibility





SCIENCE
BASED
TARGETS

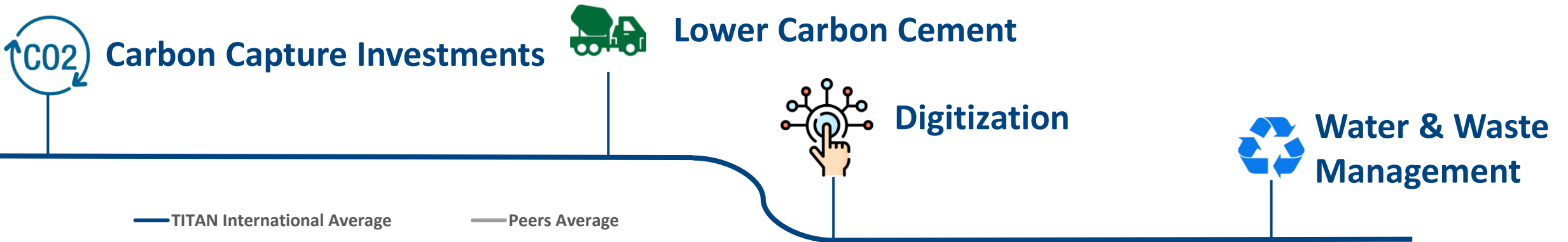
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



Keep Global Warming **under 1.5°C**



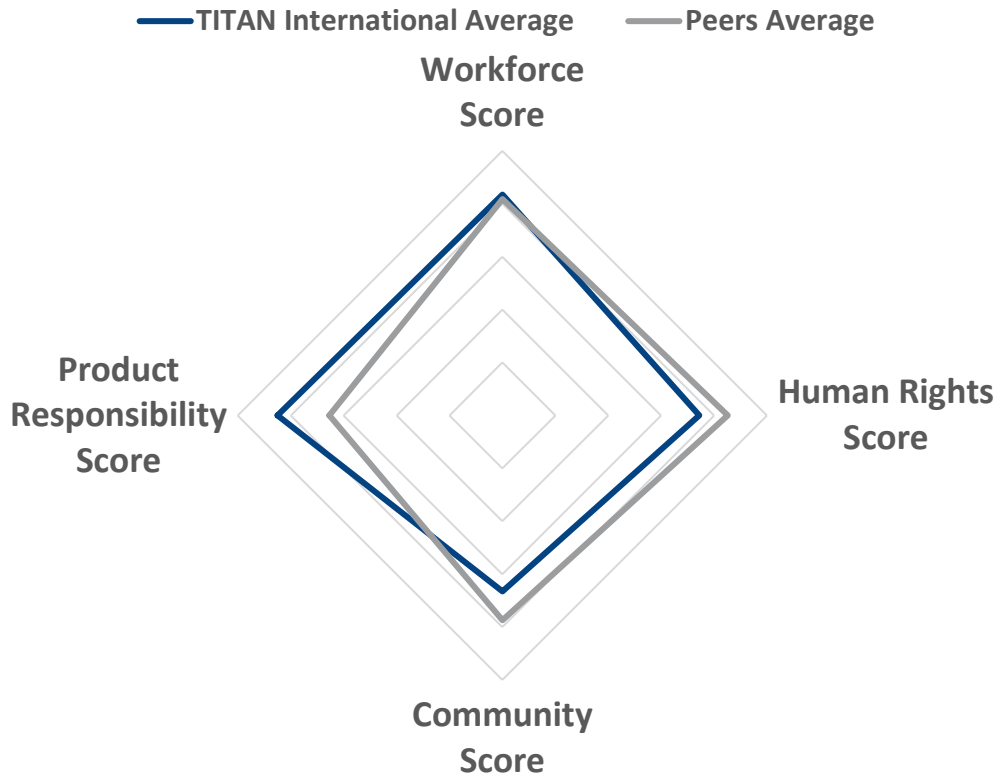
Road to Sustainability



Area of Improvement: Innovation

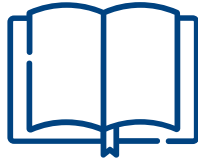


- Cement Recycling Promotion
- Social Infrastructure Development



Employees with Higher Education

30%



Employee Training

109,000 hours
(2021)



Women Employees

13.36%
(2021)

33%
(By 2025)



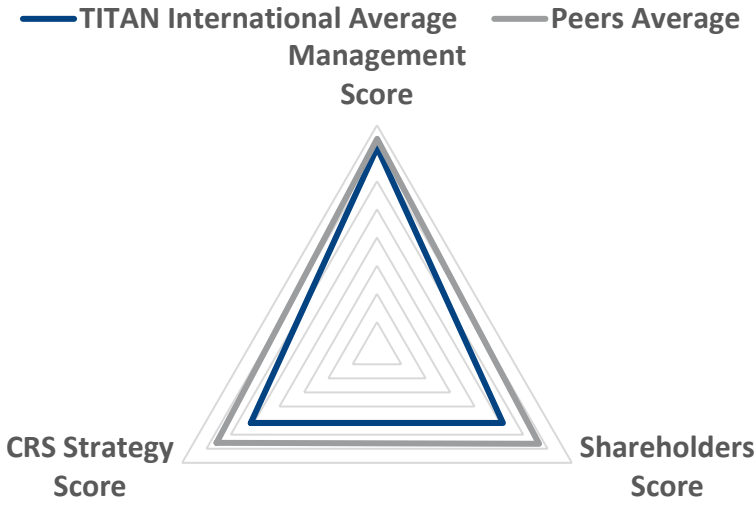
Community Donations

€2.3 Million

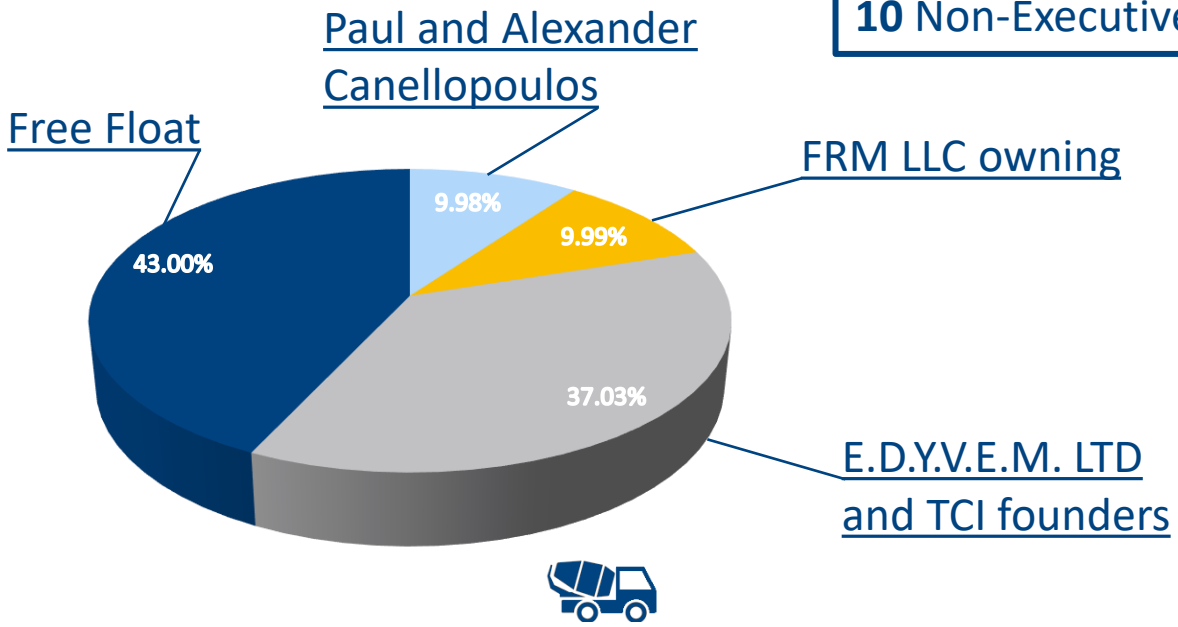
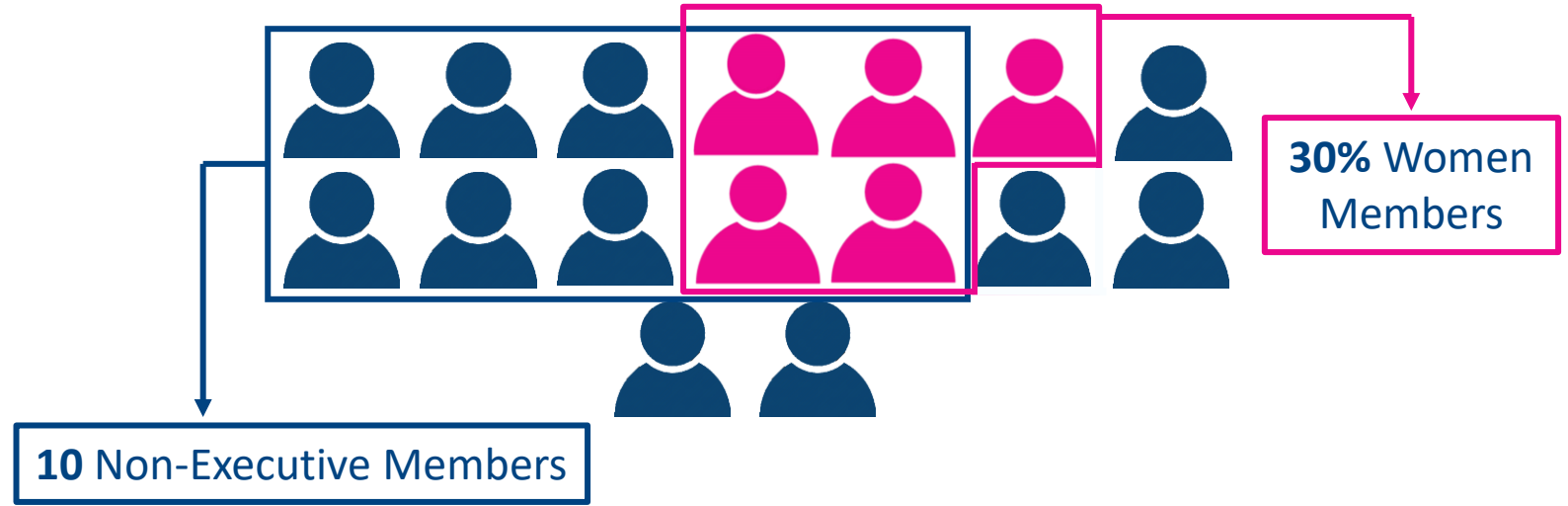
Product Responsibility:

- **Quality Products** to Customers
- Customer Centric focus on **Services**
- **Customer Protection** Policies (Cyber Security, Responsible Marketing etc.)





BoD Composition






Deferred Compensation Plan (DCP)

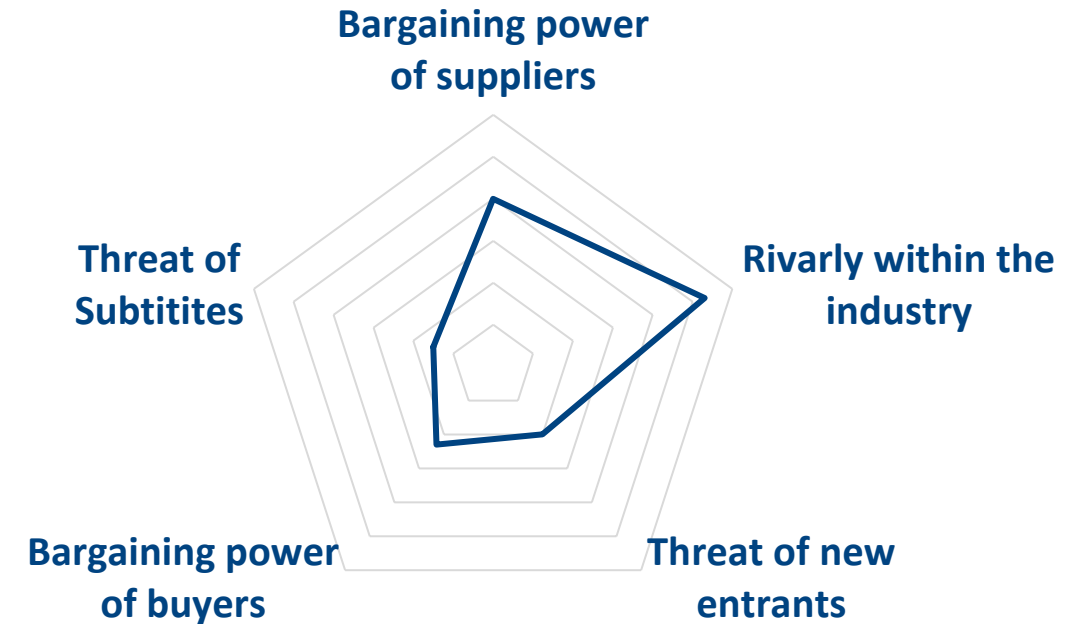


An aerial photograph of a large industrial plant, possibly a refinery or chemical processing facility. The image shows a complex network of tall distillation columns, pipes, and structural steel. In the foreground, there is a lush green lawn with several small trees and a circular water feature. A semi-transparent white horizontal band is overlaid across the middle of the image, containing the text 'B. Industry - Business' in a bold, blue, sans-serif font.

B. Industry - Business

-  Procyclical Industry
-  Cost of Energy & Raw Materials
-  Environmental & Government Regulations
-  Process Innovation
-  Upwards trending market

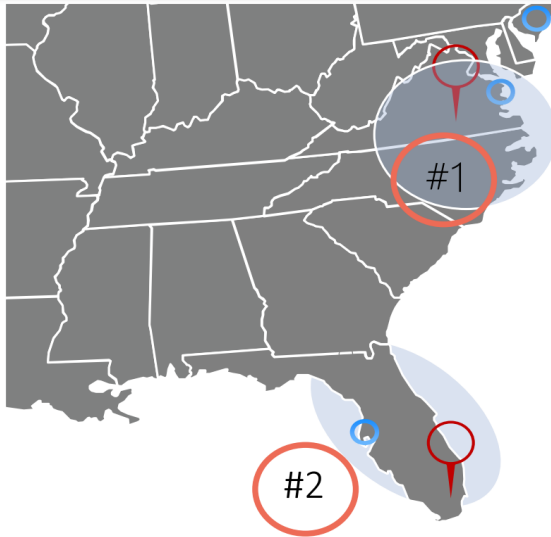
Porter's 5 Forces



Industry Market Size



USA

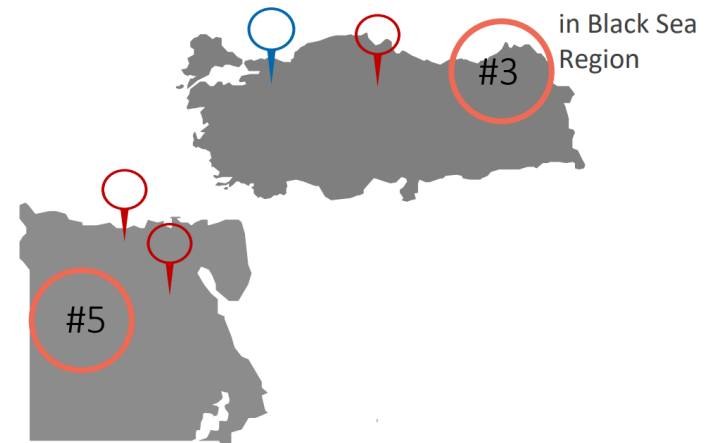


- Cement plant
- Market presence through vertically integrated activities
- Import terminals
- Grinding plant

