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# INCREASING INTERNATIONAL FOOTPRINT OF A NATURAL STONE BUSINESS

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This work is divided into seven different parts:

**Part A: Increasing International Footprint of a Natural Stone Business**

Part B: Increasing International Footprint of a Natural Stone Business - Geographical Analysis *(by Guillaume Labarre)*

Part C: Increasing International Footprint of a Natural Stone Business - In-depth Market Analysis (*by Tommaso Bordignon)*

Part D: Increasing International Footprint of a Natural Stone Business - Entry Strategy (*by Inês Moraes Sarmento)*

Part E: Increasing International Footprint of a Natural Stone Business - Marketing Plan *(by Cláudia Marques)*

Part F: Increasing International Footprint of a Natural Stone Business- Financial Plan (*by Sara São João)*

**Part G: Increasing International Footprint of a Natural Stone Business - Final Remarks**

**List of Abbreviations:**

**A&D:** Architecture and Design

**CSF:** Cutting, Shaping, and Finishing

**DP:** Company the group is doing this project for, short for DP Stones

**DP.1:** DP's subsidiary

**FOB:** Free on Board

**KPIs:** Key Performance Indicators

**M&Q:** Mining & Quarrying

**SA:** Strategic Alliance

**WC:** Worse Case Scenario

**BC:** Best Case Scenario

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# Abstract

DP Stones is a Portuguese medium-sized company that works in the Cutting, Shaping and Finishing Stone business. This company has already a significant international footprint, dealing mainly with direct exports. Facing a saturated domestic market, DP aims to extend its' lifecycle and find out new ways to gain competitive advantages.

Accordingly, this project will analyse the current and future state of the CSF industry and assess possible target markets for DP to expand to. Afterwards, an entry strategy and marketing plan will be developed as well as a financial plan to evaluate the viability of the project proposed.



Keywords (Internationalization, Market Selection, Entry Strategy, Strategic Analysis, Natural Stone, Cutting Shaping and Finishing Stone, Marketing Plan, Financial Plan, Australia, Germany)

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# Part A: Increasing International Footprint of a Natural Stone Business

## 1 Introduction

### 1.1 Organizational Challenge and Objectives

**Organizational Challenge:** While operating in a very competitive market, DP Stones faces a saturated domestic market and is reaching maturity. To extend its lifecycle, the company will have to lock in and acquire clients that ensure stable demand.

**Objectives:** The team aims to develop an internationalization plan which ultimately extends DP Stones' lifecycle. Currently, the company engages in direct trading in various international markets, nonetheless by increasing its international footprint DP will be able to extend its' customer base and improve its' revenue streams, maintaining a competitive position in the market.

### 1.2 Project Overview and Methodology

To extend DP's lifecycle, the team developed an expansion plan comprising seven different phases. Firstly, the team analysed the company as well as the industry in which it operates. Secondly, the international readiness of the company was assessed and the three most adequate countries to internationalize were discovered through a ranking and clustering analysis. Thirdly, an in-depth market analysis was performed on the three markets, further exploring the conditions to enter those markets. Having considered possible entry modes in both Australia and Germany in the fourth phase, the most adequate ones were chosen, and an entry strategy was derived. Then, both the marketing and financing plans were outlined, assuring the viability of the proposed strategy. Finally, conclusions were drawn and recommendations and future considerations were defined.

# 2 Situation Analysis

## 2.1 Company Analysis

### 2.1.1 Profile and Management

Created in 1980, DP Stones has been one of the main players in the **CSF Stone industry** for the past forty years. The company focuses on high-quality natural stones and maintains a competitive position in the market due to strong commitment and hard work.

DP is owned by three shareholders, each holding one-third of the share of the enterprise. This **medium family-enterprise** first specialized in Portuguese marble and limestone, and in 2005 started working with international natural stone with the creation of a subsidiary (DP.1).

In 2017, a change in leadership occurred and brought a new mindset to the company. The new CEO chose to merge the two businesses to increase the overall production and operation efficiency. DP facilities have mainly Portuguese stones to be sold all over the word and DP.1 is a selling point with foreign (imported) stones to be sold in Portugal. The latter works also as a showroom.

The CEO aims to improve DP's communication process and product offering. In line with this, the website was renewed and new agreements on imported stones were established. In 2019, DP employed 77 full time workers and had an exploitation result of €**7.03 m**. (See appendix 1 below)

### 2.1.2 Product Overview

DP is an active player in the CSF Stone industry and its strategy focuses on **Portfolio Depth** by offering a wide range of natural stones. DP is exporting 80% of its products to other countries. For each project, DP finds the raw materials that better fits the requirements of the client and adapts them to the forms and textures they wanted.

Regarding the processing of raw material, the company works with three standard shapes: **Blocks, Slabs, and Tiles** (Dimpomar 2019). Two different blocks from the same type of stone can translate into different profitability due mostly to the patterns of veins and the percentage of wasted stone. These situations can be foreseen and accessed with the knowledge and know-how that the company has been gathering throughout its' years of production.

**In slabs**, the company is a leading market player market being valued for the variety, novelty, quality, and trendiness of its products. Tiles are valued for their flexibility in dimensions, thickness, and finishes, as well as their quality and quantity.

The company's end-product also translates into **Cut to Size projects and Special Products** (Dimpomar 2019). DP has extended its international footprint by being part of major projects in fifteen different countries. Projects may be distinguished into three different categories: Commercial Projects, Residential or Private Projects, and Special Projects.

Special projects are a new development of exclusive and unique cut-to-size design pieces. This is an emerging sector within the company that arose by making use of the existing know-how and the available resources. Some examples are Washbasins, Shower-trays, and Decoration products.

### 2.1.3 Process & Operations of DP

DP plays different roles along the supply chain - from the stone extraction to the client final delivery. The selection of stone and CSF of stone are the company's core activities. Going to the stone quarries and **selecting the right blocks** is a key operation to guarantee quality stone is obtained. With years of experience and plenty of knowledge in the natural stone industry, DP can predict the percentage of waste and evaluate its quality. Performing these activities resulted in a wide national and international network of supply. This enables DP to broaden its product portfolio and attract new customers all over the world.

**Processing the stone** is part of DP's core business and therefore an area in which the company stands out. Efficient operation processes are achieved with high-quality machinery and experienced workers, allowing DP to work the stone with precision in every aspect.

DP also performs complementary activities in Portugal as it is the case of product **packaging and transportation**. Stone is stocked in wooden boxes that are made in-house to better suit product protection. By outsourcing wood and assembling the packages itself, the company is shifting transportation risks towards its supplier, for instance, broken material due to rotten wood. Few workers in DP are dedicated to creating the packages.

Regarding transportation, owning a truck, containers and groupage enable efficient and safe loadings, especially when the stocks carried are sensitive types of stones. Transportation from DP facilities to the harbour or vice versa is carried by a company employee. Afterwards, all the transportation services used to deliver the product to the final client are outsourced. Since DP follows the Free On-Board incoterm rules, transportation costs, risks and responsibilities are on the client's side from the moment the stone is loaded on the vessel onwards.

### 2.1.4 Positioning and Strategy

The Bowman's Strategic Clock was used to explore DP's options for strategic positioning. The company sells high quality products with the highest level of perceived added value. However, due to industry experience, expertise, and the company's capability to reduce to the minimum waste, DP is able to offer competitive prices comparing to the products' quality level. For these reasons, the group identified DP positioning in the "**Differentiation strategy"**.

Their innovative technology enables a wide range of service offerings, to closely tailor their clients' requests and efficacy in production, which allows reduced costs and efficient prices.

By engaging in various phases of the supply chain, they rapidly provide their clients with samples, logistics, and answers.

Another important pillar is DP's culture to maintain long-lasting relationships with their customers. "At DP we have been working with some clients for more than twenty years, it is our tradition to keep clients. This is only possible due to the service we provide, always carrying an open communication channel", said the sales manager.

### 2.1.5 Business Model

To fully understand DP's Business Model all nine segments will be carefully analysed. (See appendix 15 below) The company's **value proposition** is to offer high-quality natural stone with features such as durability, resistance to corrosion, and slip resistance, supported by DP's know-how and long experience in the industry. Also, DP's high status is translated through attractive stone availability for clients to build unique spaces.

Companies need to assess which customers they should focus on to find ways to build and sustain relationships with them. DP serves various **customer segments** including individuals, construction companies (which can also include consultants, small architecture, and design companies), wholesalers, and other CSF companies. While individuals directly buy the stone from DP, construction companies often play the role of intermediary between these two. Wholesalers buy in large quantities and resell to their market, and CSF companies buy stone blocks to cut, shape, and finish them and later sell them in their markets.

To approach customers, it uses **channels** such as word of mouth, newsletters, magazines, international events as fairs, an official website, social media and its Portuguese facilities (DP and DP.1). To maintain strong **customer relationships**, reputation and trust are key. DP holds long-term client relationships through dedicated personal assistance, close and continued communication.

The company has stone quarries, national and international associations, and transportation companies as **key partners**, each playing a different and important role throughout the value chain. While stone quarries grant access to the core business' materials, associations facilitate the trading and transportation companies enable the final clients to receive their products. **Key activities** are assuring quality throughout the value chain, building relationships with clients and suppliers, stone selection, cutting blocks into slabs and tiles, and cut to size projects. These result from DP owning the **key resources** of stone, competitive machinery, industry experience and knowledge, client, and supplier networks.

On **revenue streams**, DP receives transaction-based revenues (namely asset sales), where it gets a one-time payment for the stone purchased. Money is received per contract in blocks, slabs, tiles, and cut to size. Depending on the project type, contract payments are product feature dependant or volume dependant.

DP's **costs structure** is characterized by value-driven costs, focusing on value creation and premium value proposition. It has fixed costs such as employees' salaries, manufacturing facilities-related expenses, machinery, and some others. Variables costs are raw materials such as the stone and wood supplied.

### 2.1.6 Financial Overview

To grasp the company's financial situation its **financial statements** will be analysed. (see Appendix 2 below) The **P&L** will be the first statement considered. Looking at the company's revenues from 2013 to 2019 (see Appendix 3 below) it is possible to observe a subtle decline from 2013 until 2016, moment from which the sales remained close to the €6 m level.

Regarding the operating income (see Appendix 4 below), DP shows difficulties in remaining stable since the EBIT varies from nearly €800 000 to €-200 000. An observation that can be retrieved is that the operation income does not follow the same evolution as revenues. For

instance, the EBIT increases from 2013 to 2014 while in the same period the level of sales decreased. The same happens from 2017 to 2018, when the level of sales decreases, and the operating income increases by more than €155 000.

The operating income has a great impact on the company's net income. As it is possible to observe, the net income (see Appendix 5 below**)** of DP is also very unstable through the different periods. For instance, in 2017 the losses were valued at €65 475 while in 2019 DP had a profit of €120 690. These abrupt changes might be explained by the instability related to the operating income. Such observations may lead one to believe that the company is relying too much on reactive opportunities and does not seem to have a proactive strategy regarding the natural stone industry and its opportunities.

The **balance sheet** (2017-2019) will be the second financial statement considered. (see Appendix 2 below) Regarding the total assets of DP (see Appendix 6 below), both current and fixed assets remain approximately constant throughout the periods, with current assets accounting for the biggest percentage, on average representing 80.87% of total assets.

The total liabilities of DP (see Appendix 7 below) vary between approximately €1 m and €1.4 m, being at its highest in 2018. Almost 97% of total liabilities are composed of short-term liabilities such as advance deposits from clients or supplier accounts.

The total equity (see Appendix 8 below) has been increasing every year reaching more than €8.7 m in 2019. This increase can be explained by both the increase in net income from each period and the account 'Other changes recognized inequity' in which changes in exchange rates and tax refunds can be accounted for.

Next, **ratios** will be computed to evaluate the company's performance. To assess the **liquidity** of the company, the current ratio (of 8.05), quick ratio (of 6.83), cash ratio (of 2.61), and Net

Working Capital (€6 784 576) were computed for 2019 (see Appendix 9 below). All these ratios indicate how the company is using assets to settle liabilities as debts and payables.

Given that all the liquidity ratios are considerably high, it is possible to conclude the company is in good financial health and it can pay its obligations with existing assets. Nevertheless, with such high ratios, one may think the company is risk-averse, as it is leaving too much cash on the side that could be invested to grow the business.

In regard to **solvency,** the debt-to-equity ratio (of 0.0003), debt-to-asset ratio (of 0.0003), financial leverage ratio (of 1.1184), debt structure ratio (near to 0), and net debt to EBITDA ratio (of –15.9798) were computed for 2019 (see Appendix 10 below). The solvency ratios allow the examination of the company's ability to meet its long-term debt obligations (Fuhrmann 2019).

With these numbers, one can affirm that the solvency of DP is extremely high. Not only the amount of debt is especially low, but the long-term debt is also inexistent. Once again this leads to the conclusion DP is financially healthy and stable.

From an **efficiency** point of view, the ratios total assets turnover (of 0.61), fixed assets turnover (of 2.91), inventory turnover (of 5.13), days to sell inventory (of 130), average collection period, average payment period (of 100), and cash conversion cycle (of 222) were computed for 2019 (see Appendix 11 below). These efficiency ratios help to identify how well the company uses its assets and liabilities internally.

According to the numbers reached, it is possible to conclude that in terms of asset efficiency DP is similar to the overall industry (Kenton 2020). Nonetheless, the days to sell inventories and to collect from clients are much higher than industry averages (see Appendix 12 below). This can present a disadvantage in the case DP faces financial difficulties given the high cash conversion cycle. By improving the inventory turnover, DP would be able to increase the

efficiency of its operations and consequently solve the problems related to the company's efficiency.

To access the **risk** of DP's operations, the ratios breakeven point (of 3521657), the margin of safety (of 41%), degree of operational leverage (of 17.65), degree of financial leverage (of 1), tax burden (0.77), and degree of combined leverage (of 17.65) were computed for 2019 (see Appendix 13 below).

Thus, one can affirm that DP does not face high risks. Not only, it has a good margin of safety to pay its liabilities with the sales from operations, but also the tax burden is following the industry average. Nonetheless, DP shows to have an operational income quite sensitive to changes in sales given that a 1% change in sales will result in a 17.65% in the EBIT. Taking this into consideration, and to avoid future operational risks, DP must endeavour to maintain the level of sales as stable as possible.

To conclude the ratios analysis, the **profitability** of DP in 2019 was evaluated (see Appendix 14 below). DP's gross margin ratio of 46.11% is higher than the industry average (19.3%), which can represent a competitive advantage for the company. A return on sales ratio of 2.61% means that for each euro of revenue there are 0.026 euros of profit being produced, which is lower than the industry average (6.4%). The return on assets ratio is 1.60%, lower than the industry average (7.5%). The return on equity is 1.39% which means that for every 100 euros of equity invested, the company produces 1.39 euros of profit. This is also slightly lower than the industry average (12.6%), making it difficult for DP to gather investors.

After having grasped the financial statements and ratios of DP it is possible to conclude that it is **financially healthy** in what respects to liquidity, solvency, and risk perspectives. Nonetheless, the company has **numerous possibilities to grow**, not only by making its

operations more efficient but mostly by starting to implement a clear proactive strategy to take advantage of the market opportunities.

As a final remark, it is extremely important to take into consideration the **COVID-19 impact** on the financials. The analysis was based on financial statements from 2019 that do not show the influence of the pandemic. With the cooperation of DP, it was possible to start retrieving information from the ongoing operations and conclude that, as expected, COVID-19 is having a direct impact on its operations and sales during 2020. As a matter of fact, given DP's focus on high-end product offerings it is expected that the purchase decision of such products will be delayed. The recent lockdown resulted in salary cuts, an increase in unemployment, and a general decrease in the population's disposable income which explains DP's lower demand.

## 2.2 Customers Analysis

### 2.2.1 International Client Base

In 2019, DP was present in 47 different countries and **83.8% of its products were exported.** With total sales of €6.12 m, €3.52 m were sold to **European countries** which in relative terms represents 57.46% of its sales. The **Asian continent** represents 29.69% of sales, **North America** 9.19%, and **Oceania** 2.84%. When considering sales on a country level, the United Kingdom (26.64%), China (18.51%), and Portugal (16.6%) are DP's 3 top buyers in 2019 and 2018 (see Appendix 23 below**)**.

DP's client list has 576 different clients, the biggest being a reseller of natural stone to European countries in the United Kingdom. Portugal has by far the biggest representation with 368 different clients that together account for €1.02 m of sales. The United States and the United Kingdom occupy second and third place, with 31 and 28 clients respectively (see Appendix 25 below). Clients are mostly enterprises in the natural stone, construction, and architecture market. Please note these architect companies mentioned are construction companies that also

do architectural projects. (Architect and Design companies *per se* are not the main focus of DP as they do not buy stone but simply prescribe alternatives to their clients) In Portugal is also possible to find some individuals as clients that buy smaller quantities.

### 2.2.2 Client Distribution and Profitability Assessment

The group further analysed the **transactions of DP's subsidiary (DP.1) from 2015 to 2019**. Results of this analysis may be found in Appendixes 28 below, 29 below, 30 below. Moreover, to access the average volume of transactions, the average price per square meter was assumed at 24.04€. Over the past five years, DP.1 registered total revenue of 4 055 371.49€ by serving 661 clients which can be further divided into five identifiable categories: Architect Companies, Construction Companies, Individuals, Marble Suppliers, Wholesalers & Retailers.

**Marble Suppliers** accounted for 45% of total sales over the last five years. This category brought the biggest average revenue per transaction (6 968.90€) and volume (290m²). Individuals accounted for 30% of total sales during this period. Although this category is represented by a robust number of clients (222), their purchases are lower in average value (5 397.90€) and volume (225m²).

**Construction Companies**, on the other hand, accounted for only 14% of total revenue. However, the category represented a lower number of clients (87), with a higher average value per transaction (6 530.31€) and volume (272m²). Architect Companies represented 6% of total sales. On average, these 42 clients carried out purchases of 6 163.80€ accounting for 256m² of stone.

**Wholesalers and Retailers** were the weakest categories, representing only 3% of total sales. DP.1 served 31 clients of this category who realized purchases of 3 312.79€ and 138m² per transaction. Finally, DP.1 transacted with 20 unidentified clients on a total value of 122

379.59€. These clients amounted to an average revenue per transaction of 6 118.98€ and an average of 225m².

### 2.2.3 Clients' Needs Assessment

To better understand how each client type values DP's products Clients' Needs were assessed (see Appendix 31 below). Client Categories were evaluated based on six product features: **Quality of raw material**; **Price**; **Durability**; **Flexibility in cuts, shapes, and finishes**; **Trendiness**; and **Role**. Moreover, DP's response to clients' needs was also assessed based on the same product features. Although the company serves Marble Suppliers, they are both clients and competitors. As such, this category was not included in the following analysis.

