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Team C

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TITAN Cement International S.A. (TITC.BR – TITC.AT)

Date: 13/02/2023
Current Price: €14.50 (as of 06/02/2023)
Target Price: €18.50
Recommendation: BUY (27.61% Upside)

GICS Sector: Construction Materials
Industry: Cement and Concrete Manufacturing
Listed: Euronext Brussels (BSE), Athens Stock Exchange (ASE).

Recommendation: BUY

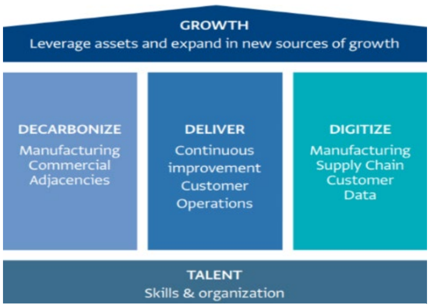
Upside: 27.61 %

Figure 1: TITAN's Overview

Key Figures	
Target Price	18.50
Last Close	14.50
Dividend Yield 2023F	4.50%
Upside	27.61%
Market Cap (€ '000s)	1,087,220.53
Shares outstanding ('000s)	74,980.726
52-Week High	14.60
52-Week Low	10.42
Beta (5Y Monthly)	1.399
P/E 2023F	7.90
P/B 2023F	0.63
EV/EBITDA 2023F	5.64
Avg. daily vol. (1Y) BR	6.38K
Avg. daily vol. (1Y) ATH	46.94K
Free Float	52.23%
FCFY 2023F	11.13%

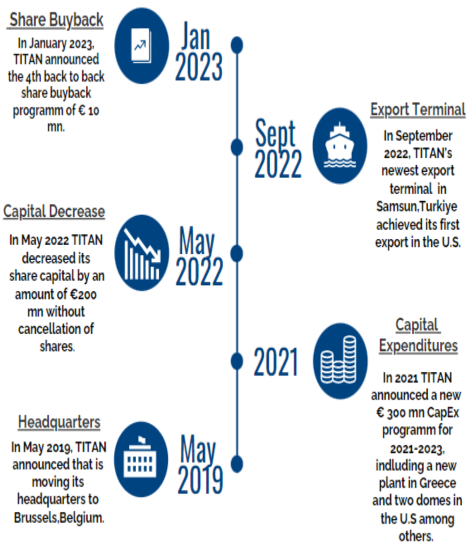
Source: Refinitiv Data, Team Analysis

Figure 2: TITAN's Driving Targets



Source: Company data

Figure 3: TITAN's Recent Corporate Highlights



Source: Company Data

TITAN Cement International SA (hereafter "TITAN" or the "Company") is a Belgium-based international cement and building material producer with presence in more than 15 countries.

INVESTMENT SUMMARY

Our analysis suggests a **BUY** recommendation for TITAN Cement Group with **a target price of €18.50**. We estimate **a total return of 32.11%**, consisting of a **27.61% upside on the stock's closing price of €14.50** on February 6th and **a dividend yield of 4.50%** (Figure 1). We base our strong recommendation on a forecasted five-year EPS CAGR of 19.15%, backed up by the resilience of TITAN's operations and its projected ability to maintain sustainable growth in the long run. Our claim is supported by 5 main factors: 1) **Resilient post-Covid-19 performance rebound** 2) **Strong demand due to infrastructure bills** 3) The **Decarbonize Deliver Digitize** principles 4) **Established International Presence** and 5) **Modernization & Expansion**.

Resilient Post-Covid-19 Performance Rebound

TITAN's FY2022 can be referred to as one of the most successful of recent years, as revenue displayed robust growth, soaring above the threshold of €2B for the first time and one of the year's highlights was **9M2022 revenue being approximately equal to the revenue of FY2021.** That was principally the consequence of several rounds of strong price increase realizations, which along with robust and consistent demand in the US and the overall construction activity in Greece and the EU, managed to offset the persistent ascending costs in COGS. Additionally, regarding the management's efficiency and experience, throughout the course of the last 2 years, many cost-saving actions were undertaken and which ultimately pushed margins to a higher level. Hence, **the EBITDA for 2022 surpassed €330M**, namely €336M, which can also be referred to as 20.63% of the last 6 years' cumulative EBITDA. **The net debt**, after peaking at €912M in 9M2022, fell **below €800M**.

Strong Demand through Infrastructure Bills

Taking into account the incremental infrastructure construction programs in Europe (RRF bills) and in the US (US Bipartisan Infrastructure Deal), where there will be a further addition of $550B to the ongoing infrastructure spending, **amounting to a total of $1.2T dollars**. That will lead to an additional cement consumption of approximately 48M metric tons for each of the next 5 years, resulting in elevated cement demand in the US, amounting to the pace of 7-8% annually.

Decarbonize Deliver Digitize

TITAN is a leading company in innovation and digitization. Relying on its sophisticated and talented staff, TITAN seeks to improve its business performance and expand into additional sources of growth, with the driving targets being **Decarbonize**, **Deliver,** and **Digitize** (Figure 2). To support its **decarbonization plans**, the company has already invested a respective amount of €158M in the first nine months of 2022 and is expected to carry on in 2023, with the CapEx being mainly directed to sustainable products, green type 1L cement, and CO_2 emissions reduction, which is 25% less than 2020, making TITAN a competitive pioneer. Turning to **digital transformation**, TITAN is using AI-based Real-Time Optimizers (RTO), which are already deployed in plants within the US, Greece, and SE Europe. RTOs, along with Equipment Failure Predictors, constitute the company's Asset Optimization virtue and improve the production's efficiency, aiming for products with higher quality specifications and lower costs. As a result, the company benefits from failure costs avoidance and downtime reduction. Additionally, applying these technologies leads to a respective reduction in logistic costs and the ability to address spare parts, while forecasting demand becomes easier. All in all, TITAN **delivers** within budget, as specified, and on time.

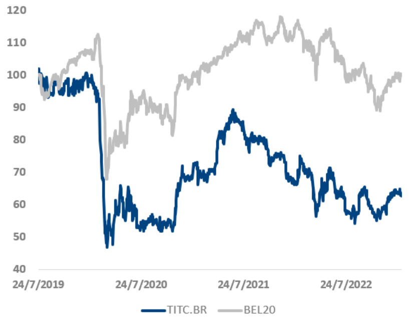
Established International Presence

TITAN is a multinational company with **plants in 10 countries**, a strong **presence in over 15 countries**, and supports **customers in over 25 countries**. Therefore, TITAN is significantly **geographically diversified**, with a good mixture of assets between developed and emerging markets, and resilient to any macroeconomic changes in any specific region. It is noteworthy that TITAN is considered among the leaders in the regions where the company operates, since the firm stands in the top 5 in terms of market share in those regions. **TITAN is the biggest cement producer in the markets of Virginia, North Macedonia, Albania, Kosovo, and second in Greece.** TITAN's flexibility of importing-exporting between its areas of operation is proven by the shift of the company's revenue mix, with sales in the US covering 58% of total revenue in FY2021 (Figure 5), fueled by imports from Greece and Eastern Mediterranean. The company is reaping the benefits of high-capacity export terminals located near the sea. As TITAN invested in an export terminal in Samsun Turkey (Figure 3) in 2022, we are confident that TITAN will continue investing in this class of facilities.

Modernization & Expansion

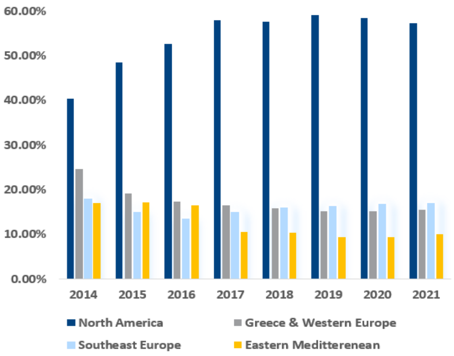
Among the main aspects that TITAN is investing in, is the growth and optimization of its future operations. The company is projected to maintain a stable EBITDA margin (Figure 13), a large portion of which, with the support of external funding, will be utilized in Capital Expenditures. The company has already invested €560M since FY2017 (Figure 3), and it is projected to spend approximately €1.17B until FY2027 on capital investments, utilizing around 50% of its EBITDA. The company's Capital Expenditures are focusing on funding projects in two main areas: i) **Modernization of assets**: due to high maintenance and improvement costs, TITAN is ensuring the replacement of its fixed assets with both leases and acquisitions to be able to remain up to date with new technologies. The company spends €50M annually for maintenance and replacement investments for the operating assets. ii) **Expansion of operations**: TITAN is expanding its operations in the US and Europe, taking advantage of the additional demand due to infrastructure and housing operations' boost through institutional funding (US Bipartisan Infrastructure Law & RRF Bills). Its investments are related to capacity

Figure 4: TITAN's Relative Share Price Performance



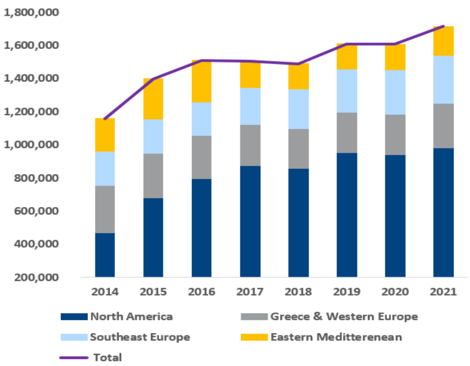
Source: Refinitiv Data

Figure 5: TITAN's Geographic Breakdown as % of Revenue



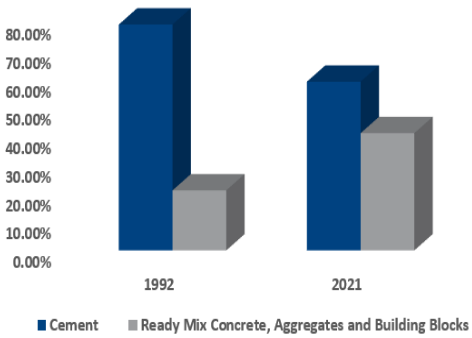
Source: Company Data

Figure 6: TITAN's Total Revenue (€ '000s) by Region



Source: Company Data

Figure 7: Revenue % by Product



Source: Company Data

increases, supporting and improving its market share in these areas, achieving a strong revenue CAGR of 5.92% for FY23-FY27.

BUSINESS DESCRIPTION

TITAN Cement International S.A. is a publicly listed company on the Athens Stock Exchange and the Brussels Stock Exchange (Figure 4) that operates as a producer and distributor of cement and building materials while its headquarters are located in Brussels, Belgium since 2019. TITAN Cement was founded in 1902 in Elefsina Greece and was the first cement company in Greece. It was incorporated in 1911 and was the second stock to ever be listed in the Athens Stock Exchange in 1912. Throughout its 120 years of operations, TITAN has become one of the largest producers of cement and building materials in Eastern Europe. At the same time, the company expanded its distribution and operations in the US, Western Europe, Eastern Mediterranean, and Brazil developing a diversified customer base across multiple regions. TITAN ensures stability in its production, operations, and costs owing to its **vertically integrated structure**, achieved mainly through acquisition deals (Appendix 3.1 – SWOT Analysis).