Greece & Western Europe



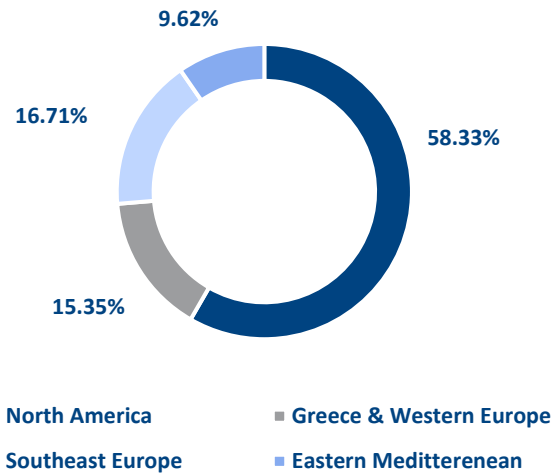
Eastern Mediterranean



Southeast Europe



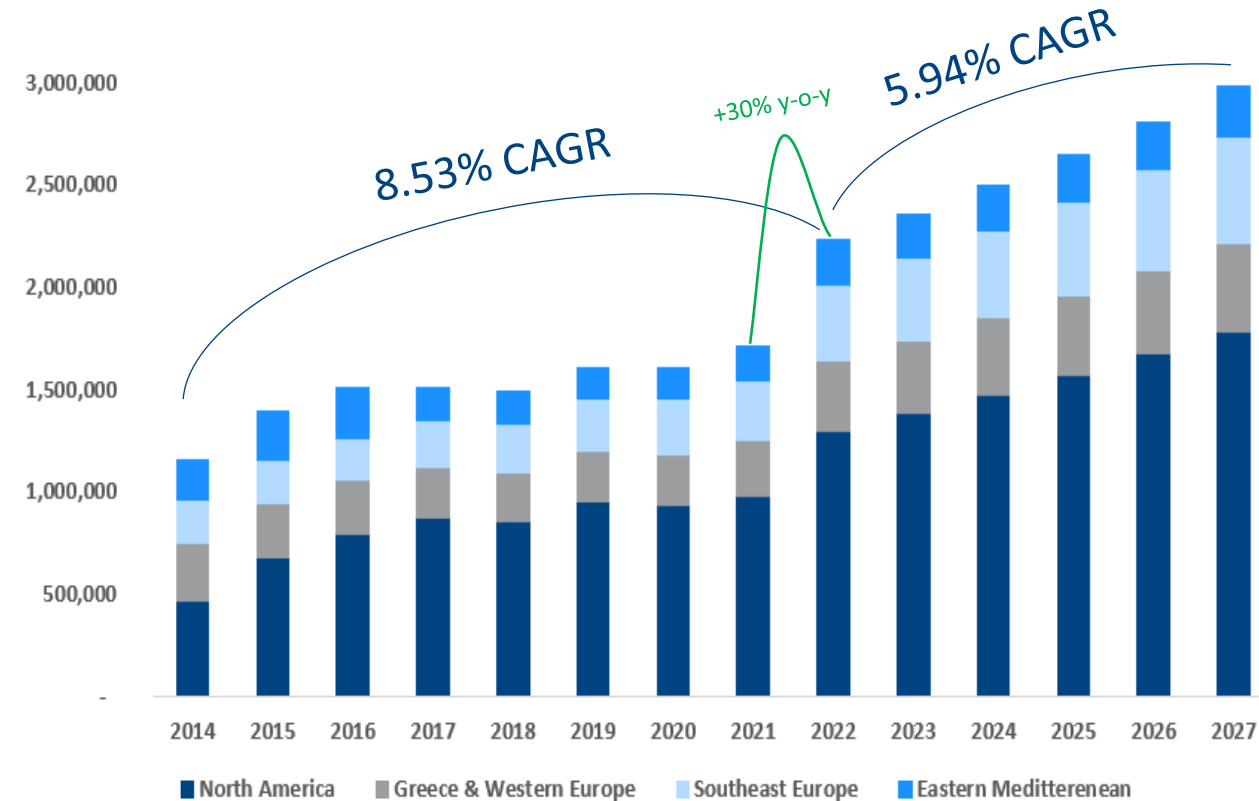
Revenue Distribution



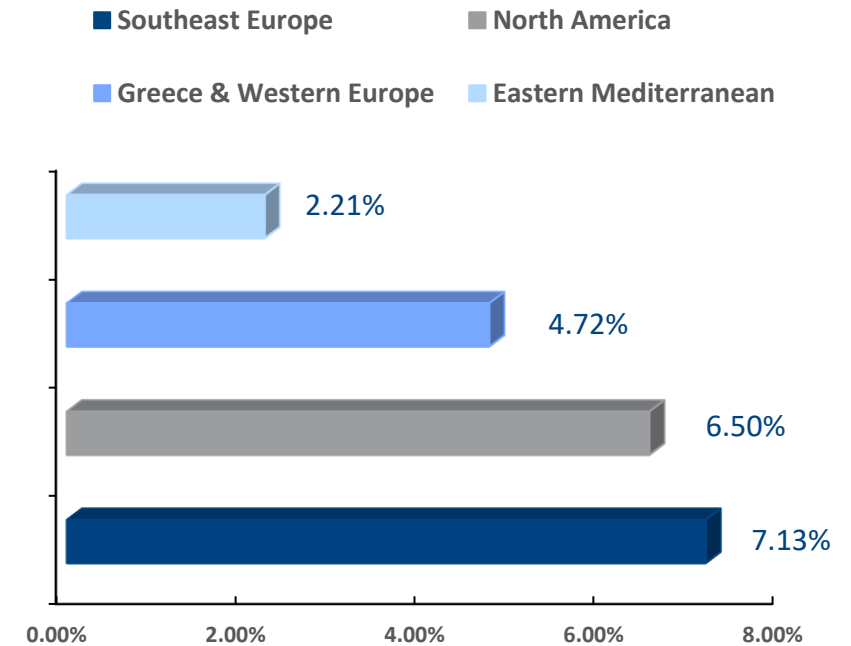


C. Financial Position

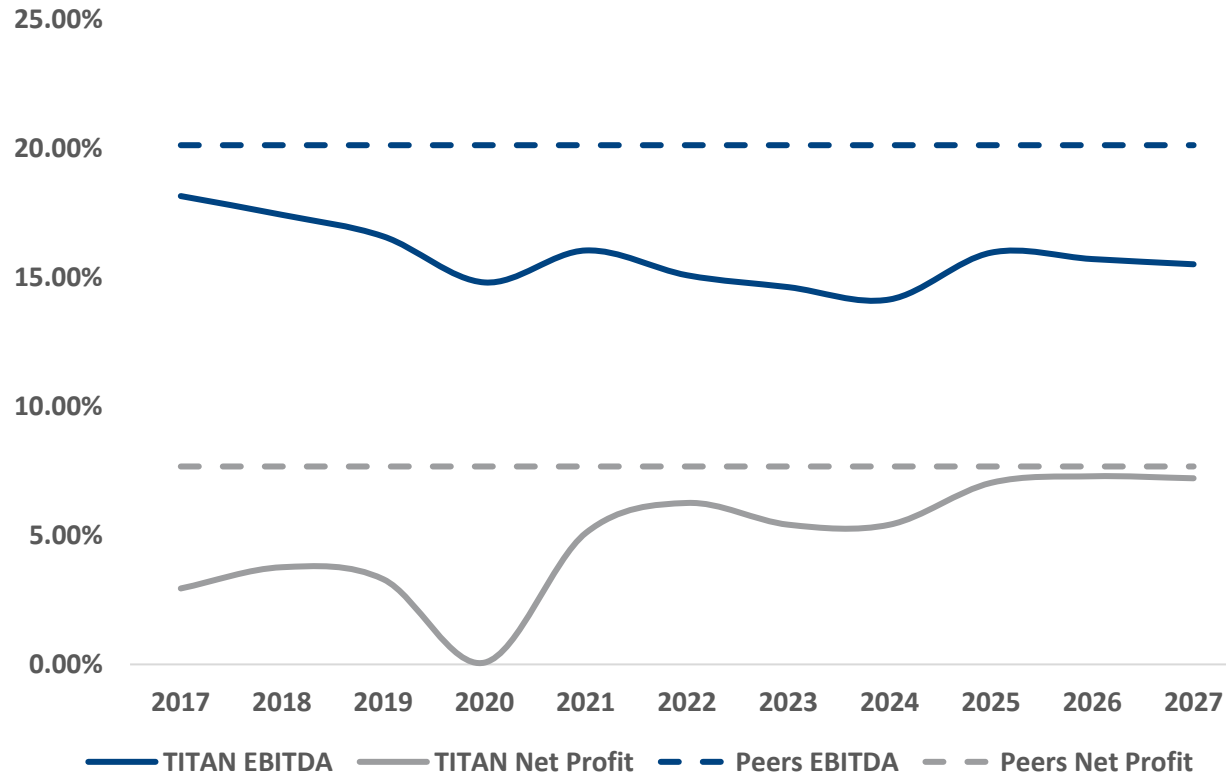
Increasing Total Revenue per region (€ '000s)



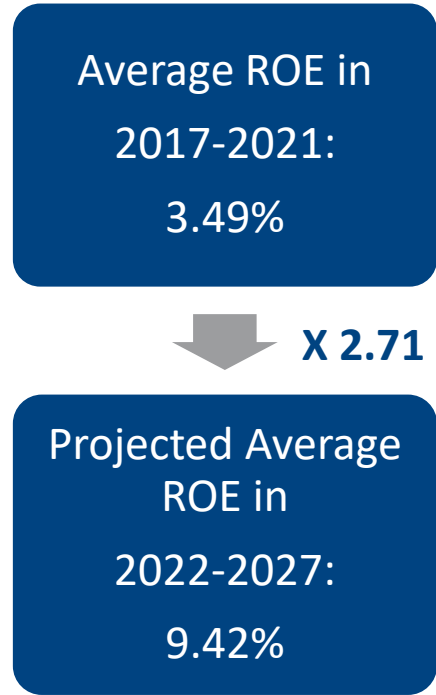
Regional CAGR 2023-2027



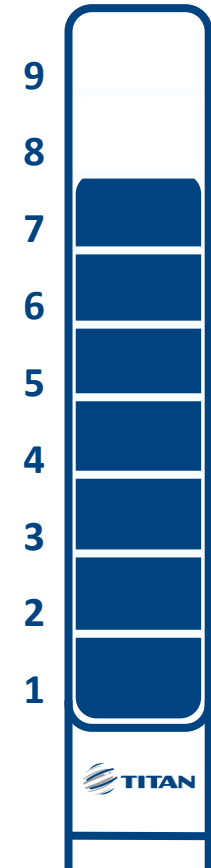
Margins Evolution



Dupont Analysis



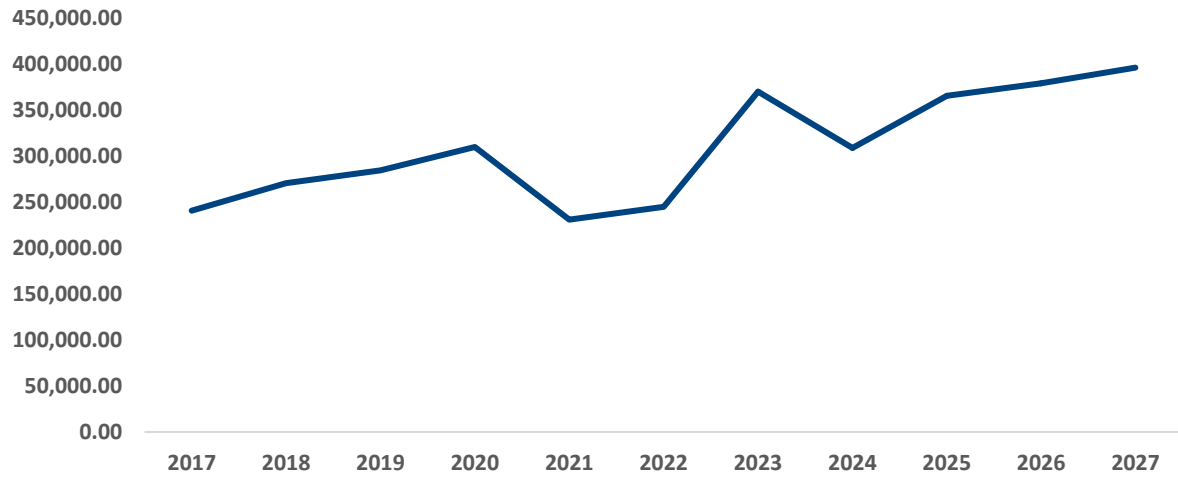
Piotroski F- Score



2023-2027 median



Operating Cash flows



Operating inflows

Pay off debt

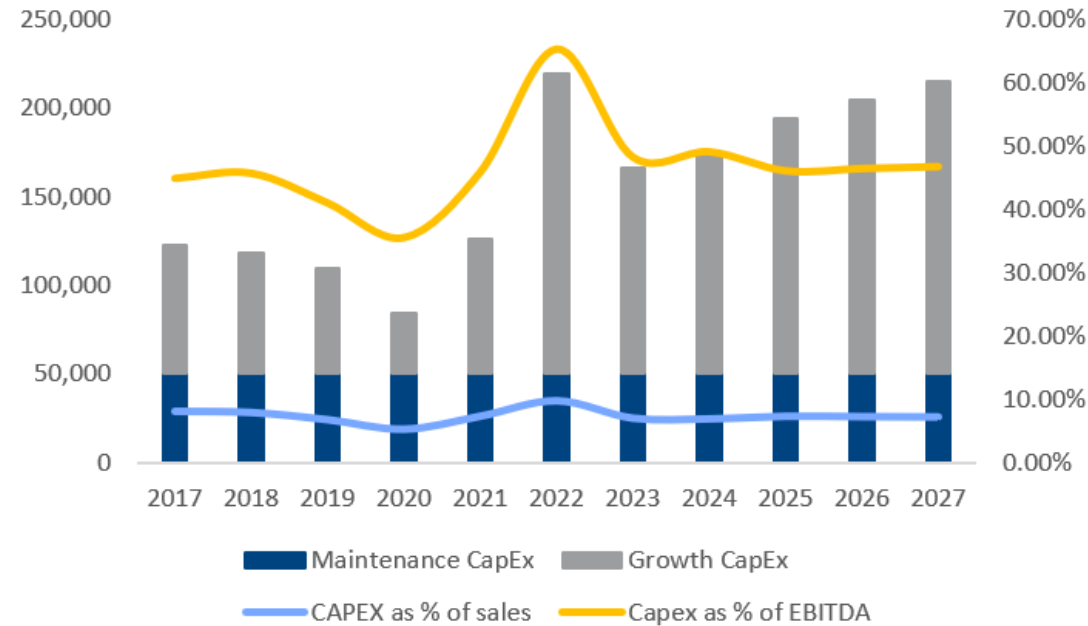
Fund investments

Reward shareholders



Source: Company's Data, Team Analysis

CapEx Evolution YoY (€ '000s)



Known Investments

25M in new Calciner in Kamari plant

2021-2023

75M in 2 US Domes

2021-2023

50M in maintenance annually



An equally weighted average of approximately 7% Capex/Sales Ratio and 47% Capex/EBITDA Ratio, based on historical medians.

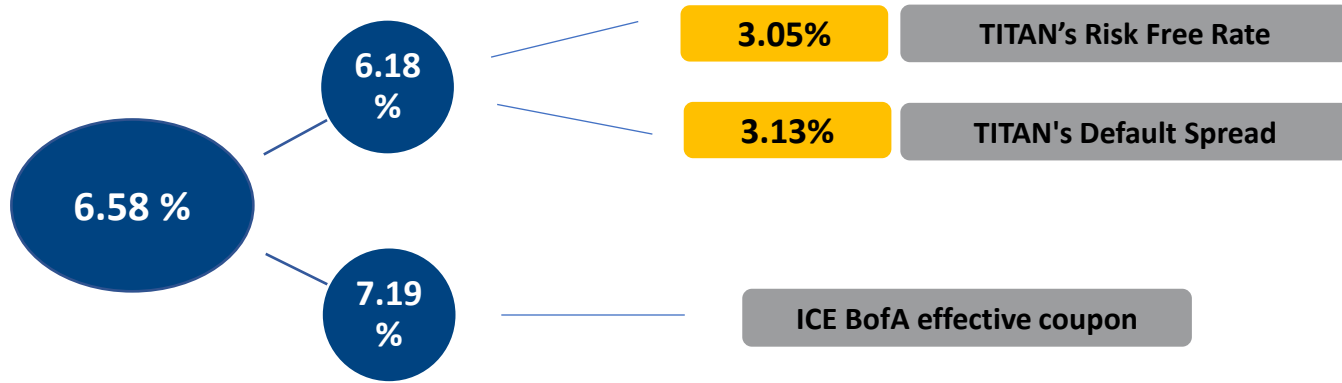
Source: Company's Data, Team Analysis



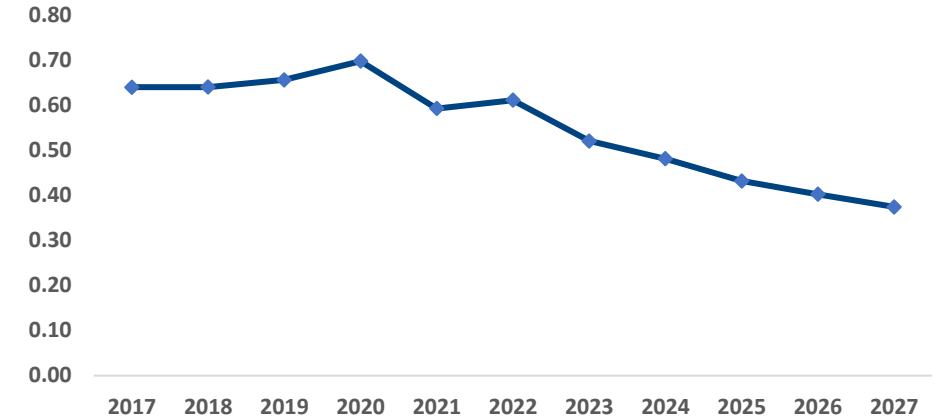
Capital Structure: Leverage Gradually Decreases



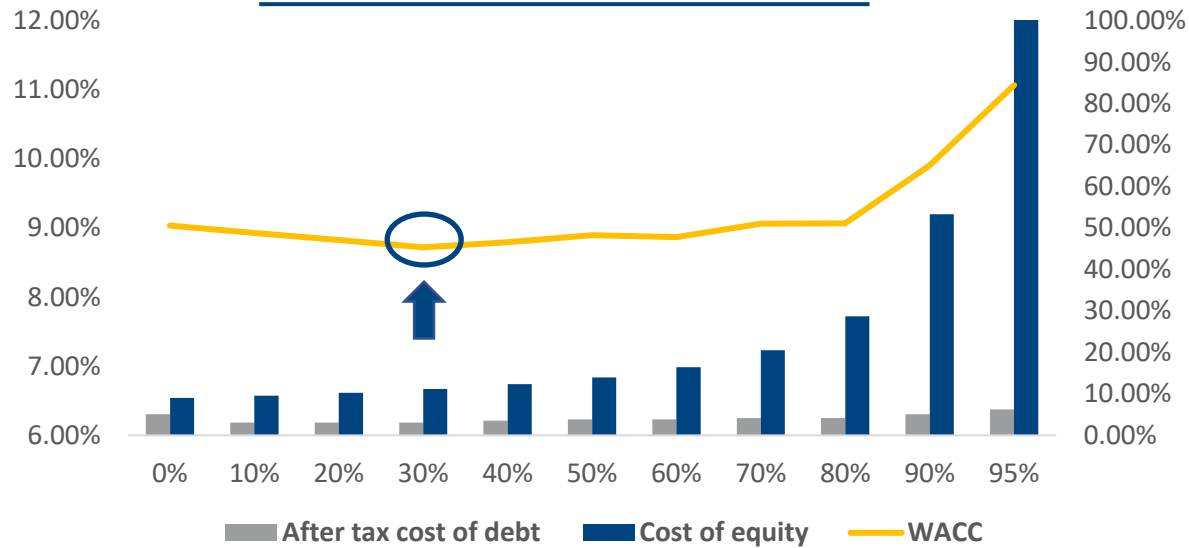
Refinance Coupon Rate 2024



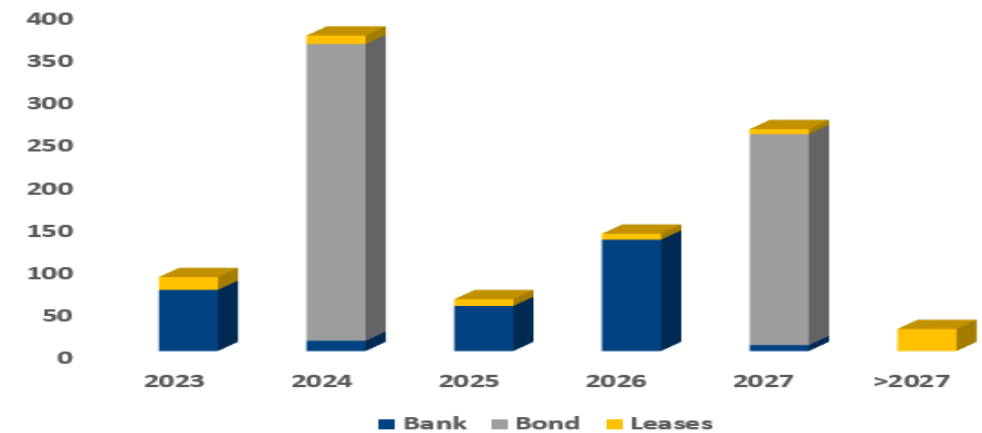
D/E Ratio



Optimal Capital Structure



Debt Profile

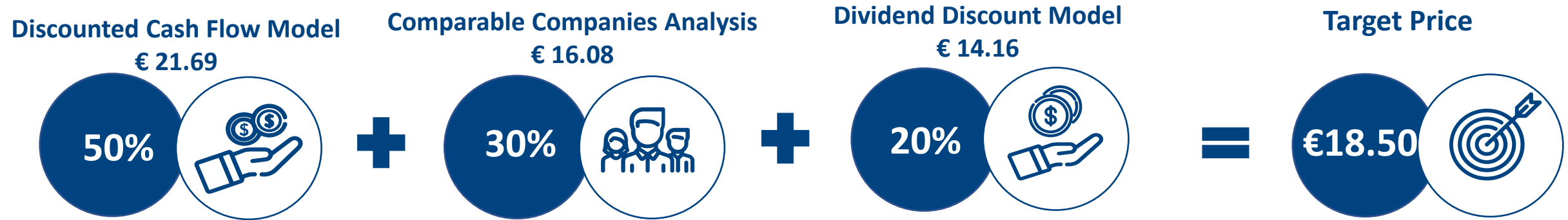


Source: Company's Data, Team Analysis

An aerial photograph of a large industrial facility, possibly a steel mill or refinery, featuring complex structures, tall chimneys, and conveyor belts. The foreground shows a green lawn with several trees and a circular water feature. A semi-transparent white horizontal band is overlaid across the middle of the image, containing the text 'D. Valuation' in a bold, blue, sans-serif font.