**Individual clients** are in contact with DP either directly or through a distribution channel, such as wholesalers, architecture and design companies, or construction companies. These clients are looking for a one-time interaction with the company, and to apply stone in a renovating project. As such, flexibility in cuts, shapes, and finishes are highly valued. The products purchased by these customers include tiles, cut-to-size products.

Individuals are attracted by high-quality stones for their luxurious appearance, nevertheless, they need intermediaries to fully understand the nature and related price of each type of stone. Although cost-driven, individuals are willing to pay higher prices for the status provided by luxurious products, being highly influenced by trends and intermediaries.

Due to the nature of their business, **Construction Companies** are very important demand drivers of cut-to-size projects. Their projects are usually big and as such their purchases represent high volumes in money and quantity of stone. It is important to note that Architecture and Design companies are active participants in the decision process of Construction companies, by recommending them on types of stone that best fit their projects. Moreover, Architecture companies are trend creators shaping design guidelines of construction projects.

Nonetheless, the price sensitivity of construction companies is highly dependent on the budget set by their clients for the project.

Quality, durability, and flexibility in cuts, shapes, and finishes are highly valued by these companies since they influence the applicability of stone to their projects, and maintenance services to their customers represent additional costs.

**Architecture and Design Companies** play a very important role as prescribers of DP's products, by suggesting to construction companies a particular type of material for their projects. Due to the nature of their business, architecture and design companies possess a deep understanding of products' features and are attracted by high-quality materials. These companies influence the global trendiness of types of stone, and the flexibility in cuts, shapes, and finishes is fundamental as it enables them to fully express their creativity.

Durability is a highly valued feature as some of these companies offer maintenance services to their customers. By recognizing and valuing product quality, architecture and design companies have a high willingness to pay.

**Wholesalers and Retailer's** customers look for diverse pricing options, as such these clients value the availability of products with different price and quality options. Moreover, wholesalers are price-driven shifting between stone suppliers according to their pricing deals.

These clients sell standardizable products, as such, they do not value flexibility in cuts, shapes, and finishes as much as other customers, looking to purchase various stone types of tiles. Furthermore, trendiness is not as valued as the variety of stones by these clients.

To answer its' clients' needs **DP offers** high-quality stone with distinguishable cuts, shapes, and finishes which meet every possible need. Due to the high quality of raw material used the products supplied by the company do not need a lot of maintenance. Furthermore, the company has developed a wide stone portfolio and supplier network through its decades of experience,

being therefore able to anticipate and respond to the latest and future trends as well as to provide its client's products with different price ranges which can accommodate their budgets.

## 2.3 Competitors Analysis

### 2.3.1 Country Competitors

There are two types of competitors: companies that started by being quarries and later started CSF stone to sell directly to the end customers; and companies such as DP that are specialized in the CSF stone, but do not operate a quarry of their own.

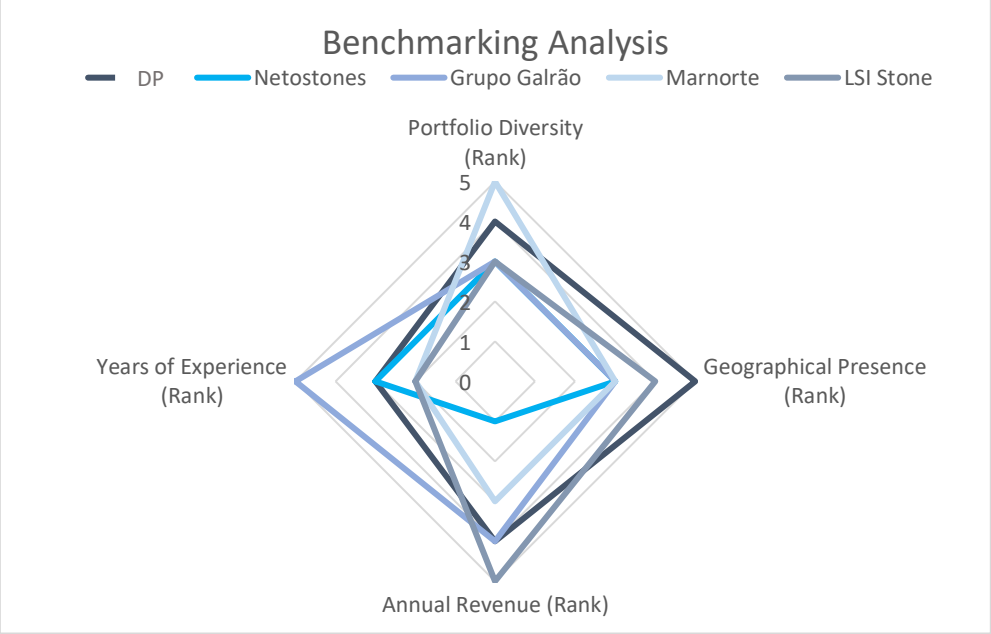
For the **first category**, it is possible to identify enterprises such as Solansis, MVC, Pedra Moca, or Grupo Galrão. For instance, Grupo Galrão (Grupo Galrão 2021) has currently a production capacity of over 7000m³ with more than twelve different hues and marble colours. By having quarries of their own, these players can offer competitive prices due to higher control over the initial stages of the supply chain, which translates in lower raw material costs. Moreover, they can easily answer to high volume orders, usually offered by the government and big construction companies.

The **second category** of competitors is national and international players that buy raw material directly from quarries all over the world. In most cases, these companies cannot compete on prices as they do not own quarries and are unable to take advantage of economies of scale, which forces them to build advantages on other characteristics. These players' experience allows them to increase price (and thus profit margin) since they add value by minimizing waste risk. Players within this category, as DP and Netostones (Netostones s.d.), usually work in lower-scale projects with medium construction companies and individual clients.

### 2.3.2 Benchmark Analysis

To help define the competitive landscape of the Portuguese Natural Stone industry a benchmarking analysis was conducted. By comparing DP with four of its main direct competitors in Portugal it was possible to identify its positioning and competitive advantages in the market.

The four companies to which a benchmarking analysis was performed were Netostones, Grupo Galrão, Marnorte (Marnorte 2020), and LSI Stone (LSI Stone 2020). The variables selected to measure companies were stone portfolio diversity, geographical presence, annual revenue, and years of experience.




In terms of geographical presence, DP is the one with the highest international footprint. Nonetheless, in terms of portfolio diversity, Marnorte has the widest offer with more than 200 different types of stones. Regarding the annual revenue, LSI Stone takes the lead with €8.02 m in 2019. The last variable analysed was years of experience where Grupo Galrão has the highest score given its 65 years of experience since its foundation in 1955.

### 2.3.3 International Competitors

The natural stone market is very competitive and after the massive entry of new players such as Turkey and China in the early ’80s, the industry is now stabilizing and maturing. In terms of the most prominent regions, Asia holds a dominant position, having a market share of more than 34% (Allied Market Research 2021). Countries such as India, China, Malaysia, and Indonesia are the main players of this region.

Following the Asian markets, the most prominent region is North America. The dominant player in this region is the US with €2 643 m in production turnover. The European region is also very important in this industry with countries such as Italy, Spain, and Greece that before the entry of developing countries used to be the market leaders.

To face the increase in global competition, key players in the market have been trying to adopt strategies that have a great impact on the industry. These decisions may influence other players in the market such as mergers and acquisitions, priming for access to a new type of stones with higher demand. An example of this situation is when Polycor INC merged (Polycor Inc. 2018) in October 2018 with the Indiana Limestone company. Nonetheless, there are other strategies that natural stone players have been implementing to increase their customer bases, such as showrooms and galleries.

The main worldwide players and competitors are listed below (Market Watch s.d.).

| | |
|---|---|
| Polycor Inc | Founded in Quebec in 1987, it is the world’s leading natural stone quarrier with over 50 quarries, 1200 employees and 18 manufacturing plants around the world (Polycor Inc. 2018). |
| Levantina | Founded in Spain in 1959, it is considered a world reference in the field of Natural Stone and a pioneer in the large-format porcelain tiles and fine thickness, Techlam (Levantina: The Natural Stone Company 2021). |
| Dermitzakis | Founded in Greece in 1990, it is one of the most successful companies in the marble sector with a strong orientation to international markets, with 85% of its sales being exported to more than 81 countries (Dermitzakis 2020). |
| Xishi Group | Founded in 1990, it has become one of the biggest exporters of stone. It is one of the main players in China, has a total area of 350,000$m^2$ and more than 1500 employees (Xishi Group 2021). |

| | |
|---|---|
| Antolini | Founded in Verona in 1956, this Italian natural stone company has grown to include new quarries around the world to extend their offer in types of stones, and it has been at the forefront of developments in natural stone processing and new technologies (Antolini s.d.). |

**Other international Players:**

| | | |
|---|---|---|
| Temmer Marble | Etgran | Xishi Group |
| Tekma | Amso International | Jin Long Run Yu |
| Pakistan Onyx Marble | Universal Marble & Granite | Xinpengfei Industry |
| Dimpomar | Best Cheer Stone Group | Jinbo Construction Group |
| Mumal Marbles | Fujian Fengshan Stone Group | Fujian Dongsheng Stone |
| Can Simsekler Construction | Xiamen Wanlistone stock | Guanghui |
| Mármoles Marín S.A. | Kangli Stone Group | |
| Aurangzeb Marble Industry | Hongfa | |

# 3 Macroeconomic Analysis

## 3.1 PESTEL Analysis

**Political**: The Republic of Portugal has an executive president who is elected by universal suffrage for a renewable term of five years and appoints the prime minister. Legislative authority is vested in the unicameral Assembly of the Republic, whose 230 members are elected by universal suffrage to serve four-year terms. Currently, the Socialist Party leads a minority government.

Portugal is still affected by high levels of private and public debt, weak bank profitability, limited access of corporations to credit, high levels of unemployment, and bottlenecks in key industries. Moreover, the budget deficit equalled 0.2% in 2019 and in 2020 the deficit is expected to reach 7.1% of GDP, as a result of COVID-19 related spending, and lower revenue caused by the slowdown in economic activity. Public debt grew to €247.451 m in 2019, equivalent to 117% of GDP, but is projected to decline to around 103% of GDP by 2023. In 2019, government expenditure on social security and welfare absorbed 39.4% of the total, followed by expenditure on general public services (16.8%) (Passport).

**Economical**: The Portuguese economy is experiencing a steep recession in 2020. Real GDP will fall by 9.2% in 2020 after gains of 2.2% in 2019. Real GDP in quarter-on-quarter terms fell by 3.9% in the first quarter of 2020 in seasonally adjusted terms, and by 13.9% in the second quarter, as a result of the COVID-19 crisis.

The Portuguese economy is mainly driven by the service sector that represents 74% of GDP. However, the sector has been hard-hit by measures to contain the pandemic. On the other hand, the share of agriculture in GDP has been falling for several decades. The sector employs 5.7% of the workforce and Portuguese farmers are the poorest in the EU.

Tourism accounts for roughly 10% of employment. Yet foreign tourism, which accounted for 52% of Portugal's exports of services in 2019, plunged by more than 90% in the second quarter of 2020. The real value of inbound tourism and business travel receipts rose by 8.7% in 2019 and since tourism was the hardest hit sector by the pandemic, a fall of 42.7% is expected in 2020.

In the banking sector, capital ratios have increased while the stock of non-performing loans has fallen. Nevertheless, banks continue to struggle owing to the large debts of the corporate sector. Access to credit continues to be difficult for small and medium-sized enterprises and start-ups. Manufacturing makes up 14.9% of GDP and employs 18.1% of the workforce. In the past, the country’s manufacturers have survived on account of low wages. However, industries such as clothing and footwear increasingly face stiff competition from Asian countries where wages are lower.

Exports account for a modest but growing proportion of GDP. In 2019, the share of exports in GDP was 28.1%. The real value of private final consumption rose by 2.4% in 2019 and a fall of 7.7% is expected in 2020. Consumer spending is being delayed by the measures in place to contain COVID-19 but should recover in 2021 (Passport).

**Social**: The Portuguese population was 10.8 million in 2019. The total number has been gradually rising but is expected to decline in the future. By 2030, the population will be down to 9.9 million. The median age was 45.2 years in 2019 – slightly higher than the regional average. By 2030, this indicator will reach 49.4 years, the highest in Western Europe (World Bank).

Fertility has fallen to just 1.4 births per female in 2019 – well below both the replacement level and the regional average. As a result, people older than 65 years are expected to account for almost 27% of the total population by 2030. With fewer workers and taxpayers being born, the Portuguese could face accelerated fiscal pressure to provide for their ageing population.

Savings amounted to 7.1% of disposable income in 2019 and the ratio will increase to 7.2% in 2020. Consumer expenditure per capita was 14 124€ in 2019. In 2020, the indicator will fall by 8.2% in real terms. Health goods and medical services will be the fastest-growing consumer category in 2020-2030 followed by housing.

**Technological**: The actual economic and start-up ecosystem in Portugal has created great potential in the industries of Information and Communications Technology. As a result, in the last few years, Portugal has been gaining a good position worldwide concerning the ICT development index.

Moreover, Portugal has been the nest for some high-tech innovations: examples are the Multibanco network, one of the most sophisticated banking networks in the world; Via Verde, the first closed system of automatic highway tolls in the world; and the Pre-Paid Mobile Phones. Portugal is also one of the European countries with the highest FTTH penetration, all 46% of households, and has been at the forefront of the 3G and 4G infrastructure investment (Passport). From financial services to software, hardware, and telecommunications, Portuguese companies have achieved a high level of excellence and international recognition.

**Environmental**: The principal environmental agencies in Portugal include the Ministry of Quality of Life and the Office of the Secretary of State for the Environment. Air and water pollution are significant environmental problems, especially in Portugal's urban centres. The nation's water supply, especially in coastal areas, is threatened by pollutants from the oil and cellulose industries. Portugal has 37 cubic kilometres of renewable water, of which 53% is used to support farming and 40% is for industrial activity. In total, the nation's cities produce an average of 2.6 million tons of solid waste. The nation's wildlife and agricultural activities are threatened by erosion and desertification of the land.

**Legal**: Portugal has a code-based civil law justice system, and its judiciary is divided between civil and administrative courts. The civil courts are structured in a hierarchy. The lowest level civil court is the District Court (the *Tribunal Judicial de Comarca*), which is subordinate to the Appellate Court (the *Tribunal da Relação*), which is subordinate to the Superior Court of Justice (the *Superior Tribunal de Justiça*). In 2019 Portugal ranked 30th (out of 180 countries) for transparency, according to the Corruption Perception Index, with a score of 62/100.

In the last few years, **new legislation** was introduced by the Portuguese government enabling people who worked at quarries and warehouses for more than 30 years to retire early. Consequently, DP has lost some of its more experienced workers and, as a result, decided to shut down its last operative quarry.

### 3.2 Covid-19 Implications

The Covid-19 pandemic has impacted almost every industry and the extent of this disruption is still unknown. The construction materials industry where the natural stones are integrated is no exception. Throughout the value chain, substantial changes were identified.

In the quarries, due to lockdowns the production had to **be shut down** until orders from the governments indicated otherwise. By being closed for several months, the production suffered

a decrease of approximately 42% (McKinsey & Company s.d.). Transportation and infrastructure-related companies also had to close or delay their deliveries leading to an estimated increase in operational costs of approximately 16% (McKinsey & Company s.d.).

The COVID-19 crisis also had a very noticeable impact on family incomes, whose **purchasing power has been decreasing**. However, as a response to the COVID-19 crisis, about 750 000 employees benefited from various temporary forms of state support. Consequently, the unemployment rate increased only moderately from 6.5% in 2019 to around 7.4% in 2020 (King 2020). Many of the job cuts are likely to be temporary, but the expected slow recovery in tourism and related services is likely to harm labour demand over a longer period.

With expectations of a near-future crisis, both supply and demand have been experiencing major **disruptions in final product deliv**ery, mainly due to a reduction in demand and downstream consumption. To adapt to this new reality, companies within the construction materials industry have been reducing their planned production for 2020 by about 30% (McKinsey & Company s.d.). Also, companies have been **cancelling or delaying investments** such as expansions to avoid an increase in capital costs.

# 4 CSF Industry Analysis

## 4.1 CSF Industry Overview

In this industry, there are players focused on the discovery and exploration of the natural stone, others more focused on the processing of the natural stone, as well as players focused on both ends of the supply chain.

As a natural resource, the stone has various characteristics such as durability, rigidity, lifespan, and corrosion resistance, cracking, peeling, and chipping. All these characteristics have made the product ideal for various uses, such as kitchen counters, decoration, paving, landscaping, roofing, among others. Furthermore, it is attractive for its usefulness, comfort, and trendiness.

Natural Resources do not present themselves in the same shapes and forms. In the case of natural stones, blocks present different vein patterns, and the amount of waste from one to another may also change (from 30% waste to 80%). As such, knowledge is key to convey the most profitability possible out of the natural resource and to reduce the risk of incurring additional costs.

The industry tends to **fluctuate alongside the purchasing power** of customers. Furthermore, although some types of stone have a stable long-term demand such as black granites, white crystalline marbles, beige limestones (Grand View Research 2020), others fluctuate alongside design trends and geographical areas. The regulation applied by the governments regarding the exploration of natural resources comes to affect the profitability of the industry.

### 4.1.1 Market Valuation

The global natural stone market size was valued at approximately **€28.61 bn in 2018** and was projected to grow at a CAGR of **3.9%** (Covid-19 was not taken into account in this prevision) (Allied Market Research 2019).

The natural stone industry is about 5-7% the size of the ceramic industry, making it in comparison a niche market. Moreover, according to Anil Taneja (Taneja 2019), director of the World Natural Stone Association, the industry in the last decades has lost most of its profitability and needs to reinvent itself. For him, the key topics to address are the significant changes in marketing and promotion, with the increasing presence of social media and the digital world; the new role of designers that need to develop new attractive products, blending tradition with modernity; and, finally, the high presence of wastage and how to recycle them.

### 4.1.2 Trends & Forecast

Starting with **trends**, the market has been majorly driven by infrastructure construction activities, which include building roads, bridges, airports, power plants, and notably highway & road projects. However, in the last years, there has been an increase in the need for **residential & commercial** infrastructure setup, and in 2019 the residential application segment led the market and accounted for more than 56% of the global revenue share in 2019 (GlobeNewswire s.d.).

Major companies are adopting marketing strategies, such as **M&A and partnerships**, to strengthen their market positions, as well as increasing their geographic presence to gain a competitive advantage.

The newest trend in the natural stone industry is the pursuit of finished products with a **higher added value**, **eco-sustainable**, and with a **low environmental impact** throughout the entire life cycle of products. Nevertheless, only a few companies have specialized departments in R&D for the design and creation of new products.

