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Estudio de Caso

Economic-financial evaluation of a cement company: Cementos Pacasmayo

Evaluación económico-financiera de una compañía de cementos: Cementos Pacasmayo

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Abstract

Purpose: The aim of this paper is to address a company valuation procedure by explaining the steps that must be followed from an economic-financial perspective.

Design/methodology: We employ the study case methodology to fulfill all the procedure stages. Specifically, we analyze the Peruvian cement company "Cementos Pacasmayo". A 10-year discounted cash flow (DCF) is presented and brought to present value using a discount rate (WACC) composed by the cost of debt and the cost of capital of the-company.

Findings: We can conclude that the evaluation process should always include the country, industry and company.

Practical implications: Our study provides useful implications for management. On the one hand, it is important to highlight the subjectivity to predict some parameters or doing assumptions. On the other hand, it is important to understand and know a good procedure to valuate a company as an insider or a potential investor.

Originality/value: The proposed model consists of the economic studies of the country, sector and company, which allow the appraiser to specify certain parameters or assumptions for the elaboration of a model that approximates the value of the company.

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Resumen

Propósito: El objetivo de este trabajo es abordar un procedimiento de valoración de empresas explicando los pasos que se deben seguir desde una perspectiva económico-financiera.

Diseño/metodología: Empleamos la metodología de estudio de caso ya que nos permite cumplir con todas las etapas del procedimiento. Específicamente, analizamos a la cementera peruana "Cementos Pacasmayo". Así, se presenta un modelo de flujo de efectivo descontado a diez años y llevado a valor presente utilizando una tasa de descuento (WACC) compuesta por el costo de la deuda y el costo de capital de la mencionada empresa.

Resultados: Podemos concluir que el proceso de evaluación siempre debe ser del país, industria y empresa.

Implicaciones: Nuestro estudio proporciona implicaciones útiles para profesionales y gerentes. Por un lado, es importante resaltar la subjetividad para predecir algunos parámetros o hacer suposiciones. Por otro lado, es importante comprender y conocer un buen procedimiento para valorar una empresa como insider o inversor potencial.

Originalidad/valor: El modelo propuesto consiste en los estudios económicos del país, sector y empresa, que permiten al valuador ejercitar ciertos parámetros o supuestos para la elaboración de un modelo que aproxime el valor de la empresa.

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INTRODUCTION

The economic evaluation of companies has always been an essential tool for decision-making by management, investors, shareholders or stakeholders. Several methods can be applied, varying according to each company conditions, characteristics and, obviously, the preference of the appraisers.

Yánez and Pazmiño (2015) argues that "in order to be able to analyze or diagnose the current situation of a-company, it is important to start from the external environment for a better vision of the factors or forces that have a considerable impact on the daily activities of the company". Thus, the relevance is given to being able to analyze the external environment as the main source of information to economically evaluate the company.

Kotler (2008) defines the economic environment as factors or forces that affect purchasing power, and consumer spending patterns. In other words, the situation and trends of the general factors or forces of the economy are essential to the success of a company.

The construction industry in Peru has grown a lot in recent years, becoming very attractive for many stakeholders since the changes happened in 2014. Within this industry, cement manufacturing companies show some relevant specificities; namely, they hold an adequate balance between the level of investments and the economic update. Thus, their strategic planning focuses on diversifying the sources of income by increasing the supply of a particular product.

However, the economic analysis is not the only factor to evaluate the business situation of the organizations. A financial analysis must also be carried out since it seeks to investigate the existent relationships between the different items in the financial statements (Guardo, Vergara & Huertas, 2018). Managers can take this information, assess the financial position and make advantageous decisions. All the decisions made by managers, whatever their area or level of responsibility, can be manifested with more or less intensity in monetary terms and have a great impact on the financial situation (Perez, 2015).

Hence, the present case study explains the industry analysis methodology, and uses the information publicly provided by Cementos Pacasmayo. Additionally, an economic and financial valuation of the company using the discounted cash flow method is carried out.