Principal Products

TITAN's principal products feature a **variety of cementitious materials**. Most of its business activity comes from **cement production**, accounting for 59% of the revenue stream, and 40% comprising of **ready-mix concrete, building blocks, and aggregates** (crushed stone, sand, gravel, and recycled concrete) (Figure 7). A third source of revenue includes **services to third parties** ranging from distribution to waste management and technology solutions with approximately 1% of the revenue. Although the company's business model is "traditional" in many aspects, TITAN focuses heavily on evolving its strategy and becoming a leading company in global trends in its industrial segment, by **incorporating low-clinker cement** in the production line. Currently, lower clinker cement is produced in the form of Type 1L in the USA, accounting for 50% of TITAN's US production output (expected to represent approx. 100% by the end of 2022). Other plants located in Greece, Egypt, and North Macedonia mainly produce lower-carbon cement. The company also developed and launched **its own AI software** in 2022**, CemAI**, aiming to use this service to improve TITAN's digital infrastructure, production line, and plants' maintenance and provide these business solutions to other companies. **With the continuous development of its product mix, TITAN demonstrates the continuous commitment to its three-pillar strategy to Deliver to its clients on time with high-quality services, Decarbonize the production in line with their ESG goals, and Digitize the units across all regions.**

Geographic Operation Segments

Geographically, TITAN's products have been distributed on a global scale since the early start of its operations, but it wasn't until **1979 when major expansions and investments abroad began**. Currently, **TITAN operates in 15 countries and services customers in more than 25 countries,** by combining two main strategies: **competitor company acquisitions and facilities construction**, thus facilitating both risk mitigation and bringing the production closer to the consumer. North America is the crown jewel of the company, occupying 58.33% of total revenue, followed by Southeast Europe with 16.71 %, Greece and Western Europe at 15.35%, and East Mediterranean at 9.62% of total sales (Figure 5). Given that TITAN has geographically diversified its operations and has entered multiple markets, the company is not majorly affected by demand fluctuations from a single region, separating its EBITDA into four distinct ones, and has structured its network to ensure high margins from low-cost areas used as product export hubs.

INDUSTRY OVERVIEW AND COMPETITIVE POSITION

TITAN's industry involves in the production of cement and cementitious materials, which are some of the principal construction materials that exhibit seasonality. The cement industry's production procedures include the extraction of raw materials such as limestone, clay, sand, and the heating of these materials to high temperatures to produce clinker, which is then grinded into powder to produce cement. The cement industry is a major contributor to the global economy, while it constitutes an energy-intensive sector. Cement companies mainly vertically integrate their production line creating a wider portfolio of products, including ready-mix concrete, building blocks, and other essential building and raw materials.

The cement industry requires a close understanding of several key factors. First, the industry is procyclical and can therefore be influenced significantly by the swings of the economic cycle, as so does construction activity. Second, the availability and quality of raw materials, as well as the energy cost required for production, can impact a company's bottom line. Moreover, environmental regulations are increasingly important, while infrastructure development and government policies also play a significant role in influencing the demand for cement. Finally, advancements in cement production technology can impact a company's competitiveness and efficiency. Regarding the cement market's current conditions, it is **trending upwards globally**, following a relative stagnation period with some downward turns during the years of the Covid-19 pandemic, **growing from a market size of $326B in 2021 to $340B in 2022**. Holistically, it is expected to grow at a CAGR of about 5,1% (2022-2029) driven by a multitude of factors. Production-wise, cement production reaches approximately 4.4B MT (2021) (Figure 9), with China occupying almost 55% (2.5B MT) of the production capacity, followed by India and the US.

Dynamics of the Cement Industry

United States of America

The cement Industry in the US is the third largest producer of cement globally, with an estimated 92M MT of production in 2021 with consumption greatly outweighing local production, making the USA a net importer. In 2021 the US was the largest importer of cement with $1.8B of imported cement. This number is expected to grow further after the infrastructure bill passed in 2021, paving the way for a robust growth in demand. Over the next five years (2023-2028) the US is expected to spend **$550B on roads, bridges, airports, and other critical and cement-intensive infrastructure investments**, creating an opportunity for an additional 48M MT of cement (Figure 8) which corresponds to **7-8% rise in demand Y-o-Y** in that period. Signs of strong demand for new housing and resilient economic recovery Virginia also show a promising future for TITAN. **We assume a 6.50% CAGR for TITAN in our baseline scenario in the US**.

Greece and European Union

Greece as the country of birth for TITAN, plays a significant role in the production and supply lines of cement whereas Europe is the base of operations for a multitude of the company's peers. Although Greece's domestic demand is well below pre-2008 levels, there is growth potential as the country experiences a record increase in investment activity. Domestic demand has already shown a **16% increase in the last four years**. Currently, Greece is mainly an exporter of cement, with the US as its main destination followed by the Middle East & Africa, and Europe. The EU27 combined produces about 181.17M MT of cement with an estimated growth of 1.9% CAGR (2022-2027). The EU houses the headquarters of 2 of the 5 largest cement companies globally and focuses heavily on carbon neutrality. It uses the highest quantities of alternative fuels and over 90% of cement plants are fitted with energy-efficient drying kilns and are global CO_2 efficiency leaders. **We assume a 4.72% CAGR for TITAN in our baseline scenario in Greece and the European Union**.

Turkey and Egypt

Turkey is the fourth largest producer of cement globally at 76M MT of production and the second largest exporter of cement to the US. Although Turkey has been struggling with extreme inflation and political disputes, the country shows strong signs of construction activity with government subsidies for public infrastructure. TITAN's operations in Egypt recorded impairment losses in 2019-20, owing to an influx of cement in the market from newly established, state-owned cement plants. Egypt's cement industry and TITAN started turning a profit in 2021, after the U-turn of the Egyptian government and the establishment of cement production quotas that stabilized the market and we are assuming that these quotas will last. Currently, Egypt produces 40M MT, with strong construction growth over the coming years, supported by government construction projects to build houses and new cities (e.g., the New Administrative Capital) and sustained GDP growth. **We assume a 2.21% CAGR for TITAN in our baseline scenario in Turkey & Egypt.**

Southeastern Europe

Southeastern Europe constitutes an opportunity for the company, as it is comprised mainly of developing nations with stable economic growth (3.37% average growth rate 2023-2027). Drivers of economic growth are i) The diaspora of those states that sends funds to home states, ii) Multiple packages in the EU's Economic and Investment Plan to develop transport connections and other infrastructure, amounting to €30B in the next years, and iii) Chinese investments in the region that amount to €32B (2009-2021) through the Belt and Road Initiative. **We assume a 7.13% CAGR for TITAN in our baseline scenario in Southeastern Europe.**

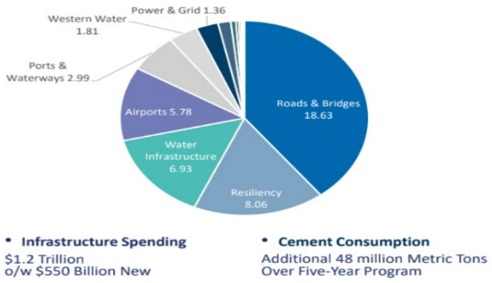
Brazil (Joint Venture)

The cement industry in Brazil is one of the largest in the world. Brazil is the fifth-largest country in terms of land area and population, and as such, the demand for cement is high due to construction and infrastructure development. The industry has faced some challenges in recent years, including economic instability, political uncertainties, and changes in government regulations. However, the industry continues to grow, and there have been several investments in new production facilities and the modernization of existing plants. Brazil produces about 65M MT of cement with the industry stagnating in 2022.

Competitive Positioning

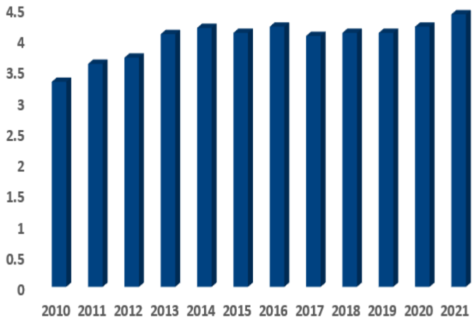
TITAN is consistently ranked among the major players in the regions where it operates and continuously invests in the development of its competencies and business. The company is a dominant player in most countries where it has a long-lasting foothold and major production capacity, **ranking as the number one market leader in Virginia (USA), Albania, North Macedonia, and Kosovo, second in Greece, Florida (USA), and Bulgaria, third in Turkey and fifth in Egypt**. In Western Europe the company has invested only in building import terminals, since this region has lower margins, making it fiscally difficult for new entries in the market. This is attributed to the fact that TITAN places most of its production in higher-margin countries and exports to lower-margin countries. **TITAN's Competitive Advantages include the leading position in the digitization progress of the company** (ESG-GHG Emissions) and a **highly educated workforce** (ESG-Human Capital) that maintain an efficient workflow. Its geographic positioning also plays a key role, by providing the ability to equalize its product demand through geographic diversity (Figure 10) and thus decreasing the impact of the EUs Emissions Trading System (EU ETS) after 2026, when companies in the EU will gradually lose their emissions allowances until 2030.