Manufacturers are also integrating themselves with graphic studios that aid in the development of new graphics to produce more aesthetically appealing stone slabs. During 2018 **quartz and porcelain** took away a major share in many markets around the world. In the US where quartz and new alternative materials have met with the biggest success, but they have also replaced natural stone in many other high-income countries. Nevertheless, granite, marble and stone are forecast to grow at over 3.5% and reach a market size of 23 trillion metric tons (Globe Newswire s.d.).

In a survey conducted by the *Clear Seas Research Department at BNP Media* (Richinelli 2019), where they polled fabricators from diverse-sized shops based throughout the U.S., 31% of the polled producers reported aggregate sales increases of 10% or more in 2019. Sales were up 5

to 10% for another 31% of producers in 2019, while only 10% of producers report that their sales were up less than 5%.

Even with the increase in sales, fabricators were planning to have more spending cuts compared to years past. The most mentioned areas were marketing (32%), stock (32%), equipment (32%), personnel (26%), facilities (24%), warehousing (21%) and showroom (18%) (see Appendix 17 below).

Regarding the **forecast**, as explained before, "the global natural stone slab market size was valued at €28.69 bn in 2018 and is expected to grow at a compound annual growth rate (CAGR) of 3.5% from 2020 to 2027" (Allied Market Research 2019). Urbanization has increased considerably over the last decade and is anticipated to continue to increase during the forecast period, which is expected to offer lucrative growth opportunities for the natural stone market growth.

The urban population growth is concentrated in **emerging economies** of the world, which makes natural stones crucial, as these regions witness significant infrastructural development. This expansion of the residential and commercial construction sectors coupled with the increasing restructuring activities across the globe is anticipated to benefit the market growth.

Moreover, the increasing demand for the product in the construction of arches, walls, dams, abutments, and other structures is anticipated to also promote the market. In addition, properties, such as superior strength, high functionality, and durability, offered by natural stone slabs are likely to further propel the industry growth.

In 2019, **the Asia Pacific** dominated the market and accounted for over 36% of the global revenue (Grand View Research 2020). The region is expected to retain its dominant position registering the fastest growth rate over the next years. This growth can be attributed to the rapid expansion of the residential and non-residential construction sectors. Besides, increasing

spending capacity among the individuals in economies like China, but also India, South Korea, Indonesia, and others, is likely to drive the construction sector, thereby supporting industry growth.

At the same time, the increasing rehabilitation activities of the existing infrastructures in developed economies like the U.S., Germany, the U.K., Spain, and several others are also fueling the industry growth. Besides, in the **developed countries** the increasing average age of the houses is likely to propel the demand for renovations, thereby benefiting the industry growth.

In the *BNP Media* survey mentioned before, 82% of the respondents expect business to continue to grow over the next 5 to 10 years by an average of 24% (see Appendix 18 below). They believe that the stone market sales revenue will continue to increase in the future due to the increase in demand for the product. “People are building more custom homes and using real stone instead of laminate or other products,” said one fabricator. “There has been a demand in natural products – especially for aesthetic finishes,” said another person.

### 4.2 Porter’s Five Forces

Porter's Five Forces is a business analysis model created by Harvard Business School professor, Michael E. Porter and identifies an industry structure by determining its’ weakness and strengths. This model analyses five competitive forces that shape the industry and is extremely useful to give an overall perspective of the market by measuring competition intensity, attractiveness, and profitability of an industry (Investopedia 2020).

An analysis with Porter’s Five Forces supports identifying risks and opportunities in the industry. The industry considered is the **CSF Stone worldwide industry**. Note that, by natural stone, it is being referred to the ones that are extracted from the quarry.

### 4.2.1 Threat of Substitutes

The products are mainly used in commercial construction applications to build stronger, durable, and aesthetically pleasing structures. However, due to the high variety of materials that can work as substitutes (brick, ceramic, glass, plastic, steel, etc.) and the high number of suppliers around the world, the market is saturated with products.

Being the supply higher than the demand, it is easy and cheap to switch between products and suppliers. Fashion trends and prices are the main factors that can influence customers' decision making in choosing the kind of materials.

In the last few years, a new threat has risen. Thanks to technological advancements, artificial stones can emulate all the characteristics of natural stones and are now way more present in the market. The product was introduced in the market as an answer to the demand for more consistency and uniformity in the look of the finished product. Due to their light-weight nature, artificial stones are much easier and less expensive to cut and manage, when compared to real ones.

Finally, thanks to the reduction in wastage and the less impactful process of extraction, artificial stones are more environmentally friendly (Lưu 2019). In conclusion, in the natural stone industry, there is a relatively **high** threat from substitutes.

### 4.2.2 Threat of New entrants

High initial capital investment and compliance with environmental regulations are barriers to entry (IfM- Cambridge University 2020). However, this can be easily offset by low manufacturing costs and the government incentives in developing economies, that have been growing substantially and were complying with environmental law is not a concern (Cosi 2015). With little bureaucracy, little safety legal requirements and low control, the entrance of these

far east countries (e.g. China, India, Taiwan, Indonesia) are forming strong new markets in emerging global economies.

In Southeast Asia, there are two main ongoing trends: existing companies that continue growing and new players entering the market looking for projects both in Asia and around the world.

Many natural stone producers have been expanding their international footprint as a way of gaining market share and broader their product portfolio. Agreements and formal partnerships (e.g. M&A) are facilitating the acquisition of foreign quarries as well as showrooms and galleries increasing international exposure. (Allied Market Research 2020)

Also, new entrants have been taking advantage of product development and R&D, adopting new methods in the exploration and operation of the quarries. While developed countries are using top production technologies to offset their high labour costs, developing economies such as Brazil, China and India have been developing their own manufacturing equipment over the past 20 years. The main outcome is an easy start-up and development of new quarries around the world.

Lastly, many quarries that used to be only a source of raw material are now forward integrating and becoming producers themselves. This new type of entrants benefits from absolute cost advantages and can have lower prices. Concluding, barriers to entry are low and the threat of new entrants is **medium-high**.

### 4.2.3 Bargaining power of suppliers

In this industry, a supplier is commonly an owner of a quarry that is actively exploring, selling, and trading blocks. Having a wide range of natural stone offerings is an important competitive advantage within this industry. As such, although there is a considerable number of suppliers, an active player within the market who acknowledges the impact of inputs differentiation is expected to have more than one supplier to meet its needs.

Loyalty and having open channels of communication with suppliers are highly valued and characteristic of this industry. Players need to secure a continued supply of both high and low quantities of various types of material. Furthermore, the waste of natural stone blocks can range from 30% to 80% which makes trustworthiness in the supplier and the quality of the delivered block highly important.

There is a high threat of forwarding integration within this industry, and when suppliers start moving throughout the supply chain, they can offer competitive prices when compared with current players.

Finally, one may say players have moderate switching costs. Although companies can easily find new suppliers, building a relationship with them is very consuming. To conclude, we may find **medium-high** supplier power in the CSF stone industry.

#### 4.2.4 Bargaining power of buyers

In the natural stone industry, the number of buyers is limited and big construction wholesalers and construction companies are important players. Their orders represent big quantities, and their value is very high, giving them the power to negotiate prices. The wholesalers have also a unique capacity to control distribution channels and the display of the products which has an important factor in sales.

In addition, given the high number of suppliers and substitute products, the switching costs for the buyers are reduced, representing a threat for natural stone companies that must differentiate in quality while maintaining competitive prices. Given this information, one may classify the bargaining power of buyers in the Natural Stone Industry as **high.**

### 4.2.5 Competitive Rivalry

This market is highly competitive with numerous competitors such as Polycor Inc (Polycor INC 2020), Margraf and DP. In this specific industry, companies can only differentiate themselves on price or quality.

As aforementioned, there are two types of companies, the ones that began as quarries and started selling directly to end customers or distributors, and the enterprises that rely on quarries to get their raw materials and differentiate themselves through their experience as DP does.

Manufacturers have entered with new generation ceramics in Spain, Italy, India, China, and Turkey. These compete on the same market as natural stone, therefore increasing the market size. Artificial stone can be seen as less elegant than natural stone and even though its' price is similar to that of natural stone, high investments in marketing and technology can lead to increased competition in the forthcoming years.

Brand identity is indeed necessary to remain attractive and differentiate from the other players in the industry. Furthermore, there are little or even no switching costs for the consumers, making the market more competitive as companies need to build real and strong relations to keep their clients' loyalty. To conclude, the intensity of competition in this market is **high**.

Five Porter analysis conclusion: All in all, DP operates in a **competitive industry with many experienced companies.** This makes it unattractive to enter, and it also means that a competitive advantage for incumbents is extremely important. Since buyers generally have high power firms need to be very careful with their customers in order not to lose them.

The biggest problem this industry is facing is the threat of substitutes since the artificial stone demand is growing. The medium-high power of suppliers indicates that to strive in this industry it is necessary to build a strong and lasting relationship with the suppliers. In summary, it is a

tough industry to compete in and companies need a good competitive advantage and a good customer network.

### 4.3 Key Industry Success Factors

Industry Key Success Factors are the areas of a company carrying critical performance that will make it succeed in the Natural Stone Industry. The following components have been determined as key success factors based on the previous analysis of the CSF industry.

First, it is vital to have specific **knowledge** on stone and its' respective processes, gained through **experience** in the industry. This will allow players to select the best stones to later sell in their companies. Also, it enables to offer clients the most appropriate stones according to the functionalities and purpose they are looking for.

Secondly, an **efficient stone selection** is extremely important to avoid extracting stones with high waste percentages and consequently having to buy more stone. Stone blocks are very costly and usually represent a big chunk of companies' expenses. As such, to be capable of selecting good blocks greatly reduces costs and increases profit.

Likewise, having **efficient operational processes** is also a key industry success factor. This means efficacy in CSF stone through innovative processes, tools and machines enabling fewer timings and defect rates. As a result, companies will be able to cut, shape, and finish the stone and deliver it to clients in less time as well as when compared to competitors they can produce more quantity in less time.

**Prosperous contact networks** are also crucial in the CSF industry and complement the other mentioned key success factors. This includes having strong and wide supply (e.g. stone quarries) and distribution chain but also a large network of clients. For instance, risk can be diversified through geographically diverse customer bases.

Finally, **product portfolio variety** and **quality control** are two essential factors desired by clients. In this industry, clients enjoy having a wide range of stone alternatives they can evaluate and choose according to their preferences and purposes. Also, customers look for a quality stone with companies responsible for guaranteeing it to them. This implies controlling quality through the several stages of the supply chain they incur in.

# 5 Country & Firm-Specific Advantages

## 5.1 Home Country Business Environment - Porter's Diamond

**Factor conditions:** As a member of the European Union, Portugal can benefit from trade agreements which facilitate imports and exports with other member countries. Moreover, transportation efficiencies are derived from its quality ports and closeness to the Atlantic Ocean. The minimum wage is rather low (€635.00 (Pordata s.d.)) when compared to other European countries. With a high school enrolment in secondary education percentage net (~95% (The World Bank s.d.)), companies may find in Portugal skilled labour at low cost.

When analysing the different lithologies of the Portuguese territory (RTP Ensina s.d.), one may note a wide variety of natural stone. In the North and Centre of Portugal the predominant stones are from a magmatic origin (e.g. Granite) and metamorphic (e.g. schists, marbles, quartzites and gneisses). In the South and Centre of Portugal sedimentary (e.g. such as sands, sandstones, clays, conglomerates, limestones, and marl) and metamorphic stones are more common. In contrast, one may find volcanic stones in the archipelagos of Açores and Madeira, namely basalt. Concluding, the advantages in Portugal are **high**.

**Demand conditions:** Industry Revenue in Portugal is predicted to reach € 535 919 200 by 2021 and € 540 322 600 by 2023. Furthermore, the industry is expected to grow by 0.45% from 2020 to 2021 (Statista 2017). In comparison, the Industry Revenue in Italy is expected to be € 2 568

240 000 by 2021, € 3 707 531 600 by 2023, and an expected growth rate of 5.88% from 2020 to 2021 (Statista 2017). Thus, the advantage in Portugal is **medium**.

**Related and Supporting Industries:** Dealing with a natural resource, stone suppliers are dependent on the lithologies of the countries in which they operate. As such, trading of blocks and slabs is very common amongst the players of the industry, ensuring portfolio diversity. Furthermore, tight, and long-term relationships with stone suppliers ensure diminishing waste rates, as well as stable supplies of stone.

Besides, Portuguese associations such as Assimagra (Assimagra s.d.) support Natural Stone companies locally while helping them to internationalize and expand their business through the organization of projects and by sharing their knowledge on the industry. Although associations are quite organized in this industry, the market of natural stone suppliers is saturated, leading to a **medium** advantage of relating and supporting industries.

**Firm Strategy, Structure, and Rivalry:** As previously discussed, domestic rivalry in this industry is nowadays marked by stone suppliers with quarries which start their own business within the CSF stone industry. In Portugal, the market is at its' maturity, showing high rivalry, which is in turn pushing businesses towards innovation.

DP pursues an international strategy, doing business with various markets. By having a big portfolio, following a differentiation strategy, and offering clients excellence products, the company assures competitive advantages when competing domestically. In conclusion, the advantage in Portugal is **high**.

**Government:** A share of the European Union Funds was attributed to DP in the value of € 513 260.86 (Total Approved Funding) (Portugal2020 s.d.). This fund will be exercised from 01/09/2019 to 31/08/2021 and aims to support the competitiveness of small and medium companies, ensuring better productivity, intelligent processes, and better exploration of natural

resources. Concluding, the advantages of doing business in this industry in Portugal are **medium**.

**Chance:** With the Covid-19's pandemic, the Portuguese unemployment rate has increased, and various outcomes are yet to be seen. Nevertheless, according to the last monthly report issued by Assimagra, exports within this industry are close to reaching the point of 2018, representing over €270 m (Assimagra 2020). Hence, the advantage of chance is **medium**.

## 5.2 Firm-Specific Advantages

### 5.2.1 Company Resources and Capabilities

Following the work of Grant (2010, 127), first, it is important to grasp the company's resources and capabilities to understand how these relate amongst themselves and result in company competitive advantages. (see Appendix 32 below)

**Resources** are the assets owned by the company and can be divided into three main categories. DP's tangible resources are cash (along with having a high solvency ratio, an intangible resource), CSF facilities and a stone quarries, truck, containers, other equipment and machinery, and raw materials such as stone and wood. Intangible resources are the internal software and databases, brand name and company reputation, customer trust and loyalty, supply and distribution international networks, and its' culture of a familiar business that maintains close and prolonged relationships with clients. Finally, human resources are employees' skills and experience, along with specific industry know-how. (see Appendix 33 below)

**Capabilities** of a company are collective skills, abilities, and expertise of an organization necessary to operate and execute the strategy designed itself. DP capabilities start with stone selection, where the best blocks are chosen to avoid waste and provide clients with good quality stone.

Next, it cuts, shapes, resizes and polishes blocks, slabs and tiles, but also packages the stone in homemade wooden boxes, storages and later transports them to the harbor enabling efficient and safe loadings. As so, DP carries material management capabilities and manufacturing capabilities on supply-chain management, production scheduling assembly, quality-control procedures, and inventory control.

Besides, DP is further capable to control stone quality throughout the whole supply chain, from stone extraction to final client delivery. Moreover, the company is able to offer a wide product portfolio with different stone categories from multiple regions. (see Appendix 34 below)

Finally, DP has a clear and strong knowledge of translucency, mechanical properties, vein-matching, and cutting-direction. They also acquired experience in special fabrication processes like Honeycomb, Stork (stone & cork), Ceramic-base.

### 5.2.2 Company Competitive Advantages

Following the rational set by Grant (2010, 135-138), resources and capabilities will be evaluated on their relevance, scarcity, non-transferability, non-replicability, and durability. If they check the first two criteria, they will give DP a temporary advantage, however, if all criteria apply then sustainable competitive advantaged is granted.

| | Relevant | Scarcity | Non-Transferability | Non-Replicability | Durability | Results |
|---|---|---|---|---|---|---|
| Resources | | | | | | |
| Cash (high solvency ratio) | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| CSF facilities, Stone quarry | Yes | No | - | - | - | Parity |
| Equipment and machinery | Yes | No | - | - | - | Parity |
| Raw materials | Yes | Yes | No | No | Yes | Temporary Competitive Advantage |
| Internal software and database | Yes | No | - | - | - | Parity |
| Brand name and reputation | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Customer trust and loyalty | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Vast and Strong International Network | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Culture (close and continued relation with clients) | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Employees' know-how and experience | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Capabilities | | | | | | |
| Product Portfolio Variety | Yes | Yes | Yes | No | Yes | Temporary Competitive Advantage |
| Packaging, storage and transportation | Yes | No | - | - | - | Parity |
| Efficient operational processes | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Effective stone selection | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Quality control throughout the value chain | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |

Raw materials such as stone and product portfolio variety can allow DP to establish a **temporary competitive advantage** but not sustain it. However, there are sources DP holds that grant **sustainable competitive advantage**.

The company has the right people with diversified skills. Both expertise in natural stones' unique characteristics and special fabrication processes is ensured by experienced craftsmen working there for over 30 years, and by a younger crew working with industry 4.0. This, along with investments made in top technology and machinery, translates into superior efficiency and CSF capacity and answering to clients' requests more accurately through the use of innovative techniques. For instance, DP not only imports but also cuts, shapes, and finishes stone from foreign countries because it is more efficient in it than the countries' companies.

Likewise, with experience to minimize wastage percentages and identify top-quality blocks, DP also benefits from a sustainable competitive advantage in its stone selection processes and ability to control quality throughout all phases of the supply channel.

*Strong and vast international networks* resulted from 40 years of market presence building credible long-term relationships with stakeholders from all around the world. *Customer trust and loyalty* were gained by following a direct approach with clients where close and lasting relationships are part of its' *culture*. This, together with DP's experience in stone sourcing and CSF, makes it one of the worldwide leading players and well-known brand name in the Natural Stone Business with a *reputation* for high reliability on the quality services it provides. All these aspects give DP a sustainable competitive advantage.

Finally, having a high (asset-based) *solvency ratio* grants a sustainable competitive advantage by increasing the leverage DP has on negotiations with suppliers and customers.

### 5.2.3 TOWS

Having performed a SWOT analysis (see Appendix 20 below) the team was able to integrate its findings into a TOWS analysis (see Appendix 21 below) to assess comprehensively the external factors and internal factors. These factors helped determined both the competitive position of DP and potential growth for the company.