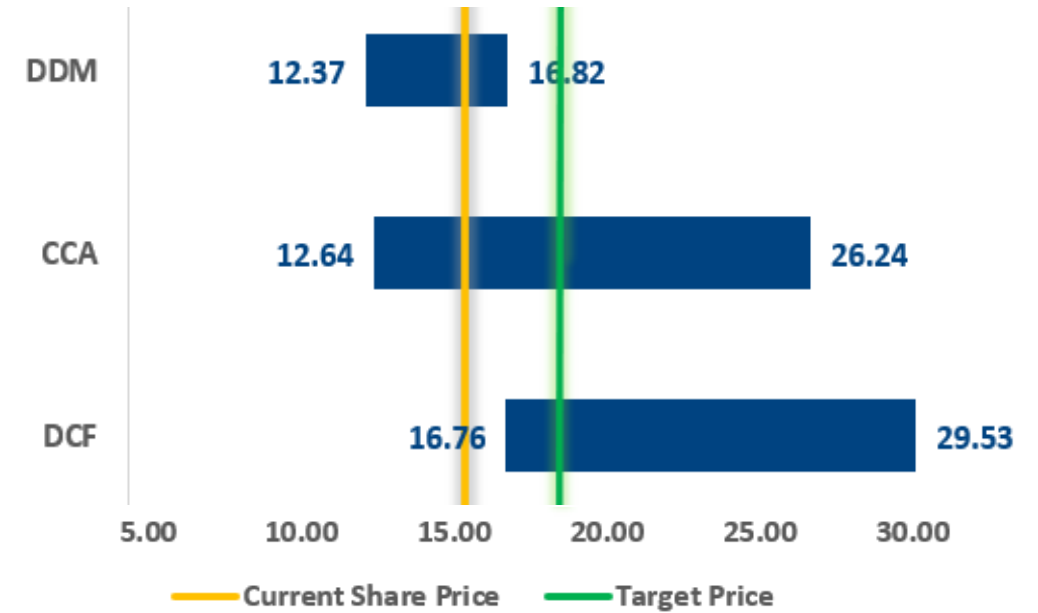
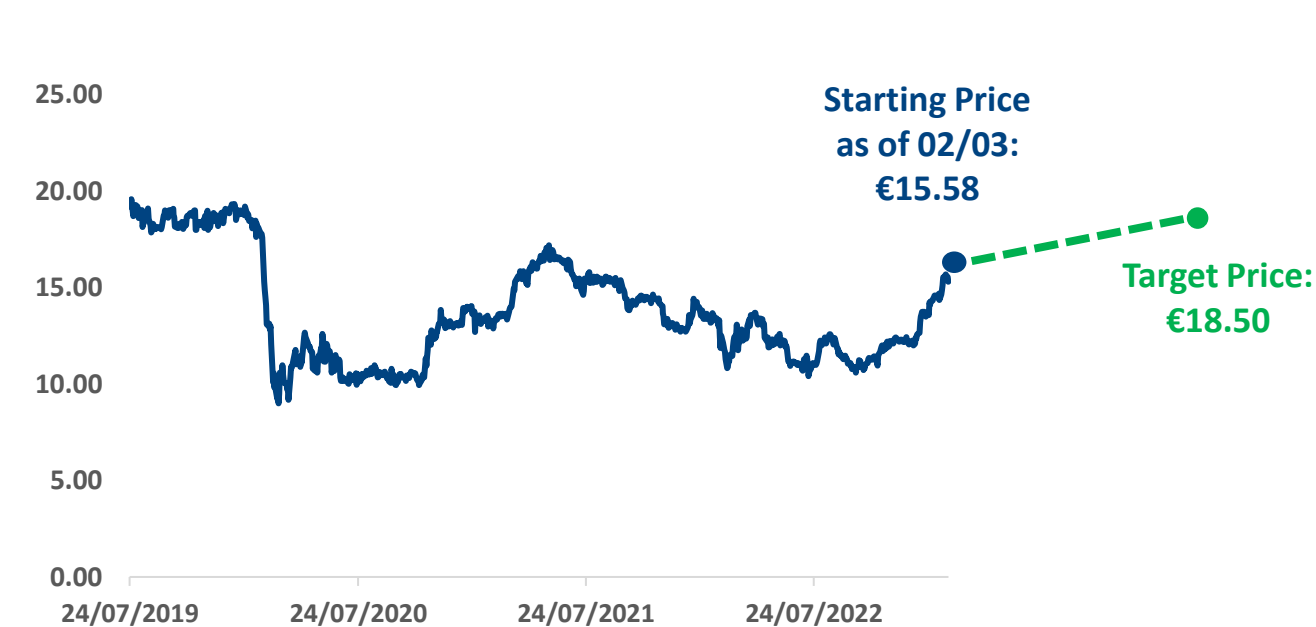
D. Valuation

Valuation Overview: Target Price and Valuation Method Mix

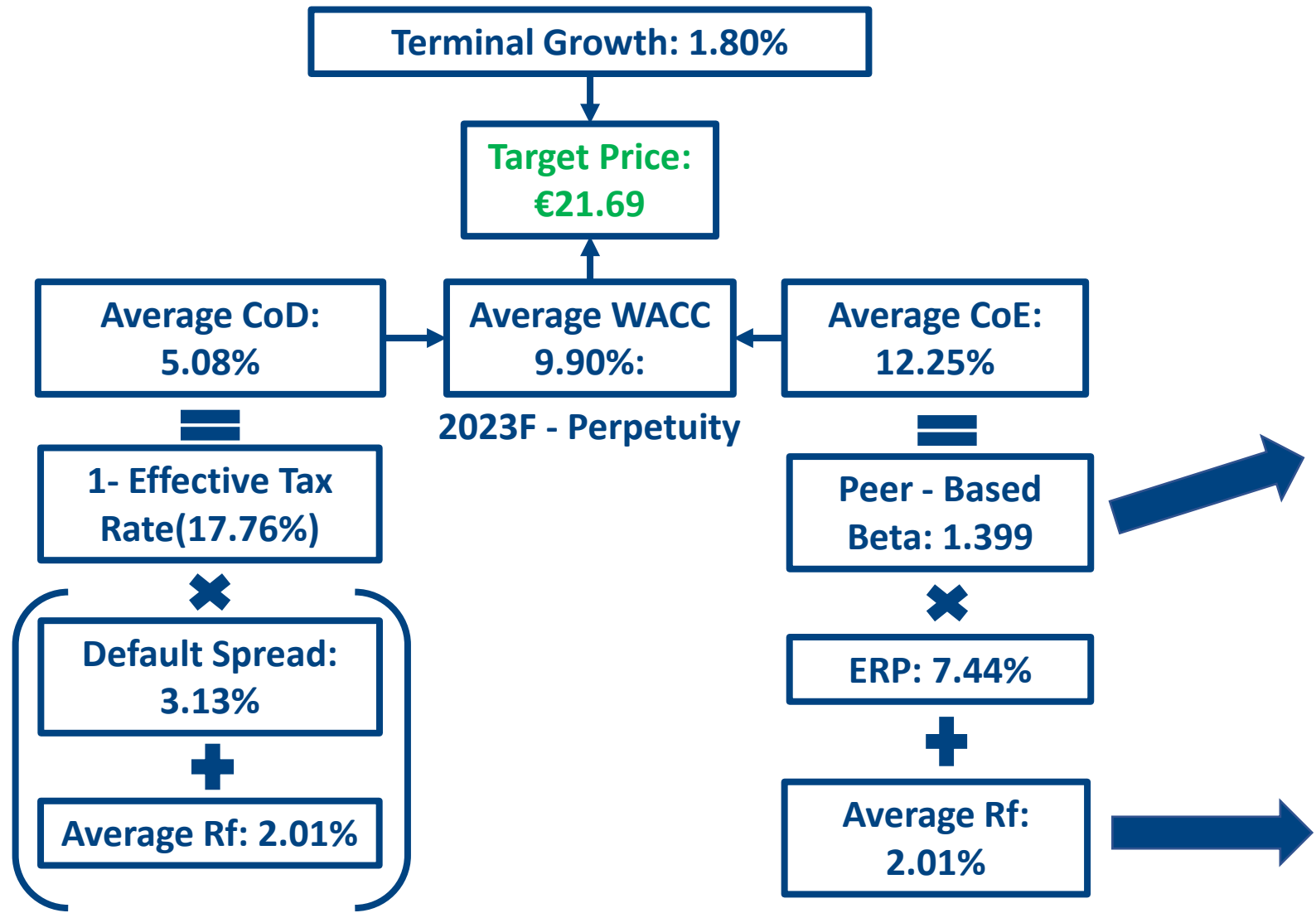


Share Price Performance

Football Field



Discounted Cash Flow Analysis: TITAN Is Trading at a Discount



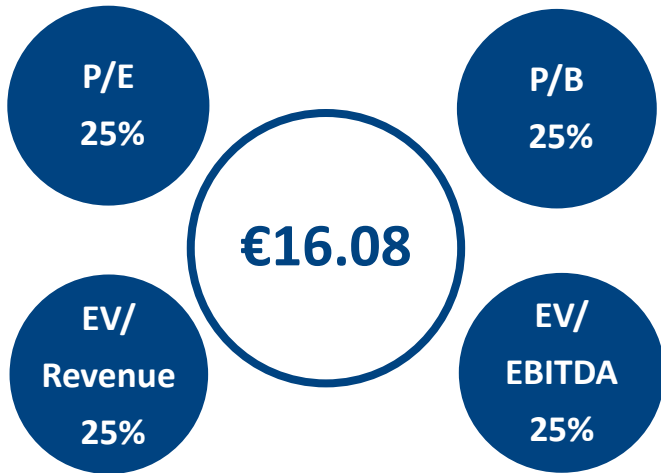
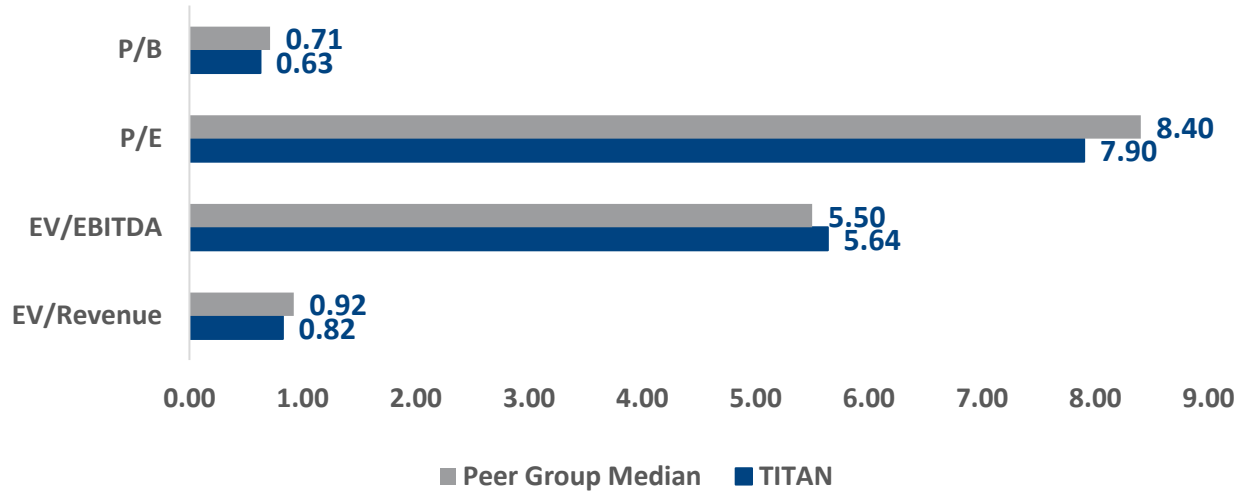
CME Group

30 Day Federal Funds
Futures and Options

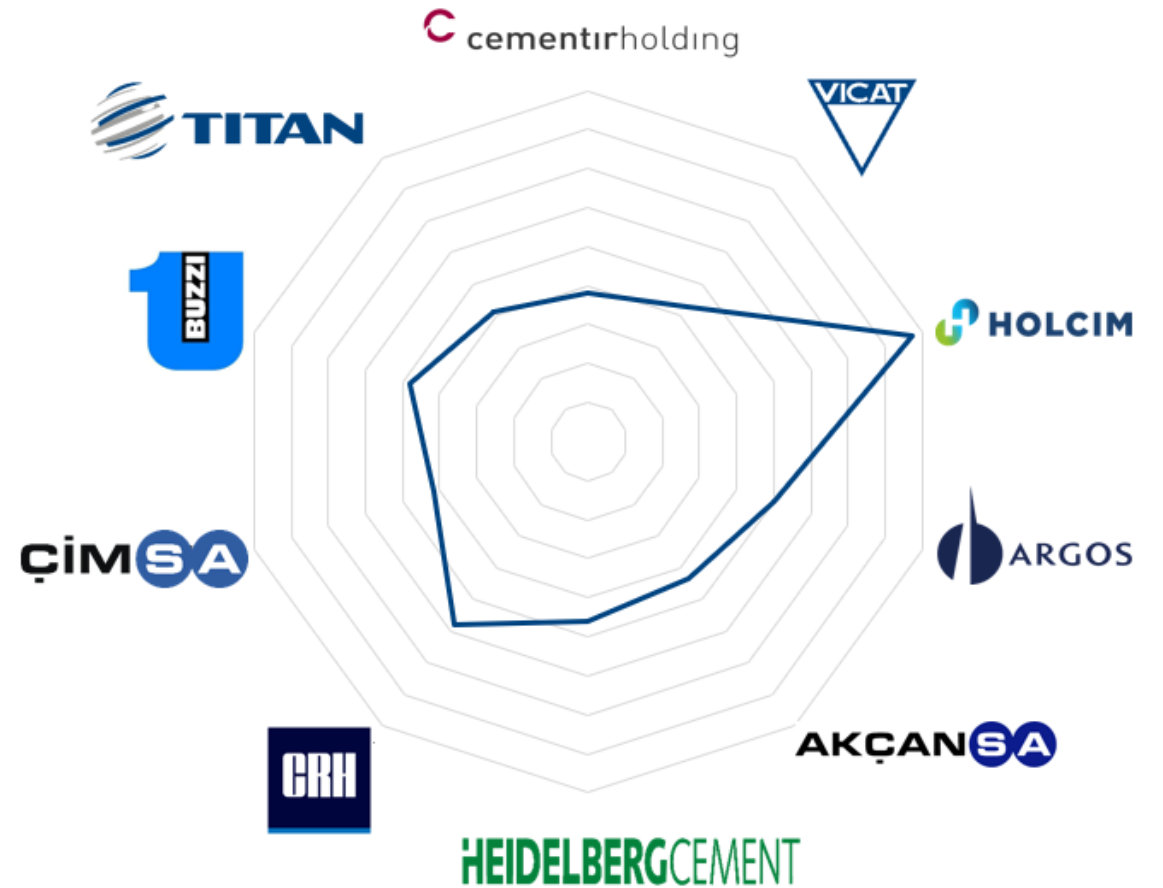
GLOBEX CODE
ZQN3



1YF Multiples



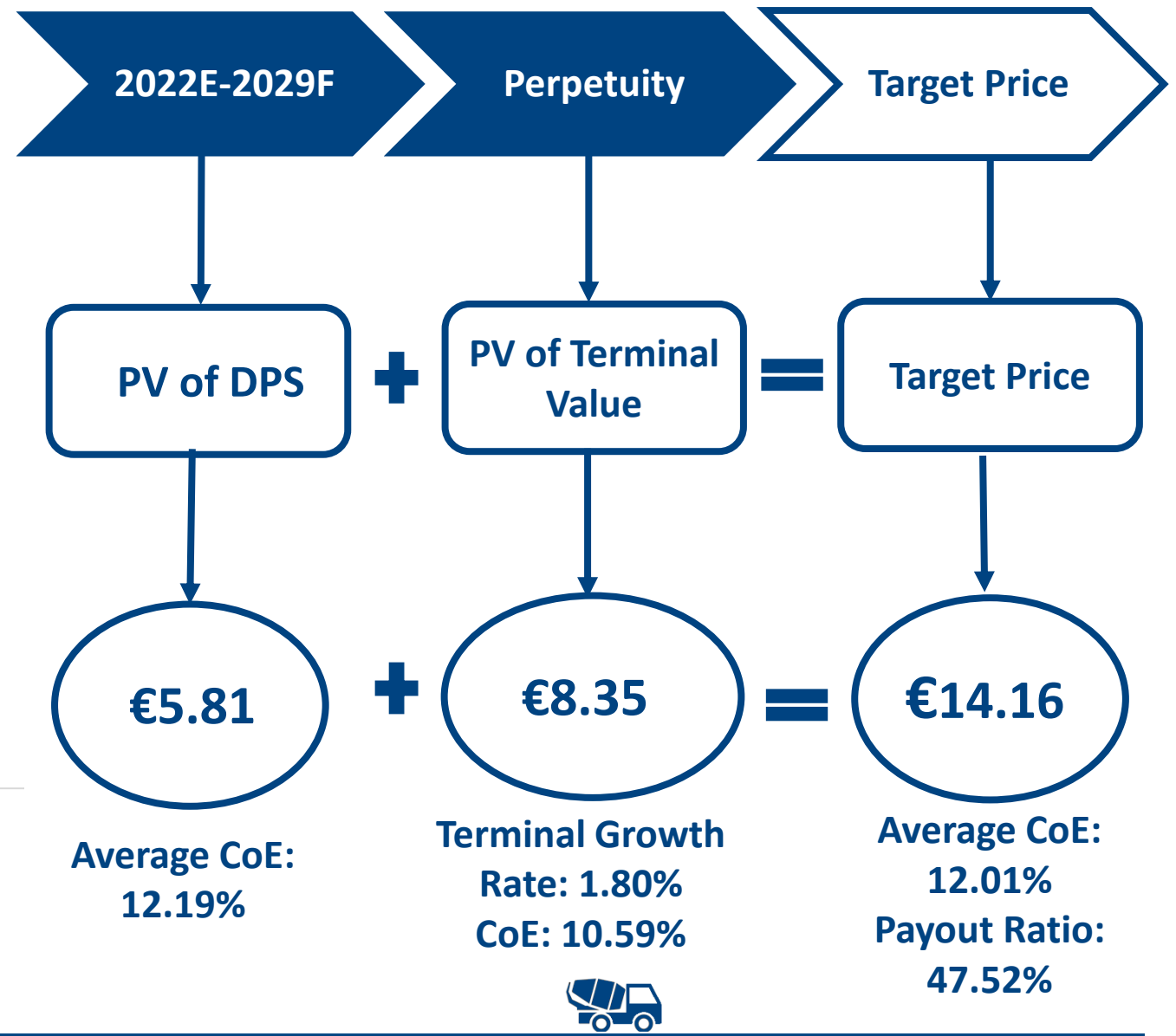
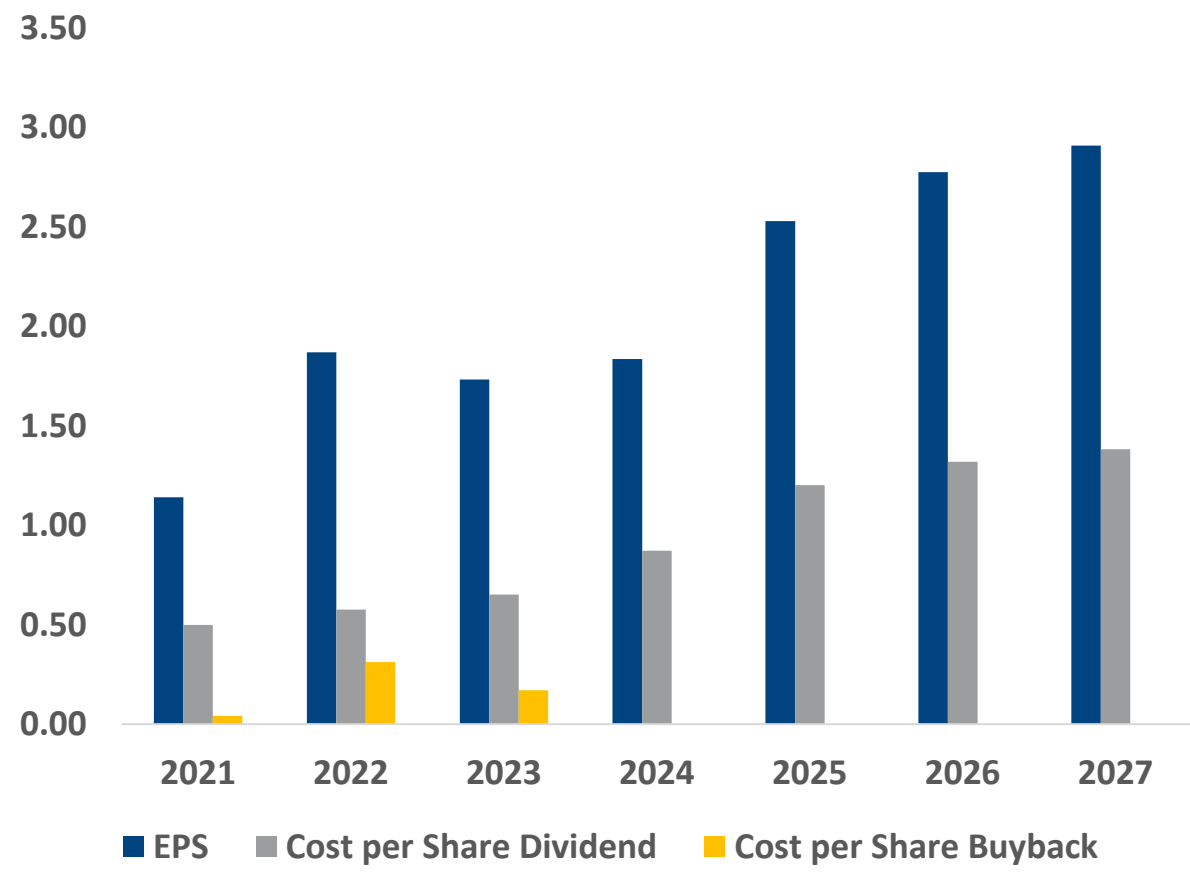
EV/Revenue Multiple