LITERATURE REVIEW

There are several ways to evaluate the economic and financial performance of a cement company. Some key factors to consider include:

- Revenue and profitability: Looks at the company's revenue and net income (profit) over time to get a sense of its financial health. You can also calculate key profitability ratios, it should be noted that profitability is the result

of placing resources in investment activities (Rehner & Rodriguez-Leiva, 2017), such as return on assets (ROA), according to Wijaya (2019) is an analytical technique commonly used to measure the level of effectiveness of a company's overall operations. Alshammari (2017) mentions that ROA indicates management's ability to use company resources and generate profitability, and return on equity (ROE). According to Brigham and Houston (2018), this ratio is net income to equity common stock, measuring the return on investment of common stockholders. However, Alshammari (2017) mentions that ROE reflects management's effectiveness in using shareholder capital, while neglecting financial leverage. For these reasons, it should be noted that ROA reflects the profitability of the company as a whole, regardless of its source of financing. ROE, on the other hand, reflects the company's return on equity, so it takes into account how the company is financed (either debt or equity).

- Debt levels: Examines a company's debt levels to understand its financial leverage. High debt levels can be a concern, as they can increase a company's risk and limit its financial flexibility. This is a necessary indicator to consider, because it shows the level of leverage in the short and long term, in addition to the borrowing capacity of an organization (Rodríguez et al., 2020). This is why by properly studying debt accounting, it is determined when and how any organization can be leveraged at a given time, appreciated only from a financial point of view (García, 2018). That is why the level of indebtedness is important because the ability of a company or individual to meet its financial obligations and obtain additional financing in the future arises. A high level of debt may indicate a higher risk of default and may increase the cost of debt due to higher interest rates. On the other hand, a low level of indebtedness can provide greater financial flexibility and lower risk of default. Yaghoubi and Keefe (2022) sustain that in the face of economic volatility it is better to maintain a conservative debt structure to avoid future losses. It is also important to note that debt levels can fluctuate over time as the total debt and net worth or income varies.
- Cash flow: Looks at cash flow statements to see how well a company is making cash and how it is using it. Positive cash flow is important to a company's ability to pay its bills and invest in future growth. Likewise, cash flow is a financial tool that reveals the liquidity of the company (Mayor & Saldarriaga, 2016) because it shows relevant information for decision-making at management level. Gupta and Mahakud (2019) mention that effective cash flow is crucial for companies' investment decisions. However, the lack of control over cash flow has been one of the factors by which some companies have failed (Escobar & Ospina, 2017). It's worth noting that cash flow is not necessarily the same as a company's net income, as net income also includes other factors, such as changes in asset values and tax accruals. On the other hand, cash flow is a fundamental indicator to assess the long-term financial viability of a company or individual and to make investment or financing decisions. Afiezan, Wijaya, and Claudia (2020) indicate that a healthy company has cash available to use in its debt policy, this can be seen in the amount of free cash flow of a company. Ramadhani and Barus (2018) found that the relation between free cash flow and debt policy is significantly negative, while the research by Oktariyani and Hasanah (2019) cannot prove that the effect of free cash flow is not significant on the debt policy.
- Market share: Looks at the company's market share in the cement industry to get an idea of its competitive position. A company with a large market share may have more bargaining power with suppliers and customers. According to Spurlin (2022) management must allocate resources to gain participation in the sector where their companies are located, since this can bring an increase in profits. Lado-Sestayo and Vivel-Búa (2019) conclude that those situations aimed at improving market share are a way to improve results. On the other hand, Yeap (2011) finds that a greater market share can have strategic consequences, namely by allowing companies to fixing prices in relation to the competitors. That is why market share is an important measure for companies as it can be an indicator of their success in the market and their ability to compete with other participants. In addition, a high market share can give a company a greater scale and bargaining power. However, it is important to note that market share can fluctuate over time due to changes in market demand and competitive supply.

- Valuation metrics: Use valuation metrics, such as the price-to-earnings (P/E) ratio and the price-to-book (P/B) ratio, to evaluate the company's stock price relative to its earnings and book value. The market approach, where multiple valuations are found, is used for its practicality and simplicity. This methodology seeks to estimate the value of a business based on multiples of comparable companies listed on the stock market (Lizarzaburu et al., 2020)

It is also important to consider the overall economic and industry conditions in which the company operates. Factors such as demand for cement, competition, and costs of raw materials can all affect the company's financial performance.

EVALUATION PROCESS

The valuation of a company causes controversy, since exogenous and endogenous, tangible and intangible, controlled and uncontrolled, known and unknown variables are involved (Urzúa & Venegas, 2019). Likewise, the company valuation process has an important subjective component since it depends a lot on who performs it or on what is to be valued. However, all valuations must have certain principles and relationships in their process. Without these two characteristics, it is impossible to achieve a valuation that is consistent and can truly reflect the value of the company (Damodaran, 2012). From a practical perspective, Milei (2007), analyze which models are usually used to evaluate a company and which are commonly significant. For their part, Gutierrez and Toro (2019) indicate that there are multiple methods of valuing companies, some considered conceptually incorrect and others more appropriate to the reality or particular need of each company. The referred are based on different assumptions about the elements that affect prices, although it is also true that they share some common characteristics.