Figure 8: US Infrastructure Bill - Additional Cement Consumption by Construction Sector (million Metric Tons)



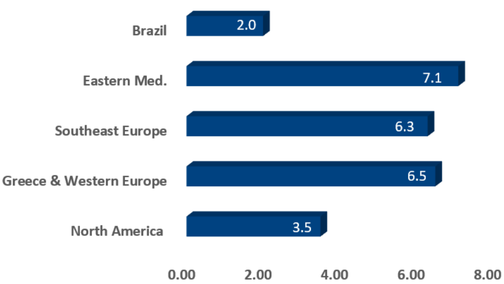
Source: PCA Fall Cement Outlook, Company Data

Figure 9: Global Cement Production (billion Metric Tons)



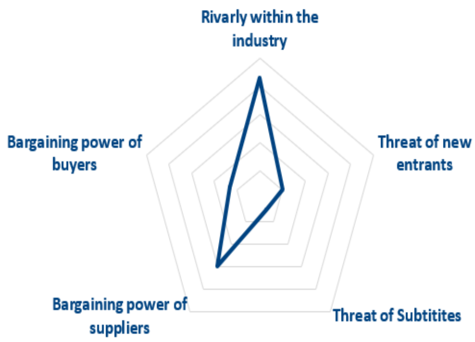
Source: Statista

Figure 10: TITAN's Production per Region in 2021 (million metric tons)



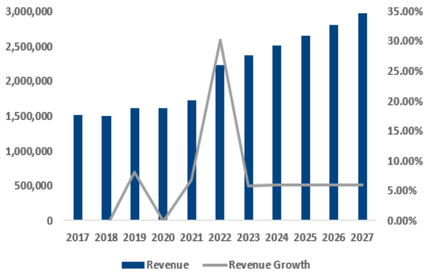
Source: Company Data

Figure 11: Porter's Five Forces



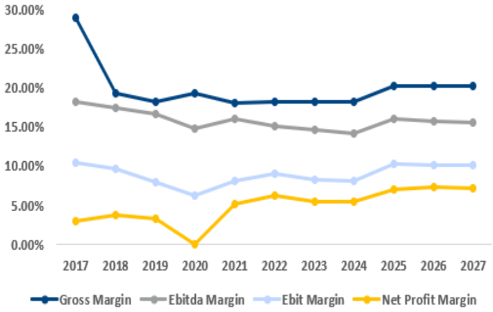
Source: Team Analysis

Figure 12: TITAN's Revenue (€ '000s) and Revenue Growth (%)



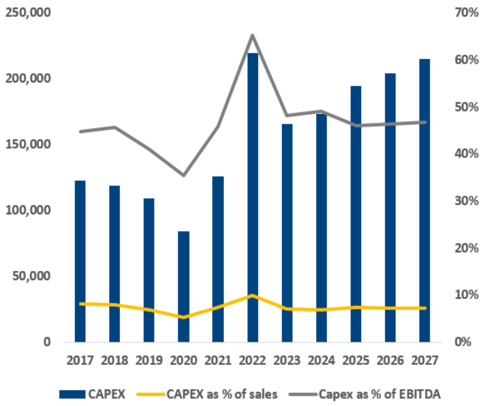
Source: Company Data, Team Analysis

Figure 13: TITAN's Margins Evolution YoY



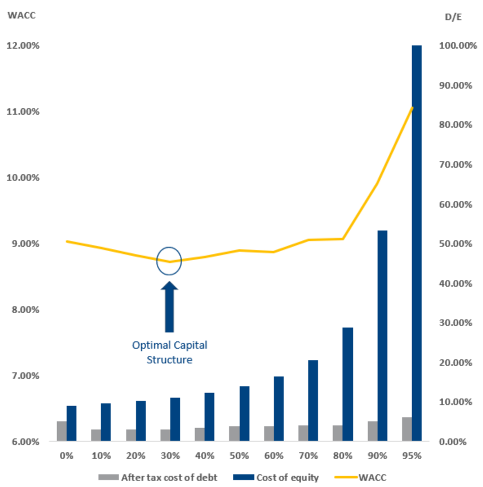
Source: Company Data, Team Analysis

Figure 14: TITAN's CapEx Evolution YoY (€ '000s)



Source: Company Data, Team Analysis

Figure 15: TITAN's Optimal Capital Structure



Source: NYU Stern, Team Analysis

Competition Overview

The Cement Industry is highly competitive (4.3) (Figure 11), with individual competitive forces ranging from Very Low (0) to Very High (5) (Appendix 4.1 - Porter's 5 Forces Analysis). According to our analysis, Substitute Products are not a threat (0.5) for the company, while the Threat of New Entrants (1) and the Buyer's Bargaining power (1.3) is low. The bargaining Power of Suppliers is moderate-high (3) largely due to the cost shift to the product's final price. The very intense competition in the industry is also reflected in the company's margins (Appendix 4.2 - Competition Ratios Analysis).

FINANCIAL ANALYSIS

Revenue Growth

In FY2022 revenue stepped up with a strong 30.07% y-o-y growth. Turning to TITAN's historical performance, the average growth in revenue for FY2014-2021 was estimated at 5.99% on a yearly basis (Figure 12), mainly fueled by the expansion of operations in North America and the CapEx associated with the modernization of assets and digital innovation. Throughout the future years, and specifically for FY2023-2027, **we assume a CAGR of 5.92% (**Appendix 1.1 – Assumptions**)**. For the examining period, our analysis showcases a respective 6.58% global annual increase of the cement market, while regionally, **North America and Southeast Europe are the leading areas of revenue growth for TITAN recording a forecasted 7.13% and 6.05% annual growth correspondingly**, while **Eastern Mediterranean** presents **a decelerated growth of 2.21% for the period FY2023-2027**. TITAN's growth strategy focuses on the further expansion of operations and sales in the US and Europe, taking into account the incremental infrastructure construction programs (US Bipartisan Infrastructure Deal and RRF bills) that boost the demand for cement and concrete. In addition, TITAN is also committed to the implementation of Type 1L cement as a brand-name product and to digital transformation. In 2025, the Company is forecasted to achieve a stable 8/9 Piotroski F-Score (Appendix 5.5 – Piotroski F-Score) which indicates an improvement in its financial robustness. Moreover, in the following years, we assume that 60% of the total revenue will derive from North America, while Western and Southeast Europe will cover 14.49% and 17.68% respectively.

Margins

The Cement and Construction Materials Industry is mature, with very intense competition, a fact that is reflected in the sector's, and consequently, TITAN's margins (Figure 13). TITAN's achieved vertical integration provokes low volatility in a significant part of COGS. Nevertheless, the Covid-19 pandemic, energy-related and transport-related disruptions added some turbulence, and margins have dropped throughout 1H22. Although 2H22 margins were rosy, **in our baseline scenario we assume compressed margins up until 2024**. We should note that TITAN margins are relatively lower compared to the selected peer group (Appendix 4.2 - Competition Ratios Analysis). This can be attributed to the company's business model, which has potential growth relative to its leading peers, but at present, serves as a disadvantage in margin comparison.

Capital Expenditures (CAPEX)

TITAN's recent capital expenditures include a €70M investment in the construction of two domes in the United States and a €25M investment in a Calciner in the Kamari plant in Greece. Both projects commenced in the last quarter of 2021 and are expected to be completed in the first quarter of 2023. To pencil future capital expenditures, we would need to account for the annual maintenance investment of €50M and add up to capture growth opportunities, particularly in the USA. We are estimating that the company will further invest in assets at an approximate rate of **7% of Sales (as the median of 2017-2022FYs) or 47% of EBITDA on average (as the median of 2017-2022FYs)** to come up **to circa €200M annual CapEx for the coming years** (Figure 14). Currently, the utilization rate in US plants stands at 92-93%, which can be counted as full utilization if we consider maintenance unavoidable down times. This is happening while the cost of building new cement plants in the US is prohibitive and the $550B infrastructure spending program from the US government in the next five years is expected to add 7-8% annual demand for cement.

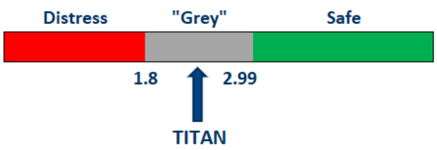
Cash Flow Generation

TITAN shows healthy operating cash flows for the examined period, accumulating over €200M cash per year from operations and maintaining a positive net cash flow after investing activities for FY17-FY21 (Appendix 2.3 -Cash Flow Statement). The Company will make use of **the total future cash flow of €1.8B** mainly in three different areas: i) **Financing of CapEx programs**, ii) **Capital returns**, keeping a high payout ratio of 47.52% on average for the projected period, and iii) **Debt payoffs** that lead to a decline in Debt-to-Equity ratio approaching the optimal capital structure in the perpetuity. TITAN will need three major refinances of his debentures and bank debt amounting to €731M during the period FY2024F-FY2027F as well as an additional loan of €30M, so as to sustain a minimum cash amount of €70M (Appendix 1.1 – Assumptions).

Capital Structure

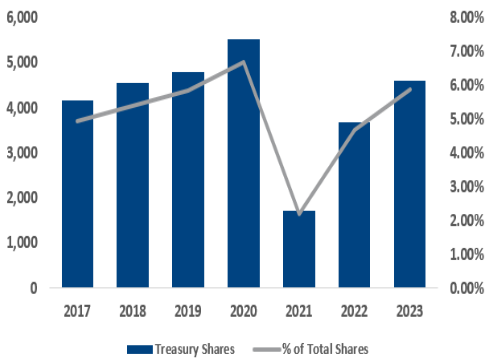
Although TITAN's D/E ratio currently remains above the peer group average, throughout the course of the examining period (FY 2022-FY2027), **we expect the D/E ratio to drop from 59% to 39% in 2027**. That is attributed to TITAN's ability of financing its investments with operating cash flows and cash reserves. Given that, TITAN resorts to debt only to pay its previous debentures or to maintain the cash reserves above a certain level. Along with that debt capacity (Figure 30), TITAN's forecasted high coverage ratios signal strong financial independence. Currently, there are two outstanding debentures, maturing in 2024 and 2027, with annual coupons of 4.75% and 5.5% respectively. Regarding bank loans, TITAN has proceeded to hedge 80% of its total borrowings, **maintaining an effective interest rate of 3.77%**. Turning to **Altman's Z score**, since 2021 and throughout the examining period, the company's score demonstrates a solid change from the lower to the upper limit of the grey zone, namely from **2.072 to 2.520**, indicating an improvement of TITAN's capability to decrease its leverage (Figure 16) (Appendix 5.4 – Altman Z-Score).

Figure 16: Altman Z-Score



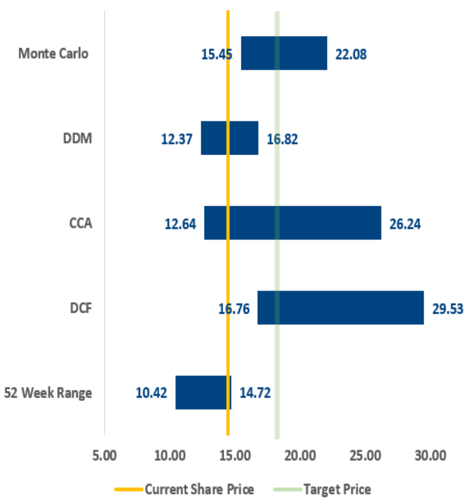
Source: Team Analysis

Figure 17: Treasury Shares('000s) and Treasure Shares as % of Total Shares



Source: Company Data, Team Analysis

Figure 18: Football Field



Source: Team Analysis

Figure 19: Bottom-Up Beta Metrics

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 (€ '000s)	79,882.00
TITAN's Beta	**1.399**

Source: NYU Stern, Team Analysis

Dupont Analysis

The Dupont Analysis demonstrated that there were no significant ROE fluctuations for the FY2017-2019. Regarding the FY2020, ROE approached zero, since the Tax Burden, Interest Burden, and Margins were extremely low, due to the impact of the Covid-19 pandemic. The following uptrend of ROE in FY2021-2022 occurred as a consequence of the elevated Operating and Net Profit margins. The decline in those margins in combination with the lower Interest Burden and Equity Multiplier resulted in **a ROE of around 8% for the FY2023-2024**. The projected rebound of the economy from FY2025 and onwards that will spur TITAN's margins, in conjunction with the higher Asset Turnover, will lead to an uplifted ROE which will anchor well above the level of 10% (Appendix 5.2 – Dupont Analysis).