**Using Strengths to maximize opportunities:** By using the know-how provided by several years of experience within the industry, DP could engage in R&D initiatives, exploring quarries and developing new partnerships. The know-how would give DP an edge in engaging in R&D initiatives related to the raw material. Although DP is already developing cut-to-size products that use wasted material, other players in the industry are transforming the raw material turning it into partly engineered stone or finding alternative uses for natural stone. With the help of partnerships with universities, DP could distinguish itself from other players and compete in developing markets such as synthetic stone industry.

Moreover, DP's know-how and further learning economies could be a determinant factor in efficiently exploring quarries. The backward integration would allow DP to sell blocks and slabs at competing prices to other companies and have greater control over their costs. Being know-how such a valuable resource in this industry, DP could use it to establish relevant partnerships with construction companies, which would give them more secured prospect sales and financial stability.

Furthermore, the know-how, along with the control of various stages of the supply chain, can help DP to expand its international presence through partnerships and other internationalization strategies, building new access to other markets. Finally, the large range of product portfolio, provided by long and healthy relationships with clients and suppliers abroad, fights companies that are globally threatening the industry.

**Using Strengths to Minimize Threats:** The competitive advantage of their established and trustworthy business international relations can be used to minimize the threat of engineered stone companies and quarries that have recently started their businesses.

**Minimize Weaknesses by Taking Advantages of Opportunities:** By working on a clear communication strategy, as well as an acquisition strategy of clients and partners, DP can take advantage of some external opportunities it faces. Firstly, the associations to which DP belongs work as efficient channels of communication with both potential clients, suppliers, and other players within the industry. By establishing a clear strategy to attain customers, DP could make better use of those channels as well as explore new associations that would open new opportunities in different markets.

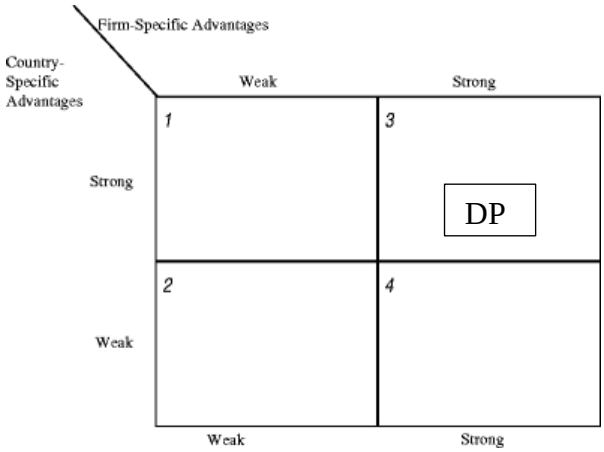
Secondly, by drafting a proper strategy to capture the segments that DP wants to target, the company can profit from having a wider range of clients whom they know how to attract and engage. Thirdly, by working on a communication strategy, DP can take advantage of new partnerships that bring more stable and high-volume sales, ensuring their financial stability.

**Minimizing Weaknesses and Avoiding Threats:** DP can minimize its' weaknesses and avoid current threats as it is the case of engineered stone companies and quarries that started their own business. By carefully drafting a strategy for communication and capturing clients, DP can position through its' points of differentiation within the market. This would enable the company to distance itself from these threats, fighting for a niche position within the industry. On the other hand, DP can also draft those new strategies in a way to face and compete alongside those players.

### 5.2.4 FSA-CSA Matrix

As explained before, DP benefits from both firm and country-specific advantages. However, while the firm-specific advantages, thanks to DP's decades of experience and presence on the

market, are strong and established, the country-specific advantages depend mainly on the relevance of the Portuguese stones in the global market. Since the demand for Portuguese marble has risen in recent times, the group decided to collocate DP in the third quadrant however, this position could change towards the fourth quadrant in the future.




# 6 Global Readiness

## 6.1 Internal Drivers: Motives to Internationalize

Since its early days, DP has always had an **international vision and presence**. In 1984, DP was already exporting stones for four clients in three different countries. Today, it has projects over the five continents, exporting to more than forty countries. Currently, close to 80% of the sales are made to international customers being the US, China and the United Kingdom their top three international markets (see Appendix 23 below). The remaining 20% are made to Portuguese clients through its DP.1 office. In the past, the percentage was even higher with 90% of the revenues coming from international clients.

DP's supply chain goes beyond the Portuguese quarries with suppliers of stones from fifteen countries. In fact, for DP, building relationships with players from all over the world has always been a key action to **extend its' stone portfolio**, to **find new clients,** and **enter new markets.**

In the last years, natural stone companies as DP have been facing **difficult moments** (see Appendix 17 below) accentuated by the Covid-19 pandemic that caused a delay in multiple projects launchings. The decline in profit registered over the last years depends also on the company's **fewer sales in Portugal**. Hence, DP sees further internalization as a way to offset this situation, believing it will **increase sales and efficiency** by using its factory available production capacity.

However, the change in the management provided by the introduction of a new CEO has pushed the company's strategy even more towards internationalization and has caused a shift in DP's strategy. The company has decided to focus less on finding new partnerships with companies that own quarries to extend their portfolio, and instead, they want to rely on stronger and more comprehensive networks by increasing their partnership with the main actors of the value chain of the construction industry. As a result, DP will be able to rely less on a reactive approach and shift to a more proactive one.

### 6.2 Global Readiness Assessment

DP has already proved its understanding of customer needs in multiple countries, as shown by the sales in the United Kingdom, China and the US, respectively 26.63%, 18.51% and 8.7% of the total sales. Besides comfortably playing in international markets, it is a financially healthy company. As such, DP is ready to further expand its' international presence worldwide and strengthen resource commitment by adopting new possible entry modes.

Nevertheless, to assure a successful internationalization plan, DP will have to follow a clear path and focus on four groups of capabilities. The first one is "**Leadership and Governance**". DP's new CEO carries a strong leadership that can be seen through the complex changes that she implemented and that were necessary. For instance, a high number of international stones was added to the portfolio, allowing DP to answer to a broader demand for stones. However,

since this change in governance is recent it is key to align stakeholders' minds towards the same goal. This will reduce the risk of losing key partners that could jeopardize the entire process.

The next one is "**Business capabilities**". DP holds powerful technical and production capabilities. As explained before, DP detains a clear and strong understanding of the stone and mechanical properties. At the same time, the company has mastered the main technical skills needed in this industry, as well as owning state-of-the-art machines for the cut, shape and finish of stones.

The third group of capabilities regards "**Organisational and Executional alignment**", where DP is strong. Their primary focus has always been to offer the best product and experience to their customers. DP has succeeded by currently holding close and long-lasting client relationships. Additionally, by guaranteeing the quality of the "Cutting, Shaping and Finishing" of the stone, DP was able to position itself as a strong actor in the market.

Lastly, regarding "**Learning and Agility capabilities**", DP has forty years of experience in the Natural stone market with a strong and experienced board. In every industry, to be a key player for a long time is proof of company agility. To remain competitive against newcomers, a company always have to reassess its knowledge and operational processes.

## 7 Conclusions and Next Steps

An analysis of the company was conducted to understand DP's product and processes, but most importantly its' **competitive advantages** – employees with know-how and experience; efficient stone selection and CSF processes; quality control throughout the supply channels; Strong and vast international networks; the company culture, brand and reputation, customer trust and loyalty; and a high (asset-based) solvency ratio.

Moreover, drawing its business model allowed a holistic and detailed understanding of each segment of the business it runs. Joining this information with the one obtained from industry analysis hinted at **potential opportunities** DP can take advantage of by using its strengths.

However, some **urgencies** were also highlighted. Despite DP being a main player in the CSF industry, this industry has been suffering changes with the emergence of a new type of suppliers (e.g. ceramic stone) and increased use of mergers and acquisitions to create stronger and powerful companies (e.g. Polycor INC). Therefore, if DP wants to keep its market position and/or increase its presence, further actions must be taken.

Moreover, a saturated domestic market encouraged DP to look for new sources of revenues, namely international markets. In this sense, DP's **internalization readiness** was evaluated and confessed readiness to jump further in the worldwide trade. As such, multiple analyses will be made to find the best country for the internationalization process and the best strategy to enter it.

In the **next steps**, a geographical analysis will evaluate existing countries using qualitative and quantitative variables. The three top countries will be further analyzed through a market in-depth analysis. This consists of searching information on these countries and ranking them according to their attractiveness compared to DP value proposition and maturity.

Having done that, the best country or countries will be chosen, and an entry strategy and marketing plan will be drafted as well as a financial analysis to ensure the project is viable and that it will bring value to DP. For the entry strategy to be successful, the company will have to follow the different steps outlined along with the marketing actions associated.

## Part G: Increasing International Footprint of Natural Stone Business – Final Remarks

### 1 Risk Assessment

The most plausible risks that can result from the internationalization plan, the impact they can have on the plans' success and possible actions that can predict or resolve these risks were identified. The table below illustrates this analysis.

| Risk | Description | Suggested Action | Probability | Impact on the Plan |
|---|---|---|---|---|
| *Planning Failures* | Difficulty in estimate the time necessary for each phase of the plan. | It is important to define clear objectives in terms of revenues, number of projects and types of stones for strategic alliance to reach before moving to following phase. This way, it will be easier to understand when DP will be ready for each phase. | Medium | Medium |
| *Difficulty in enstablishing contacts in foreign countries* | Since in the industry loyalty and contacts are extremely important, the clients tend to stick with their current suppliers. In the beginning DP could have problems in winning the trust of the clients. | Thanks to decades of presence in the business, DP has already some contacts in the target countries. However, to expand their reach it is key to participate to fairs and to contact stone national associations. | Medium | High |
| *Difficulty in finding qualified employees* | Along the expansion plan DP will need to hire different new employees, with precise skills. It is possible that the selection problem could require an important amount of time. | It is possible that DP will have some problems in finding qualified personnel, especially for the sales representive in Australia that will need to be fluent in Portuguese. To minimize this possibility, is important to start the recruiting process in the first phase of the expansion plan, in order to have some time flexibility. | Low | High |
| *Inability to find worth Strategic Alliances in Germany* | After succeding in Australia, DP could have problems to replicate the same strategy in Germany due to the different maturity of the market. | It is possible that due to the German market being more mature, DP will have more difficult in making strategic alliances with local companies. In this case, DP will need the flexibility to be ready to shift and target other European market that could offer more opportunities. | Medium | Medium |
| *Underestimation of the competitive environment* | Due nature of the industry and recent trend for quarries to start working directly on the stones, the market could have a higher degree of competition than expected. | In case the Australian and Germany markets will turn out to be more competitive than expected, DP will need to be ready to offer better conditions in terms of prices and days to pay than the other competitors. Moreover, DP will need to invest in marketing strategies to underline the higher quality of their products. | Medium | High |
| *Financial Risk* | If to initiate and sustain the project DP will need a higher investment than planned. | DP, currently, has a really solid financial position. Moreover, the expansion plan will depend mainly on reinvesting profits, so that DP's finances will not be stressed. Nevertheless, DP could always wait before moving from one phase to the next, to delay the expenses; or could change the ratio between equity and debt, and ask for a bigger loan. | Low | Medium |

### 2 Main Limitations

Reaching the end of the internationalization project for DP, it is now possible to get an overview of the limitations underlined in the processes and methodologies executed.

Over the course of the project, the main limitations found were mostly due to the **lack of accurate and reliable information**. This limitation is related to the fact that the natural stone industry is considered very closed regarding information sharing. Looking for data on market size and market shares showed to be difficult at a global level and a country level. Also, finding the prices of the products from companies in the industry was extremely hard if not impossible given the secrecy surrounding the pricing strategies within natural stone companies, as they are

usually set by negotiation. The same limitations were found on information about the geographical footprint of the competitors.

To overcome the lack of information regarding the industry and DP's competitors, several assumptions were created based on data from previous years and by taking advantage of every piece of information gathered. A close relationship with DP was also particularly important when making those assumptions since the knowledge they shred was fundamental to understand the strengths of each hypothesis and assumption made. There are however other actions DP can take to overcome this situation, namely, to buy industry reports available online. However, when doing so it must be careful to only choose reliable sources.

Another limitation found during the process was the **lack of information about the company** due to inexistent or incomplete files. Although DP is in the process of informatization of all internal data, several databases and financial documents were still to be formatted. That led to the creation of extrapolations and assumptions when the information was not available, especially on sales and marketing efforts such as the list of sales breakdowns and the different prices practised by the company within different markets and types of products.

To help overcome this issue in the future, when automatizing its' data files DP should also implement a business intelligence software. By taking advantage of these types of data-driven tools, it will be able to combine the data it has available on multiple sources and analyse the information in a quicker and more visually appealing way. In addition, it will give the ability to analyse market trends, capture opportunities and optimize operations in real-time. This will also lead to the development of new strategies supported by data.

Still regarding DP's data systems, at a financial level, DP is recommended to implement an accounting system that allows for a continuous update of the financial information of the company. This way it will be easier to track the numbers of each operation and consequently

analyze profitability and efficiency. In addition, DP will be able to make its business decision based on financial data such as deciding if a certain type of stone is profitable or should be removed from the portfolio.

# 3 Recommendations and Future considerations

## 3.1 General Recommendations

After the implementation of the internationalization project, DP must keep adapting its business model to be successful in an everchanging market. Thus, two recommendation will be presented to help DP preparing for what is coming.

The first recommendation is to do a **continuous evaluation of the market**. To do so, DP must perform regular market analysis, not only at a country level but also globally to capture new market opportunities, threats, and trends. Additionally, DP must pay close attention to the customers in the market, by understanding if their needs are changing and finding ways to tackle them. Surveys, customer analysis and feedback collection should be performed regularly.

The second recommendation is to **keep updating and performing new sensitivity and scenario analysis** to each project DP undertakes. This step is especially important as it identifies the forecasts and assumptions that might incur in more risk to the company. DP should analyze the behaviour of the financial models' most problematic variables and the impact they have on the financial situation of the company. By doing so DP would gather a better understanding of the different scenarios and it would be able to prepare in advance strategies on how to overcome each one of those scenarios. The more prepared DP is, the better it will perform in the future.

## 3.2 Future Considerations: Given the Failure of the Internationalization Plan

**Problem 1:** The first problem that could arise in DP's expansion plan is the **failing of the strategic alliances** made with the local companies in Australia and Germany. Particularly, problems as a lack of commitment and few projects from the partners, different cultures and ways of working or mismatched expectations could arise. To prevent these DP must make sure to clarify the objectives and responsibilities with partners during the negotiations phase. It can also set joint KPIs for a clear understanding of the alliance's performance. Since Strategic Alliances are flexible contracts it is usually easy to terminate the relationship if necessary.

Another problem could be to face difficulties in handling partner company's' orders by lacking available production capacity or simply not being able to comply with timings set to produce and ship the products. In this case, DP should try to ensure active communication before and during the development of projects so the partner is aware of all the delays or problems that could emerge in the production.

**Problem 2:** Secondly, some problems might arise related to the **Sales Branch**. To prevent **discrepancies** with the parent company, DP should organize quarterly meetings with the branch and ensure alignment in objectives, global strategy, as well as in the value proposition.

**Transportation inefficiencies** might also arise such as late deliveries, missed shipments, or damaged goods. Such problems might damage DP's value proposition and brand reputation. Nevertheless, they might be tackled by re-organizing the contractual terms with transportation companies, doing partnerships with different shipping companies, improving the predictability of future orders by analysing client's history, or even require clients to order with more days in advance.

Furthermore, possible **trusting issues** could be tackled by planning occasional trips for DP's employees to Australia and ensuring personal contact. DP should consider dropping the Sales

Branch if none of the recommendations proves to be successful or changing the entry mode strategy in the case that the delivery standards are not adequate to a specific client segment.

**Problem 3:** Lastly, DP could find out that the **Australian market is less profitable than expected**. In this scenario, DP should try to re-adapt its strategy, focusing only on the clients and products that bring more revenues and stop selling to the others.

On top of that, DP should also re-analyze the market with the insights they have collected during the time spent in Australia in order to understand if there is the possibility to focus on different types of clients and products, that can have a better market in the country.

Finally, DP should delay the following phases of the expansion plan until the revenues improve or in the worst-case scenario, disinvest from Australia and focus to different countries.

### 3.3 Future Considerations: Given the Success of the Internationalization Plan

**Consideration 1:** The strategic alliances and sales representatives aim to increase footprint in Australia to be profitable. Having these two steps successfully launched, DP will move to the **acquisition of the CSF company**. The team gave a preview of the acquisition cost, nevertheless DP will have to execute a "Precedent transaction analysis". Specific information is available on "equity research reports", "Bloomberg", and "M&A Global". Three multiples often used in the evaluation of companies are EV/Revenue, EV/EBITDA, EV/Capital employed. These multiples will give a complete overview of the financial efficiency of the company.

**Consideration 2:** If the acquisition proves to be successful, DP can further consider **doing business with other Asian countries**. It can think of markets that are attractive to trade stone with such as China, South Korea, Singapore, Japan, New Zealand and Hong Kong. It can also consider geographically close countries, namely Papua New Guinea, Malaysia, Indonesia, Philippines and Vietnam.

To decide which country to choose, DP can follow the analysis done in this project: to gather data on variables that characterize the market's potential (e.g. demand on stone, GDP, etc.) and do a ranking and clustering analysis. If the trend remains, a possibility could be to do strategic alliances with companies in South Korea, a country that has proven to be attractive for DP.

Following the rationale of the entry strategy proposed for Australia, DP can opt by entering these countries through externalization entry modes and then increase resource commitment once market knowledge and experience is gained.

**Consideration 3:** Provided with a prosperous Internationalization Plan, DP could consider engaging on some of the **identified opportunities**, sustaining the longevity of its competitive advantage. Examples include: Engaging in R&D initiatives, facing the competition of artificial stone; Acquiring a quarry to diversify their product portfolio and control prices; Explore alternative use for their existing quarries; Make use of relationships with local stone associations to secure client and supply networks; Keep increasing its' international footprint and thus its' revenue; Proactively exploring new customer acquisition strategies; and Making more partnerships with clients, securing stable demand for their products.

## 4 Conclusions

The project was divided into seven different parts. After analyzing, in the first part, the situation analysis of both DP and the CSF Stone industry, it was concluded that the company shows readiness to internationalize.

In the second part, a ranking and clustering analysis was conducted using quantitative and qualitative variables. This highlighted potential countries DP could expand to, the top three being Australia, Germany, and South Korea. Afterwards, a market in-depth analysis on these three evaluated crucial factors to be considered when entering a market: country overview

through Pestel analysis, the intensity of competition, market revenue potential, contacts in the country and entry mode.

The Australian market is the one with the most expected growth in the future both in terms of market size and production turnover. Moreover, since the market is still developing the competition is less severe than the German and South Korean ones. On the other hand, since DP has already a small footprint in Germany, it is plausible that they will have fewer problems in finding clients, thanks to the contacts that they have made in the past. Yet, since the German CSF stone industry is much more mature, DP will need to comply with a higher level of competition. Appendix 36 summarizes the final scores for each country, with Australia, closely followed by Germany, proving to be the best countries to expand to.