In our analysis, the evaluation process will follow an economic-financial perspective. Accordingly, it is a fundamental tool within the development process of companies, it allows all financial administrators to clarify their doubts regarding the value of the company in a negotiation, make decisions at different levels of the organization to optimize the course and improve the efficiency of east (Rios, Marulanda, & Correa, 2019). This process, commonly known as self-assessment, allows managers to better understand their company and detect strengths and weaknesses to efficiently achieve their goals (Martínez, 2007). Consequently, the company can reach higher profitability as well as managing financial resources for an optimal level of debt for the company

The economic-financial approach requires the evaluation of four areas:

- Liquidity and solvency, typical in the financial analysis, refer to the ability to meet various short and long-term financial commitments.
- Profitability relates to the results achieved in a period by obtaining resources and productive activity affects the growth of the company and the performance obtained from the use and the various production factors in each period. (Ruíz & Peña, 2006)

According to Fernández (2016), there is no event in the external environment such as economic, political, social or technological that ceases to have an impact on the strategic performance of the company. More and more organizations have a comprehensive analysis to analyze the impacts that these variables may have on the company. Recognizing the opportunities and threats that impact the company can be used advantageously to achieve objectives, and this recognition is a challenge for management because a strategy cannot be created or adapted without first identifying the growth potential and usefulness of the promising opportunities. This leads managers to analyze the environment, make a timely decision and, in turn, recognize the opportunities that exist to increase the monetary value of the company (Ramírez, 2017).

Although it exists a variety of models to determine a company's value, the discounted cash flow method will be used (Martínez, 2011). Additionally, the multiples approach is utilized to verify whether the outcomes of the discounted cash flow method are comparable in relation to market value (López, 2013).

STUDY OF THE ECONOMIC SITUATION

From a valuation perspective, Damodaran (2012) points out that it is necessary to know the

narrative of the companies and hence, studying the economic situation is considered a key success factor for company evaluation. This study helps to estimate or make certain assumptions for the projection of prices, costs and quantities of future market.

Understanding the setting in which a company operates, gives the advantage of planning, anticipating problems, and designing more specialized strategies for consumers, as well as knowing the economic perceptions that they have at the time of purchase (Grande, 2006).

Analysis of the regional and national environment

Peru's economy has grown steadily in last decade. The economy has had an average growth of 5.9% per year, the second-best performance in terms of growth in the Latin America and the Caribbean region. In the same period, it doubled its per capita income much more than the average of the region, where the increase in this figure was only half. Likewise, inflation levels showed an adequate behavior, with an average value of 2.9%. This occurred thanks to macroeconomic policies and structural reforms in different areas.

In 2017, GDP was affected by changes in the mining sector and by the stoppage of large infrastructure projects, as well as weak private investment, as a result of investigations into corruption cases linked to Brazilian construction companies, and to the negative effects caused by El Niño Costero (a climatological phenomenon which yearly affects the northern coasts of Peru during May). Likewise, the political crisis that Peru went through in December, caused by the motion to vacate President Pedro Pablo Kuczynksi because of the investigation into the Odebrecht case, slowed the growth of public investment for this month. However, the president survived the vote for the presidential vacancy and reformulated his cabinet on January 9, 2018. According to the projections of the Peruvian Central Bank (BCRP, 2017), the economic growth of the year 2018 would be 4%, assuming the recovery of public and private investment in line with the unlocking and resumption of investment projects and the increase progressive expenses for the reconstruction process associated with El Niño Costero (Multiannual Macroeconomic Framework 2018-2021). According to the World Bank (2017), growth projections are vulnerable to external shocks on commodity prices, a higher level of slowdown in the growth of the Chinese economy, the volatility of capital markets, changes in United States monetary policy, as well as natural risks (Mejía, 2017). Finally, growth requires structural and fiscal reforms to improve productivity, reduce informality, and increase the efficiency of public services.