Buyback Program

TITAN engaged in a series of buyback programs with the current one having started in 2022 and concluding on 28/02/2023 incurring a total cost of approximately €10M with a projected number of shares repurchased around 201,348 (Figure 17). The company has announced a new buyback program that will commence on 01/03/2023, with a duration of up to 10 months and a maximum cost of €10M. Since the end of 2021, the company has executed 3 buyback programs, with a cumulative cost of €40M. The buybacks are conducted through ATHEX and Euronext Brussels, with **14.53%** and **21.58% of the total volume for 2022** accounted for by these programs respectively, which is limited by the regulatory restriction of the 25% daily volume limit. Given the low volume in EURONEXT Brussels, the company is expected to continue conducting the majority of its buyback activity on ATHEX, as in previous years.

Treasury shares buyback	2021A	2022E	2023F
Amount of shares (in '000s)	230.141	1,947.711	929.681
Cost of shares repurchased (in € '000s)	3,230.00	23,299.84	12,626.14

VALUATION

We issue a **BUY** recommendation on TITAN (TITC.BR) at a target price of €18.50 per share, representing a **27.61% potential upside** on the closing price of €14.50 (as of 06/02/2022) (Figure 1). Our recommendation is based on a weighted average of a Discount Cash Flow Model (DCF), a Comparable Companies Analysis (CCA), and a Dividend Discount Model (DDM). The selected weightings are **50%/30%/20%**, respectively. We also evaluate the influence of different weightings applied to the valuation methods, using a range of 40%-70% for DCF, 20%-50% for CCA, and 10%-30% for DDM. This scenario analysis provided a price range of €17.75 - €19.82 per share. Our BUY recommendation is further supported by the Graham Number which indicates that TITAN stock is undervalued (Appendix 5.6 – Graham Number). In addition, our stock Technical Analysis confirms our **BUY** recommendation by revealing an upward trend.

Discounted Cash Flow (DCF)

We used a **two-stage Discounted Cash Flow model (transition-stable)**. Given the current instability in energy costs and inflation, we deemed a two-stage model appropriate. This accounts for the transition period until 2024, followed by a deceleration in these effects from 2025 onwards, leading to higher EBIT margins. Beyond 2028, the revenue growth rate is expected to decline gradually toward the **terminal growth rate of 1.8%**, in the following years. Hence, the result of the DCF analysis **implies a €21.69** price per share, a **49.59% upside** from the current price, indicating that TITAN's share price is undervalued. Furthermore, a sensitivity analysis conducted for WACC and long-term growth rate, suggests a price range of €16.76 to €29.53 (Appendix 6.2 – Discounted Cash Flow Model).

Bottom-Up Beta

To estimate a more business-oriented beta, using more robust assumptions, the Bottom-Up approach was deemed appropriate, according to professor Aswath Damodaran. This particular choice was due to the tendency of regression betas to be highly influenced by the selected time series. Our sample size is 27 companies operating in the same business and regions as TITAN (Figure 19). The **sector's median unlevered beta is 0.68** and indicates a relatively low level of market risk. However, after subtracting the influence of cash, the sector's **pure-play beta increases to 0.80**, which better reflects the sector's true risk profile. This adjustment was made using the industry's Cash to Firm value, which is currently at 7.49%. The effect of riskless cash positions is removed by estimating the pure play beta, which results in beta free from idiosyncratic influences, capital structure choices, or cash, and therefore values the relative risk of a firm's operations for its shareholders. The pure-play beta is then levered-up and re-cashed to estimate **TITAN's bottom-up beta of 1.399** (Figure 20).

Beta in Perpetuity

Drawing from the Blume's approach on convergence of betas, **we assume a long-run beta of 1.00 for TITAN,** assuming convergence towards the cement and concrete manufacturing industry. Using statistical data, we implement a variant of the Blume's approach whereby the company's future beta is influenced by the current beta with a weighting of ⅔, and by the market's beta with a weighting of ⅓. For our calculation we use the **market's beta** as the **median of 5Y monthly beta** of the cement and concrete manufacturing sector which is **0.98**. Ultimately, **TITAN's beta in perpetuity is estimated to be 1.260**.

Terminal Growth

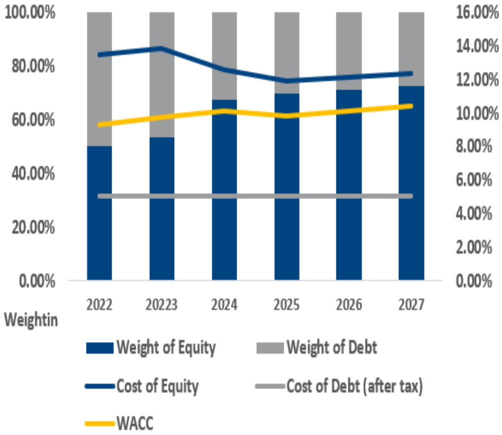
We estimated a **terminal growth rate of 1.80%** for TITAN based on the average GDP growth rate projections from both the Federal Open Market Committee (FOMC) and the European Central Bank (ECB) for the longer run. The terminal growth rate is reflective of the **cyclical nature of the cement and building materials market, which is highly correlated with the general economy's volatility**. During times of economic growth, low interest, and mortgage rates typically lead to increased housing starts and infrastructure programs, resulting in better industry performance and vice versa. As a

Figure 20: TITAN's Bottom-Up Beta

Bottom-Up Beta	Values (€ '000s)	Beta
TITAN Operations	1,889,369.45	0.804
TITANCash	79,882.00	0
TITAN Company	1,969,251.45	0.771
Bottom-Up Beta of operations	1.458	
Bottom-Up Beta of the company	1.399	

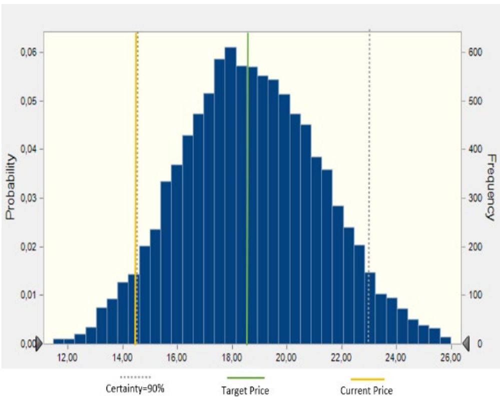
Source: NYU Stern, Team Analysis

Figure 21: WACC and WACC Components



Source: NYU Stern, Team Analysis

Figure 22: Monte Carlo Simulation



Source: Team Analysis

Figure 23: Comparable Companies Analysis

Ticker	EV/ Revenue	EV/ EBITDA	P/E	P/B
CEMI.MI	0.76x	4.11x	7.85x	0.91x
VCTP.PA	0.85x	5.50x	6.98x	0.44x
HOLN.S	1.75x	7.70x	12.18x	1.06x
CCB.CN	1.00x	5.76x	13.44x	0.52x
AKCNS.IS	0.87x	5.27x	8.40x	-
HEIG.DE	0.92x	5.69x	8.60x	0.65x
CRH.L	1.16x	7.09x	13.51x	1.65x
CIMSA.IS	0.83x	5.23x	5.78x	-
BZU.MI	0.96x	5.07x	8.10x	0.71x
TITC.BR	0.82x	5.64x	7.90x	0.63x
Median	**0.92x**	**5.50x**	**8.40x**	**0.71x**
Implied Prices	**19.12 €**	**15.46 €**	**14.40 €**	**15.37 €**
Weightings	**25%**	**25%**	**25%**	**25%**
Implied Share Price	16.08 €			

Source: Refinitiv Data, Team Analysis

result, the 1.80% growth rate reflects our expectation of the long-term average performance of TITAN within this industry.

Weighted Average Cost of Capital (WACC)

For TITAN, a **WACC of 9.29%** (Figure 21) was calculated, using the **current weightings of 50.26% for Equity and 49.74% for Debt** (Appendix 6.1 – WACC). WACC breaks down to a **Cost of Equity of 13.46%** and an **after-tax Cost of Debt of 5.08%**. The **Cost of Equity** was calculated using the **CAPM approach**, which involves **a Risk-Free-Rate of 3.05%, TITAN's beta of 1.399**, and the company's **Equity Risk Premium of 7.44%**. The most appropriate Risk-Free-Rate for TITAN was considered a Revenue-Weighted average between the real Risk-Free-Rates of the US and EU, which comprise the biggest and most solid percentage of total Revenue and additionally, these are the main areas of TITAN's equity holders' origin. In our valuation, as a real Risk-Free-Rate, **we designated the 10Y Treasury Bond yield minus the corresponding default spread**, which is based on Moody's ratings. Similarly, we ended up with an Equity Risk Premium of 7.44% by averaging out the Equity Risk Premiums of the US and EU with the regional revenue. Turning to the Cost of Debt of 5.08%, a formula was used, that suggests adding the company's credit default spread to the Risk-Free-Rate. Throughout the examining period, it is assumed that the WACC is going to fluctuate and thus the weightings used In WACC projections are based on the forecasted book value of Equity and Debt. Furthermore, in order to maintain a notion of seasonality, Risk-Free Rates are projected to follow the expected Federal Funds Rate yearly BPS changes, based on the Federal Funds Rate Futures.

Federal Funds Rate Futures

We assume that the risk-free rate will follow the course of the corresponding bond yields of the US and EU throughout the examining period. Given that there is no effective way to estimate bond yields for future years, we assume that the corresponding bond yields will fluctuate according to their biggest influence, namely interest rates. **To maintain a notion of the market expectations, a monthly average of the Federal Funds Rate Futures was used for each year**. In this way, instead of decreasing during the examining period, which is what FOMC and ECB projections indicate, the risk-free rate showcases a mild increase until FY2023 and a significant decline throughout FY2023-2025. During FY2025-2027 there is a clement upside, namely from 1.51% to 1.99%. In perpetuity, we assume that the Federal Funds Rate Futures should match the long-term interest rate target, which is 2.5%. Hence, the risk-free rate displays a decline to 1.22%. **These fluctuations are due to the fact that interest rates do not follow a solid course into perpetuity, but rather change in regard to the cyclicality of the economy and this is depicted in the Federal Funds Rate Futures**.

Risk-Free Rate	2023	2024	2025	2026	2027	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%**

Optimal Capital Structure

Based on our valuation and given the management's performance, TITAN is projected to approach its optimal capital structure in the long-term horizon and thus maximizing the firm's value. In particular, based on different D/ E scenarios, TITAN's capital structure alters and in correspondence to that, WACC components and ultimately WACC. **The optimal capital structure includes a D/E at the level of approximately 40%, which will minimize the WACC, specifically 8.72%** (Figure 15).