Source: Team Analysis



Dividend Policy



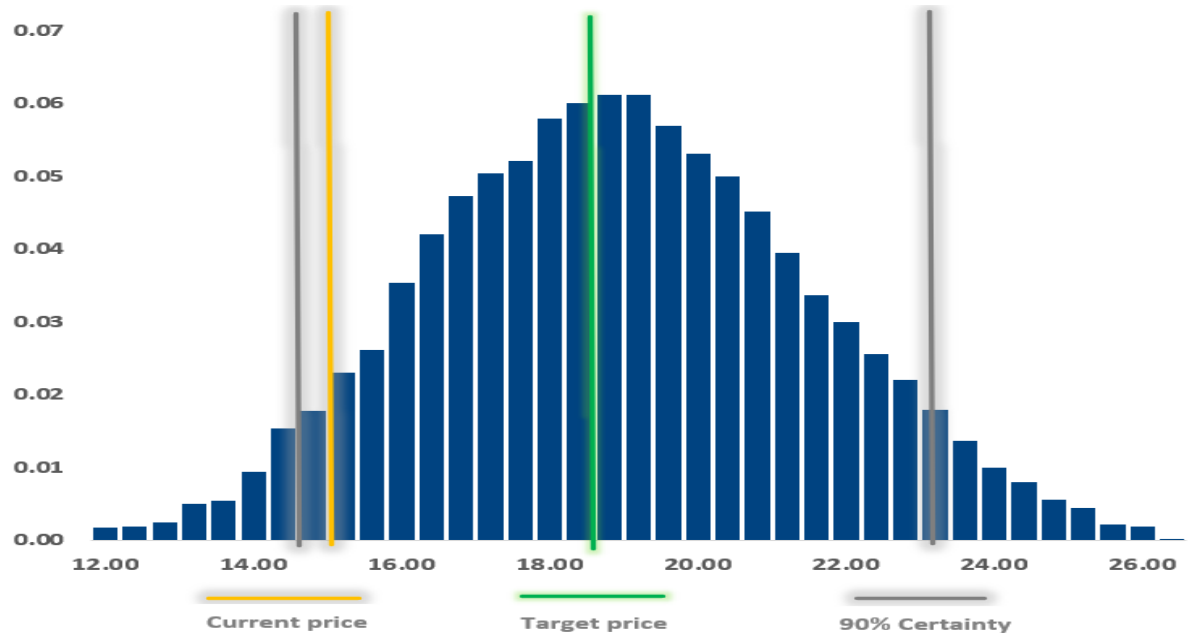
Source: Team Analysis



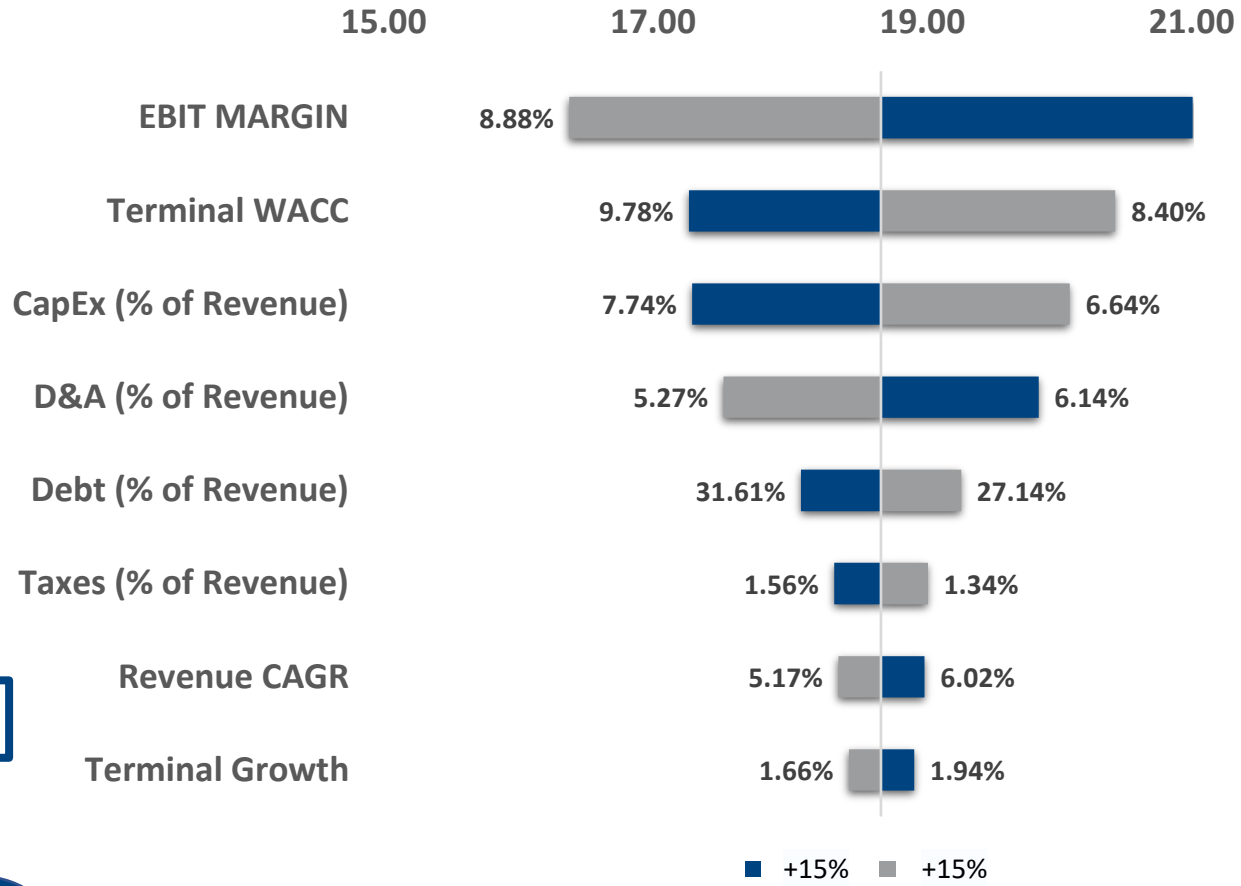
- **TITAN falls behind the competition**
- **Worsening of global economic conditions**
- **Inflationary pressures extend to 2026**

- **Increased Market share in the US (Infrastructure bills)**
- **Credit Rating upgrade to BB+**
- **Inflation Slowdown & energy cost decline**

Monte Carlo Simulation



Tornado Graph



Parameters stressed

- EBIT Margin
- Capex
- Terminal WACC
- Taxes
- Revenue CAGR
- Terminal Growth Rate
- D&A
- Debt
- Cash & Cash Equivalents
- Changes in WC

Trials

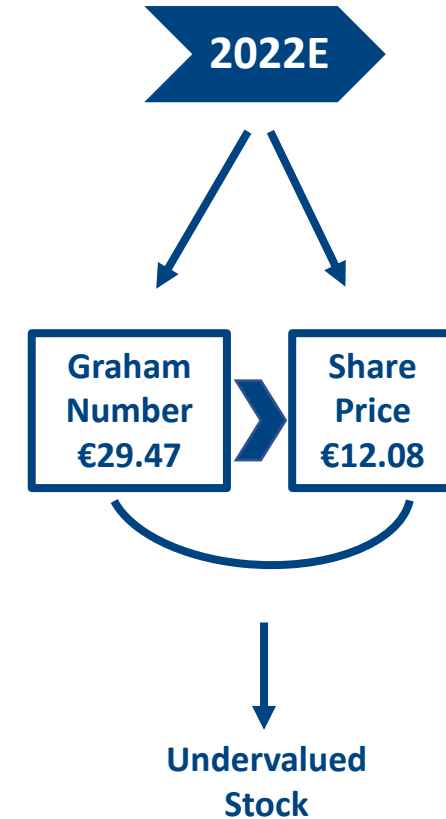
10,000

89% of the scenarios confirms our BUY Recommendation

Technical Analysis



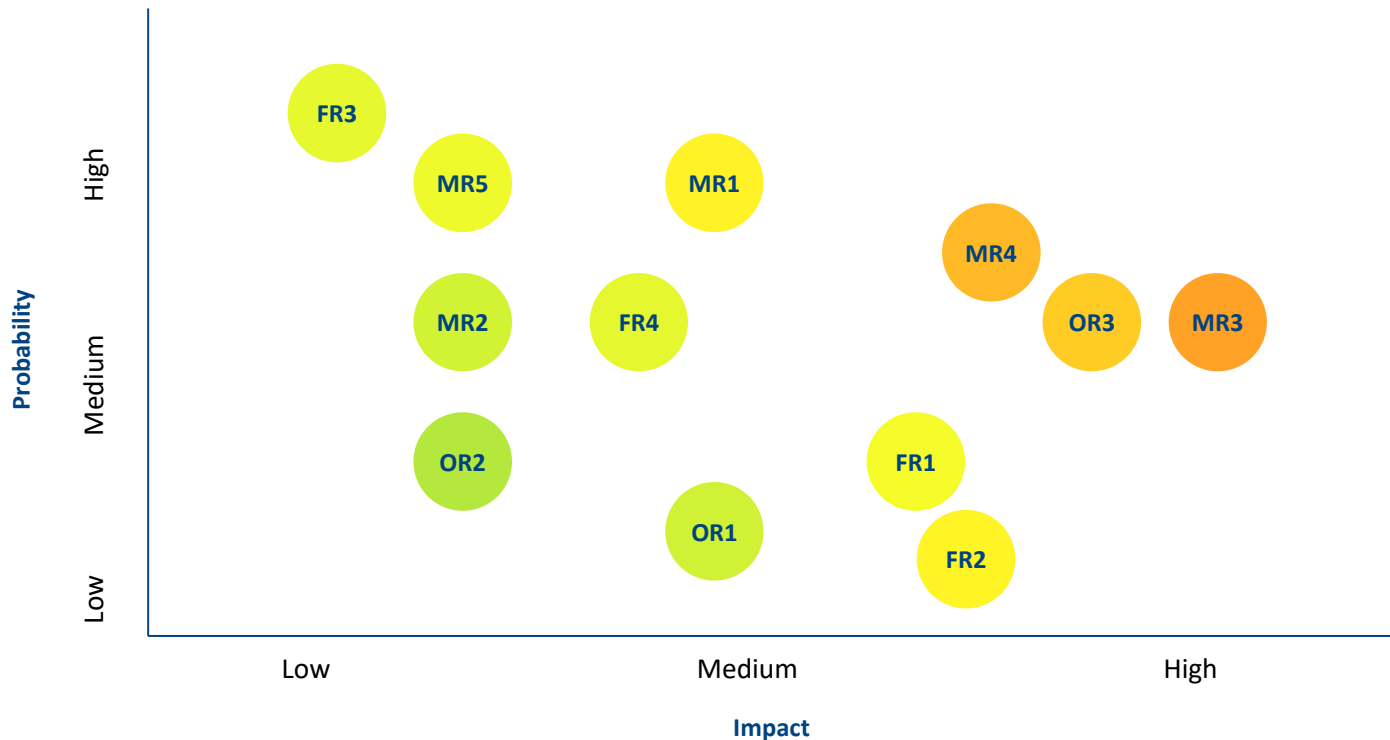
Graham Number



An aerial photograph of a large industrial plant, possibly a refinery or chemical processing facility. The image shows a complex network of tall distillation columns, pipes, and structural steel. In the foreground, there is a lush green lawn with several small trees and a circular water feature. A semi-transparent white horizontal band is overlaid across the middle of the image, containing the text 'E. Investment Risks' in a bold, blue, sans-serif font.

E. Investment Risks

TITAN's Risk Scatterplot



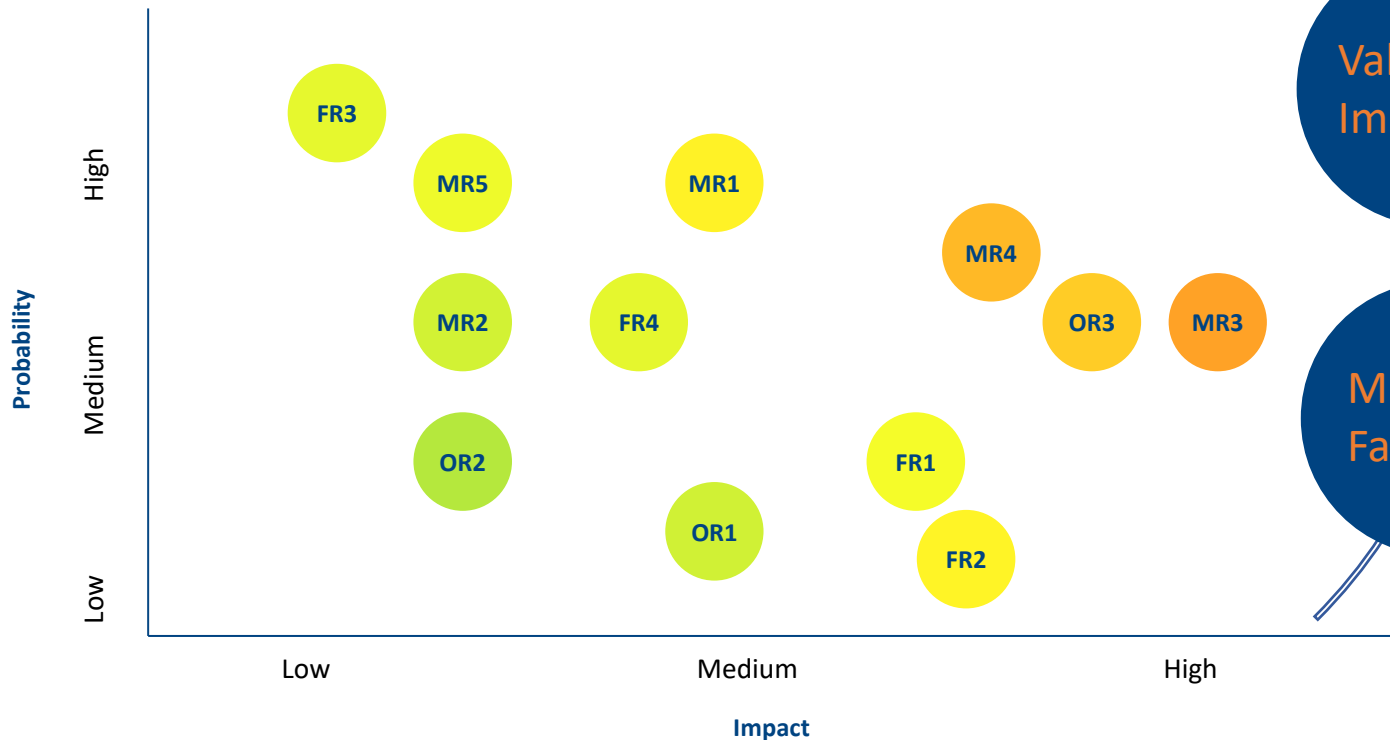
Market Risks	
MR1	Inflation
MR2	Hyperinflation
MR3	Rivalry -Competition
MR4	Energy Costs
MR5	Market Liquidity

Operational Risks	
OR1	Supply Chain Issues
OR2	Governance Risk
OR3	Political Risk

Financial Risks	
FR1	Credit Risk
FR2	Company Liquidity
FR3	FX Risk
FR4	Effective Interest Rate



TITAN's Risk Scatterplot



Valuation Impact

- MR3 Lower valuation by 16.38%
- MR4 Decrease of 10.7% in target price
- OR3 Increased Cost of Equity by 221 bps

Mitigating Factors

- MR3 Geographically diversified
- MR4 Hedging instruments
- OR3 Strong relationships with local stakeholders



-  Effective Management
-  International Presence
-  Sustainable Growth Path
-  Strong Demand
-  Post Covid-19 Robustness



BUY

$$18.75\% \text{ UPSIDE} + 3.72\% \text{ DY2023F} = 22.47\% \text{ RETURN}$$

€18.50

Twelve-Month Target Price

University of Macedonia

CFA Research Challenge Local Final, Presentation
4 March 2023



Thank you for your attention...

Q&A



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Citations

Appendix : Income Statement



Income Statement in € '000s	Historical					Projected					
	2017A	2018A	2019A	2020A	2021A	2022E	2023F	2024F	2025F	2026F	2027F
Revenue	1,505,803	1,490,097	1,609,778	1,607,033	1,714,623	2,230,204	2,360,231	2,500,361	2,649,049	2,806,556	2,973,450
COGS	-1,070,349	-1,201,884	-1,315,866	-1,297,763	-1,403,728	-1,824,089	-1,931,356	-2,046,023	-2,111,226	-2,236,755	-2,369,765
Gross Profit	435,454	288,213	293,912	309,270	310,895	406,115	428,874	454,337	537,823	569,801	603,685
Administrative Expenses	-125,459	-130,241	-145,188	-143,046	-153,951	-181,512	-198,194	-213,100	-227,431	-241,837	-256,686
Selling and Marketing expenses	-22,570	-22,321	-25,289	-24,278	-26,391	-31,116	-35,272	-37,853	-40,206	-42,618	-45,157
Net other operating income	-13,984	9,453	5,400	6,067	9,897	6,439	0	0	0	0	0
EBITDA	273,441	259,741	267,133	237,989	275,209	336,464	345,222	353,802	422,915	441,091	461,279
Depreciation & Amortization	-112,294	-115,797	-139,965	-138,575	-136,481	-136,539	-149,814	-150,418	-152,730	-155,745	-159,438
Impairment Losses	-4,135	-1,160	-1,667	-48,599	-1,722	0	0	0	0	0	0
Earnings Before Interest & Taxes	157,012	143,944	127,168	99,414	138,728	199,925	195,408	203,384	270,186	285,346	301,841
Participations-Joint Venture Profit/Losses	-7,326	-6,884	1,380	3,200	3,291	0	0	0	0	0	0
Net Financial Expenses	-86,460	-54,382	-64,242	-65,777	-37,808	-30,235	-40,047	-38,726	-43,515	-36,494	-41,024
Earnings Before Taxes	63,226	82,678	64,306	36,837	104,211	169,690	155,361	164,658	226,671	248,852	260,818
Income Taxes	-18,929	-26,578	-11,211	-35,777	-16,811	-30,130	-27,586	-29,237	-40,248	-44,186	-46,311
Net Profit	44,297	56,100	53,095	1,060	87,400	139,560	127,775	135,421	186,423	204,666	214,507

Appendix : Balance Sheet (1/2)



Balance Sheet in € '000s	Historical						Projected				
	2017A	2018A	2019A	2020A	2021A	2022E	2023F	2024F	2025F	2026F	2027F
Assets											
Property, plant and equipment	1,466,046	1,647,892	1,699,078	1,529,243	1,545,382	1,758,750	1,779,377	1,804,638	1,846,268	1,893,505	1,946,649
Investment properties	12,130	12,202	11,628	11,720	10,980	10,980	11,607	11,607	11,607	11,607	11,607
Goodwill	287,669	338,400	344,523	268,013	271,986	303,820	303,820	303,820	303,820	303,820	303,820
Intangible assets	58,302	66,821	80,817	84,279	91,444	99,418	102,071	104,939	108,763	112,878	117,311
Investments in associates and joint ventures	160,904	117,567	113,858	85,610	88,753	103,253	103,253	103,253	103,253	103,253	103,253
Derivative financial instruments	1,434	94	0	2,291	2,488	4,459	4,459	4,459	4,459	4,459	4,459
Receivables from interim settlement of derivatives	0	0	12,937	0	6,185	11,085	11,085	11,085	11,085	11,085	11,085
Other non-current assets	11,959	13,096	15,436	16,957	18,794	33,256	33,256	33,256	33,256	33,256	33,256
Deferred tax assets	2,926	8,715	13,939	12,464	8,867	6,678	10,133	10,133	10,133	10,133	10,133
Total non-current assets	2,001,370	2,204,787	2,292,216	2,010,577	2,044,641	2,331,699	2,359,060	2,387,190	2,432,643	2,483,995	2,541,573
Current Assets:											
Inventories	258,204	286,561	283,519	248,586	305,131	425,551	388,434	411,496	424,609	449,856	476,607
Receivables and prepayments	179,634	199,122	186,565	185,247	236,344	274,181	281,602	298,321	316,061	334,854	354,766
Income tax receivable	0	7,664	5,657	4,744	1,611	1,611	4,257	4,257	4,257	4,257	4,257
Derivative financial instruments	2,012	796	1,245	16,462	1,715	1,715	4,387	4,387	4,387	4,387	4,387
Receivables from interim settlement of derivatives	0	0	3,829	4,142	9,079	9,079	9,079	9,079	9,079	9,079	9,079
Cash and cash equivalents	154,247	171,000	90,388	206,438	79,882	101,477	94,978	94,518	86,413	84,806	70,102
Total current assets	594,097	665,143	571,203	665,619	633,762	813,613	782,737	822,058	844,807	887,238	919,198
Total Assets	2,595,467	2,869,930	2,863,419	2,676,196	2,678,641	3,145,312	3,141,798	3,209,248	3,277,449	3,371,234	3,460,770

Appendix : Balance Sheet (2/2)