Analysis of the construction sector

The construction sector is one of the most dynamic sectors of the Peruvian economy, since its activities involve and generate mobility in other industries, in such a way that the growth of the sector is associated with the development of the country's economy. The correlation coefficient between the construction sector and GDP according to ASOCEM (2017a) was 0.77. It is important to highlight the characteristics of the activity of construction companies and their workers, since they differ from the other sectors of the economy in two basic aspects:

- They are permanently mobile because the workplaces have a defined space and time, since when the work ends, workplaces disappear, and the builder moves to another location.
- The products of construction companies are heterogeneous.
- The projects are often sold or offered before being built, to finance said construction.

Due to these characteristics, construction companies have a high level of business risk. In addition, the activity and that of its workers fluctuate according to the economic situation of the country, and the levels of investment both private and governmental (national or foreign). The activity of construction companies is decentralized, since it is carried out in different parts of the country. On the other hand, it has a multiplier effect on the economy, as it generates new jobs. According to Scotiabank (2015), the construction sector contracted in 2015 mainly due to less investment in mining projects, due to the stoppage and / or completion of investment in large-scale projects (shopping centers, business centers, educational facilities etc.

According to Baldeira and Hovenko (2016), Chile, Colombia, Mexico and Peru are countries that will continue with increasing demand for construction,

mainly deriving from government funded projects. Likewise, they would not present problems in case of requiring financing since they are among the economies with the lowest Debt-GDP ratio in the world. In the Peruvian case, the construction sector will continue to expand given various factors such as the country's stable finances, its large young population, the projected growth of GDP according to the IMF, the urbanization ratio of 78% that accommodates more construction activity. Besides, with a population of 30 million, the low rate of unemployment, inflation and Debt-GDP, the country presents a favorable panorama for construction.

Analysis of the cement industry

According to Baldeira and Hovenko (2016), the production of cement is characterized by having high sunk costs and little flexibility, due to the high initial capital needs to start construction of a cement manufacturing plant, which can take around 3 years and requires of-certain installed capacity. Likewise, they depend largely on the availability of raw materials near the plant. The technology used for the manufacture of cement is in a state of maturity and the process is generally standardized. However, cement companies develop novel products by changing the traditional formula with additives or aggregates, depending on the final use of the cement products.

The demand for cement is related to GDP, population growth, urbanization, quality of infrastructure and the ability to finance public and private investments (Baldeira & Hovenko, 2017a). Internal consumption of cement is an important indicator of economic activity, since it measures the evolution of the construction sector; in this case, the correlation of these variables of 0.99 (ASOCEM, 2017b).

Since 2014, there have been decreases in domestic cement consumption and local shipments. This is due to the decrease in self-construction spending, the reduction in investment in office buildings and in mining projects, and the decrease in-government spending that affected the progress of public projects. Similarly, the presidential change of 2016 also affected public spending. Public and private investment decreased by 6.1% and 0.5% respectively. In the period January - September 2017, the construction sector decreased by 0.72% because of the drop in domestic cement consumption by 1.65% due to the lower investment in public and private projects (real estate projects, shopping centers, among others), while since June 2017 a recovery is shown.

In recent years, the Peruvian cement industry has developed an investment program, modernizing both the technology used in its plants and the clinker and cement manufacturing processes, and at the same time, making strategic acquisitions or opening new manufacturing plants to increase production capacity and improve its distribution models. Currently, the industry is large enough to face aggressive construction programs, since its capacity would allow to almost double its current production. As of 2017, production capacity reached 17,540 Metric Tons (MT), while cement production was 9,980 MT. The result was a utilization ratio of 57%.

UNACEM in 2016 had the highest participation at the national level in the total cement shipments of local producers, around 5,109 ~~thousand~~ MT (47.1%). In second place is Yura, with 2,250 MT and a 20.7% share of total cement shipments. Together, Cementos Pacasmayo and its subsidiary Cementos Selva achieved 2,285 MT (21.1%).

Demand is tailored to housing and infrastructure needs of people and companies living in the area of influence. It is subject to local growth and the types of economic activity that take place there.

Analysis of the current situation and projections for the northern region

The northern region of the country is made up of the departments of Tumbes, Piura, Lambayeque, La Libertad, Cajamarca, Amazonas, Loreto and part of Ancash. In this area, the demand for cement is divided into 60% for self-construction and 40% for the construction of mega projects of public and private class. In addition, it concentrates 23% of the population and 15% of the GDP of Peru. There, economic activities such as agriculture, fishing and commerce are developed. It currently represents 20% of cement shipments. It has a high potential for expansion, both in the self-construction segment and in infrastructure.