Monte Carlo Simulation

The results of the Monte Carlo Simulation provide robust validation of our valuation. The simulation (Figure 22), after performing 10,000 iterations utilizing various scenarios and inputs in accordance with our assumptions (Appendix 1 Assumptions), generated a range of potential outcomes. The results indicate a **95.34% probability of the potential share price surpassing the current market price**, while there is a **4.66% probability of a downside**. The variables with the greater impact on the output are the EBIT Margin and the Terminal WACC, followed by CapEX and D&A (Appendix 6.3 – Monte Carlo Simulation).

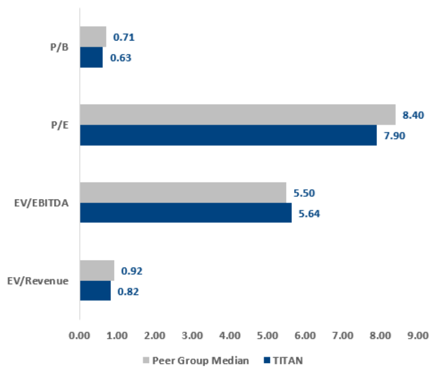
Comparable Companies Analysis (CCA)

Our analysis includes a comparison between TITAN's valuation multiples and a selected group of peer companies. This comparison was based on the following criteria: (i) **Industry Leaders,** as they provide a more accurate representation of the risks and opportunities within the Cement industry, (ii) **Similar Market Capitalization**, for a more precise comparison of TITAN's share price position, and (iii) **Comparable market share** in TITAN's operating regions, to demonstrate TITAN's competition in its respective regions (Figure 23). Taking these factors into consideration, the result of the multiple analysis is an **implied price of €16.08 per share** derived from a one-year weighted average forward multiples of 0.92x EV/Revenue, 5.5x EV/EBITDA, 8.4x P/E and 0.71x P/B ratios (Figure 24) resulting in a **10.89% potential upside** for the company's share price (Appendix 6.4 - Comparable Companies Analysis).

Discounted Dividend Model (DDM)

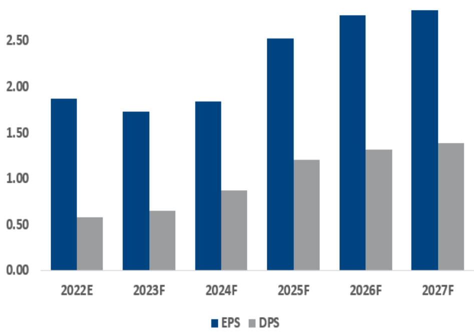
The DDM implies **a €14.15 price per share**, representing a **2.41% downside** from the current market price, and a **4.53% dividend yield (2023F)** resulting in a total of **2.12% upside**. TITAN's dividend policy includes cash dividends and a considerable amount of share buybacks. In 2022, the Board of Directors (BoD) proceeded in a share capital decrease of €200M which will be returned to shareholders gradually in the form of dividends in the upcoming years. The company has spent €23.3M in 2022 alone and is projected to spend an additional €13.78M in 2023, in addition to the dividend

Figure 24: 12mo Forward Metrics



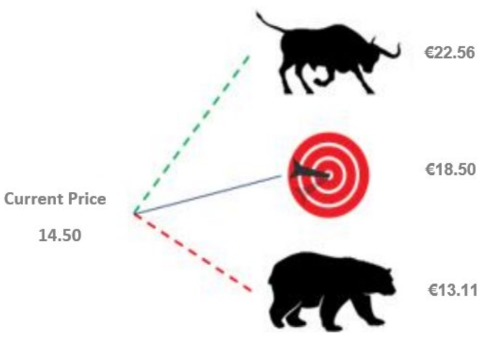
Source: Refinitiv Data, Team Analysis

Figure 25: Dividend Policy



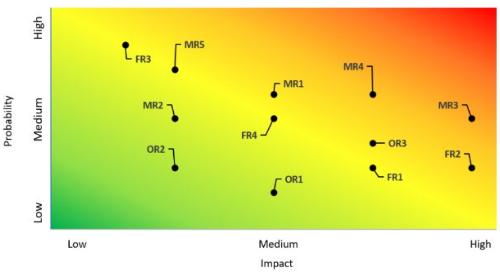
Source: Team Analysis

Figure 26: Scenario Analysis



Source: Team Analysis

Figure 27: Risk Impact-Probability Plot



Source: Team Analysis

returns. The **payout ratio of 47.52%** (Figure24that is implemented in the DDM has been calculated by factoring in the expenditures per share from share repurchases and dividend returns in 2021, as **TITAN aims to maintain a stable dividend policy** with a target of +/-5% annual dividend growth in the short-term. Based on our analysis, net profit is projected to rise in 2025, accompanied by an increase in dividends. Team analysis conducted two sensitivity analyses, one for the payout ratio and another between the WACC and the long-term growth rate. The resulting implied price range was between €11.09 to €17.24 and €12.37 to €16.82, respectively. The long-term growth rate used to calculate the terminal value is consistent with that used in the DCF model (Appendix 6.5 – Discounted Dividend Model).

Technical Analysis

The daily chart analysis of TITAN's share price suggests that the price trend experienced a shift following an accumulation phase and an upward movement. From May 21, 2021, the price trended downwards, which was validated by the break of the 16.12 price level and a cross below the 100-day moving average. During the downtrend, lower peaks and troughs were observed, with resistance noted at both the trend line and the 100-day moving average. However, on November 4, 2022, the price broke above the average and the trend line, resulting in an equal high with the previous peak and a higher bottom. This event marked the beginning of an upward trend that was confirmed on January 9, 2023, following a break of the 12.56 structure level. The price movement has also been in line with the Fibonacci Retracement levels, **suggesting a positive trend**, as shown in the diagram below.

Scenario Analysis

In addition to our base case analysis, we conducted comprehensive bull and bear scenario analyses incorporating a variety of assumptions (Appendix 1.1 - Assumptions). Our **Bull scenario** analysis revealed a potential target price of **€22.56 per share**. Conversely, the **Bear scenario** analysis indicated a potential target price of **€13.11 per share** (Figure 26).

INVESTMENT RISKS

Market Risks

Inflation Risk (MR1)

Following the Covid-19 crisis, central banks' subsequent accommodative policy combined with the Ukrainian war and the following energy crisis, created a global inflation surge since late 2021. Throughout 2021 and 2022, TITAN recorded higher costs of sales, lowering the profit margins of the company while increasing the nominal value of receivables and payables. **Valuation Impact:** An increase of 5% in raw materials for the next 3 years, due to persisting inflation, lowers our valuation by 6.05% (from €18.50 to €17.38). **Mitigation**: TITAN applies its pricing policies in a mild and customer-friendly way and in accordance with the current business conditions, in order to preserve margins at a sustainable level.

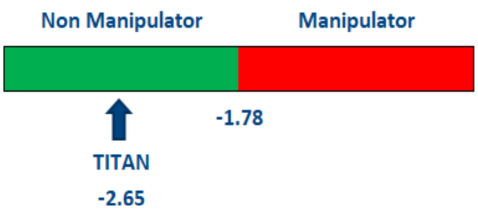
Hyperinflationary Environment Risk (MR2)

One of the most important concerns for TITAN is the Turkish debt and currency crisis, which intensified in 2022. Turkey's annual inflation rate is estimated at around 57.68%, raising concerns regarding asset and revenue underestimations and high interest rates. **Valuation Impact**: The Company will experience impairment loss recordings due to asset and revenue value underestimation. **Mitigation**: AS 29 was necessarily implemented for currency readjustments in FY2022. Furthermore, TITAN's strategy can focus mainly on exporting the products produced in the Eastern Mediterranean to other countries of operation taking advantage of the lower COGS and covering higher product demand needs, especially in the US.

Rivalry Risk (MR3)

TITAN is operating in mature markets, and even though that locally holds a high market share, its competitors constitute of well-established companies which maintain higher market capitalization and larger production capacity. Additionally, Chinese and Indian cement companies (main rival markets) hold around 60% of the global cement and concrete production. This fact combined with major mergers and ventures (Holcim-Lafarge) that disrupt market competition, creates a hostile competitive environment for TITAN threatening the stability of its market share. **Valuation Impact**: A decrease in the projected revenue by 5%, as TITAN remains a market price follower will lower our valuation by 16.38% (from €18.5 to €15.47) **Mitigation**: Thanks to its geographic diversification, TITAN efficiently reduces its region exposure to any market, sustaining its product price so as to remain competitive in the operating areas. On the same page, TITAN

Figure 28: Beneish M-Score



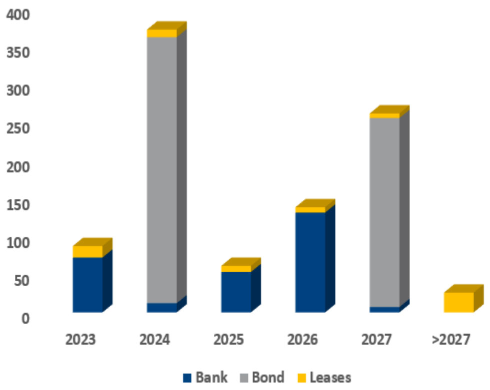
Source: Team Analysis

Figure 29: Risk Mitigation

Investment Risks	
Risk	**Mitigation**
Inflation Risk (MR1)	Applying pricing policies to maintain margins at sustainable levels
Hyperinflation Environment Risk (MR2)	Exporting the production produced in Eastern Meditteranean in other countries.
Rivalry Risk (MR3)	Geographically diversified, expanding in new markets.
Energy Costs Risk (MR4)	Hedging instruments so as to stabilize its future costs and adjusting pricing policies
Market Liquidity Risk (MR5)	Emphasizing in maintaining, but also extending its financial stability
Supply Chain Issues (OR1)	Getting into arrangements to agree on fixed rates for freight rates.
Governance risk (OR2)	Considering internal controls regarding decision-making and compensation terms.
Political Risks (OR3)	Diversifying its operations, while also proceeding to local partnerships.
Credit Risk (FR1)	Trying to increase its interest coverage ratio, and reducing its D/E ratio.
Company Liquidity Risk (FR2)	Resorting to debt to maintain its cash reserves stabilized and immunizing the cash flows.
Foreign Exchange Risk (FR3)	Counterbalancing its sensitive currency positions with financial instruments.
Effective Interest Rate (FR4)	Ensuring relatively low fixed rates for refinances and hedging its short-term borrowings.

Source: Team Analysis

Figure 30: Debt Maturity



Source: Company Data

can expand its operational activities to new markets, mainly taking advantage of its presence in Brazil, through its joint venture.