Next, an expansion strategy was developed to extend DP's life cycle and guarantee its competitiveness in the CSF industry. DP will do so by raising international demand and revenues once its domestic market is saturated. A two-way entry strategy was then proposed: to first enter the Australian market and then the German one.

This outlines DP should change its approach to demand by embracing a more proactive attitude by going after client and project opportunities. It is also suggested to start engaging in contractual modes to guarantee annual demand levels and have sustainable growth over time. Finally, DP is left with the possibility of creating an Asian hub by extending production to Australia. Following an organic and sustainable path, it will be finally capable to answer demand orders from big countries such as China and South Korea.

A Marketing Plan was suggested with the purpose of optimally and sustainably drive DP's profitability. In that train of thought, several actions were recommended in line with DP's luxurious and premium offerings following proactive customer acquisition and retention strategies.

In the sixth part of the project, a Financial Plan was conducted where the financial viability of the project was analyzed in an operational, investment and financing level. At the end of the analysis, the project showed to be viable and sustainable not only in the short-term but also in a medium, long-term perspective.

To finalize the work, a risk assessment was performed to understand the which were the actions in the implementation plan what imply more risk to DP and its internationalization project. Thus, to complement the risk analysis, limitations, recommendations, and future considerations were presented to help DP minimize risks and maximize its success. The recommendations were separated in 3 parts. The first part contemplated general recommendations for DP, the second part presented considerations and recommendations in the case of specific implementations failures that might happen in the future. The last part presented recommendations and considerations for the future of DP's internationalization project, given the success of its implementation, as it is expected.

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# 6 Appendixes

Appendix 1. Human Resources Data

| Distribution of Human Resources by Level of Training | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Personnel | < = Level 3 | | | Level 4 | | | Level 6 | | |
| | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 |
| Men | 65 | 64 | 58 | 2 | 3 | 3 | 4 | 3 | 3 |
| Women | 9 | 7 | 10 | | | | 3 | 3 | 3 |
| Total | 74 | 71 | 68 | 2 | 3 | 3 | 7 | 6 | 6 |

| Personnel | Total | | |
|---|---|---|---|
| | 2017 | 2018 | 2019 |
| Men | 71 | 70 | 64 |
| Women | 12 | 10 | 13 |
| Total | 83 | 80 | 77 |

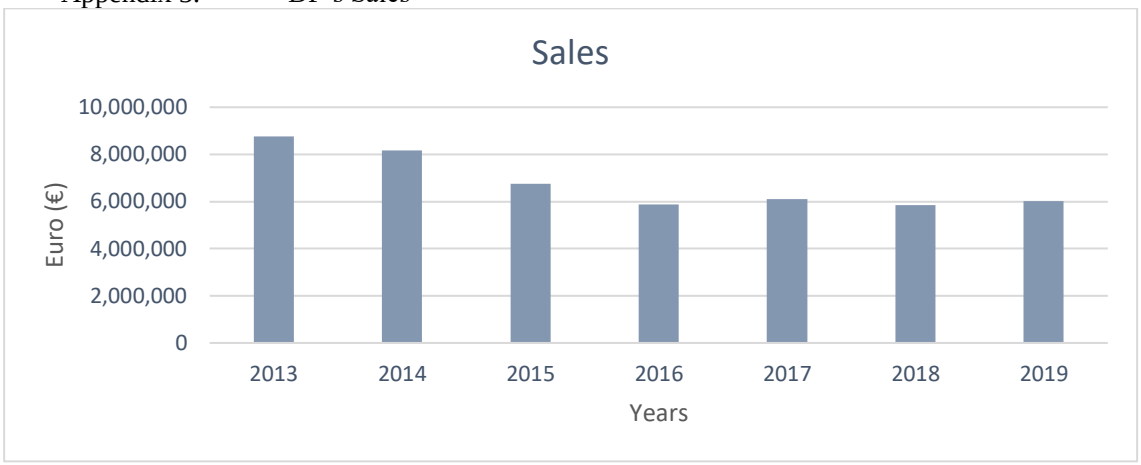
Appendix 2. DP Financial Statements

| Profit & Loss Account | | | |
|---|---|---|---|
| REVENUES AND EXPENSES | Periods | | |
| | 2019 | 2018 | 2017 |
| Sales | 6,018,037.48 | 5,835,688.25 | 6,109,894.72 |
| Operating grants | 405 | 3,683.05 | 3,391.01 |
| Inventories of production change | -129,033.32 | -16,420.94 | 95,086.93 |
| Cost of goods sold (and consumed) | -3,243,296.01 | -2,908,955.46 | -2,872,750.03 |
| External supplies and services | -1,057,704.36 | -1,092,812.13 | -1,237,147.82 |
| Employees expenses | -1,623,733.32 | -1,644,998.73 | -1,656,108.30 |
| Impairment of debts (losses/reversions) | 4,012.35 | -13,989.99 | |
| Fair value Increase/Decrease | 152,392.14 | -144,731.05 | 35,495.86 |
| Other revenues and gains | 371,281.66 | 443,805.20 | 278,885.76 |
| Other expenses and losses | -35,477.03 | -74,164.86 | -491,842.19 |
| **EBITDA** | **456,884.59** | **387,103.34** | **264,905.94** |
| Expenses/reversions of depreciation and amortisation | -299,717.24 | -250,674.52 | -284,234.97 |
| **EBIT** | **157,167.35** | **136,428.82** | **-19,329.03** |
| | | | **-0.57** |
| **Result before taxes** | **157,167.35** | **136,428.82** | **-19,329.60** |
| Income tax for the period | -35,477.69 | -34,893.67 | -46,045.49 |
| **Net result for the period** | **121,689.66** | **101,535.15** | **-65,375.09** |
| | | | Unit: Euro |

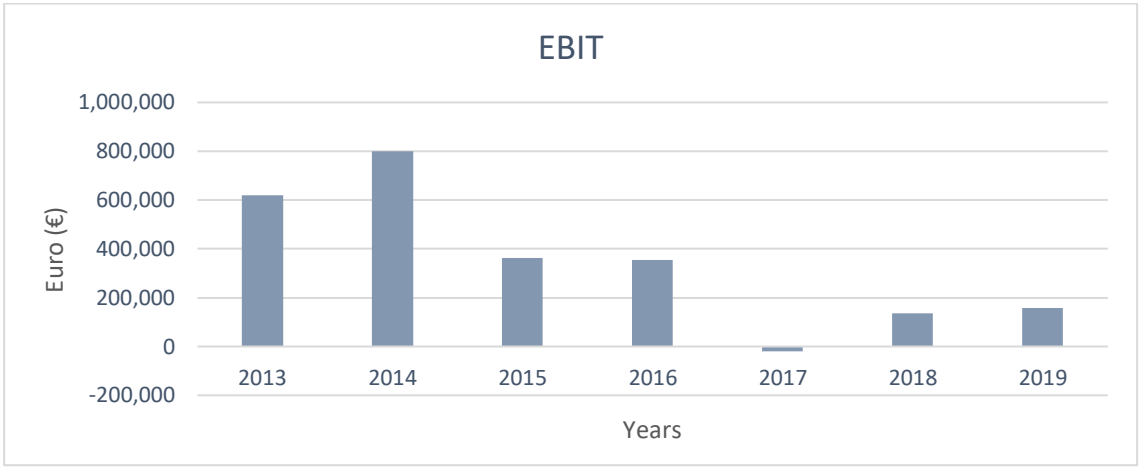
| Statement of Cash Flows | | | |
|---|---|---|---|
| ITEMS | Periods | | |
| | 2019 | 2018 | 2017 |
| Cash flows from operations | | | |
| Cash receipts from customers | 5,989,246.53 | 6,394,703.38 | 5,962,664.73 |
| Cash paid to suppliers | -4,174,335.05 | -4,370,908.05 | -4,544,459.25 |
| Cash paid to employees | -1,624,856.59 | -1,645,121.18 | -1,652,788.43 |
| Cash generated from operations | 190,054.89 | 378,674.15 | -234,582.95 |
| Income Tax Payment / Receipt | -68,446.15 | 22,511.89 | -79,876.76 |
| Other receivables/payables | 167,156.26 | 120,640.42 | -1,218,190.30 |
| **Net Cash Flow from Operations** | **288,765.00** | **521,826.46** | **-1,532,650.01** |
| Cash flows from investing activities | | | |
| Cash receipts from | | | |
| Tangible fixed assets | -252,843.09 | -239,484.67 | -173,294.94 |
| Intangible assets | | -22,567.16 | -65,780.01 |
| Financial Investments | | -785.54 | |
| Other assets | -366,285.63 | | |
| Cash paid for | | | |
| Tangible fixed assets | 27,571.00 | 58,500.00 | 18,008.94 |
| Financial Investments | 7,500.00 | 7,500.00 | 6,397.92 |
| Other assets | 144 | 144 | |
| Investment subsidies | 29,229.61 | | |
| Interest and Similar income | 51,160.83 | 21,681.40 | 12,157.88 |
| Dividends | 17,227.79 | 20,436.67 | |
| **Net Cash Flow from Investing Activities** | **-486,295.49** | **-154,575.30** | **-202,510.21** |
| Cash flows from financing activities: | | | |
| Cash paid for | | | |
| Repayment of loans | -1,298.58 | -3,117.15 | -41,588.18 |
| Interest and Similar expenses | | -3,339.78 | -0.57 |
| Other financing activities | | -11,149.98 | |
| **Net Cash Flow from Financing Activities** | **-1,298.58** | **-17,606.91** | **-41,588.75** |
| **Net Change in Cash and Equivalents** | **-198,829.07** | **349,644.25** | **-1,776,748.97** |
| Effect of Exchange Rate Changes | 85,975.99 | 168,615.18 | -431,985.40 |
| Cash at Beginning of Period | 2,626,951.31 | 2,108,691.88 | 4,317,426.25 |
| Cash at End of Period | 2,514,098.23 | 2,626,951.31 | 2,108,691.88 |
| | | | Unit: Euro |

| Balance Sheet | | | |
|---|---|---|---|
| ITEMS | Date | | |
| | 31/12/2019 | 31/12/2018 | 31/12/2017 |
| ASSETS | | | |
| **Fixed Assets** | **2,064,896.07** | **1,779,406.53** | **1,778,218.79** |
| Tangible fixed assets | 1,414,939.90 | 1,426,976.07 | 1,520,118.35 |
| Investment properties | 456,263.40 | 91,905.86 | 93,833.95 |
| Intangible fixed assets | 112,940.46 | 172,566.67 | 70,728.10 |
| Other financial investments | 80,752.31 | 86,823.93 | 93,538.39 |
| Deferred taxes assets | | 1,134.00 | |
| **Current Assets** | **7,746,973.76** | **8,122,758.27** | **7,905,903.73** |
| Stocks | 1,172,283.35 | 1,463,069.45 | 1,462,569.24 |
| Clients | 1,678,981.26 | 1,795,471.98 | 1,995,863.45 |
| State and other public bodies | 72,300.51 | 149,314.51 | 94,290.49 |
| Other receivables | 435,919.21 | 282,802.16 | 148,386.89 |
| Deferred | 34,433.98 | 24,472.44 | 33,530.64 |
| Financial assets held for trading | 1,838,957.22 | 1,780,676.42 | 2,062,571.14 |
| Cash and deposits | 2,514,098.23 | 2,626,951.31 | 2,108,691.88 |
| **Total assets** | **9,811,869.83** | **9,902,164.80** | **9,684,122.52** |
| EQUITY | | | |
| Subscribed capital | 99,759.58 | 99,759.58 | 99,759.57 |
| Legal reserves | 57,559.46 | 57,559.46 | 57,559.46 |
| Other reserves | 667,400.75 | 667,400.75 | 667,400.75 |
| Transited results | 7,562,296.40 | 7,459,997.10 | 7,524,608.04 |
| Revaluation surplus | 9,934.01 | 10,698.16 | 11,462.32 |
| Other equity changes | 254,160.15 | 86,892.22 | 94,570.65 |
| Net result for the period | 121,689.66 | 101,535.15 | -65,375.09 |
| **Total Equity** | **8,772,800.01** | **8,483,842.42** | **8,389,985.70** |
| LIABILITIES | | | |
| **Non-current Liabilities** | **76,672.50** | **26,668.44** | **28,466.80** |
| Deferred tax liabilities | 2,884.07 | 3,105.92 | 3,327.77 |
| Other debt payables | 73,788.43 | 23,562.52 | 25,139.03 |
| **Current Liabilities** | **962,397.32** | **1,391,653.94** | **1,265,670.02** |
| Suppliers | 159,445.57 | 270,578.26 | 464,578.79 |
| Advances from clients | 406,317.96 | 660,082.28 | 434,042.73 |
| State and other public bodies | 73,408.88 | 107,607.34 | 77,335.12 |
| Current financing obtained | 2,590.04 | 3,888.62 | 7,005.77 |
| Other current liabilities | 320,634.87 | 349,497.44 | 279,108.16 |
| Deferred | | | 3,599.45 |
| **Total Liabilities** | **1,039,069.82** | **1,418,322.38** | **1,294,136.82** |
| **Total Liabilities and Equity** | **9,811,869.83** | **9,902,164.80** | **9,684,122.52** |
| | | | Unit: Euro |

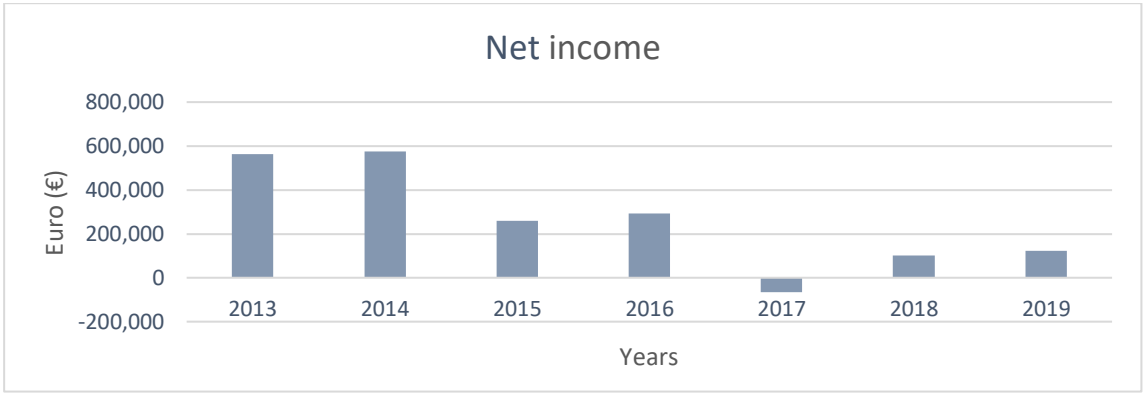
Appendix 3. DP's Sales



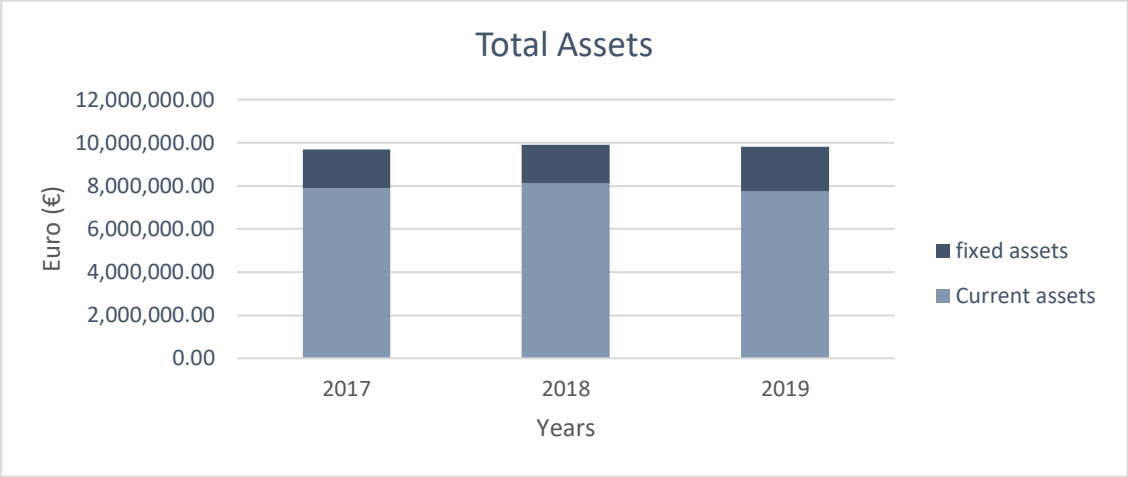

Appendix 4. DP's EBIT



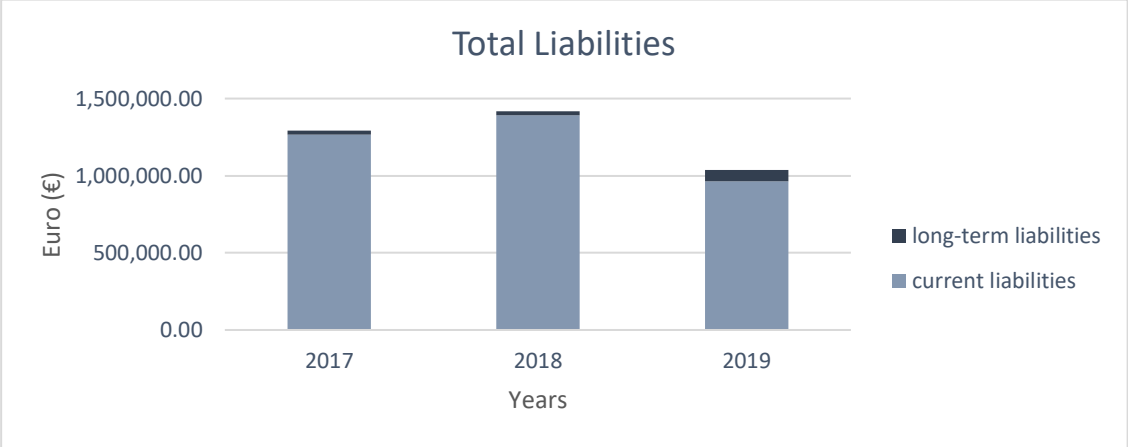

Appendix 5. DP's Net Income



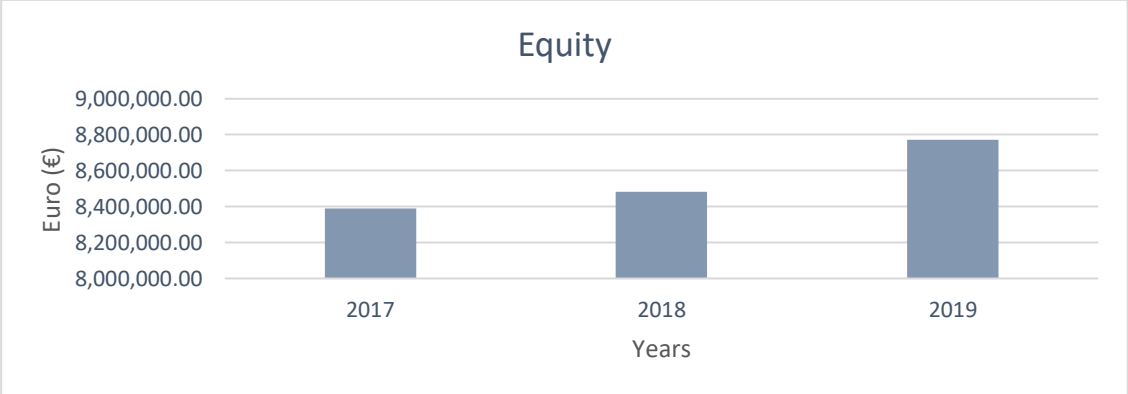
Appendix 6. DP'S Total Assets




Appendix 7. DP's Total Liabilities




Appendix 8. DP's Equity



Appendix 9. DP'S Liquidity ratios

| Liquidity ratios 2019 | |
|---|---|
| **Current ratio** | **8,05** |
| Current assets | 7 746 973,76 |
| Current liabilities | 962 397,32 |
| | |
| **Quick ratio** | **6,83** |
| Current assets | 7 746 973,76 |
| Inventories | 1 172 283,35 |
| Current liabilities | 962 397,32 |
| | |
| **Cash ratio** | **2,61** |
| Cash | 2 514 098,23 |
| Current liabilities | 962 397,32 |
| | |
| **NWC** | **6 784 576,44** |
| Current assets | 7 746 973,76 |
| Current liabilities | 962 397,32 |