- Self-construction: The self-construction segment will be estimated based on the number of municipal licenses granted for the construction of single-family and multi-family homes in the national territory. As can be seen

in the graph, it is an upward trend, based on the deficit of 1.9 million homes in the country, the increase in the purchasing power of the population and the urbanization rate of 72%.

- **Public and private investment in infrastructure:** Firstly, an increase in the demand for cement in the northern area is expected because of the execution of the "Plan de Reconstrucción Integral con Cambios", which seeks to revert as soon as possible the damages caused by El Niño Costero. Investment in reconstruction represents a total of $ 7.9 billion (S / 23.3 billion), which is about 4% of GDP. The five regions that received the greatest impact, namely Piura, Lambayeque, La Libertad, Ancash and Lima, represent 80% of the resources used, being the reconstruction spending around 18% of the joint GDP of those regions.

Of the total budget, 75% of the resources (around S / 17 trillion) will be allocated to replace and rebuild the damaged areas, while 23% (S / 5 trillion) will be used for prevention and urban development, and 2% (S / 450 million) will go to improve the management capacities of the executing units of the PIRCC. Specifically, of the reconstruction work, 50% (S / 8.7 billion) will go to the transportation sector, 14% (S / 2.4 billion) to education, 9% (S / 1.6 billion) to housing, 8% (S / 1.4 billion) to sanitation, 7% (S / 1.6 billion) to agriculture and irrigation, and finally, 4% (S / 742 million) to tracks and sidewalks.

Taking into account both Cementos Pacasmayo's target markets and the reconstruction budget of around S/17.1 billion that will be allocated to the regions of Piura, La Libertad, Ancash, Lambayeque, JP Morgan (2017) estimates that the demand for cement can reach 1.1 billion tons in 3 to 4 years, or 280 to 380 thousand tons per year.

The country's total infrastructure Project portfolio is USD 33 billion, including $ 15 billion from the Private Investment Promotion Agency (ProInversion, 2018). Between 2016-2025, total investment could reach $ 159.6 billion to fill the infrastructure gap. The goal is to sign $ 4.8 billion in public-private partnership projects in 2018.

Additionally, the PCR of Cementos Pacasmayo and subsidiaries SAA (2016) report shows that in the northern region of Peru, three major projects are in execution stage and in which Cementos Pacasmayo has been chosen as cement supplier. The projects are Talara Refinery, the Longitudinal Highway of the Sierra and Alto Piura and the Huacrachuco-Sausacocha highway

CASE STUDY

Description of Pacasmayo cements (CPSAA)

Cementos Pacasmayo (NYSE: CPAC; BVL: CPACASC1) is a Peruvian company, founded in 1957 which manufactures and sells cement, quicklime, aggregates, ready-mix concrete and other construction materials. The Company's operations are concentrated in the Northern Region of Peru. CPSAA is part of the Hochschild Group ("The Group"), one of the country's largest conglomerates, which has two business divisions: i) mining division (Hochschild Mining; LSE: HOC), engaged in gold and silver extraction; ii) industrial division (Cementos Pacasmayo). The Group was established in 1911 and began operations in Peru in 1925. Currently, the company has 3 cement plants located in: Pacasmayo (2.9MMT), Piura (1.6MMT) and Rioja (0.4MMT), which represents a cement production capacity of 4.9 MMT. In addition to eight precast concrete plants, seven ready-mix concrete plants, one diatomite brick plant, one lime plant, and three aggregate plants, strategically distributed throughout major cities in the northern region for better access to its base of customers. In addition, CPSAA integrates its production and marketing activities through its subsidiaries, strategically located in major cities in the north of Peru:

- Cementos Selva SAA: dedicated to the production and commercialization of cement, quicklime and other related materials near the Peruvian jungle. It owns all the outstanding shares of Dinoselva Iquitos SAC, which is the distributor of construction materials and cement for products processed at the Rioja plant. In 2013, its cement production capacity increased from 200 TMT to 440 TMT
- Distribuidora Norte Pacasmayo SRL (DINO): Operations focus on the sale and distribution of cement and cement products from Pacasmayo (main supplier) and third parties.
- ET Guadalupe EIRL: Electrical power plant to serve the Pacasmayo facilities.