Equity and Liabilities											
Equity:											
Share Capital	253,897	265,869	1,159,348	1,159,348	1,159,348	959,348	959,348	959,348	959,348	959,348	959,348
Share Premium	22,826	22,826	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974	5,974
Preferred shares	0	26,113	0	0	0	0	0	0	0	0	0
Share options	3,003	3,742	4,904	5,307	3,913	4,174	4,174	4,174	4,174	4,174	4,174
Treasury shares	-105,384	-109,930	-117,139	-124,120	-31,773	-55,974	-68,600	-68,600	-68,600	-68,600	-68,600
Preferred treasury shares	0	-2,954	0	0	0	0	0	0	0	0	0
Other reserves	723,716	738,487	-106,947	-875,492	-1,166,698	-890,506	-933,519	-981,632	-1,045,979	-1,045,979	-1,045,979
Retained earnings	409,155	449,980	429,025	1,080,345	1,350,862	1,490,422	1,618,197	1,753,618	1,940,041	2,056,126	2,173,384
Equity and reserves attributable to owners of the parent	1,307,213	1,394,133	1,375,165	1,251,362	1,321,626	1,513,438	1,585,574	1,672,882	1,794,958	1,911,043	2,028,301
Non-controlling interests	62,459	77,157	34,626	23,994	15,260	28,230	28,230	28,230	28,230	28,230	28,230
Total Equity	1,369,672	1,471,290	1,409,791	1,275,356	1,336,886	1,541,668	1,613,804	1,701,112	1,823,188	1,939,273	2,056,531
Liabilities:											
Long-term borrowings	820,382	745,222	776,694	628,172	641,461	728,365	379,365	676,365	575,365	451,365	701,365
Long-term lease liabilities	0	0	46,126	38,821	46,004	42,400	32,400	24,400	17,400	11,400	11,400
Derivative financial instruments	0	0	11,084	0	6,185	7,052	7,151	6,605	5,689	4,647	3,530
Payables from interim settlement of derivatives	0	0	0	2,291	1,070	1,220	1,237	1,143	984	804	611
Deferred tax liability	39,644	94,414	96,319	102,078	113,604	129,529	131,355	121,319	104,489	85,355	64,847
Retirement benefit obligations	32,440	32,741	35,268	22,824	22,063	25,156	25,510	23,561	20,293	16,577	12,594
Provisions	30,172	28,373	31,587	49,550	56,001	63,851	64,751	59,804	51,508	42,076	31,966
Non-current contract liabilities	0	18	0	1,991	1,692	1,929	1,956	1,807	1,556	1,271	966
Other non-current liabilities	6,711	5,669	55,062	9,864	12,849	14,650	14,857	13,722	11,818	9,654	7,334
Total non-current liabilities	929,349	906,437	1,052,140	855,591	900,929	1,014,153	658,583	928,725	789,101	623,149	834,613
Short-term borrowings	56,825	197,637	86,277	205,656	89,242	135,377	397,377	88,377	166,377	290,377	35,377
Interest payable	0	8,930	3,863	0	0	0	0	0	0	0	0
Short-term lease liabilities	0	0	17,030	18,194	16,378	37,092	32,092	30,092	29,092	28,092	22,092
Derivative financial instruments	0	2	2,692	5,113	8,742	9,967	10,108	9,336	8,041	6,568	4,990
Payables from interim settlement of derivatives	0	0	1,092	12,957	0	0	0	0	0	0	0
Trade and other payables	228,433	256,273	265,519	278,370	302,611	379,858	402,196	426,075	439,653	465,794	493,493
Current contract liabilities	0	15,944	13,580	8,215	9,998	11,400	11,560	10,677	9,196	7,512	5,707
Income tax payable	2,630	1,651	3,251	4,054	1,544	1,760	1,785	1,649	1,420	1,160	881
Provisions	8,558	11,766	8,184	12,690	12,311	14,037	14,235	13,147	11,323	9,250	7,027
Total current liabilities	296,446	492,203	401,488	545,249	440,826	589,491	869,353	579,352	665,102	808,753	569,567
Total liabilities	1,225,795	1,398,640	1,453,628	1,400,840	1,341,755	1,603,644	1,527,936	1,508,077	1,454,202	1,431,902	1,404,181
Total Equity and Liabilities	2,595,467	2,869,930	2,863,419	2,676,196	2,678,641	3,145,312	3,141,739	3,209,190	3,277,391	3,371,175	3,460,712

Appendix : Cash Flow Statement (1/2)



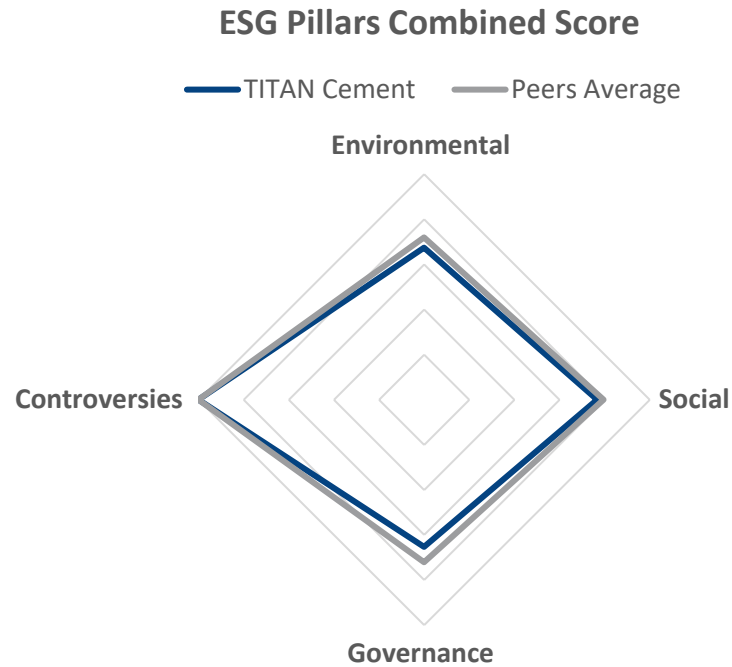
Cash Flow Statement in € '000s	Historical						Projected				
	2017A	2018A	2019A	2020A	2021A	2022E	2023F	2024F	2025F	2026F	2027F
Cash flows from operating activities											
Profit after taxes	44,297.00	55,984.00	53,155.00	1,160.00	91,555.00	139,559.84	127,775.27	135,421.20	186,423.12	204,665.91	214,507.05
Depreciation, amortization and impairment of assets	116,429.00	115,797.00	139,965.00	186,181.00	136,481.00	136,538.58	149,814.25	150,418.45	152,729.79	155,745.35	159,437.52
Impairment of goodwill	0	0	0	0	0	10390	0	0	0	0	0
Hyperinflation Adjustments	0	0	0	0	0	-16880	0	0	0	0	0
Adjustments before changes in working capital	128,884.00	99,797.00	92,102.00	116,787.00	46,705.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest and related expenses	0.00	0.00	58,463.00	48,397.00	35,972.00	30,325.26	40,046.98	38,725.85	43,514.80	36,493.92	41,023.52
Other non-cash items	0	0	33639	68390	10733	25677	0	0	0	0	0
Changes in Working Capital	-49,157.00	-1,100.00	-1,045.00	5,474.00	-43,978.00	-81,009.71	52,033.79	-15,901.99	-17,275.56	-17,897.98	-18,964.50
Cash generated from operations	240,453.00	270,478.00	284,177.00	309,602.00	230,763.00	244,600.96	369,670.29	308,663.51	365,392.15	379,007.20	396,003.59
Income tax paid	-14,359.00	-9,198.00	-9,817.00	-10,176.00	-12,172.00	-30,130.15	-27,585.94	-29,236.65	-40,247.66	-44,186.18	-46,310.82
Net cash generated from operating activities	226,094.00	261,280.00	274,360.00	299,426.00	218,591.00	214,470.81	342,084.36	279,426.86	325,144.49	334,821.03	349,692.77
Cash flows from investing activities											
Payments for property, plant and equipment	-119,950	-102,118	-100,477	-76,787	-118,910	-207,199	-156,530	-163,254	-183,386	-192,787	-202,948
Payments for intangible assets	-2,568	-16,394	-8,836	-7,509	-7,134	-12,431	-9,391	-9,794	-11,002	-11,566	-12,176
Net proceeds from other investing activities	0	0	0	0	0	99	0	0	0	0	0
Proceeds/(payments) of share capital decrease/(increase) in associates and joint ventures	0	-15,015	-312	-355	336	0	0	0	0	0	0
Payments for acquisition of subsidiaries, net of cash acquired	0	0	0	-330	-45	0	0	0	0	0	0
Payments for acquisition of subsidiaries and joint ventures, net of cash acquired	-21,106	-16,668	0	0	0	0	0	0	0	0	0
Payments for investing in associates and joint ventures	0	0	0	0	0	0	0	0	0	0	0
Proceeds from sale of PPE, intangible assets and investment property	1,467	1,850	6,824	3,110	8,694	0	0	0	0	0	0
Proceeds from dividends	4,686	2,649	3,335	2,449	934	0	0	0	0	0	0
Proceeds from disposal of joint venture, net of cash disposed	0	4,610	0	0	0	0	0	0	0	0	0
Net cash acquired with the subsidiaries	0	0	0	0	0	0	0	0	0	0	0
Share capital increase in associates and joint ventures	-28,678	0	0	0	0	0	0	0	0	0	0
Net (payments)/proceeds from the (acquisition)/sale of available-for-sale financial assets	-29	0	0	0	0	0	0	0	0	0	0
Interest received	854	1,855	1,713	559	535	0	0	0	0	0	0
Net cash flows used in investing activities	-165,324	-139,231	-97,753	-78,863	-115,590	-219,531	-165,921	-173,048	-194,388	-204,354	-215,124
Net cash flows after investing activities	60,770	122,049	176,607	220,563	103,001	-5,060	176,164	106,378	130,757	130,468	134,569

Appendix : Cash Flow Statement (2/2)



Cash flows from financing activities

Proceeds from non-controlling interest's participation in subsidiary's share capital increase/establishment	807	2,123	2,227	0	0	0	0	0	0	0	0
Acquisition of non-controlling interests	0	-63	-20,376	-21,795	-40,814	0	0	0	0	0	0
Payments from share capital decrease of the Parent Company	-84,136	0	0	0	0	0	0	0	0	0	0
Net payment due to TCI acquiring 100% of Titan Cement	0	0	-42,872	0	0	0	0	0	0	0	0
Issuance costs	0	0	-9,347	0	0	0	0	0	0	0	0
Payments due to share capital decreases	0	-42,138	-1,266	0	-767	0	0	0	0	0	0
Dividends paid and share capital returns	0	0	-13,690	-17,615	-31,985	-38,612	-43,014	-48,112	-64,347	-88,581	-97,249
Dividends & reserves paid to shareholders	-8,438	0	0	0	0	0	0	0	0	0	0
Dividends written-off and paid to the Greek State	-23	0	0	0	0	0	0	0	0	0	0
Dividends paid to non-controlling interests	-3,868	0	0	0	0	0	0	0	0	0	0
Dividends paid	0	-8,152	0	0	0	0	0	0	0	0	0
Net (payments)/proceeds from transactions with own shares	0	0	0	0	0	0	0	0	0	0	0
Payments for shares purchased (bought) back	-4,951	-8,614	-6,855	-8,816	-3,230	-23,300	-12,601	0	0	0	0
Proceeds from sale of treasury shares	398	439	1,049	779	1,231	0	0	0	0	0	0
Proceeds from government grants	209	276	0	0	0	0	0	0	0	0	0
Payments for financial assets designated at FVTPL	0	0	0	0	-50	0	0	0	0	0	0
Interest and other related charges paid	-60,183	-61,620	-63,914	-49,917	-36,153	-30,325	-40,047	-38,726	-43,515	-36,494	-41,024
Proceeds from borrowings	691,159	0	0	0	0	0	0	0	0	0	0
Proceeds from borrowings and derivative financial instruments	0	313,789	366,086	478,398	243,129	175,243	0	350,000	30,000	131,000	250,000
Payments of borrowings	-613,538	0	0	0	0	0	0	0	0	0	0
Payments of borrowings and derivative financial instruments	0	-301,795	-455,180	-459,932	-347,968	-57,000	-87,000	-370,000	-61,000	-138,000	-261,000
Principal elements of lease /finance lease (2018) payments	0	-2,632	-15,936	-15,967	-16,309	0	0	0	0	0	0
Net cash flows used in financing activities	-82,564	-108,387	-260,074	-94,865	-232,916	26,006	-182,662	-106,838	-138,862	-132,075	-149,273
Net (decrease)/increase in cash and cash equivalents	-21,794	13,662	-83,467	125,698	-129,915	20,946	-6,498	-460	-8,105	-1,607	-14,704
Cash and cash equivalents at beginning of the year	179,710	154,247	171,000	90,388	206,438	79,882	101,477	94,978	94,518	86,413	84,806
Effects of exchange rate changes	-3,669	3,091	2,855	-9,648	3,359	649	0	0	0	0	0
Cash and cash equivalents at the end of the year	154,247	171,000	90,388	206,438	79,882	101,477	94,978	94,518	86,413	84,806	70,102



ESG Score

MSCI 

AA

 **SUSTAINALYTICS**

26.9
(16th out of 142)

MOODY'S
ESG Solutions

56
(5th out of 25)

S&P Global

59



“Uncovering the Relationship by Aggregating Evidence from 1,000 Plus Studies Published between 2015 – 2020”

Main Points of the Report:

- Corporate Studies on ESG Performance:

Positive Results: 57% | Neutral Results: 29% | **Mixed: 9%** | **Negative: 6%**

- Improved **financial performance** due to good ESG Score is **marked in the long-term**.
- Stocks with good ESG Scores have a **downside protection** and **faster recovery** after socio-economic crisis.

Correlation of ESG Scores from Six Rating Agencies



ESG 0.54 Correlation



Environmental:

- Alternative Fuels
- Carbon capture Investing
- Water and Waste management
- Digitization
- Lower Carbon Cement



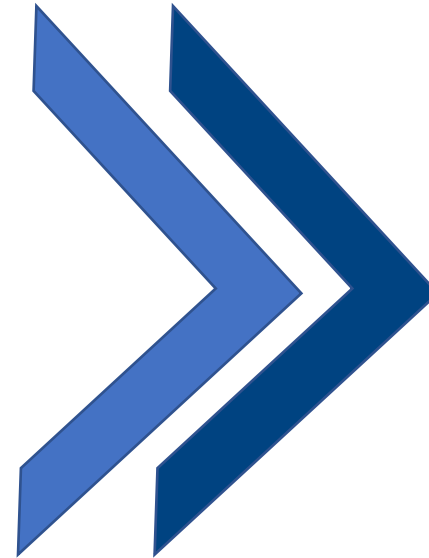
Social:

- Women inclusion
- Employee training
- Donations



Governance:

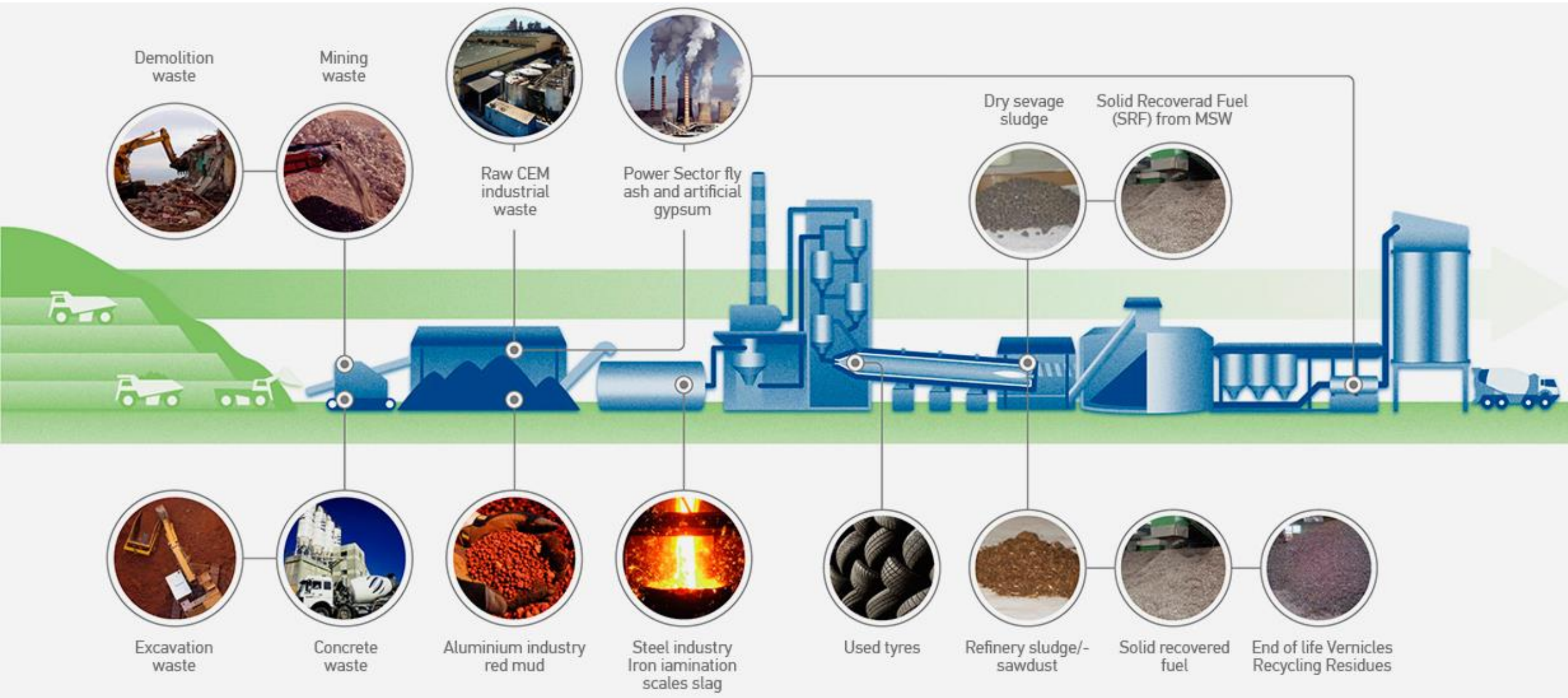
- Largely Independent Board
- High Percentage of Women Members
- Emission Incentive Plan



Effects on TITAN:

- Lower maintenance Costs
- Lower Operating Costs
- Higher Efficiency on Plants and Logistics
- Attraction of ESG conscious investors
- Reducing Operating Risks and Political Risks
- Enhancing Customer Loyalty
- Increased Employee productivity

	Weight (%)	Titan Cement Int	Buzzi Unicem SPA	Cementos Argos S.A.	Cemex SAB DE CV	Cementir Holding NV	CRH PLC	Heidelberg Cement AG	HOLCIM AG	VICAT S.A.	
E	Resource Use	15.10%	A+	B-	A+	A+	A-	A-	A+	B	B
	Emissions	15.10%	A-	B-	A+	A+	B+	A+	A	A-	A
	Innovation	11.90%	D+	D-	B	B	B	A+	B	B	D+
S	Workforce	10.70%	A	B	A+	A+	B	A	A+	A-	C+
	Human Rights	11.10%	B+	A	B+	A+	A+	A+	A+	A-	B
	Community	7.90%	A	A	A+	A-	A-	A	B+	B+	B+
	Product Responsibility	4.20%	A	B+	B	A+	B-	A	D	B	B
G	Management	15.90%	B+	B	C-	A+	B-	A+	A+	A	B
	Shareholders	4.80%	B-	A+	B	C+	B-	A+	A-	A+	C+
	CSR Strategy	3.20%	B-	A	C+	B	A	A-	A	B+	C-
C	ESG Controversies		A+	A+	A+	A+	A+	A+	A+	A+	A+
Total ESG Score		99.90%	B+	B	A-	A	B+	A	A	B+	B-





THREAT OF SUBSTITUTE PRODUCTS (0.5/5)

It is generally accepted that cement is not easily replaceable (0.5/5), due to the following factors:

- Lack of alternatives (0)** : Until recently, there are no viable alternatives capable of replacing cement effectively.
- Infinitesimal influence of known alternative materials (1)**: Construction companies may opt to utilize alternative materials with cementitious properties, thus reducing the cement usage. However, the impact of this substitution on the industry is minimal and not significant.



THREAT OF NEW ENTRANTS (1/5)

The threat of new entrants is relatively low (1/5), as there are significant barriers in order to do so:

- High entrance costs (1)**: Cement plants, equipment and operating assets are extremely expensive.
- Strict regulation (1)** : Governments monitor closely the cement activity, on account of the energy intensity, that leads to significant pollution and licenses costs.
- Mature market (1)** : Well-established competitors maintain effectively their market share.
- Scale economies (1)** : For a cement company to remain competitive, high-capacity facilities and a strong and diversified customer portfolio are required.



RIVALRY AMONG COMPETITORS (4.3/5)

The highly competitive state (4.3/5) of the cement industry can be attributed to the following factors:

- Well-established companies (4)** : The sector consists of historically large companies with stable market share, large production and high market capitalization.
- Critical partnerships (5)** : Major ventures that have been created by large firms in countries with few competitors and the global merge of two of the biggest industry's companies, Holcim and Lafarge back in 2015 have disrupted the competition.
- Price setters (4)** : The bigger companies set prices and the rest tend to follow them in order to compete, leading them to lower margins.
- China-India superiority (4)** : Although they mostly use it domestically, Chinese and Indian cement companies produce 65.45% (2021) of the global cement.