Energy Costs Risk (MR4)

TITAN, as cement production and distribution include high energy-consumption processes, needs to address the issue of the ongoing energy crisis, started in 2021. As a result, the company will record in 2022 a high margin of 25% of OpEx only for energy consumption, mainly coal, electricity, and natural gas. More specifically, TITAN's operations in the Balkan area excluding Serbia and Bulgaria are exposed to high volatility of the energy market raising concerns about the profit margins of the company in this area, despite the hedging attempts that TITAN maintains to temper energy costs fluctuations. **Valuation Impact**: An increase of 5% in energy costs for the next 3 years, leads to a decrease of 10.7% in our valuation (from €18.50 to €16.52). **Mitigation**: TITAN's strategy is to use hedging instruments to stabilize its future costs and pricing in order to mitigate those risks. For Greece, the company has agreed and signed a long-term contract until 2023 with Public Power Corporation (PPC) S.A. and they are under negotiation for the expansion of the contract. In the US, the company covered 40% of the natural gas consumption for 2023. TITAN also manages its pricing policies to offset its elevated operating costs.

Market Liquidity Risk (MR5)

TITAN encounters low trading volume, which translates into high levels of volatility regarding its stock price. The double listing in Euronext and Athens stock exchange, which positively exposed TITAN to lower loan rates and lower yield debt financing, has also negatively lowered the liquidity of the stock in both exchanges. Throughout 2022 and fueled by its continuous buyback programs, TITAN was in charge of more than 20% of the total volume, particularly 21.58%. **Mitigation**: Consistency, resilience, and growth prospects will be able to increase investors' interest in the stock and subsequently increase liquidity and lead to a gradual volume stimulation.

Operational Risks

Supply Chain Issues (OR1)

Due to incremental demand in the US, and given the fact that the US economy has almost reached full capacity regarding cement production, TITAN is forced to follow a product-import strategy from other operational regions through shipping to maintain and improve its market share. Because of that, the company is exposed to risks regarding transportation delays, possibility of shipwreck, as well as financial burden from exposure to the freight market's fluctuations. **Valuation Impact**: An 5% increase in projected distribution costs for the next 3 years lowers the valuation by 6.32% (from €18.5 to €17.33). **Mitigation**: TITAN can get into discussions and negotiations with multiple shipping companies that can provide shipment services in the Mediterranean and Atlantic region. This way, TITAN can agree on fixed rates for freights, securing its distribution expenses from market volatility and achieving better cash flow planning.

Governance Risk (OR2)

TITAN's management consists of a one-tier structure with highly qualified executives with decent academic background and experience in business consulting and management. Nonetheless, 2 of the 6 executive members of the BoD are also stakeholders of the company (Figure 36, Figure 37). **Valuation Impact**: Regulatory checks threaten the company with additional legal expenses and loss of reputation. **Mitigation**: Under usual circumstances, Shareholders and Owners are contradictory stakeholders. As a result, the Board should consider the replacement of executives with a high qualified professional with no ownership of the company. In 2023, TITAN deputed a new President of the Group Executive Committee, Marcel Constantin Cobuz, while the former President and shareholder of the Company, Dimitri Papalexopoulos, took the Chair of BoD (Non-Executive Director).

Political Risks (OR3)

TITAN has both production procedures and sales in emerging markets, which can often introduce difficulties for the company. TITAN faces serious political implications in Egypt. In particular, the military's involvement in the construction business represents almost 75% of the total market. Apart from that, TITAN has to compete with great disadvantages compared to military construction firms. These disadvantages are attributed to the bureaucracy, unionized working force, and also the cost of land for construction, which is expected to increase by 15% during the course of the next year. Additionally, Turkey and Brazil are considered "Swing States" as political tensions and corruption are increasing market uncertainty. **Valuation Impact**: Considering risks associated with all TITAN's areas of operations, the Cost of Equity (WACC) increases by 221 bps, namely from 13.46% to 15.67%. This increase lowers our target price by almost 20%, down to €14.90. **Mitigation**: TITAN's business model includes diversifying its operations across multiple regions, while also proceeding to local partnerships/joint ventures to distribute the undertaking risk. Additionally, TITAN can also consider strengthening its relationships with the local governments.

Financial Risks

Financial Credit Risk (FR1)

Currently, TITAN Group and its senior bond issues are graded by S&P as "BB", while the Z-Score of the company remains in the gray zone throughout the examined period. The grade places the debentures of the company below the investment grade. The main factors that contribute to this are the high-risk countries where TITAN operates that display low credit quality and high market volatility. Above that, additional credit risk derives from receivables which increased nominally in 2022 due to inflation. **Valuation Impact**: A one-scale degrade to B+ for TITAN increases the WACC up to 9.87%. **Mitigation**: TITAN maintains a stable credit policy regarding the sales volume, while trying to increase its interest coverage ratio, and reduce its D/E ratio which will improve its credit rating score.

Company Liquidity Risk (FR2)

Being a company that is principally reliant on its cash flows regarding its investments and operations, TITAN's cash & cash equivalent levels are highly dependent on TITAN's performance and there is a significant risk that these levels fall below a sustainable threshold. **Valuation impact**: Given a decrease of 15% in cash for each year, our valuation's capital return decreases by 255 bps, namely from 28.14% to 25.59%, and a corresponding target price reduction of €0.36. **Mitigation**: TITAN resorts to debt to maintain its cash reserves above a certain level. In addition, they should immunize the cash flows as much as possible against any kind of fluctuations.

Foreign Exchange Risk (FR3)

Due to its geographically diversified operations, TITAN is inevitably exposed to the fluctuation of the FX market. This fact affects the company regarding both the P&L and asset evaluations. While Euro and US Dollar follow a stable trend, other currencies necessary for TITAN's transactions like Bulgarian Lev, Turkish and Egyptian Lira are more volatile. **Valuation Impact**: Given an average of the previous FX losses for each of the upcoming years, creates on average an annual financial burden for TITAN of €5M. **Mitigation**: To offset FX market fluctuations, TITAN should counterbalance its sensitive currency positions with financial instruments.

Effective Interest Rate (FR4)

The borrowing costs are expected to move even higher until 2024 and remain well above the central banks' 2.5% target in the upcoming years for developed economies. Given that, along with the high volatility of interest rates in emerging economies, like Turkey and Egypt, there is a concerning possibility that TITAN's effective interest rate and coupons display an increase. **Valuation Impact**: An increase of 5% in TITAN's borrowing costs results in an average annual increase of €16M in interest expenses**. Mitigation**: TITAN's management comprehension of the matter has led to the successful (fixed rate) hedging on 80% of borrowings, maintaining its effective interest rate stable. Given the healthy financial outlook of the company, TITAN should also take advantage of the imminent upgrade of the rating of Greek government debt and possibly actively ask for a rating update from credit rating companies.

ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG)

TITAN's commitment to transform its business into a sustainable and socially aware model is most prevalent in its actions, its 2025 ESG pledges, and global rankings published from various ESG rating companies (Appendix 7.2 – ESG Rating Agencies Scores). After thorough research, examination of the Sustainability report of the company, and by filtering data from Refinitiv's ESG report, we have determined a series of factors the cement industry focuses on and TITAN's performance on those. In a retrospective view of ESG Sores, **the company ranks 15th globally** (Refinitiv) with solid continuous progress each year (Figure 31).

Environmental Pillar

The Environmental pillar (Figure 33) constitutes a major priority for TITAN, pioneering in **its plan to keep Global Warming at the 1.5ºC level**. In a recent update in November, TITAN's environmental plan was validated by the Science Based Targets Initiative (SBTi), placing in a select few companies to be validated globally from the Cement Industry. Until 2030 the company has laid out ambitious plans to cut emissions by 35% compared to 1990 levels and reach Net-Zero by 2050. The main drivers of the environmental score we identified are i) Greenhouse Gas Emissions ii) Sustainable Energy Sourcing and iii) Waste and Water Management (Figure 32).

Greenhouse Gas Emissions

To reduce its emissions, **TITAN invests heavily in Carbon Capture, Lower Carbon Cement, and Digitization**. Currently, it is a part of two major European projects (CARMOF and RECODE) that aim to build technologies on Carbon Capture that could be applied in its plants, with the Kamari plant in Greece already being used as a pilot for the projects. Lower carbon Cement (or Type 1L) plays a key role in controlling GHG Emissions. Type 1L cement is manufactured with less clinker (the main ingredient for concrete) and a higher percentage of limestone, resulting in less energy used and thus fewer emissions for the same amount of produced cement. Digitization is an initiative where the company installs sensors, real-time optimizers, and equipment failure predictors, all connected through digital software. This technology allows the monitoring of all its assets and plants in real-time, while having the capability to predict efficiently the need for maintenance, making the production line more efficient and logistics optimization for the distribution of the products.

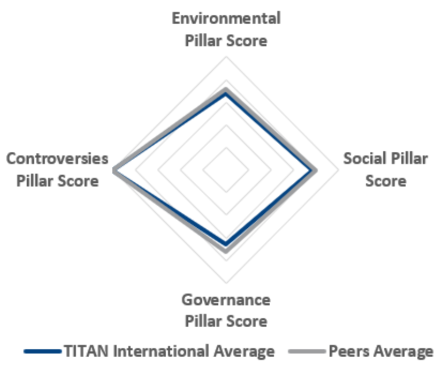
Sustainable Energy Sourcing

Although TITAN is still very reliant on fossil fuels**, heavy investments have gone into diversifying its energy mix to support its 2050 Net-Zero goals**. The two approaches to energy diversification are: Launching the "Hydrogen to Use" (H2CEM) project and incorporating alternative fuels into the production. The H2CEM project, with pilot trials in Greece and Bulgaria, aims to expand the use of hydrogen as a source of fuel for the cement plants of the company, thus also reducing the carbon footprint of the company. Alternative Fuel substitution contains the burning of "waste material" such as concrete waste, used tires, and fly ash instead of fossil fuels. Its use reached 15.1% company-wide in 2021 after a €20M investment in this initiative increased the capacity of storage of alternative fuels and plant modifications, mainly focused on Bulgaria, Greece, and the USA.