- Salmueras Sudamericanas SA: It explores the brine deposits discovered in the company-owned concessions in Morrope. This project is developed in partnership with Quimpac, one of the main Peruvian companies in the chemical products market.

Income determinants

- Retail sales (FY2016: 91%) are directed to the self-build construction segment and construction companies that buy bagged cement for small projects. The self-build construction segment represented 63% of cement sales at the end of 2Q2017; (2014: 55%; 2015: 55%; 2016: 58%) and is driven by residential construction levels, which in turn are conditioned by the region's economic prospects.
- Bulk cement sales (FY2016: 9%) are sold to large private and public infrastructure projects. The economic outlook, the availability of financing and the levels of investment in the region limit these larger projects.
- The private sector represented 25% of cement sales, while the public sector represented 12% of cement sales. Public investment in infrastructure depends on the government's priorities and financial resources.

Cost determinants

The private sector represented 25% of cement sales, while the public sector represented 12% of cement sales. Public investment in infrastructure depends on the government's priorities and financial resources.

Business strategy

- Focus on its core business, based on supplying cement on demand: The Company plans to cover the growing demand for cement in the market by increasing its installed capacity of cement and clinker. Its objective is to maintain its market share in the northern region without reducing profits.
- Maintain operational efficiencies to control production costs: CPSAA intends to control costs and maintain its margins, primarily by securing its source of coal and using domestic anthracite coal instead of imported bituminous coal.
- Strong business relationship with retailers and end consumers: To maintain brand loyalty and drive demand for its products, the company will continue to support retailers as part of its DINO distribution network by offering product education, training sessions, rewards and assistance to finance purchases. In addition to door-to-door cement sales, to strengthen CPSAA's relationship with its retailers and end consumers.
- Being the preferred provider of building solutions: CPSAA focuses on providing efficient and customized construction solutions for the construction needs of its clients. Historically, the Company evolved from having a single type of cement to offering nine different types of cement products.
- Selectively Tracked Acquisitions: The company will continue to evaluate and seek strategic acquisitions and complementary businesses to expand its presence and diversify its product portfolio.

Cementos Pacasmayo's cement production between 2014 and 2016 had a downward trend, despite the implementation of the Piura Plant in the first quarter of 2016. This is mainly due to the contraction of the construction sector of 5.8% and 3.1 % in 2015 and 2016 respectively. Analyzing the variation between the third quarter of 2016 and that of 2017, an increase of 7.3% was observed in the cement production of all the plants (+ 6.2% Pacasmayo, + 5.6% Rioja and + 9.1% Piura); This is due to the increased demand for cement in the area affected by the El Niño Costero Phenomenon that took place between January and May. However, the accumulated production result does not exceed the total production of the previous year, which decreased by 2.8%.

The production of cement clinker between 2014 and 2016 presented an upward trend, increasing 44% during 2016. However, during 2017, the accumulated production of clinker until September showed a reduction of 13.1%, due to the fall in the production of the Pacasmayo and Rioja plants, which decreased 29.5% and 3.3% respectively. The new Piura plant increased production compared to the previous year's accumulated by 6.1%.

Financial Analysis

- *Income growth*: CPSAA revenues presented a CAGR of 4.72% for the period 2010-2016; the growth rates of 10.79%, 17.57% and 5.97% for the years of 2011, 2012 and 2013 respectively were the highest for the period.
- However, after that, revenues slowed to rates of less than 1% for the following years, reaching a historical record of variation of -0.9% in 2015, due to the weak demand of the public sector throughout the first semester of the year. Despite this, the 3Q17 results (+ 4.8%) indicate a possible recovery in the industry, supported by a growing demand for cement from the self-construction sector and a recovery in public spending. Our forecast is an annual growth rate between 4.05% and 4.62%, as a result of the weighted average contribution of its products to income multiplied by the expected growth of the three segments that CPSAA attends.
- *Operating costs*: The company's costs include raw materials, coal, energy, clinker, transportation costs, among others. In general, the Company has an average cost of sales of 58% of its net sales. In 2017, the estimated total cost of sales is around 73.5% of CPSAA's net sale. These figures are somewhat unusual due to the additional expense incurred in transportation through alternatives since usual transportation routes were blocked or destroyed by heavy rains, landslides caused by El Niño phenomenon from January to May. CPSAA has managed its manufacturing costs effectively: moving from imported bituminous coal to anthracite domestic coal, producing clinker itself,
- *EBITDA margin:* CPSAA recorded an EBITDA margin of 30.97% at the end of fiscal year 2016, translated to a nominal value of S / 382 million (2015: S / 395 million, 32.1%), this negative variation was the result of a reduction in the gross margin and increase in operating expenses. Even so, the Company's EBITDA margin remains competitive compared to its competitors, although UNACEM had the highest margin (2016: 37%).
- *CAPEX*: as of September 2017, the Company spent S / 47.4 million, mainly on projects in the Pacasmayo facilities, purchase of concrete equipment and aggregates (47.4%); while the rest was used in projects at the Rioja and Piura plants. CPSAA's most important investment to date was the construction of the Piura facility, with an initial investment of USD 380 million, and financed with the 2013 bond issue. Additional capital expenditures for the next 5 years would consist of USD 88 million, divided into USD 22 million and USD 30 million for 2018 and 2019 respectively, for ongoing projects at the Company's facilities, and annual disbursements of USD 12 million from 2020 onwards as "maintenance expense"