BARGAINING POWER OF BUYERS (1.3/5)

In the cement industry, the effect of the buyer bargaining power is relatively low (1.3/5), owing to:

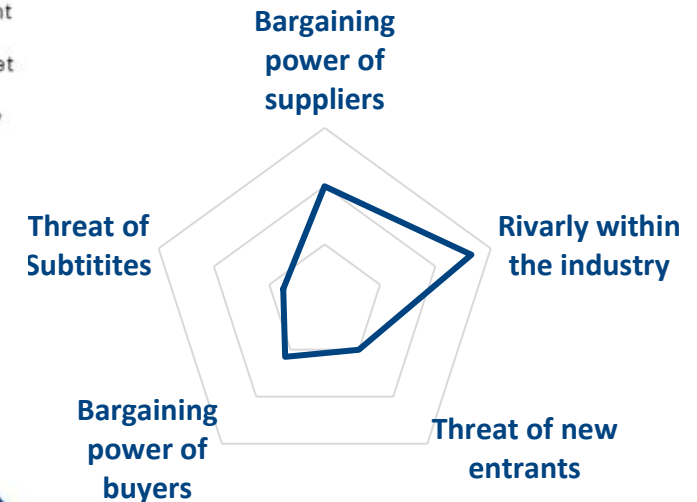
- No cement substitutes (1)**: That translates to buyers' inability to turn to any cement replacement. In consequence to that, buyers' demand maintains an inelastic profile.
- Low buyers' concentration (1)**: Buyers' concentration in the cement industry is relatively low. Hence, buyers' influence is weak and therefore buyers are price takers.
- Oligopoly (2)**: Areas of TITAN's operations consist of limited cement companies, and thus it is mandatory that buyers cope up with the given prices and production.



BARGAINING POWER OF SUPPLIERS (3/5)

The supplier power of the industry is moderate (3/5) as a consequence of:

- Price setting (3)**: Powerful suppliers can practice higher prices in both energy and raw materials, leading to lower corporate profits. However, it can be argued that the limited bargaining power of buyers results in the majority of the cost being reflected in the final product price.
- High switching costs between suppliers (3)**: The cost of switching between suppliers in different regions may not be financially convenient.



S

Strengths



- Geographically diverse portfolio of operations and modern assets, in order to hedge each region's performance/risk.
- Vertically Integrated production line that allows Titan to have full control of the manufacturing process end to end wherever possible.
- Facilities established near the coast that facilitate easy access to shipping of stock and materials.
- Scientifically acute and well-trained workforce comprised of 30% of workers with a MSc or PhD, ensuring production of high-quality products and efficient workflow.
- Leading Market share in major construction hubs across the world, giving the company a privileged position on market influence and reputation.

W

Weaknesses



- Undifferentiated portfolio of products, pressures Titan to maintain a highly competitive level to endure market fluctuations.
- Low volume of the Titan's stock in Euronext creates liquidity issues for the company.
- Lack renewable fuels use, as TITAN has renewable energy use ratio of 1.26% of total energy use, while buying those sources.
- High foreign exchange rate risk exposure, with eight different currencies of exchange between the company and its trade partners placing additional stress on FX hedging.

O

Opportunities



- Alternative fuels and hydrogen implementation to the production process to lower energy costs and diversify energy suppliers.
- Infrastructure Funding Programmes in the USA and the EU will bolster construction and the demand for construction materials, to high-turnover areas for Titan.
- Potential Acquisitions to expand in new markets and expand production capacity.
- Ukraine rebuilding efforts after the end of the conflict will result in a spike in demand of construction materials. Titan is well placed to cover that demand with production in nearby regions, easily accessible to Ukraine.

T

Threats



- High subsection to political and economic instability in various countries of operation (e.g. Brazil, Eastern Mediterranean and Balkan states).
- Titan is highly exposed to fluctuations in the energy and shipping markets, due to the nature of the production and the export strategy.
- Industry high competence: While operating in mature markets, Titan has strict limitations on price increase.
- Interest rate volatility, given the hawkish movement in ECB and BOA interest rates.

Holcim AG is a Switzerland-based company operating in the building materials industry. The Company's business segments include Cement, Aggregates, Ready-Mix Concrete, and Solutions & Products, has a presence in around 70 countries and is listed on the SIX Swiss Exchange. Originally, the company was established as LafargeHolcim by the merger on 10 July 2015 of Holcim and Lafarge. Holcim's market capitalization stands at €29.9B, its annual sales were €24.84B in 2021 and the company is considered as one of the cement industry's leaders.

CRH PLC is an Ireland-based company, which operates a building material and mainly cement business in both North America and Europe, and is listed on the London Stock Exchange (where it is a constituent of the FTSE 100 Index) and on Euronext Dublin. Its operations span in 29 countries and are considered a cement leader in Europe. CRH's market capitalization stands at €32.34B and their last annual sales were €24.61B (2021).

Cementir Holding NV is a multinational company incorporated in Italy operating in the construction materials sector. Through its subsidiaries in 18 countries across five continents, Cementir specializes in white cement and the production and distribution of gray cement, ready-mixed concrete, aggregates, concrete products and is active in the processing of urban and industrial waste. The Group is a major producer of white cement and has vertically integrated platforms in Scandinavia, Belgium, and Turkey. The company is listed on the Milan Stock Exchange, has a market capitalization of €1.19B, and their sales in 2021 were €1.36B.

Cementos Argos SA is a Colombia-based company engaged in the production of cement, aggregates, and concrete mix products, such as white and gray cement, lime, and mortar. It is considered as a multinational company and a part of Grupo Argos S.A. with presence in 16 countries. The company mainly operates in The United States and the Caribbean and Central America. Cementos Argos is the second-largest concrete producer and the fourth-largest cement producer in the United States and it exports cement and clinker to 30 countries around the world. Cementos Argos is listed on the Colombian Stock Exchange with a market capitalization of €811.9M and recently on the New York Stock Exchange. In 2021, the company announced sales of €2.22B.

Vicat SA is a French company manufacturing cement, aggregates, and ready-mix concrete. Europe, United States, and Brazil are among the 12 regions that the company has presence in. Vicat is listed on Euronext Paris and has a market capitalization of €1.16B while their last annual sales were €3.12B (2021).

HeidelbergCement AG is a Germany-based building materials company. The Company operates through four segments: Cements, Aggregates, Ready-Mixed Concrete-Asphalt, and Service- Joint Ventures – Other. Heidelberg is listed on Xetra, is a DAX corporation, and is one of the largest building materials companies in the world. On 1 July 2016, HeidelbergCement AG completed the acquisition of a 45% shareholding in Italcementi. That acquisition made HeidelbergCement the number one producer of construction aggregates, the number 2 in cement, and number three in ready-mix concrete worldwide. Heidelberg has presence in more than 50 countries across the world. Its market capitalization is €12.23B and the company announced in 2021 that its sales were €21.1B.

Appendix : Competitors' Ratios Analysis



Key Ratios - Competitors Analysis	TITAN		Holcim AG		CRH PLC		Cementir Holding NV		Cementos Argos CA		Vicat SA		HeidelBerg Cement AG	
	2020A	2021A	2020A	2021A	2020A	2021A	2020A	2021A	2020A	2021A	2020A	2021A	2020A	2021A
Profitability Ratios (%)														
Net Profit Margin (%)	0.07	5.10	7.26	8.50	4.22	8.36	8.90	9.00	1.50	5.30	6.10	7.10	-11.00	10.40
Gross Profit Margin (%)	19.24	18.13	41.87	42.99	34.13	33.75	37.80	38.70	18.10	19.40	29.50	27.60	55.30	54.70
Operating margin (%)	6.19	8.09	13.91	15.52	10.66	11.41	12.20	12.90	7.70	12.50	9.80	10.50	10.90	10.20
EBITDA margin (%)	14.81	16.05	25.40	24.16	16.81	17.45	20.70	21.00	17.90	21.90	19.00	18.80	20.20	18.30
Return on Assets (%)	0.04	3.26	3.59	4.74	2.52	5.45	4.86	5.66	0.75	2.75	3.18	4.06	-5.40	5.90
Return on Equity (%)	0.08	6.54	6.66	9.07	5.83	11.84	9.25	10.20	1.60	5.54	6.86	8.84	-13.60	12.50
Liquidity Ratios (x)														
Current ratio (x)	1.22	1.44	1.33	1.41	2.01	1.85	1.10	1.44	1.00	0.86	1.53	1.34	1.24	1.14
Quick ratio (x)	0.76	0.74	1.09	1.14	1.59	1.38	0.87	1.04	0.69	0.56	1.14	0.98	0.90	0.83
Cash ratio (x)	0.38	0.18	0.20	0.28	1.03	0.76	0.60	0.61	0.23	0.14	0.47	0.44	0.48	0.44
Working Capital to Total Assets (x)	0.04	0.07	0.05	0.07	0.17	0.14	0.03	0.10	0.00	-0.03	0.09	0.07	0.04	0.03
Cash Conversion Cycle (x)	40.57	41.33	21.19	12.35	63.76	65.80	29.73	14.25	36.40	41.85	85.88	68.92	24.44	13.40
Solvency Ratios (x)														
Total Debt to Total Assets (%)	0.33	0.30	0.26	0.28	0.38	0.27	0.24	0.15	0.40	0.36	0.31	0.33	0.30	0.24
Debt to Equity (%)	0.70	0.59	0.48	0.55	0.68	0.58	0.45	0.26	0.86	0.69	0.67	0.71	0.67	0.48
Interest Coverage (x)	2.15	4.01	7.20	10.33	9.33	7.72	11.67	20.34	3.37	1.66	4.62	5.97	8.29	8.71

Source: Refinitiv, Team Analysis



The reconstruction of Ukraine: Historical lessons for postwar reconstruction of Ukraine

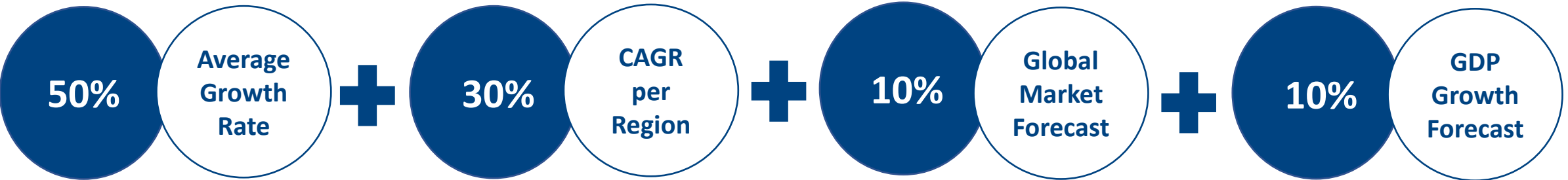
Reconstruction offers Ukraine an opportunity to leapfrog several stages of economic and governmental development, emerge stronger, and reshape Europe.

At the Ukraine Recovery Conference on July 4 and 5, 2022, Ukraine's Prime Minister, Denys Shmyhal, estimated that a 10-year reconstruction effort would cost around US\$750 billion. European Investment Bank (EIB) president, Werner Hoyer, suggested that costs would exceed €1 trillion or US\$1.1 trillion.

As of August 22, 2022, Ukraine's Ministry of Economy and the Kyiv School of Economics (KSE) estimated that the war had caused physical infrastructure damage amounting to US\$113.5 billion.

The European Bank for Reconstruction and Development (EBRD) has established a recovery fund that currently holds over US\$650 million, all in the form of grants.

Revenue Projections: Synthetic Growth Rates per Region



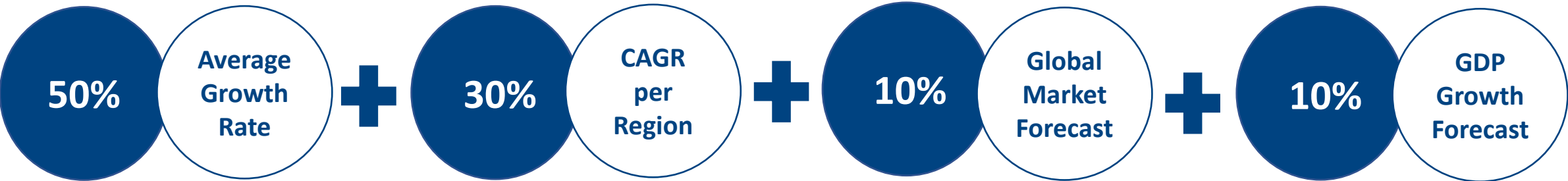
Region	Average Growth (8Y)
North America	8.45%
Greece & Western Europe	3.06%
Southeast Europe	7.53%
Eastern Meditterenean	-1.43%

Regional Cement CAGR 2023-2027		
Region	Source	CAGR
US	IMARC Group	4.90%
Greece and W. EU	Expert Market Research	7.90%
SE EU	Expert Market Research	7.90%
E. Med.	Expert Market Research	6.10%

Global Cement CAGR 2023-2027	
Source	CAGR
Infiniti Research Limited	4.62%
Market Growth Reports	8.09%
Global Industry Analysts	7.90%
IMARC Group	6.10%
Expert Market Research	6.20%
Average	6.58%

Regional GDP growth Rates					
Regions	2023	2024	2025	2026	2027
North America	3.04%	3.68%	3.33%	3.33%	3.30%
Greece & W. EU	4.38%	5.18%	5.59%	5.78%	5.85%
Southeast Europe	2.80%	3.65%	3.60%	3.49%	3.53%
Eastern Mediterranean	3.71%	4.43%	4.46%	4.56%	4.58%

Revenue Projections: Synthetic Growth Rates per Region



Consolidated Growth Rates	2023	2024	2025	2026	2027
North America	6.40%	6.51%	6.53%	6.53%	6.53%
Greece & Western Europe	4.61%	4.75%	4.74%	4.74%	4.74%
Southeast Europe	7.07%	7.16%	7.15%	7.14%	7.14%
Eastern Mediterranean	2.14%	2.22%	2.22%	2.23%	2.23%
Total	5.83%	5.94%	5.95%	5.95%	5.95%

Consolidated Projected Revenues	2023	2024	2025	2026	2027
North America	1,384,112.09	1,474,268.35	1,570,591.94	1,673,208.97	1,782,530.65
Greece & Western Europe	358,051.11	375,060.80	392,841.04	411,464.19	430,970.19
Southeast Europe	398,938.20	427,490.05	458,062.90	490,774.14	525,837.30
Eastern Mediterranean	219,129.29	223,984.58	228,954.17	234,055.78	239,275.74
Total	2,360,230.69	2,500,360.52	2,649,048.63	2,806,556.46	2,973,450.07

CONTRIBUTION	
Region	Average (3Y)
North America	58,33%
Greece & Western Europe	15,35%
Southeast Europe	16,71%
Eastern Mediterranean	9,62%

Appendix : TITAN's Ratios Analysis



Key Ratios (Fiscal year ends 31 December)	Historical						Projected				
	2017A	2018A	2019A	2020A	2021A	2022E	2023F	2024F	2025F	2026F	2027F
Profitability Ratios (%)											
Net Profit Margin	2.94	3.76	3.30	0.07	5.10	6.26	5.41	5.42	7.04	7.29	7.21
Gross Profit Margin	28.92	19.34	18.26	19.24	18.13	18.21	18.17	18.17	20.30	20.30	20.30
Operating margin	10.43	9.66	7.90	6.19	8.09	8.96	8.28	8.13	10.20	10.17	10.15
EBITDA margin	18.16	17.43	16.59	14.81	16.05	15.09	14.63	14.15	15.96	15.72	15.51
Return on Assets	1.71	1.95	1.85	0.04	3.26	4.44	4.07	4.22	5.69	6.07	6.20
Return on Equity	3.23	3.81	3.77	0.08	6.54	9.05	7.92	7.96	10.23	10.55	10.43
Liquidity Ratios (x)											
Current ratio	2.00	1.35	1.42	1.22	1.44	1.38	0.90	1.42	1.27	1.10	1.61
Quick ratio	1.13	0.75	0.70	0.76	0.74	0.66	0.45	0.70	0.63	0.54	0.77
Cash ratio	0.52	0.35	0.23	0.38	0.18	0.17	0.11	0.16	0.13	0.10	0.12
Receivables Turnover	8.02	7.87	8.35	8.64	8.13	8.38	8.38	8.38	8.38	8.38	8.38
Inventory Turnover	4.22	4.41	4.62	4.88	5.07	4.97	4.97	4.97	4.97	4.97	4.97
Payables Turnover											
Cash Conversion Cycle (days)	47.60	55.51	50.42	40.57	41.33	40.95	40.95	40.95	40.95	40.95	40.95
Working Capital Turnover	5.06	8.62	9.49	13.35	8.89	8.89	8.89	8.89	8.89	8.89	8.89
Solvency Ratios (x)											
Total Debt to Total Assets (Book Values)	0.34	0.33	0.32	0.33	0.30	0.30	0.27	0.26	0.24	0.23	0.22
Debt to Equity (Book Values)	0.64	0.64	0.66	0.70	0.59	0.61	0.52	0.48	0.43	0.40	0.37
Interest Coverage	2.46	2.23	2.22	2.15	4.01	6.59	4.88	5.25	6.21	7.82	7.36

Appendix : Capital Expenditures Evolution



Capital Expenditures

in € ('000s)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CAPEX	122,518.00	118,512.00	109,313.00	84,296.00	126,044.00	219,630.16	165,920.79	173,048.41	194,387.76	204,353.50	215,123.92
Sales	1,505,803.00	1,490,097.00	1,609,778.00	1,607,033.00	1,714,623.00	2,230,203.81	2,360,230.69	2,500,360.52	2,649,048.63	2,806,556.46	2,973,450.07
EBITDA	273,441.00	259,741.00	267,133.00	237,989.00	275,209.00	336,463.61	344,524.00	353,005.00	422,576.00	440,701.00	460,833.00
CAPEX/Sales	8.14%	7.95%	6.79%	5.25%	7.35%	9.85%	7.03%	6.92%	7.34%	7.28%	7.23%
CAPEX/EBITDA	44.81%	45.63%	40.92%	35.42%	45.80%	65.28%	48.16%	49.02%	46.00%	46.37%	46.68%

|-----| 130M
|-----| 200M

Weights for 2022

6M	0.3
9M	0.6
CapEx/Sales	0.1

Weights for 2023-2027

CapEx/Sales	0.5
CapEx/EBITDA	0.5

Approximately 7% annual CAPEX as a percentage of sales or 47% as a percentage of EBITDA onwards.

Appendix : TITAN's Debt Profile (1/2)



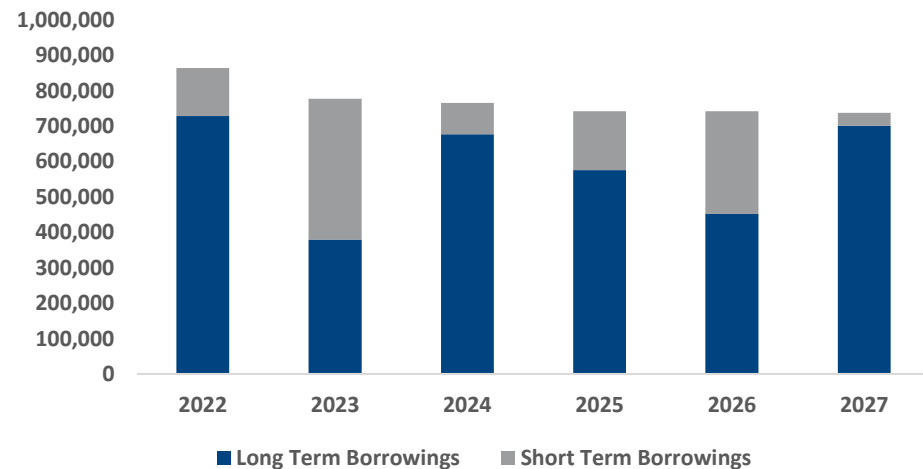
In Thousands

Borrowing Payments per Region	2022	2023	2024	2025	2026	2027
Greece & Western Europe	30,977.00	49,234.19	8,205.70	36,241.84	89,578.88	4,786.66
U.S.	31,590.93	15,734.64	2,622.44	11,582.44	28,628.30	1,529.76
South Eastern Europe	11,796.21	2,671.84	445.31	1,966.77	4,861.27	259.76
Eastern Mediterranean	9,129.86	4,359.33	726.55	3,208.95	7,931.56	423.82

In Thousands

Leases Liabilities	2019	2020	2021	2022
Long-Term Lease Liabilities	46,126.00	38,821.00	46,004.00	42,400
Short-Term Lease Liabilities	17,030.00	18,194.00	16,378.00	37,092
TOTAL	63,156.00	57,015.00	62,382.00	79,492.19

Forecasted Borrowings

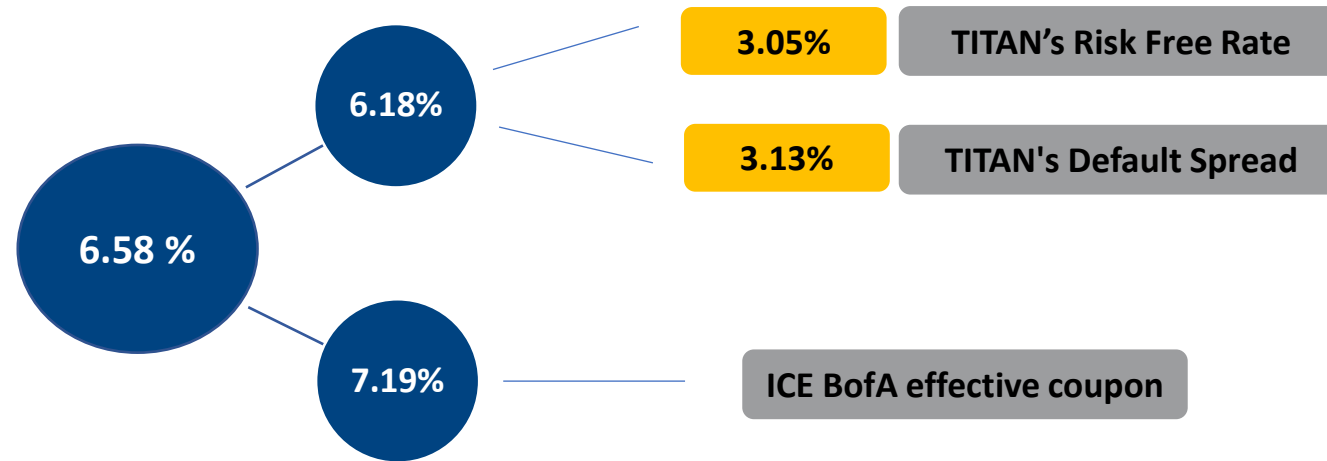


Forecasted Leases



Source: Company's Data, Team Analysis

Debenture Coupon Rate for 2024



Outstanding Debentures	11/16/2024	7/9/2027
Amount Outstanding (In Thousands)	350,000.00	250,000.00
Coupon Rate	2.375%	2.750%

semi-annual

In order to determine TITAN's efficiency of using its shareholders equity, we conducted a Dupont Analysis, in order to breakdown ROE in basic components that the management of Dupont Corporation firstly compiled.