Appendix 10. DP's Solvency ratios

| Solvency ratios 2019 | |
|---|---|
| **D/E ratio** | 0,0003 |
| Total debt | 2 590,04 |
| Equity | 8 772 800,01 |
| | |
| **Debt to Assets ratio** | 0,0003 |
| Total debt | 2 590,04 |
| Assets | 9 811 869,83 |
| | |
| **Financial Leverage ratio** | 1,1184 |
| Assets | 9 811 869,83 |
| Equity | 8 772 800,01 |
| | |
| **Net Debt to EBITDA** | -15,9798 |
| Total debt | 2 590,04 |
| Cash | 2 514 098,23 |
| EBITDA | 157 167,35 |
| | |
| **Debt Structure Ratio** | 0 |
| Long-term debt | 0 |
| Total debt | 2590,04 |

Appendix 11. DP's Efficiency Ratios

| Efficiency ratios 2019 | |
|---|---|
| **Total Assets Turnover** | 0,61 |
| Total assets | 9 811 869,83 |
| Sales | 6 018 037,48 |
| | |
| **Fixed Assets Turnover** | 2,91 |
| Fixed assets | 2 064 896,07 |
| Sales | 6 018 037,48 |
| | |
| **Inventory Turnover** | 5,13 |
| Sales | 6 018 037,48 |
| Inventory | 1 172 283,35 |
| | |
| **Days to Sell Inventory** | 130,12 |
| Inventory | 1 172 283,35 |
| COGS | 3 243 296,01 |
| | |
| **Average Collection Period** | 100,44 |
| Accounts Receivables | 1 678 981,26 |
| Sales | 6 018 037,48 |
| | |
| **Average Payment Period** | 9,00 |
| Accounts Payable | 159 445,57 |
| Purchases | 6 377 822,80 |
| | |
| **Cash conversion cycle** | 221,56 |
| Days to sell inventory | 130,12 |
| Average collection period | 100,44 |
| Average payment period | 9,00 |

Appendix 12. Industry Average Ratios (Ready Ratios s.d.)

Industry: 32 - Stone, Clay, Glass, And Concrete Products

Measure of center: median (recommended)

| Financial ratio | Year | | | | | |
|---|---|---|---|---|---|---|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 |
| **Solvency Ratios** | | | | | | |
| Debt ratio | 0.68 | 0.54 | 0.52 | 0.46 | 0.61 | 0.61 |
| Debt-to-equity ratio | 1.21 | 1.02 | 0.67 | 0.70 | 0.80 | 0.75 |
| Interest coverage ratio | 1.80 | 2.06 | 2.03 | 2.92 | 1.74 | 2.05 |
| **Liquidity Ratios** | | | | | | |
| Current Ratio | 1.99 | 1.85 | 1.80 | 1.75 | 1.23 | 1.67 |
| Quick Ratio | 1.00 | 0.96 | 1.13 | 1.08 | 0.77 | 0.87 |
| Cash Ratio | 0.11 | 0.17 | 0.19 | 0.28 | 0.16 | 0.30 |
| **Profitability Ratios** | | | | | | |
| Profit margin | 2.4% | 3.8% | 2.6% | 3.1% | 2.1% | 2.9% |
| ROE (Return on equity), after tax | 12.7% | 7.3% | 4% | 8.8% | 3% | 6.4% |
| ROA (Return on assets) | 7.5% | 2.6% | 1.9% | 3.3% | 1.8% | 1.4% |
| Gross margin | 19.3% | 20.9% | 24.5% | 25.8% | 21.3% | 23.3% |
| Operating margin (Return on sales) | 6.4% | 6.9% | 9.4% | 9.4% | 5.8% | 6.4% |
| **Activity Ratios** | | | | | | |
| Asset turnover (days) | 112 | 433 | 440 | 416 | 422 | 375 |
| Receivables turnover (days) | 12 | 38 | 37 | 44 | 47 | 45 |
| Inventory turnover (days) | 17 | 60 | 60 | 45 | 54 | 53 |

Appendix 13. DP's Risk Ratios

| Risk Ratios 2019 | |
|---|---|
| **Breakeven point** | 3521657,09 |
| Total fixed costs | 1 623 733,32 |
| Gross Profit | 2 774 741,47 |
| Sales | 6 018 037,48 |
| | |
| **Margin of safety** | 0,41 |
| Actual sales | 6 018 037,48 |
| Breakeven sales | 3 521 657,09 |
| | |
| **Degree of operational leverage** | 17,65 |
| Gross profit | 2 774 741,47 |
| EBIT | 157 167,35 |
| | |
| **Degree of financial leverage** | 1,00 |
| EBIT | 157 167,35 |
| EBT | 157 167,35 |
| | |
| **Tax burden** | 0,77 |
| Net Income | 121 689,66 |
| EBT | 157 167,35 |
| | |
| **Degree of combined leverage** | |
| DOL | 17,65 |
| DFL | 1,00 |

Appendix 14. DP's Profitability Ratios

| Profitability Ratios 2019 | |
|---|---|
| **Return on Sales** | 2,61% |
| EBIT | 157 167,35 |
| Sales | 6 018 037,48 |
| | |
| **Return on Assets** | 1,60% |
| EBIT | 157 167,35 |
| Total Assets | 9 811 869,83 |
| | |
| **Return on Equity** | 1,39% |
| Net Income | 121 689,66 |
| Equity | 8 772 800,01 |
| | |
| **Gross Margin** | 46,11% |
| Sales | 6 018 037,48 |
| COGS | 3 243 296,01 |

Appendix 15. Bowman's Strategy Clock

Appendix 16. DP's Business Model

### Key Partners

- Stone quarries
- Associations (national and international)
- Transportation companies

### Key Activities

- Assure quality throughout value chain
- Stone Selection, Cutting blocks into slabs and tiles, Cut to size projects
- Building relationships with suppliers and clients

### Key Resources

- Stone
- Competitive Machinery
- Industry experience and knowledge (C3 employees)
- Client and Supply network

### Value Propositions

- High status, attractive stone for clients to build unique spaces
- High quality stone (durability, resistant to corrosion, slip resistant)
- Quality guaranteed through know-how and long experience in the industry (40 years)

### Customer Relationships

- Reputation and trust are key
- Prolonged dedicated personal assistance
- Close and continued communication with clients
- Maintain long-term client relationships

### Channels

- C3_1 and C3_2 facilities
- International/national events (fairs)
- Word of Mouth
- Website and Social Media (Facebook, LinkedIn, Instagram)
- Newsletter, Magazine

### Customer Segments

- Individuals
- Construction companies (some fit under the category of architectures, design, consultants, installation)
- Wholesalers
- Cutting, Shaping and Finishing of Stone companies

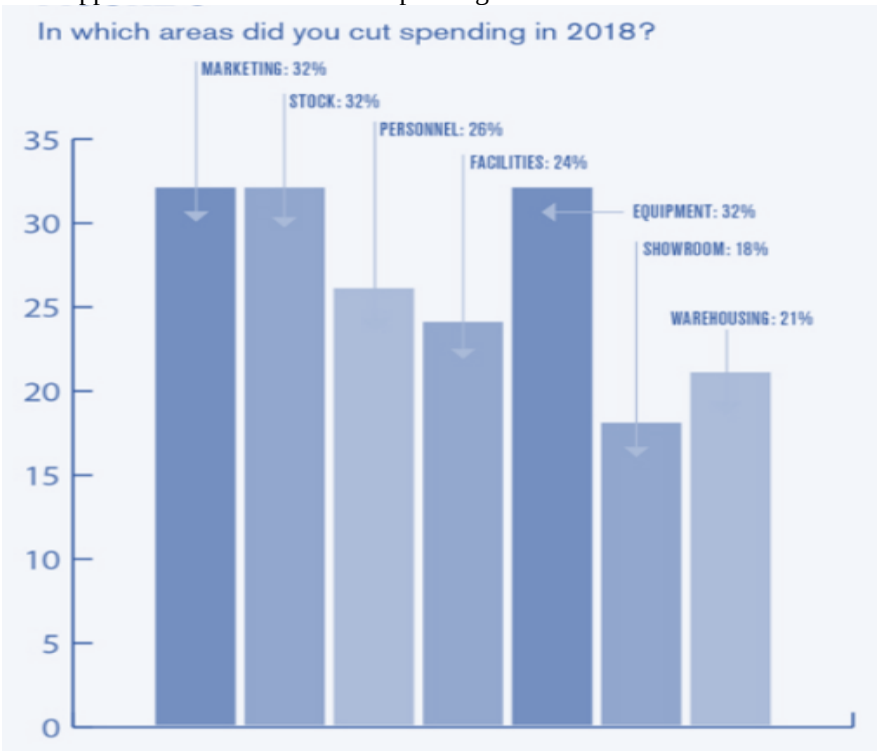
### Cost Structure

- Value driven (focused on value creation, premium value proposition)
  - Fixed costs (employees salary, manufacturing facilities, machinery)
  - Variable Costs (raw materials, e.g. stone and wood)

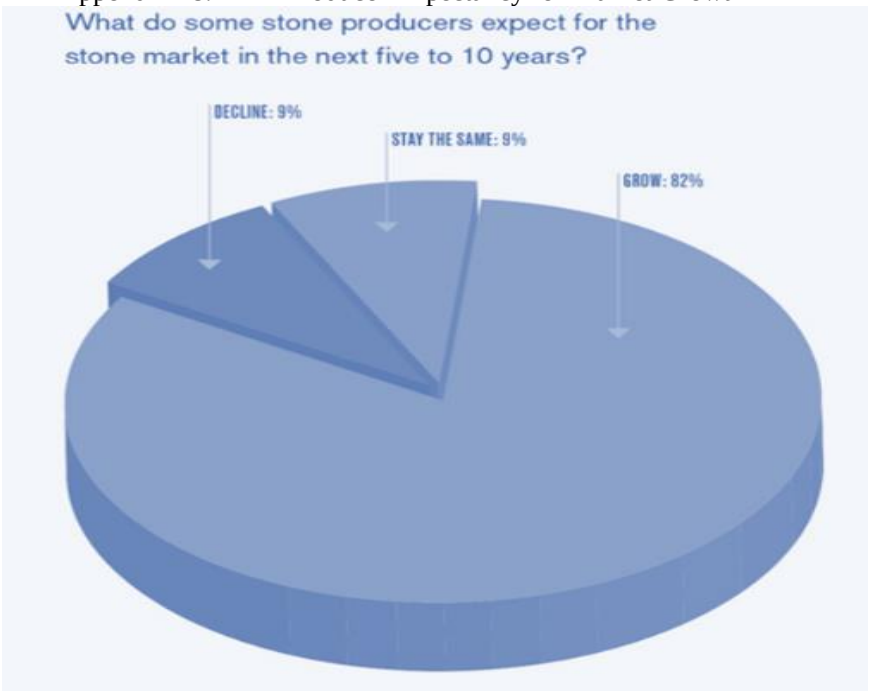
### Revenue Streams

- Transaction based Revenues, namely asset sales (one time payment for stone purchased)
  - Money received per contract (in Slabs / Blocks / Cut to size project)
  - According to the type of project, contract payments are: Product feature dependant or Volume feature dependant payments

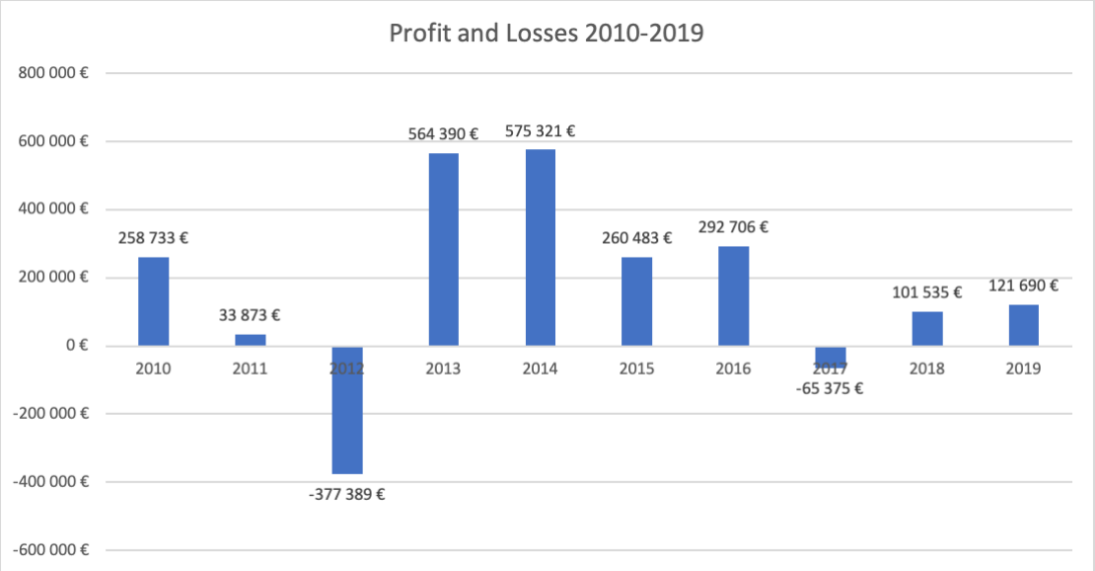
Appendix 17. Planned Spending Cuts




Appendix 18. Producer Expectancy for Market Growth



Appendix 19. DP's P&L



Appendix 20. SWOT Analysis

The origins of the SWOT analysis date back to the 1960s and 1970s in a research project at Stanford University led by Albert S. Humphrey (Wikipedia 2020), to whom it was credited. SWOT analysis assesses both internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats) of a company, providing a glance at the current and future potential of the company within its competitive set.

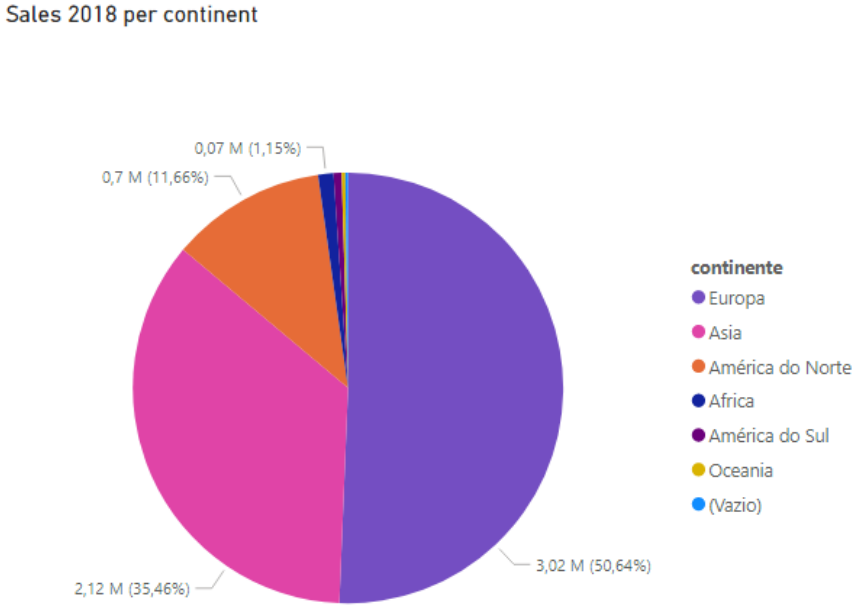
| Strengths | Weaknesses |
|---|---|
| **Know-how provided by the years of experience:** The Natural Stone business profitability fluctuates a lot given the quality of raw material. As such, having experience in dealing and sourcing blocks is key. DP has access to the knowledge on Natural Stone's unique characteristics as book-matching, translucency, mechanical properties, vein-matching, cutting direction. Furthermore, their years of experience in Special Fabrication processes as well as their investment in proper machinery have translated into the mastery of Honeycomb, Stock (stone and cork), and Ceramic base techniques.<br>**International footprint:** As further discussed above, the company has long time partners in Portugal and abroad with suppliers of raw material and clients. This has enabled them to enlarge the range of their product portfolio.<br>**Control over some stages in the supply chain:** As one goes further down the supply chain, the profitability that can be attained with the end-product decreases. DP has successfully concentrated its business on profitable stages of the supply chain and their mastery of various product applications has made them control the supply chain from the Block to the end-product. | **Communication Strategy:** DP has been making increasing efforts to improve communication with potential clients. Recently, they have hired a new Marketing Manager, who has been activating their social media, and their website has been renewed. Nevertheless, in terms of communication strategy, the company seems to be behind other competitors.<br>**Strategy to capture new clients and potential partners:** Currently, DP may choose the projects in which it wants to participate and sources new clients mainly through contacts and international fairs. Given that the company is not working up to its full capacity, it could invest in new strategies for attaining new clients and potential partners. |
| **Opportunities** | **Threats** |
| **R&D initiatives:** Some companies have been developing R&D teams dedicated to finding alternative uses to their raw materials. Some R&D initiatives aim at new uses of waste, others at transforming raw material, making it partly natural and partly engineered. Furthermore, R&D initiatives could be used to enhance current processes as well as an incentive for the design and creation of new products.<br>**Acquiring and/or exploring a Quarry:** DP used to explore 3 quarries which at this time are abandoned. By backward integrating their business, they could secure the supply of some types of stone and better control prices, being also able to offer more competitive products.<br>**Explore alternative uses for the abandoned Quarries:** Some alternative uses have been found for abandoned quarries, such as artificial lakes. DP could explore alternative uses for their quarries.<br>**The Associations:** Currently, DP is part of a couple of associations. One of them, Assimagra, provides various services to the belonging partners. Given the current situation of the European Union, DP could explore those services and consider applying for the London Association of natural stone.<br>**Enlarging their international footprint:** By doing so, the company could integrate new product offerings on their portfolio as well as find new clients in other countries. Currently, DP has been exploring this option.<br>**Create new ways of acquiring customers:** They could showcase their products in a home-decoration magazine, generate engagement through their current communication channels, amongst other options.<br>**Making a partnership with construction or architect companies:** As referenced before, their current plant is not working up to its full capacity. By partnering with other businesses at the end of the supply chain, the company could secure their financial stability, as well as high volume demands. | **Engineered Stone:** Engineered and partly engineered stone has been flooding the market. China is currently the most competitive country in the production of these alternative products.<br>**Quarries starting their own businesses:** DP has no active quarries, and their natural stone is supplied by long-term partners (nationally and internationally). The quarries control the supply of natural stone both in quantity and price. When the owner of a quarry decides to start his/her own business, it will be able to sell slabs at a lower price or supply natural stone at a higher price. Both situations will (and have) negatively impacted DP.<br>**Covid-19 epidemics:** As in other industries, the sales of DP have been negatively impacted by this global epidemic.<br>**Labour laws:** The retirement age for this industry has changed in Portugal since it has been considered forced labour. As such, DP has been experiencing early retirements, especially motivated by the current pandemic. |