VALUATION METHODOLOGY

There are several valuation methodologies and the applicability depends on the context and the situation of the company. According to Damodaran (2012) we can identify three types of valuations:

A. Intrinsic valuation: it seeks to calculate the value of the asset (company) according to certain key characteristics such as the future cash flows and the risk of these flows. The key way to perform this valuation is with the cash flow method.

B. Relative valuation: It consists of estimating the value of the company by analyzing a group of comparable companies that have similar characteristics such as income, cash flows, book value, etc.

C. Contingent valuation: It is based on a price model, which indicates that its model is based on the assets' value.

The three valuation methods are suitable for measuring a company's value (Berggrun et al., 2016). The intrinsic valuation model allows the use of the other studies mentioned above, which are the economic situation and the company's own study. The intrinsic valuation methodology allows the appraiser to make a perfect combination between the narrative (study of the company), the economic situation of the context and the mathematical model (discounted cash flow). For discounted cash flow, it is necessary to consider certain basic points, which are the following:

- List of key assumptions related to the economic situation, the situation of the company and future estimate of its flows.

- The company's risk, its cost of capital and debt structure.
- The horizon of the valuation and its terminal value. The valuation is based on the calculation of a discounted cash flow, where a discount rate was used that allowed to have the present value of the future flows of the company according to the information collected from various sources (assumptions).

Creation of the Discounted Cash Flow (CDF) model

A discounted cash flow model must consider the number of projection years that are being taken. For this valuation, a projection was made from 2018 to 2023. The assumptions were presented according to the information of the industry and the important facts, the discounted flow was made up to EBIT, thus using depreciation and amortization (DA), working capital, CAPEX, and the income tax rate itself. The discounted cash flow calculation was performed as follows:

Table 1. Discounted cash flow

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
EBIT (1-t)	215.1	223.8	232.9	242.3	252.1	262.3	272.9	284.0	295.4	307.4
DA	113.1	109.0	105.1	101.4	97.8	94.4	91.0	87.8	84.7	81.7
Working capital	-97.1	-38.9	-38.9	-38.9	-38.9	-35.6	-32.4	-29.1	-25.9	-22.7
CAPEX	-14.1	-14.7	-15.3	-15.9	-16.5	-17.2	-17.9	-18.6	-19.4	-20.1
Free Cash Flow	217.0	279.3	283.9	289.0	294.6	303.9	313.7	324.0	334.9	346.3
Terminal Value										3,980.5

Source: Own elaboration.

Preparation of Discount Rate (WACC)

An appropriate discount rate should be based on the cost of capital and the cost of debt. For the first, the CAPM methodology was used as shown in the research by Fernández (2017). We used a free market rate of 2.4% (10-year T-bills) and a market return or market risk premium calculated with historical data (Fernandez et al., 2018). In addition, following the same procedure as Fernandez (2018), where comparable companies in the electricity sector were used to calculate the beta that would be used in the CAPM, we will use the same comparable principle to calculate leveraged beta. To obtain the beta, it was necessary to use a pool of comparable companies that, due to their market behavior, allowed the development of a deleveraged beta (market beta) that was used with the capital structure to calculate the mentioned leveraged beta:

Table 2. Cost of capital calculation

Market risk premium	6.40%
Risk-free rate	2.40%
Beta leveraged	1.04%
Country Risk Premium	1.40%
Spread on zero coupon curve	2.00%
Cost of Capital (CAPM)	12.40%

Source: Own elaboration.