Waste and Water Management

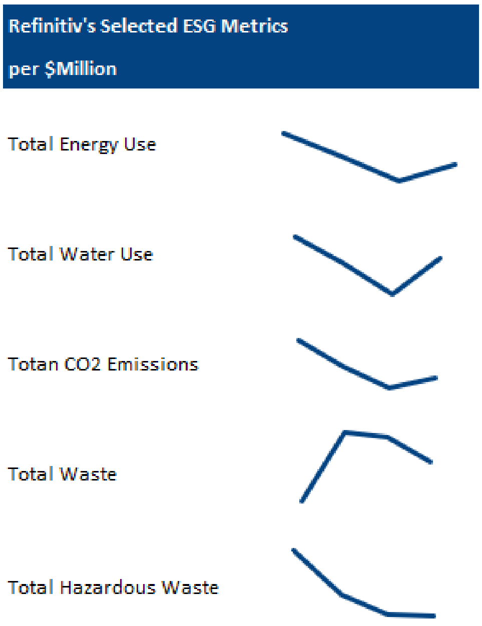
Waste and Water Management are significant metrics in the cement industry, as cement requires large quantities of water and produces significant amounts of waste. With the expansion of the production and its business, TITAN has laid down measures and has acted to mitigate both. The company started the development of the Integrated Water Management System (2010) that helps monitor the consumption of water. In 2021, TITAN reported an increase in total water consumption, rising to 43.1m m^3. Despite the increase in absolute numbers, the liters consumed per ton (l/t) of Cementitious products declined to 245.7 l/t, far below the 2025 target of 280 l/t, **largely owing to the recycling of 66% of water**, a figure that is expected to reach 70% (2025 goals). On the Waste Management side, the company has made strides towards Zero-Waste. Hazardous waste fell by 78% since 2018 and significantly transformed the methods of waste

Figure 31: ESGC Combined Evaluation



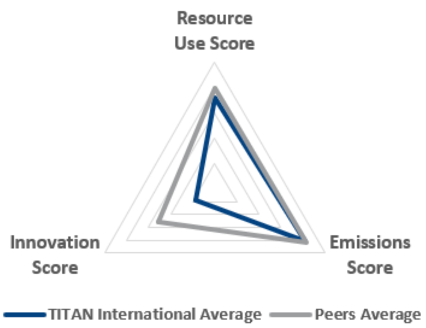
Source: Refinitiv Data, Team Analysis

Figure 32: Environmental Key Metrics (2018-2021)



Source: Refinitiv Data, Team Analysis

Figure 33: Environmental Evaluation



Source: Refinitiv Data, Team Analysis

Figure 34: Social Evaluation

Source: Refinitiv Data, Team Analysis

Figure 35: Governance Evaluation

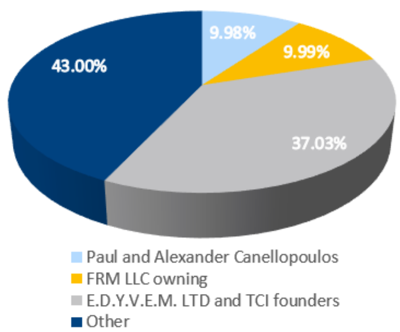
Source: Refinitiv Data, Team Analysis

Figure 36: TITAN's Board of Directors

Name	Position in BoD
Dimitri Papalexopoulos	Chairman
Kyriakos Riris	Vice-Chairman
Michael Colakides	Managing Director and Group CFO
Marcel Constantin Cobuz	Chairman of the Group Executive Committee
William Antholis	Member
Andreas Artemis	Member
Harry David	Member
Natalia Nicolaidis	Member
Leonidas Canellopoulos	Member
Lyn Grobler	Member
Yanni Paniaras	Member
Alexandra Papalexopoulou	Member
Theodora Taoushani	Member
Dimitris Tsitsiragos	Member
Bill Zarkalis	Member
Mona Zulficar	Member

Source: Company Data

Figure 37: TITAN's Shareholders Structure



Source: Refinitiv Data, Team Analysis

disposal. In 2021 all the plants located in Greece were certified as "Zero-Waste to landfill" and overall, this certification applies to 56% of the cement produced, exceeding the 50% set in the 2025 goals.

Social Pillar

Through the Social initiatives TITAN is taking, it is adding value to its employees, the BoD, and the Local Community. The main drivers of the Social Pillar that our team has identified are i) the Human Capital of the company ii) Community Engagement and iii) Product Responsibility (Figure 34).

Human Capital

A great deal of effort is going into having a resilient and well-equipped workforce by TITAN, **boasting 30% of its employees with higher degrees (MSc, PhD)**. To ensure an efficient workflow and a safe environment the company spent a total of €960,000 and 109,000 hours of training that included health and safety, well-being, and the development of existing and new skills. During Covid-19 TITAN launched 13 initiatives in 7 regions to ensure the health and safety of its workforce during the outbreaks. The company follows the ISO 45001 Health and Safety Management System in all its plants and 83% of RMC plants in Egypt, Turkey, and Europe with the US plants also complying with local relevant laws. **Diversity in TITAN's workforce is also a priority, having an increasing percentage of women employees reaching 13.36% in 2021 and 17.59% women managers, pledging to increase it by 20% by 2025.**

Community Engagement

The company has been involved in a series of actions to engage with local communities across its regions. Except from the positive outcome of its Environmental action analyzed in the according pillar above, TITAN has directly contributed to the regions it operates. During the outbreak of Covid-19, the company supported materially local communities by distributing food to families, donating medical equipment, supporting actions of tree planting, **donating €1M towards wildfire protection in Greece, and more. 2021 saw donations of up to €2.3M for improvements in local infrastructure and education.**

Product Responsibility

TITAN exhibits great responsibility in adjusting its products towards the direction of sustainability. To achieve this, TITAN has introduced in its production line Type 1L cement and Lower Carbon Cement. Therefore, the company satisfies the needs of its existing customer base, captures the trend in demand for sustainable building materials, and at the same time protects the environment and maintains carbon emissions at a low level. TITAN has also implemented policies for data Protection, Responsible Marketing and Cybersecurity with a view to protecting its clients' privacy and building a customer centric product approach. Greece was the focus of attention with multiple programs on an **innovative ready-mix concrete technique that reduces CO_2 emissions and** completed a full Life Cycle Analysis (LCA) in compliance with ISO 14040 and 15804.

Governance Pillar

The company is governed by Belgian Law, setting up many limitations and regulations to mitigate any discrepancies and fraudulent activities that could arise. The Governance Pillar is best broken down into i) Management Review ii) Shareholders Structure and iii) Corporate Social Responsibility (Figure 35).

Management Review

The Board of Directors of TITAN (Figure 36) **consists of 16 members out of which 9 are independent Directors and 5 women Directors, approximately 30% of the Boards Composition a figure that could be improved upon**. The Board's composition, diversity, and academic background, lays ground for future innovations and strengthens resilience toward future challenges. The Senior's Compensation as of 2021 is defined by various plans, the most recent of which is the Deferred Compensation Plan (DCP). It aims to align the Seniors with the long-term strategy of the company and the Shareholders, by placing emissions performance quotas that could be up to 25% of their annual compensation. Other forms of compensation include Long and Short-Term Incentives, Fixed Compensation, and others.

Shareholder Structure

Ownership Structure & Management TITAN is principally owned by 3 institutions: E.D.Y.V.E.M. public company LTD and TCI founders holding 37.03%, Paul and Alexander Canellopoulos Foundation with 9.98% and FRM LLC owning 9.99% of the voting shares. The remaining 43.00% is publicly traded and owned by institutional and individual investors. TITAN has great transparency with its shareholders and is in frequent contact with them through shareholder meetings and the Shareholder Service Department (Figure 37).

Corporate Social Responsibility

TITAN's Board has made progress in making the company Socially Responsible. It currently is a signatory to 15 out of 17 UN SDGs, with a comprehensive Plan of Action to control its emissions and environmental impact and an established Sustainability Committee to accurately report progress. **By 2025 the company plans to fully implement the UN SDGs across its plants**.

ESG Peer Group Comparison

For the best result in comparing the company with its peers, we extracted ESG reports for a total of 8 competitor companies from Refinitiv's platform. The competitors were chosen according to the same criteria that we used on our comparable companies analysis: i) Industry Leaders, ii) Similar Market Capitalization, and iii) Comparable market share in regions that TITAN operates in. According to this comparison, **TITAN ranks 6th out of 9, due to lack of Innovation, Shareholder's score, and CSR Strategy Score. However, TITAN outperforms the peer average in Product Responsibility, and Workforce Scores, with Emissions Score being comparable to its peers** (Appendix 7.1 – ESG Peer Group Comparison).

Appendix Map

Appendix 1: Assumptions

Appendix 1.1 Assumptions

DCF Base Case
Revenue: 50% Historical Growth Rate,30% CAGR per Region (researches),10% Global Cement Market forecasts,10% GDP projections.
CapEx for 2022 based on a weighted average of 60% 9M2022, 30% 6M2022 and 10% as % of revenue (weights based on the historical correlation of the components with CapEx)
Fixed D&A Charge rate (5Y Average rate) on corresponding Net Book Value of Fixed Assets plus Additions.
Revenue for FY2022 based on 9M2022, after that based on a projected annual growth for each year.
COGS will remain elevated for FY2023-FY2024, due to persisting inflation costs.
Administrative/Selling expenses: Weighted average of Percentage of Revenue and Growth Rate (50/50) (80/20).
Days receivable, days inventory and days payable remain the same in the forecasted period.
Shares outstanding determined by substracting Treasury Shares from Total Shares (as of 31/01).
Terminal growth weighted average 50% FOMC, 50% ECB.
Effective Tax Rate 17.56%, weighted average (company data).
Three refinances of two debentures (FY2024, FY2027) and one bank loan (FY2026), plus one bank loan to cover cash shortage (FY2025).
Cash and cash equivalents minimum at 70M.
Bull Scenario
The assumptions remain constant, apart from the following exception:
TITAN manages to capture a bigger portion of the demand created from the US Infrastructure bill, thus increasing revenue by 5%.
Decreased COGS/Revenue percentage to pro-inflation and energy-crisis averages.
WACC decreased by 25bps.
Debenture refinance with the same coupon.
Terminal Growth rate increased by 20bps.
Bear Scenario
The assumptions remain constant, apart from the following exceptions:
Higher COGS (23-26) (inflationatory pressures will persist up until 2026 and thus cogs are an average of 2021 and 2022).
WACC increased by 25bps.
Debenture refinance coupon 6.71% (ICE).
Terminal Growth rate decreased by 25bps.
Sixty-seven percent of Treasury Stock sold and become shares outstanding (similar percentage as the 2021 Cancellation).
Monte Carlo assumptions
The assumptions remain constant, apart from the following exceptions:
PERT distribution was used to emphasize the base case which is most likely to occur.
All Variables were stretched +/-15%.
DDM assumptions
Payout remains constant at 47.52%. To calculate the payout ratio the amount spent on share repurchases and dividends divided by the number of Shares (excluding treasury), a number we named Cost per Share. Then, we divide the EPS by Cost Per Share to get the total payout ratio for 2021.
We take only 2021 into account as TITAN is aiming to maintain a stable dividend policy.
Cost of Equity after 2027 remains at 10.59% (same as perpetual Cost of Equity WACC).
EPS growth consistenly slows down after 2027 as we approach perpetuity.