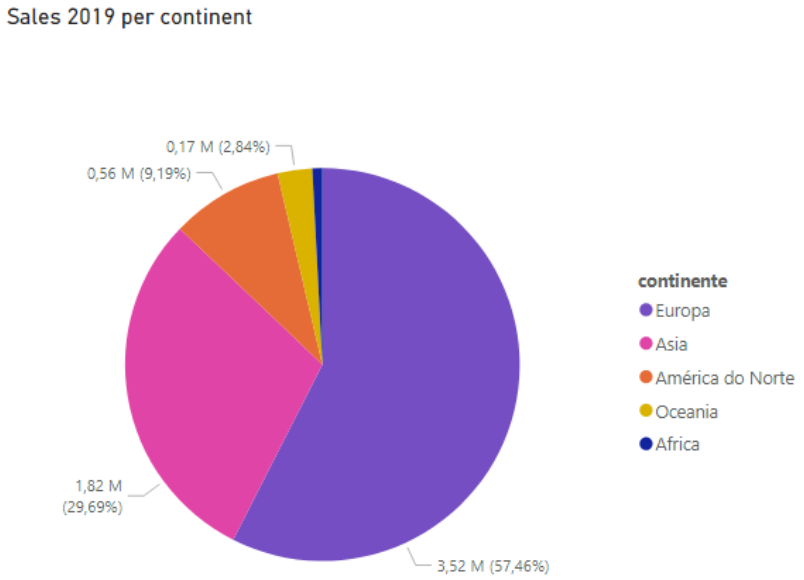
Appendix 21. TOWS Analysis

| | **Internal Strengths**<br>1.Know-how provided by the years of experience<br>2.International footprint<br>3.Control over some stages in the supply chain | **Internal Weaknesses**<br>1.Communication Strategy<br>2.Strategy to capture new clients and potential partners |
|---|---|---|
| **External Opportunities**<br>1.R&D initiatives<br>2.Acquiring and/or exploring a quarry<br>3.Explore alternative uses for the abandoned Quarries<br>4.The associations<br>5.Enlarging their international footprint<br>6.Create new ways of acquiring customers<br>7.Making a partnership with construction or architect companies | **Use Strengths to maximize Opportunities**<br>By using the know-how provided by several years of experience within the industry, DP could engage in R&D initiatives, exploring quarries and developing new partnerships. The know-how would give DP an edge in engaging in R&D initiatives related with the raw material. Although DP is already developing cut-to-size products that use wasted material, other players in the industry are transforming the raw material turning it into partly engineered stone or finding alternative uses for natural stone. With the help of partnerships with universities, DP could distinguish itself from other payers and compete in developing markets such as synthetic stone industry.<br>DP's know-how and further learning economies could be a determinant factor in exploring efficiently quarries. The backward integration would allow DP to sell blocks and slabs at competing prices to other companies and have greater control over their costs.<br>Being know-how such a valuable resource in this industry, DP could use it to establish relevant partnerships with construction companies, which would give them more security on prospect sales and on financial stability. Finally, the know-how, along with the control of various stages of the supply chain can help DP to expand its international presence through partnerships and other internationalization strategies, building new access to other markets. Finally, the large range of product portfolio, provided by a long and healthy relationship with clients and suppliers abroad, fights companies that are globally threatening the industry. | **Minimize Weaknesses by taking advantage of Opportunities**<br>The associations to which DP belongs work as efficient channels of communication with both potential clients, suppliers, and other players within the industry. By establishing a clear strategy to attain customers, DP could make a better use of those channels as well as explore new association that would open new opportunities in different markets.<br>By drafting a proper strategy to capture the segments that DP wants to attract, the company can profit from having more a wide range of clients whom they know how to attract and engage.<br>By working on a communication strategy, DP can take advantage of new partnerships that bring more stable and high-volume sales, ensuring their financial stability. |
| **External Threats**<br>1.Engineered stone<br>2.Quarries starting their own business<br>3.Covid-19 epidemics<br>4.Labour laws | **Use Strengths to minimize Threats**<br>The competitive advantage of their established and trustworthy business international relations can be used to minimize the threat of engineered stone companies and quarries that have recently started their own businesses. | **Minimize Weaknesses and avoiding Threats**<br>DP can minimize its weaknesses and avoid current threats as engineered stone companies and quarries that started their own business. By carefully drafting a strategy for communication and capturing clients, DP can position through its points of differentiation within the market. This would enable DP to distance itself from these threats, fighting for a niche position within the industry. On the other hand, DP can also draft those new strategies in a way to face and compete alongside those players. |

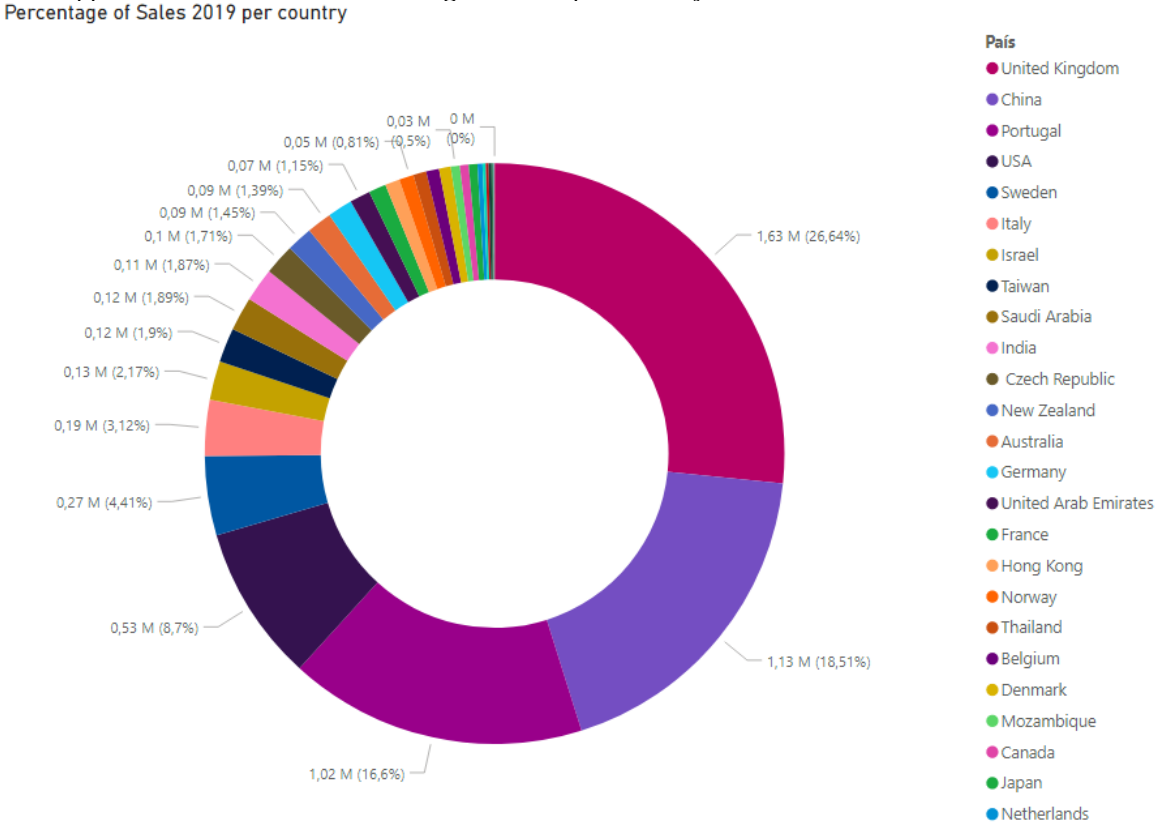
Appendix 22. Global Outlook of DP's Sales 2019


Appendix 23. DP's Sales per Continent for 2018 and 2019



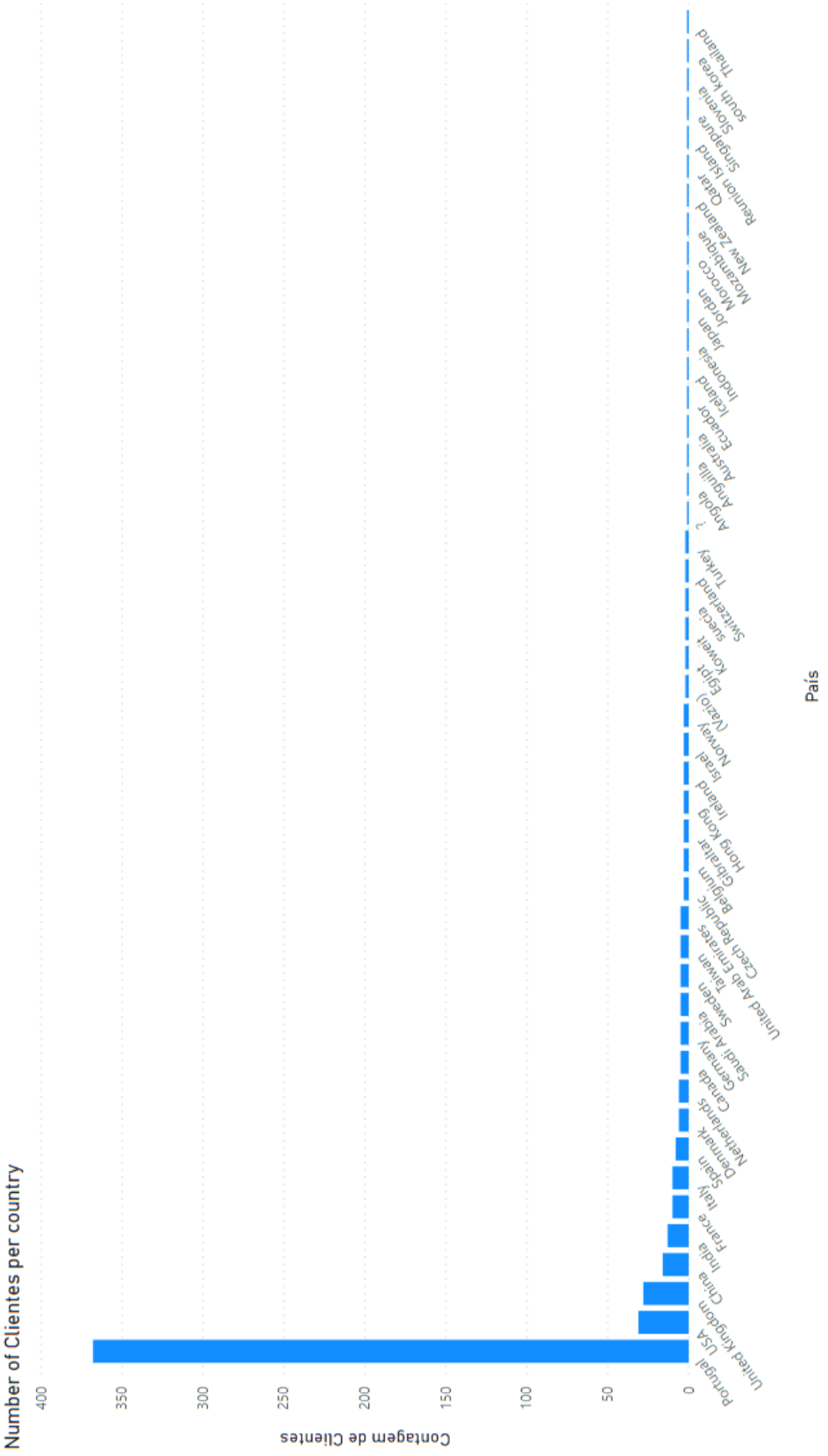



Appendix 24. DP's Percentage of Sales per Country 2019

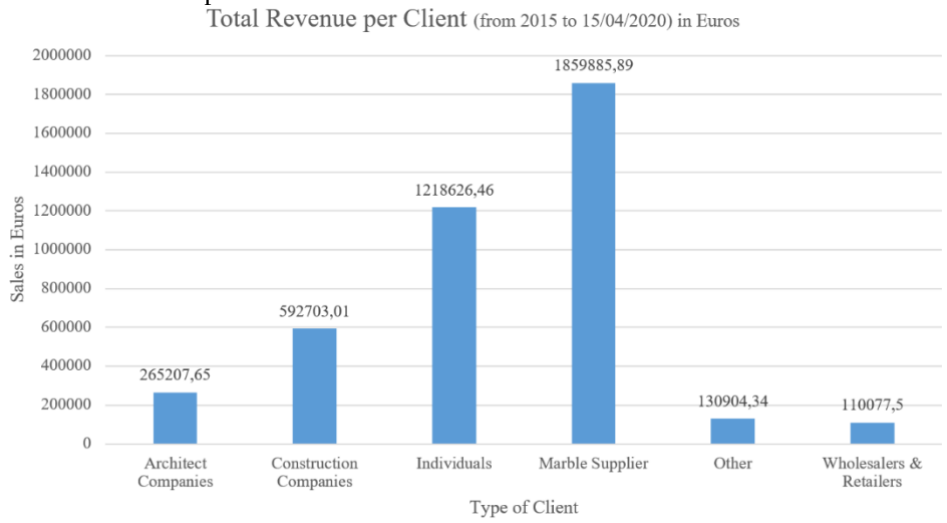


Appendix 25. DP's Sales per Country for 2018 and 2019

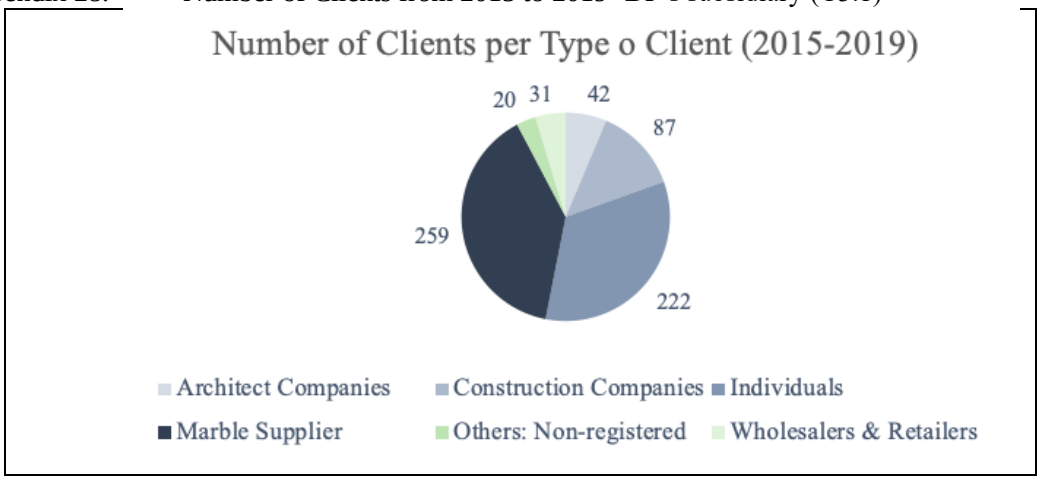
Appendix 26. Number of Clients per Country for 2019



Appendix 27. Repartition of DP's Sales 2015-2020

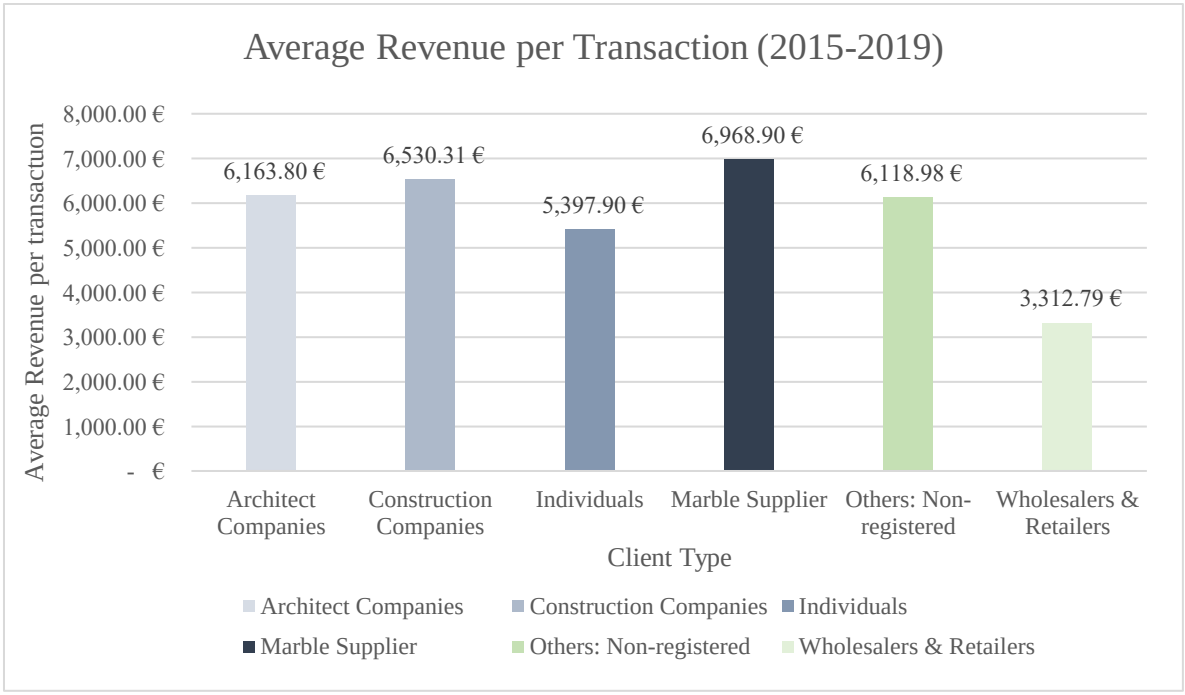



Appendix 28. Number of Clients from 2015 to 2019- DP's subsidiary (C3.1)