According to Fernández (2017), the market risk premium can be found using a historical method and, therefore, it was calculated with the historical difference in the S&P 500 rates and the rate returns of the 10-year American bonds (Damodaran, 2012). With this value of cost of capital (CAPM) we have the first phase of WACC that according to Fernández (2016) the proportion of capital and the cost of debt must multiply the capital component therefore, to calculate the

debt, the information in the financial statements and the risk rating of the company were used to calculate the debt. Resulting in a cost of debt of 8.3%.

Table 3. WACC calculation

Cost of debt	8.3%
Cost of capital	12.4%
% Debt	51.2%
% Capital	48.8%
WACC	9.0%

Source: Own elaboration.

Intrinsic Valorization

The intrinsic valuation of the company Cementos Pacasmayo is based on discounted cash flows (DCF), based on the study the market and the company for the elaboration of relevant assumptions that allow to make company projections (sales, costs, depreciation, investments, among others). Using the assumptions and the company's historical data, a future flow of the key accounts can be considered in order to represent the future situation of the company and its possible future earnings. By having the proposed model and having the complete information of what is proposed for the future, the discounted cash flow is performed as shown in Table 1. However, the company did not close operations in 2027, therefore a terminal value should be calculated assuming future growth for the subsequent years. Thus, we use the last flow (considering it as constant), and a perpetual discount rate. The rate used was GDP growth of 3.9% because we are assuming that the company is highly related to market dynamism (beta). With the armed free cash flow, it would only be necessary to use a discount rate to have the future flows calculated at the present value and thus have a value that represents the future flows at the present value. For this, future flows are brought to the present value with the present value methodology with the WACC rate in Table 3.

CONCLUSIONS

The growth of the self-construction segment is measured by (*i*) the growth of the population of the region and (*ii*) the number of municipal licenses granted for the construction of single-family and multi-family homes in the national territory. This indicator has a compound annual growth rate (CAGR) of 6.4%. Furthermore, the current national housing deficit of 1.9 million homes and the urbanization rate of 72% provide great opportunities for the construction sector and, consequently, for the cement industry.

Growth in investment in public and private infrastructure are the main indicators of cement demand and can be estimated by analyzing the budget and government spending of previous years, foreign direct investment, or gross fixed capital formation.

The cement industry is characterized by a very low rivalry between competitors, given that cement production companies within the national territory only operate within the limits of their geographical distribution. The threats of new entrants or substitute products are very low, and the power of suppliers and customers is very low.

CPSAA maintains a leadership position in the northern region of Peru. The Company, through its subsidiary, Cementos Selva SA, owns 21.1% of the national cement dispatches. CPSAA is the only cement manufacturer in the northern region of Peru and manufacturees and sells substantially all of the cement consumed in the region. GDP in the northern region grew at a compound annual rate of 4.3%, and its infrastructure deficits will continue to drive demand for cement. Besides, their focus on innovation to meet their customers' needs puts them ahead of any potential threat.

The effectiveness of the company's cost structure derives from its vertically integrated operations, participating in the entire production chain from the extraction of limestone quarries and seashells to the manufacturing process and the extensive distribution network. In addition, the quarries are located very close to the production

facilities, which minimizes transportation costs. Complementary measures include replacing imported bituminous coal consumption with local anthracite coal and acquiring coal extraction concessions. Besides, being able to ensure the electricity requirements of its facilities with long-term supply contracts: Electroperú SA ("Electroperú") will supply the Pacasmayo and Piura facilities until 2025,

To date, the Company has a cement production capacity of 4,940 TMT and 1,780 TMT of clinker's production capacity, with utilization rates of 46.05% and 62.27% for cement and clinker respectively. CPSAA management exhibits enough capability to cover possible future demand for the next five years.

The process of valuation and analysis of companies (Farfán et al, 2017) and the necessary steps to be able to reach a close or expected value of a company requires access to sufficient information about the company, the market and the certainty about the methodology to make a relevant calculation. An intrinsic valuation was used because the information obtained in the annual reports, market reports, news, and other sources allowed the use of the discounted cash flow methodology. The calculations shown above about free cash flow precisely derive from the information collected and the assumptions made according to what is expected in the following years. However, discount rate calculations are public information and can only vary depending on the approach sought to give to the valuation (mainly due to valuation periods). The valuation presented was prepared to show the process of a company valuation and Cementos Pacasmayo was chosen because of the abundant information available to address key points of the valuation.

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