Dupont Analysis	Historical					Projected					
	2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F
Tax Burden (%)	70.06	67.85	82.57	2.88	83.87	82.24	82.24	82.24	82.24	82.24	82.24
Interest Burden (%)	40.27	57.44	50.57	37.05	75.12	84.88	79.51	80.96	83.89	87.21	86.41
Operating Margin (%)	10.43	9.66	7.90	6.19	8.09	8.96	8.28	8.13	10.20	10.17	10.15
Net Profit Margin (%)	2.94	3.76	3.30	0.07	5.10	6.26	5.41	5.42	7.04	7.29	7.21
Asset Turnover (x)	0.58	0.52	0.56	0.60	0.64	0.71	0.75	0.78	0.81	0.83	0.86
Equity Multiplier (x)	1.89	1.95	2.03	2.10	2.00	2.04	1.95	1.89	1.80	1.74	1.68
ROE (%)	3.23	3.81	3.77	0.08	6.54	9.05	7.92	7.96	10.23	10.55	10.43



Z-Score Indices		Historical					Projected					
		2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F
X1	Working Capital to Total Assets	0.11	0.06	0.06	0.04	0.07	0.07	-0.03	0.08	0.05	0.02	0.10
X2	Retained Earnings to Total Assets	0.16	0.16	0.15	0.40	0.50	0.47	0.52	0.55	0.59	0.61	0.63
X3	EBIT to Total Assets	0.06	0.05	0.04	0.04	0.05	0.06	0.06	0.06	0.08	0.08	0.09
X4	MV of Equity to Total Liabilities	1.58	1.17	1.08	0.81	0.78	0.59	0.69	0.70	0.73	0.74	0.76
X5	Revenue to Total Assets	0.58	0.52	0.56	0.60	0.64	0.71	0.75	0.78	0.81	0.83	0.86
Altman Z-Score		2.09	1.68	1.63	1.83	2.07	2.02	2.06	2.27	2.41	2.44	2.60



The formula used in Z-Score is: $Z\text{-Score} = 1.2 \cdot X1 + 1.4 \cdot X2 + 3.3 \cdot X3 + 0.6 \cdot X4 + 1.0 \cdot X5$

Interpretation

Altman Z-Score < 1.81: Company has a high probability of bankruptcy.

Altman Z-Score > 2.99: Company is financially sound.

M-Score Indices	Historical					Projected					
	2017A	2018A	2019A	2020A	2021A	2022E	2023F	2024F	2025F	2026F	2027F
Day Sales in Receivables Index (DSRI)	0.92	1.12	0.87	0.99	1.20	0.89	0.97	1.00	1.00	1.00	1.00
Gross Margin Index (GMI)	1.00	1.50	1.06	0.95	1.06	1.00	1.00	1.00	0.90	1.00	1.00
Asset Quality Index (AQI)	1.01	1.02	0.98	1.03	0.99	1.01	1.00	1.00	1.00	1.00	1.00
Sales Growth Index (SGI)	1.00	0.99	1.08	1.00	1.07	1.30	1.06	1.06	1.06	1.06	1.06
Depreciation Index (DEPI)	0.97	1.08	0.86	0.92	1.02	1.13	0.93	1.01	1.01	1.01	1.00
Selling, General, & Admin. Expenses Index (SGAI)	1.03	1.04	1.03	0.98	1.01	0.91	1.04	1.01	1.01	1.00	1.00
Leverage Index (LVGI)	1.12	0.97	0.98	1.03	0.89	1.01	0.89	0.95	0.94	0.96	0.96
Total Accruals to Total Assets (TATA)	-0.07	-0.07	-0.08	-0.11	-0.05	-0.02	-0.07	-0.04	-0.04	-0.04	-0.04
Beneish M-Score	-2.93	-2.43	-2.88	-3.04	-2.40	-2.40	-2.75	-2.62	-2.66	-2.59	-2.60

<< -1.78

The formula for the 8 variable model is:

$$\text{M-Score} = -4.84 + 0.92 \cdot \text{DSRI} + 0.528 \cdot \text{GMI} + 0.404 \cdot \text{AQI} + 0.892 \cdot \text{SGI} + 0.115 \cdot \text{DEPI} - 0.172 \cdot \text{SGAI} + 4.679 \cdot \text{TATA} - 0.327 \cdot \text{LVGI}$$

Interpretation

Beneish M Score < -1.78: Company is not likely to have manipulated their earnings

Beneish M Score > -1.78: Company is likely to have manipulated their earnings

Appendix : Piotroski F-Score



F-Score Indices	Historical					Projected					
	2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F
<u>Profitability</u>											
ROA	1	1	1	1	1	1	1	1	1	1	1
CFO	1	1	1	1	1	1	1	1	1	1	1
ΔROA	0	1	0	0	1	1	0	1	1	1	1
ACCRUAL	1	1	1	1	1	1	1	1	1	1	1
<u>Leverage, Liquidity, Source of Funds</u>											
ΔLEVER	0	1	0	1	0	0	1	0	1	1	0
ΔLIQUID	1	0	1	0	1	0	0	1	0	0	1
EQ_OFFER	1	1	1	1	1	1	1	1	1	1	1
<u>Operating Efficiency</u>											
ΔMARGIN	0	0	0	1	0	1	0	0	1	1	0
ΔTURN	1	1	0	1	1	1	0	1	1	1	1
Piotroski F-Score	6	7	5	7	7	7	5	7	8	8	7

————— **7/9** —————
Median

————— **7/9** —————
Median

ROA (Return on Assets): Net Income divided by year beginning total assets. If ROA is positive, the F-Score is 1. Otherwise, it is 0.

CFO: Operating Cash Flow divided by year beginning total assets. If CFO is positive, the F-Score is 1. Otherwise, it is 0.

ΔROA: Change in ROA from the prior year. If ΔROA>0, the F-Score is 1. Otherwise, the F score is 0. **ACCRUAL:** CFO compared to ROA. If CFO>ROA, the F-Score is 1. Otherwise, the F-Score is 0.

ΔLEVER: Change in Long-term Debt/Average Total Assets ratio. If the ratio compared to the prior year is lower, the F-Score is 1, 0 otherwise.

ΔLIQUID: Change in current ratio. If the current ratio increases from the prior year, the F-Score is 1, 0 otherwise.

EQ_OFFER: Total common equity between years. If common equity increases compared to the prior year, the F-Score is 1, 0 otherwise.

ΔMARGIN: Change in Gross Margin Ratio. If the current year's ratio minus prior year's ratio is positive, the F-Score is 1, 0 otherwise.

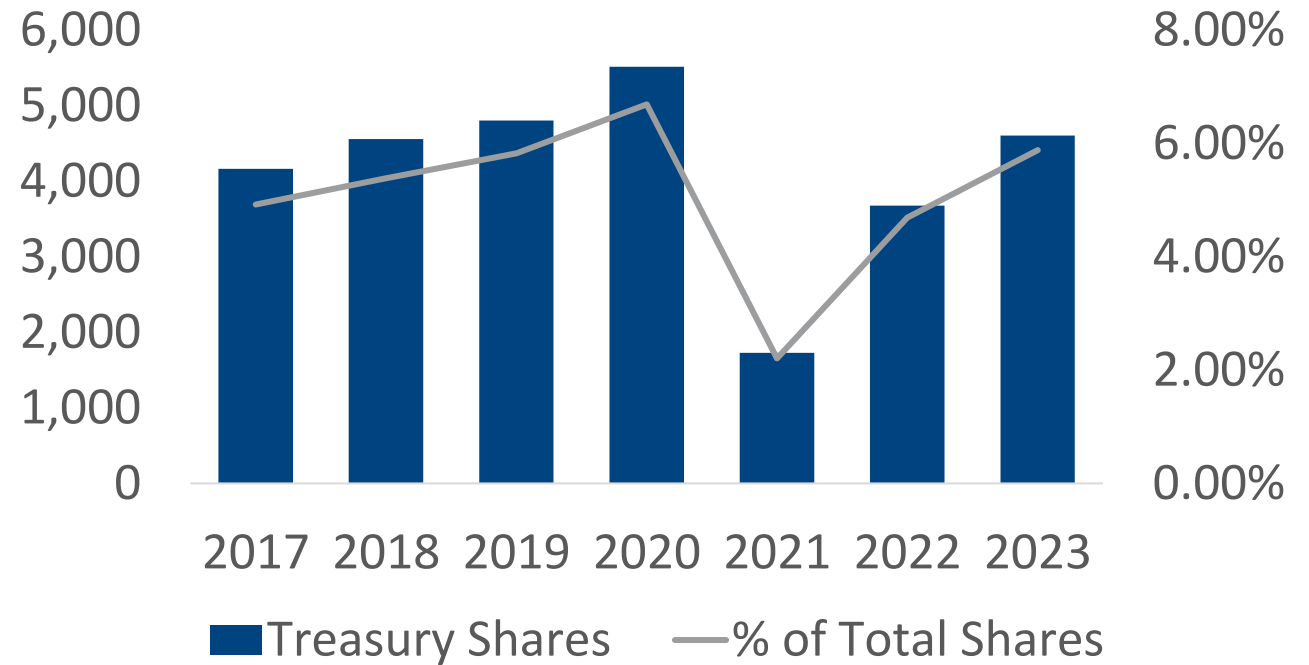
ΔTURN: Change in Asset Turnover Ratio (Revenue/Year Beginning Total Assets). If the current year's ratio minus prior years lays above 0, the F-Score is 1, 0 otherwise

Volume on EURONEXT (€ '000s)

1Y AVG.	3M AVG.	YTD AVG.	1M AVG.
7.37	10.56	15.07	24.73

Volume on ATHEX (€ '000s)

1Y AVG.	3M AVG.	YTD AVG.	1M AVG.
49.02	60.07	76.61	80.52



WACC Projections: Risk-Free Rate based on FFRFs



WACC	Today	2023	2024	2025	2026	2027	In perpetuity
Risk Free Rate	3.05%	3.42%	2.17%	1.51%	1.75%	1.99%	1.22%
Beta (5Y Monthly)	1.399	1.399	1.399	1.399	1.399	1.399	1.260
Equity Risk Premium	7.44%	7.44%	7.44%	7.44%	7.44%	7.44%	7.44%
Cost of Equity	13.46%	13.83%	12.58%	11.92%	12.16%	12.40%	10.59%
Rating (S&P500)	BB						
Default Spread	3.13%						
Effective Tax Rate	17.76%	17.76%	17.76%	17.76%	17.76%	17.76%	17.76%
Cost of Debt (after tax)	5.08%	5.08%	5.08%	5.08%	5.08%	5.08%	5.08%
Weight of Equity	50.26%	53.51%	67.50%	69.82%	71.28%	72.75%	72.75%
Weight of Debt	49.74%	46.49%	32.50%	30.18%	28.72%	27.25%	27.25%
WACC	9.29%	9.76%	10.14%	9.85%	10.13%	10.40%	9.09%

Risk-Free Rate	2023	2024	2025	2026	2027	In perpetuity
FFRF average	95.30	96.55	97.21	96.97	96.73	97.50
Implied Interest Rate	4.70%	3.45%	2.79%	3.03%	3.27%	2.50%
BPS change	36.92	-125.00	-66.29	24.54	23.46	-76.87
BPS converted to %	0.37%	-1.25%	-0.66%	0.25%	0.23%	-0.77%
Risk-Free Rate	3.42%	2.17%	1.51%	1.75%	1.99%	1.22%

Risk-free rates by region	
USA	3.60%
W. EUROPE	1.24%
S. EUROPE	2.66%

Risk Premiums by Region	
USA	5.94%
W. EUROPE	9.17%
S. EUROPE	11.18%

Percentage of Revenue	
Total Revenue	1,745.20
USA	55.20%
W. EUROPE	13.47%
S. EUROPE	15.95%

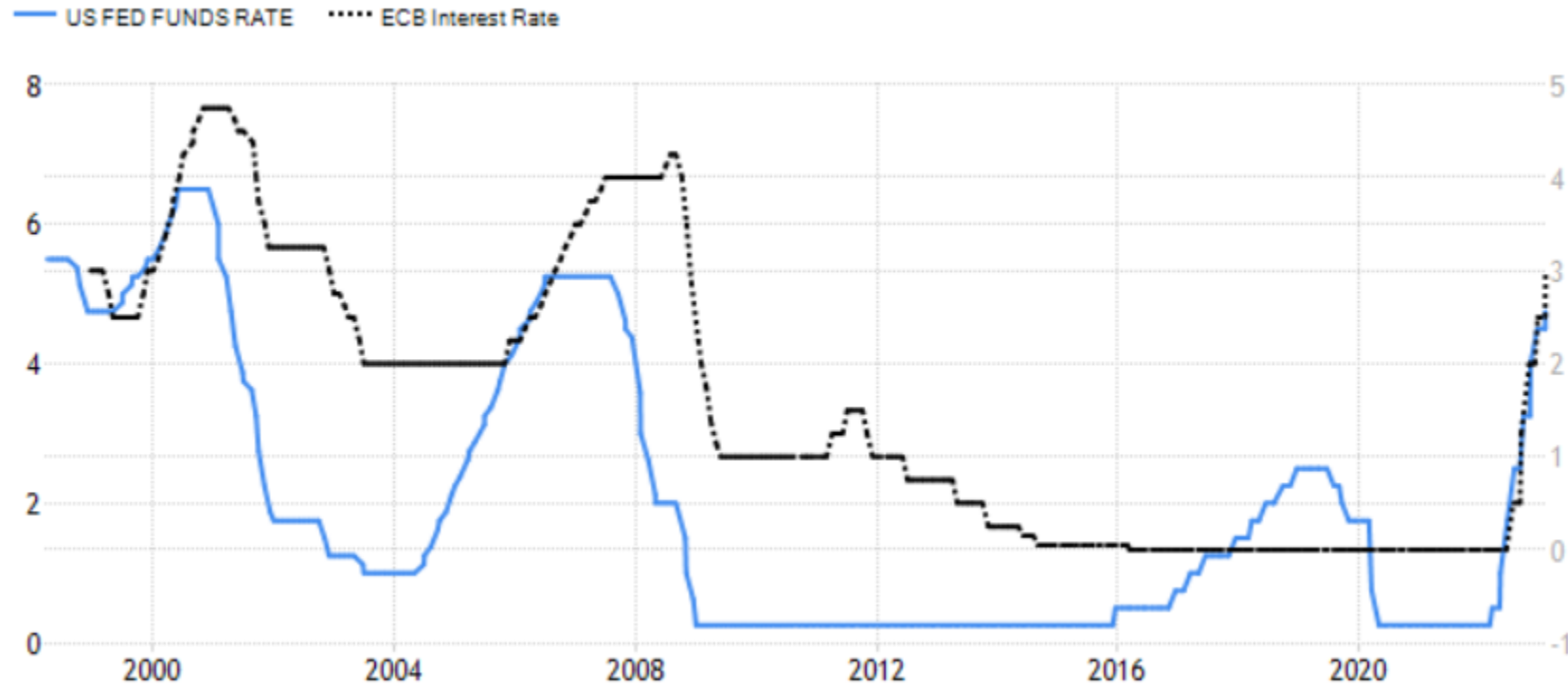
TITAN's Beta: A Peer-Based approach utilizing Bottom-Up Beta



Bottom-Up Beta	
Business Sector	Cement & Concrete Manufacturing
Sample Size	27
Sector Median levered Beta	0.94
Sector Median Unlevered Beta	0.68
Sector Median Cash/Firm Value	7.49%
Sector Pure Play Beta	0.80
TITAN's Leverage (market value)	0.990
Beta of TITAN's operations	1.458
TITAN's Cash & Equivalents (EUR)	79,882.00
TITAN's Beta	1.399

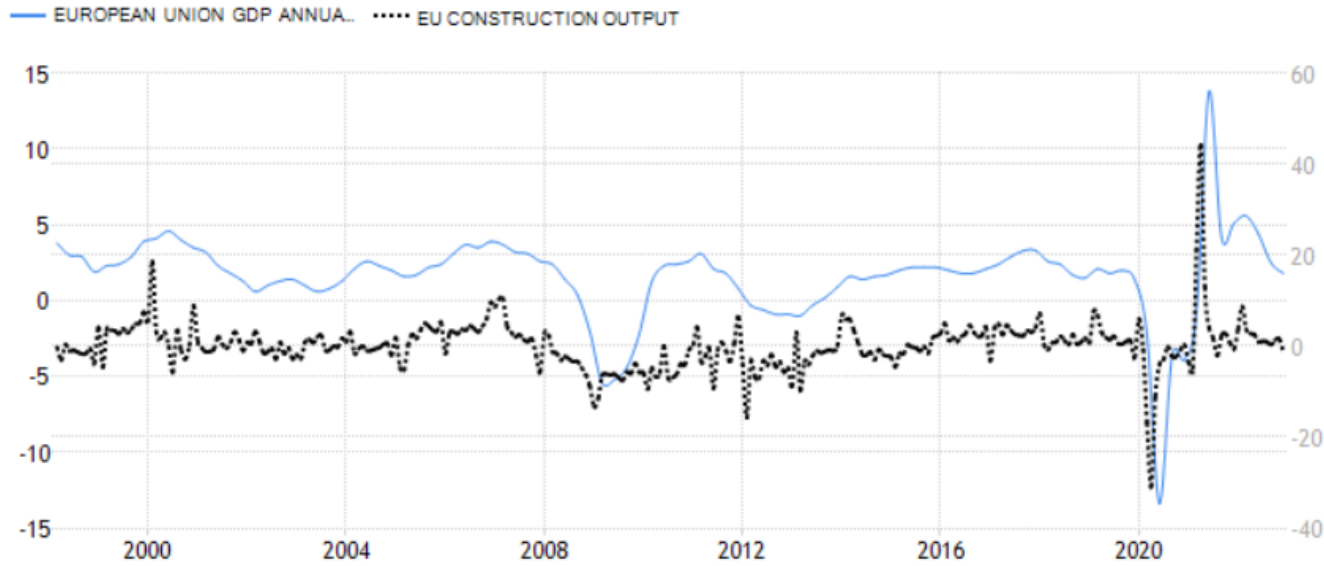
Bottom-Up Beta	Values (€)	Beta
TITAN Operations	1,889,369.45	0.804
TITAN Cash	79,882.00	0
TITAN Company	1,969,251.45	0.771
Bottom-Up Beta of operations	1.458	
TITAN's Beta	1.399	