Source: Team Analysis

Appendix 2: Financials

Appendix 2.1 Income Statement

Income Statement	Historical					Projected					
in € '000s	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**

Source: Company Data, Team Analysis

Appendix 2.2 Balance Sheet

Balance Sheet	Historical					Projected					
in € '000s	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 derivativ	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 derivativ	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**
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 th	**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**
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**

Source: Company Data, Team Analysis

Appendix 2.3 Cash Flow Statement

Cash Flow Statement	Historical					Projected					
in € '000s	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)	0	-15,015	-312	-355	336	0	0	0	0	0	0
Payments for acquisition of subsidiaries, net of cash acqui	0	0	0	-330	-45	0	0	0	0	0	0
Payments for acquisition of subsidiaries and joint venture	-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 investme	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 dispo	0	4,610	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 a	-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**
Cash flows from financing activities											
Proceeds from non-controlling interest's participation in s	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 Comp	-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
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 instrur	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 instrume	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) payment	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**

Source: Company Data, Team Analysis

Appendix 3: Business Description

Appendix 3.1 SWOT Analysis

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 subjection 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.

Source: Team Analysis

Appendix 4: Industry Overview & Competitive Positioning

Appendix 4.1 Porter's 5 Forces Analysis

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.

Source: Team Analysis

Appendix 4.2 Competition Overview

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 €34.19B, 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 €32.34Band 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 €18.72B.

Source: Companies' Websites and Financial Statements, Team Analysis

Appendix 4.3 Competition 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: Companies Financial Statements, Refinitiv Data, Team Analysis

Appendix 5: Financial Analysis

Appendix 5.1

Ratios Analysis

Key Ratios	Historical								Projected					
	2014A	2015A	2016A	2017A	2018A	2019A	2020A	2021A	2022E	2023F	2024F	2025F	2026F	2027F
Profitability Ratios (%)														
Net Profit Margin	3.08	2.53	8.44	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	25.42	25.64	28.96	28.92	19.34	18.26	19.24	18.13	18.21	18.17	18.17	20.30	20.30	20.30
Operating margin	6.61	6.13	10.04	10.43	9.66	7.90	6.19	8.09	8.96	8.28	8.13	10.20	10.17	10.15
EBITDA margin	15.68	15.48	18.46	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	1.27	1.20	4.56	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	2.19	2.07	8.20	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	2.02	1.91	1.54	2.00	1.35	1.42	1.22	1.44	1.38	0.90	1.42	1.27	1.10	1.61
Quick ratio	1.05	0.96	0.92	1.13	0.75	0.70	0.76	0.74	0.66	0.45	0.70	0.63	0.54	0.77
Cash ratio	0.50	0.40	0.44	0.52	0.35	0.23	0.38	0.18	0.17	0.11	0.16	0.13	0.10	0.12
Receivables Turnover	7.02	8.61	8.31	8.02	7.87	8.35	8.64	8.13	8.38	8.38	8.38	8.38	8.38	8.38
Inventory Turnover	3.47	3.70	4.00	4.22	4.41	4.62	4.88	5.07	4.97	4.97	4.97	4.97	4.97	4.97
Payables Turnover	4.32	4.96	5.04	4.77	4.83	4.80	4.80	4.80	4.80	4.80	4.80	0.00	0.00	0.00
Cash Conversion Cycle (days)	71.00	55.86	44.58	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	3.98	5.09	6.93	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	0.24	0.25	0.30	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)	0.42	0.44	0.54	0.64	0.64	0.66	0.70	0.59	0.61	0.52	0.48	0.43	0.40	0.37
Interest Coverage	1.17	1.32	2.30	2.46	2.23	2.22	2.15	4.01	6.59	4.88	5.25	6.21	7.82	7.36

Source: Company Data, Team Analysis

Appendix 5.2

Dupont Analysis

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 complied.

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**

Source: Company Data, Team Analysis

Appendix 5.3

M-Score Analysis

The Beneish's M-Score analysis, created in 1999 by Dr. Messod Beneish, is a tool that detects if the company is committing financial fraud and especially if the company's earnings are manipulated, by using eight financial ratios through a mathematical model. For interpretation purposes, an M-Score greater than -1.78 indicates that the firm is likely to manipulate its earnings, while an M-Score lower than -1.78 proves otherwise. As for TITAN, the M-Score is far below -1.78 the whole historical and projected examined period, indicating a very low possibility of manipulated earnings.

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 Ind	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**

The formula for the 8 variable model is: M-Score= -4.84 + 0.92*DSRI + 0.528*GMI +0.404*AQI +0.892*SGI +0.115*DEPI – 0.172*SGAI +4.679*TATA - 0.327*LVGI

Source: Company Data, Team Analysis

Appendix 5.4

Z-Score Analysis

The Altman Z-Score analysis, developed by American finance professor Edward Altman in 1968, is used to verify the Company's financial health and the probability of filing for bankruptcy. A Z-Score below 1.81, indicates a high firm's probability of going bankrupt (in the next 2 years), while a Z-Score of 2.99 or above indicates that the firm is far from becoming insolvent and file for bankruptcy. TITAN seems to be in the "gray" zone, between 1.81-2.99 in the last two historical years (FY2020-2021) and will remain there in the projected years (FY2022-2027) with an upward trend towards the safe zone, indicating that it is unlikely to going bankrupt.

	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-Score= 1.2*X1 + 1.4*X2 + 3.3*X3 + 0.6*X4 + 1.0*X5

Source: Company Data, Team Analysis

Appendix 5.5

F-Score Analysis

The Piotroski F-Score was developed by Chicago Accounting Professor Joseph D. Piotroski in 2000. It is an accounting-based fundamental analysis that mainly aims to point potential buy and sell stocks, by using nine key financial ratios. The used ratios are separated in three main categories: profitability, operating efficiency and leverage/liquidity/source of funds and examines if these ratios have improved YoY. If the ratio is improved, the F-Score of the particular ratio is 1, otherwise is 0. As a result, the higher the F-Score is the better its fundamentals are, indicating a buy signal.

F-Score Indices	Historical					Projected					
	2017	2018	2019	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F
Profitability											
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
Leverage, Liquidity, Source of Funds											
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
Operating Efficiency											
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**

Source: Company Data, Team Analysis

Appendix 5.6

Graham Number

The Graham Number, developed by the value investor Benjamin Graham, is a metric that calculates the highest price that an investor should pay for a certain stock. The number uses on a per share basis, the earnings and book value of a company. A stock price below that metric indicates a buy signal while a stock price above the metric indicates the opposite. TITAN's last year stock price is below the Graham number, demonstrating a buy signal. TITAN's Graham Number for the FY2020-2021 was above the share price, suggesting a buy signal.

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 × (earnings per share) × (book value per share))

Source: Company Data, Team Analysis

Appendix 6: Valuation

Appendix 6.1

Weighted Average Cost of Capital (WACC)

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%**

Source: Company Data, Team Analysis

Appendix 6.2

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

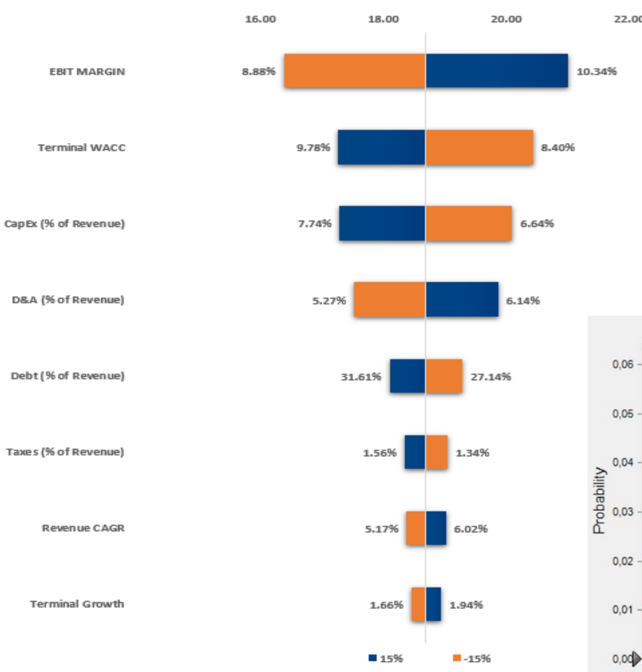
Long-term Growth \ WACC	7.59%	8.09%	8.59%	9.09%	9.59%	10.09%	10.59%
1.20%	26.91	24.25	21.97	19.99	18.27	16.76	15.42
1.40%	27.81	24.99	22.60	20.53	18.73	17.15	15.76
1.60%	28.76	25.79	23.26	21.09	19.21	17.57	16.13
1.80%	29.78	26.63	23.97	**21.69**	19.72	18.01	16.51
2.00%	30.88	27.53	24.72	22.32	20.26	18.47	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

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**

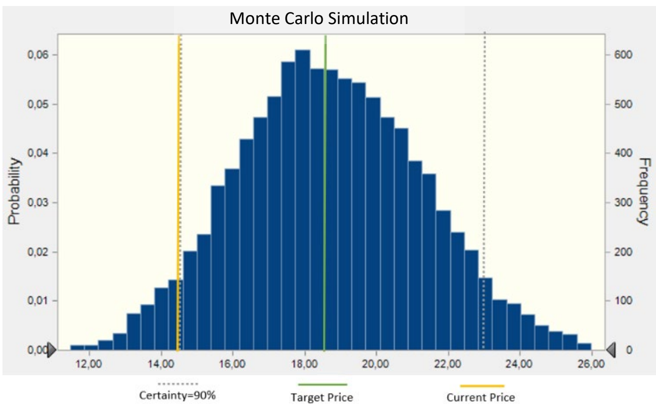
Source: Company Data, Team Analysis

Appendix 6.3

Monte Carlo Simulation



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



Simulation Statistics	
Iterations	10,000
Minimum	10.57
Maximum	28.98
Mean	18.73
Median	18.63
Std. Deviation	2.59
Variance	6.70
Skewness	0.16
Kurtosis	2.89

Source: Company Data, Team Analysis

Appendix 6.4 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	Itay	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	4.50%
Dividend Payout Ratio	47.52%
Return on Assets	4.07
Return on Equity	7.92

Source: Company Data, Refinitiv Data, Team Analysis

Appendix 6.5 Discounted Dividend Model

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

Long-Term Growth	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

Source: Company Data, Team Analysis

Appendix 7: Environmental, Social, Governance (ESG)

Appendix 7.1 ESG Peer Group Comparison

		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		B+	B	A-	A	B+	A	A	B+	B-

Source: Refinitiv Data, Team Analysis

Appendix 7.2 ESG Evaluation Scoring Scale & Rating Agencies Scores

ESG Valuation Scoring Scale	
A+	A: Strong Compliance with ESG criteria
A	
A-	
B+	B: Medium Compliance with ESG Criteria
B	
B-	
C+	C: Weak Compliance with ESG Criteria
C	
C-	
D+	D: Minimum Compliance with ESG Criteria
D	
D-	
F	F: Non-Compliance

Rating Agency	Score
CDP	A-
MSCI	AA
Sustainalytics	26.9
Moody's ESG Solutions	56
Refinitiv	70
S&P Global ESG Scores	59

Source: Company Data, Team Analysis

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