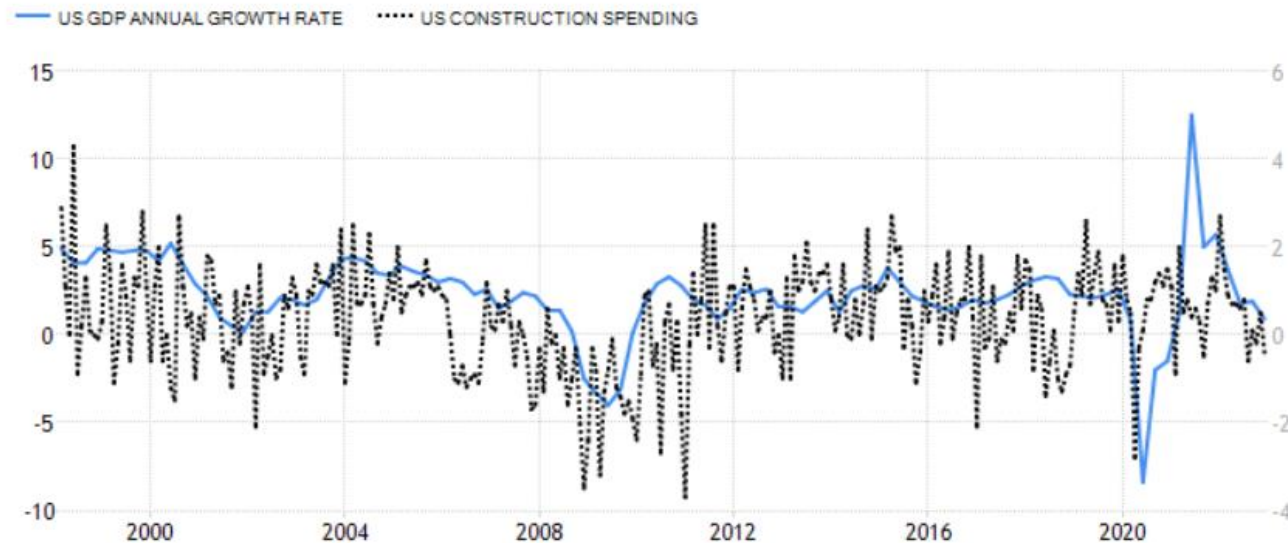


Federal Funds Rate vs Main Refinancing Rate

Terminal Growth Rate: Annual GDP growth and Construction Activity



**European Union GDP annual growth rate
vs
European Union construction output**



**US GDP annual growth rate
vs
US construction spending**

Appendix : Discounted Cash Flow Model



Discounted Cash Flow Analysis							
in (€ '000s)	2023F	2024F	2025F	2026F	2027F	2028F	2029F
EBIT	195,408	203,384	270,186	285,346	301,841	317,953	332,466
Less: Taxes	27,586	29,237	40,248	44,186	46,311	49,009	51,246
Plus: D&A	149,814	150,418	152,730	155,745	159,438	170,748	178,541
Less: CapEx	165,921	173,048	194,388	204,354	215,124	227,157	237,525
Less: Changes in WC	-52,034	15,902	17,276	17,898	18,965	19,960	20,871
Unlevered FCFF	203,749	135,615	171,004	174,654	180,880	192,575	201,365
DCF Values	185,627	111,790	128,994	118,735	110,277	114,258	109,518
Cumulative DCF	185,627	297,417	426,411	545,147	655,423	769,682	879,200

Sensitivity analysis - Perpetuity Growth

	WACC						
	7.59%	8.09%	8.59%	9.09%	9.59%	10.09%	10.59%
1.20%	26.91	24.25	21.97	19.99	18.27	16.76	15.42
1.40%	27.81	24.99	22.60	20.53	18.73	17.15	15.76
1.60%	28.76	25.79	23.26	21.09	19.21	17.57	16.13
1.80%	29.78	26.63	23.97	21.69	19.72	18.01	16.51
2.00%	30.88	27.53	24.72	22.32	20.26	18.47	16.90
2.20%	32.06	28.50	25.52	22.99	20.83	18.96	17.32
2.40%	33.33	29.53	26.37	23.70	21.43	19.47	17.76

Long-term Growth

DCF Valuation Results	in (€ '000s)
Final Year FCF	201,364.86
Terminal Value	2,811,878.09
PV of Terminal Value	1,529,320.15
Enterprise Value	2,408,519.86
Less: Net Debt (Cash)	791,314.95
Equity Value	1,617,204.91
Shares Outstanding	74,556.409
Implied Share Price	€ 21.69

Appendix : Comparable Companies Analysis



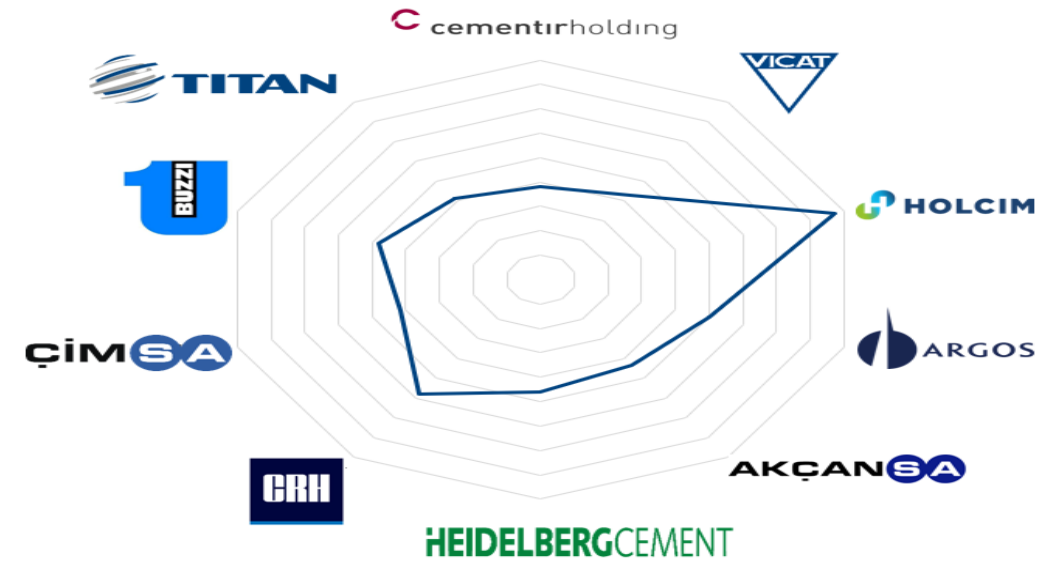
Company	EV/ Revenue	EV/ EBITDA	P/E	P/B
Peers Group				
Cementir Holding NV	0.76x	4.11x	7.85x	0.91x
Vicat SA	0.85x	5.50x	6.98x	0.44x
Holcim AG	1.75x	7.70x	12.18x	1.06x
Cementos Argos SA	1.00x	5.76x	13.44x	0.52x
Akcansa Cimento Sanayi ve Ticaret AS	0.87x	5.27x	8.40x	-
HeidelbergCement AG	0.92x	5.69x	8.60x	0.65x
CRH PLC	1.16x	7.09x	13.51x	1.65x
Cimsa Cimento Sanayi ve Ticaret AS	0.83x	5.23x	5.78x	-
Buzzi Unicem SpA	0.96x	5.07x	8.10x	0.71x
Target Company				
Titan Cement International SA	0.82x	5.64x	7.90x	0.63x
Quartile 1	0.82x	4.88x	6.74x	0.49x
Median	0.92x	5.5x	8.40x	0.71x
Quartile 3	1.28x	7.21x	13.45x	1.30x
Implied Prices				
Percentile 10	15.83	12.58	11.55	10.61
Adjusted Median	19.12	15.46	14.40	15.37
Percentile 90	30.43	23.38	23.06	28.09
Weightings	25%	25%	25%	25%
Share Price				
Percentile 10		12.64		
Adjusted Median		16.08		
Percentile 90		26.24		

Company	Currency	Country of Exchange	Market Cap (bn €)
Cementir Holding NV	EUR	Italy	1.2
Vicat SA	EUR	France	1.15
Holcim AG	CHF	Switzerland	34.11
Cementos Argos SA	COP	Colombia/USA	0.81
Akcansa Cimento Sanayi ve Ticaret AS	TRY	Turkey	0.61
HeidelbergCement AG	EUR	Germany	12.16
CRH PLC	GBP	Ireland/England	32.26
Cimsa Cimento Sanayi ve Ticaret AS	TRY	Turkey	0.67
Buzzi Unicem SpA	EUR	Italy	4.01
Titan Cement International SA	EUR	Belgium/Greece	1.14

TITAN's Key Metrics		2023F
EV/Revenue		0.82
EV/EBITDA		5.64
EV/EBIT		12.52
PE		7.90
P/B		0.63
Dividend Yield		3.72%
Dividend Payout Ratio		47.52%
Return on Assets		4.07
Return on Equity		7.92

Company	EV/Revenue	EV/EBITDA	P/E	P/B
Peers Group				
Cementir Holding NV	0.76x	4.11x	7.85x	0.91x
Vicat SA	0.85x	5.50x	6.98x	0.44x
Holcim AG	1.75x	7.70x	12.18x	1.06x
Cementos Argos SA	1.00x	5.76x	13.44x	0.52x
Akansa Cimento Sanayi ve Ticaret AS	0.87x	5.27x	8.40x	-
HeidelbergCement AG	0.92x	5.69x	8.60x	0.65x
CRH PLC	1.16x	7.09x	13.51x	1.65x
Cimsa Cimento Sanayi ve Ticaret AS	0.83x	5.23x	5.78x	-
Buzzi Unicem SpA	0.96x	5.07x	8.10x	0.71x
Target Company				
Titan Cement International SA	0.82x	5.64x	7.90x	0.63x
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Weightings	25%	25%	25%	25%
Share Price				
Percentile 10		12.64		
Adjusted Median		16.08		
Percentile 90		26.24		

EV/Revenue Multiple



HOLCIM

>100% EV increase



25% Revenue increase

Appendix : Dividend Discount Model (1/2)



Dividend Discount Model

	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	Perpetuity
Shares outstanding('000s)	74,650.474	73,720.793	73,720.793	73,720.793	73,720.793	73,720.793	73,720.793	73,720.793	73,720.793
Cost of Equity	13.46%	13.83%	12.58%	11.92%	12.16%	12.40%	10.59%	10.59%	10.59%
EPS	1.870	1.733	1.837	2.529	2.776	2.910	3.035	3.151	36.48
y-o-y growth	63.85%	-7.29%	5.98%	37.66%	9.79%	4.81%	4.31%	3.81%	-
DPS	0.58	0.65	0.87	1.20	1.32	1.38	1.44	1.50	17.33
PV of DPS	0.56	0.57	0.69	0.86	0.83	0.77	0.79	0.74	8.35

Sensitivity Analysis - Perpetuity Growth

	Cost of Equity						
	9.09%	9.59%	10.09%	10.59%	11.09%	11.59%	12.09%
1.20%	16.00	15.08	14.27	13.56	12.93	12.37	11.87
1.40%	16.29	15.33	14.49	13.75	13.10	12.52	12.00
1.60%	16.61	15.60	14.72	13.95	13.28	12.68	12.14
1.80%	16.94	15.88	14.97	14.16	13.46	12.84	12.28
2.00%	17.28	16.18	15.22	14.39	13.65	13.01	12.43
2.20%	17.65	16.49	15.49	14.62	13.86	13.18	12.59
2.40%	18.04	16.82	15.77	14.86	14.07	13.37	12.75

DDM Valuation		2022
Long-Term Growth		1.80%
PV of Cash Flows		5.81
PV of Terminal Value		8.35
Implied Share Price		€ 14.16

Sensitivity Analysis

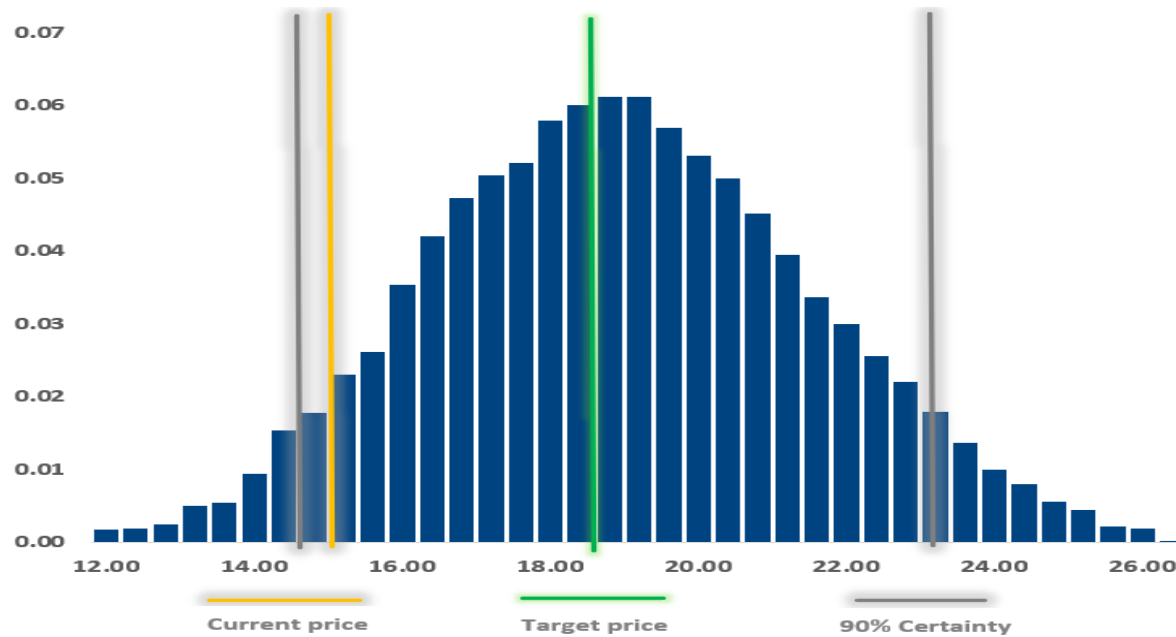
Payout Ratio	37.52%	39.52%	41.52%	43.52%	45.52%	47.52%	49.52%	51.52%	53.52%	55.52%	57.52%
Share Price	11.09	11.71	12.32	12.94	13.55	14.16	14.78	15.40	16.01	16.63	17.24

	2021	2022	2023	2024	2025	2026	2027
Earnings per Share (EPS)	1.14	1.87	1.73	1.84	2.53	2.78	2.91
Cost per Share Dividend	0.50	0.58	0.65	0.87	1.20	1.32	1.38
Cost per Share Buyback	0.04	0.31	0.17	0.00	0.00	0.00	0.00
Total Cost per Share	0.54	0.89	0.82	0.87	1.20	1.32	1.38
Payout ratio	0.475	0.475	0.475	0.475	0.475	0.475	0.475

Dividend Calculation	2022	2023
No. of Shares ('000s)	74,650.474	73,720.793
Buybacks' Cost ('000s)	23,299.84	12,601.37
EPS*Payout Ratio	0.89	0.82
Buyback Cost per Share	0.31	0.17
Approximate Dividend	0.58	0.65
Dividend Cost ('000s)	43013.59	48112.49

Terminal	Target	Impact on Target
0.90%	17.10	-7.6%
1.00%	17.24	-6.8%
1.20%	17.53	-5.2%
1.40%	17.84	-3.6%
1.60%	18.16	-1.8%
1.80%	18.50	0.0%
2.00%	18.86	1.9%
2.20%	19.24	4.0%
2.40%	19.65	6.2%

DCF	CCA	DDM	Target	Impact on Target
80%	20%	0%	20.57	11.18%
80%	10%	10%	20.38	10.14%
70%	30%	0%	20.01	8.15%
70%	20%	10%	19.82	7.11%
60%	40%	0%	19.45	5.11%
60%	30%	10%	19.25	4.08%
60%	20%	20%	19.06	3.04%
50%	40%	10%	18.69	1.04%
50%	30%	20%	18.50	0.00%
50%	25%	25%	18.41	-0.51%
40%	50%	10%	18.13	-1.99%
40%	40%	20%	17.94	-3.03%
40%	30%	30%	17.75	-4.06%



Statistics: Forecast values

Trials	10,000
Base Case	18.7
Mean	18.79
Median	18.71
Standard Deviation	2.62
Variance	6.86
Skewness	0.186
Kurtosis	2.89
Coeff. of Variation	0.139
Minimum	10.61
Maximum	27.73
Range Width	17.12
Mean Std. Error	0.03

Variable	Minimum	Base	Maximum	Distribution
Revenue CAGR	4.76%	5.60%	6.44%	PERT
EBIT Margin	8.17%	9.61%	11.05%	PERT
Taxes (% of Revenue)	1.23%	1.45%	1.66%	PERT
D&A (% of Revenue)	4.85%	5.71%	6.56%	PERT
CapEx (% of Revenue)	6.11%	7.19%	8.27%	PERT
Changes in WC (% of Revenue)	0.20%	0.23%	0.27%	PERT
Debt (% of Revenue)	24.97%	29.38%	33.78%	PERT
Cash & Equivalents (% of Revenue)	2.65%	3.12%	3.59%	PERT
Terminal Growth	1.53%	1.80%	2.07%	PERT
Terminal WACC	7.72%	9.09%	10.45%	PERT

Graham Number	2021	2022E
EPS	1.14	1.87
BVPS	17.45	20.65
Share Price	13.38	12.06
Graham Number	21.17	29.47

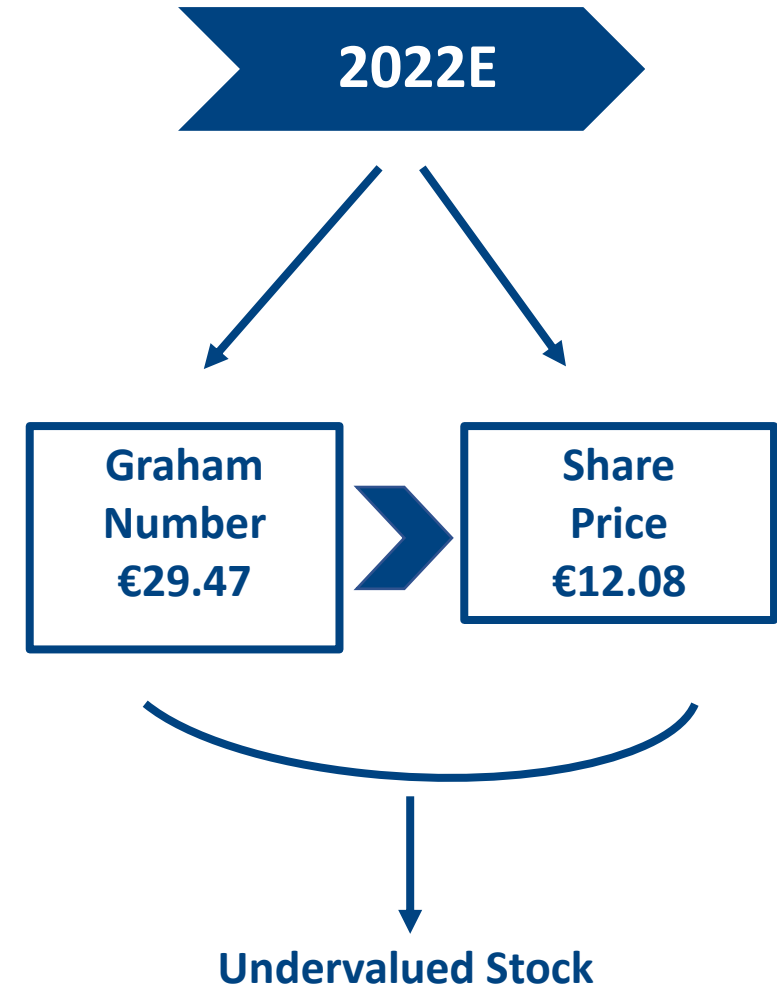
The formula used is Graham Number:

$$\sqrt{(22.5 \times (\text{earnings per share}) \times (\text{book value per share}))}$$

Interpretation

Graham Number > Share Price: the company is undervalued

Graham Number < Share Price: the company is overvalued



Risk Factor	Valuation Impact	Mitigation Factors
Inflation Risk (MR1)	6.05% (€1.12) Valuation Decrease	Pricing Policies
Hyperinflationary Environment Risk (MR2)	Recording of Impairment Losses	IAS 29- Expansion of exports
Rivalry Risk (MR3)	16.38% (€3.03) Valuation Decrease	Geographically Diversification
Energy Cost Risk (MR4)	10.7% (€1.98) Valuation Decrease	Hedging Instruments
Market Liquidity Risk (MR5)	Stock Underestimation due to lack of Volume	Growth Prospects
Supply Chain Risk (OR1)	6.32% (€1.12) Valuation Decrease	Fixed Rate Freight Contracts
Governance Risk (OR2)	Additional Legal Expenses- Reputation Loss	Replacement of Executives (Mr. Cobuz)
Political Risk (OR3)	20% (€3.50) Valuation Decrease	Strengthen local Reputation
Financial Credit Risk (FR1)	Increased WACC up to 9.87%	Stable Credit Policy- Improve Leverage
Company Liquidity Risk (FR2)	2.55% (€0.36) Capital Return Decrease	Cash Flow Immunization by Short-Term Debt
FX Risk (FR3)	€5M annual Financial Burden	Use of Financial Instruments
Effective Interest Rate (FR4)	€16M increase in Interest Expenses	Hedging of Borrowings

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- [TITAN Cement Group SBTi validates TITAN's updated GHG emissions reduction targets as consistent with the 1.5oC scenario,](#)
- [TITAN Cement group regulatory/stock exchange announcements](#)
- [TITAN Cement group Corporate Presentation](#)
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- [ECB macroeconomic projections \(December 2022\)](#)
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- [Moody's currency ratings](#)