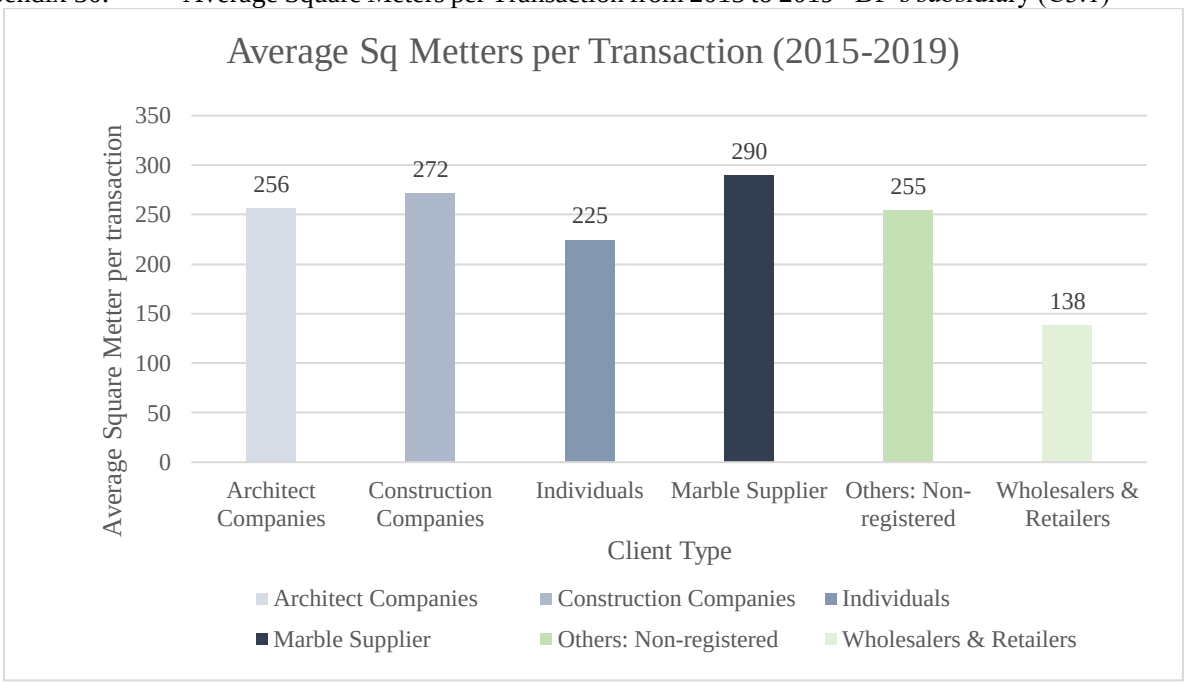



Note: These architect companies mentioned are construction companies that also do architectural projects in this area. (Architect and Design companies *per se* are not the focus of DP as they do not buy stone but simply prescribe alternatives to their clients)

Appendix 29. Average Revenue per Transaction from 2015 to 2019 - DP's subsidiary




Appendix 30. Average Square Meters per Transaction from 2015 to 2019 - DP's subsidiary (C3.1)




Note: These architect companies mentioned are construction companies that also do architectural projects. (Architect and Design companies *per se* are not the focus of DP as they do not buy stone but simply prescribe alternatives to their clients)

Appendix 31. Summary Table of Clients' Needs Assessment

| Features/ Type of customer | DP's Offer | Individuals | Construction Companies | Architecture and Design Companies | Wholesalers |
|---|---|---|---|---|---|
| **Role** | - | One-time purchasers | High volume but on a budget purchaser | Promoters/ Prescribers | Price sensitive purchasers |
| **Products** | Blocks, Slabs, Tiles, Cut-to-size products | Tiles, Cut-to-size products | Slabs, Tiles, Cut-to-size | - | Tiles from various types of stone |
| **Quality of Raw Martials** | High quality stone, while providing on-budget solutions | Value more luxurious appearance than quality | Highly valued although these clients rely on other agents to choose type of stone | Highly valued, these clients possess deep product understanding | Valued, although they demand for stones with different quality levels |
| **Price** | Highly priced, while providing also on-budget offerings | Willingness to pay for status provided by high quality products | Price sensitive, depending on their client's available budget | High willingness to pay | Price sensitive: change stone supplier when offered a better deal. Value offers with high price diversity |
| **Durability** | High, due to high quality materials products do not need much maintenance | Highly valued | Highly valued, maintenance represents extra cost | Highly valued, maintenance represents extra cost | Valued |
| **Flexibility in cuts, shapes, and finishes** | Distinguishable cuts, shapes, and sizes which meet every possible need | Highly valued | Highly valued | Fundamental, allows to fully express their creativity | Not as valued, sell only standardized products |
| **Trendiness** | On track due to high product portfolio and decades of experience in the business | Highly valued | Highly valued, follow design guidelines of Stone consultants and Architecture and Design companies | Highly valued, these clients influence the global trendiness of types of stone | Valued, although variety of stone is preferable to trendiness |

Appendix 32. Resources, capabilities and competitive advantage relation

Source: Grant, Robert (2010). Contemporary Strategy Analysis. 7th Edition.


Appendix 33. Resources of DP

| Tangible | | Intangible | | | | Human |
|---|---|---|---|---|---|---|
| Financial | Physical | Technology | Reputation | Social | Organizational | |
| Cash (high solvency ratio - intangible) | Facilities, stone quarry, equipment and machinery, raw materials: stone and wood | Internal software and information database | Brand name and reputation, customer trust and loyalty | Client, supply and distribution vast and strong international networks | Culture (familiar company, close and continued relation with clients) | Employees' skills and experience, know-how |


| Tangible | | Intangible | | | | Human |
|---|---|---|---|---|---|---|
| Financial | Physical | Technology | Reputation | Social | Organizational | |
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## Appendix 34. Capabilities of DP

| Capabilities | Description |
|---|---|
| Product Variety | The offer a large product portfolio with many different categories of stone available |
| Product Storage, Packaging and Transportation | To pack, store and transport stones in na efficient and safe way. |
| Effecient Operational Processes | To cut, shape, resize and polish blocks, slabs and tiles |
| - Materials management capability<br>- Manufacturing capability (CSF) | Involves the capailities of supply-chain management, production scheduling assembly, quality-control procedure, inventory control |
| Effective Stone Selection | To select the best blocks to avoid waste costas and give clietns quality stone |
| Quality control throughout the value chain | To guarantee and control the quality of stone from blocks extraction to final delivery |


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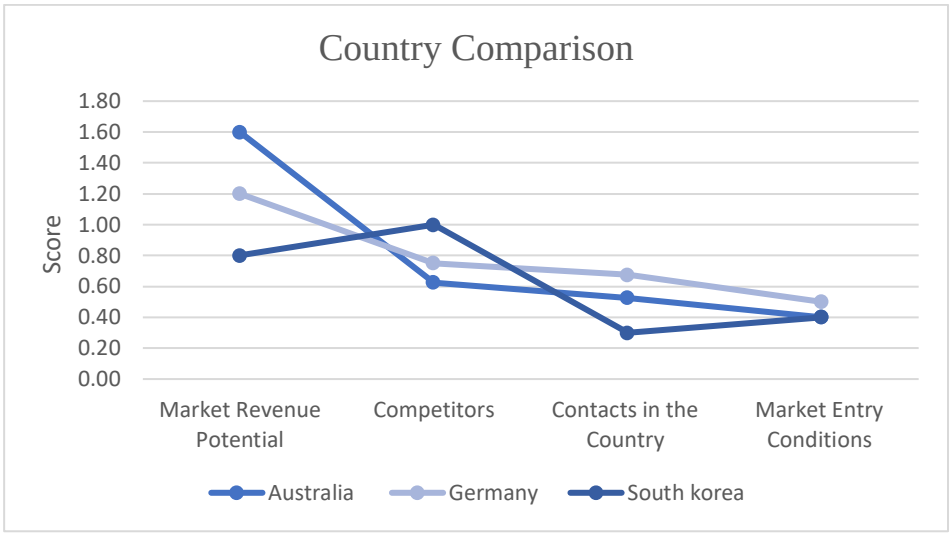
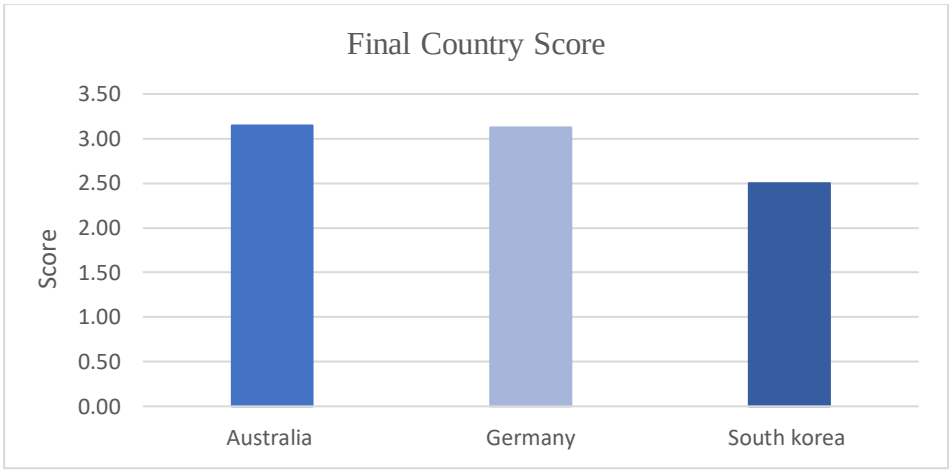
| Quality control throughout the value chain | To guarantee and control the quality of stone from blocks extraction to final delivery |

## Appendix 35. DP Competitive advantages

| | Relevant | Scarcity | Non-Transferability | Non-Replicability | Durability | Results |
|---|---|---|---|---|---|---|
| Resources | | | | | | |
| Cash (high solvency ratio) | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| CSF facilities, Stone quarry | Yes | No | - | - | - | Parity |
| Equipment and machinery | Yes | No | - | - | - | Parity |
| Raw materials | Yes | Yes | No | No | Yes | Temporary Competitive Advantage |
| Internal software and database | Yes | No | - | - | - | Parity |
| Brand name and reputation | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Customer trust and loyalty | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Vast and Strong International Network | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Culture (close and continued relation with clients) | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Employees' know-how and experience | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Capabilities | | | | | | |
| Product Portfolio Variety | Yes | Yes | Yes | No | Yes | Temporary Competitive Advantage |
| Packaging, storage and transportation | Yes | No | - | - | - | Parity |
| Efficient operational processes | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Effective stone selection | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |
| Quality control throughout the value chain | Yes | Yes | Yes | Yes | Yes | Sustainable Competitive Advantage |

## Appendix 36. Country comparisons and Final scores



A Work Project, presented as part of the requirements for the Award of a Master's degreein Management from the Nova School of Business and Economics.

# INCREASING INTERNATIONAL FOOTPRINT OF A NATURAL STONE BUSINESS -IN DEPTH MARKET ANALYSIS

Tommaso Niccolò Bordignon-40713

Work project carried out under the supervision of:

João Pedro Delgado

04-01-2021

This work is divided into seven different parts:

Part A: Increasing International Footprint of a Natural Stone Business

Part B: Increasing International Footprint of a Natural Stone Business - Geographical Analysis *(by Guillaume Labarre)*

**Part C: Increasing International Footprint of a Natural Stone Business - In-depth Market Analysis (*by Tommaso Niccolò Bordignon)***

Part D: Increasing International Footprint of a Natural Stone Business - Entry Strategy (*by Inês Moraes Sarmento)*

Part E: Increasing International Footprint of a Natural Stone Business - Marketing Plan *(by Cláudia Marques)*

Part F: Increasing International Footprint of a Natural Stone Business - Financial Plan (*by Sara São João)*

Part G: Increasing International Footprint of a Natural Stone Business - Final Remarks

Keywords (Internationalization; Market Selection; Entry Strategy; Strategic Analysis; Natural Stone; In-depth market analysis; In-depth country analysis)

Abbreviations (DP: Company the group is doing this project for, short for DP Stones; CSF: Cutting, Shaping and Finishing; M&Q: Mining and Quarrying)

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

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# 1 Methodology

After the country ranking, the focus was shifted to an in-depth analysis of markets in Australia, Germany and South Korea.

The team started by analysing the entry conditions and the macro-environment of each country, completed by performing a PESTLE analysis of the three countries (detailed in the Annexes). The first step was followed by analysis of the competitive environment and the possible contacts in each country. Particularly, in order to assess the competitive conditions, the group used Orbis & Passport, except for Australia, where, due to lack of information on those searching tools, the website Stonecontact was instead used.

The team then shifted its attention to the market revenue potential, using Passport & Orbis as tools to collect data. Mining & Quarrying (M&Q) industry and Industrial Production are addressed, as they supply materials and services necessary for DP's end products; CSF Stone industry, Construction industry and Architecture & Industrial Design Industry are evaluated since they represent potential DP's demand.

Finally, the team analysed the market and company revenue potential in each country. DP is already exporting in Australia and Germany, with a total amount of sales of $85 and $84 thousands respectively in 2019. On the other hand, DP is not currently selling into South Korea, but has developed different projects there in the past. Nevertheless, the team considered that by shifting the approach from reactive to proactive, DP presence in these markets could increase substantially.

# 2 Country Analysis: Australia

## 2.1 Country Overview and Market Entry Conditions

Australia ranks as one of the best countries to live in the world by international comparisons of wealth, education, and quality of life. It is the sixth-largest country by land mass with a

comparatively small population. Despite experiencing an economic recession in 2020 due to the pandemic, confinement in Australia has been less strict than elsewhere thanks to the relatively mild COVID-19 outbreak. Growth of real GDP should bounce back to 3% in 2021 (Passport). The full analysis of the Australian macro-environment can be found in the PESTLE (Annex 1).

Australia's savings ratio is one of the highest in all developed countries, being registered at 11.1% of disposable income in 2019, and it is expected to remain at the same level in 2020. In 2019, 9 million households were registered (World Bank). Sydney is one of the least affordable major housing markets in the country, while Canberra intends to increase spending on housing over the next few years. Recent measures such as new taxes on foreign property buyers have been cooling down the inflation in the housing market. Business investment outside the housing and mining sectors is expected to rise. In 2019, the government announced an investment of 100 billion Australian dollars on infrastructures. The increase on infrastructure investments is expected to result in an increase of productivity growth (Passport).

The Resources sector is very strong and attractive for foreign investors and significant infrastructure spending is expected to drive the economic progress within the next decade. Moreover, Australia scored 95/100 in the Getting Credit index, being ranked in the 4$^{th}$ position. According to the World Bank's indicators, on all categories, amongst the three countries analysed, Australia presents a cultural distance from Portugal similar to that of South Korea, with an average difference of 8.5. Australia presents lower power distance (38 vs 63), uncertainty avoidance (51 vs 99), and long-term orientation (21 vs 28) when compared to Portugal. Nevertheless, it presents higher values on individualism (90 vs 27), masculinity (61 vs 31), and indulgence (71 vs 33). (Annex 2)

Australia scored 85.7/100 in Paying Taxes, being ranked in 28$^{th}$ place. The total tax and contribution rate as a percentage of profit is 47.4% (World Bank). Roughly 80% of taxpayers

incur an income tax rate of 30%. For SME, recently, company tax rate has been lowered from 30% to 27.5% with new tax cuts to encourage equipment investment (Passport).

Total exports made up 19.5% of GDP in 2019 with a decrease of 6.4% expected in 2020.

The trade balance was in surplus for 0.6% of GDP in 2019. After Brexit, Canberra hopes to negotiate a trade agreement with both the UK and the EU. Currently, Australia's main export markets are: China (38.2%) and Japan (14.7/%). Australia scores 70.3/100 in trading across borders, being ranked in the 106th place.

Regarding exports, border compliance takes 36h and costs $766, while documentary compliance accounts for 7h and costs $264 (Passport). Regarding imports, border compliance accounts for 39h and costs $539, while documentary compliance takes 4h and costs $100. In 2019, the quality of ports, railroads, and road infrastructures were evaluated relatively high, at 4.8, 4.4, and 4.9 respectively, where 7 is the highest. According to the logistics performance index, Australia scored 3.71/5. Australia scored 50.3/100 in the Innovations index of 2019. Moreover, 2,757 patent applications were registered by residents and the charges for the use of intellectual property account for $3.5 billion (World Bank).

The CSF stone industry is integrated in the Cement, stone and ceramic industry. The turnover of the whole industry has increased from 2018 to 2019, although it is forecasted to decrease in 2020, to recover again in 2021, meeting the levels of 2019. Regarding the Attractiveness Index in Selected Industries 2019 (Passport), Australia scored 10/10 in the Cement, stone and ceramics products; 8/10 in Construction; and 2/10 in Quarrying of stone, sand and clay, which translates into a positive outlook for the industry of CSF stone. Exports within the industry have increased in real terms from 2018 to 2019 and the export share in percentage of turnover comes close to 1.2%. Imports have also increased from 2018 to 2019, recording around 13% imports share on turnover (Passport).

In Australia, this industry is represented mostly by B2B buyers and a few households. In 2019, the turnover of the industry reached $25 billion. Regarding the cost structure, B2B costs account for the greatest part and labor costs are about $4 billion per year. The whole industry presented $18 billion costs in 2019. The profit margin has been increasing in real terms since 2015, coming close to 17% in 2019 (Passport).

### 2.2 Competitive Environment Analysis

According to Stonecontact there are 800 players in the natural stone market in Australia. The leading companies in the market are the following:

BellStone, founded in 1991, has been a leading supplier of premium quality natural stone for over 25 years. Bellstone offers a wide range of products including tiles, flagstones & pavers. Their products are made of different materials, including marble, granite, sandstone, travertine and quartzite.

CDK Stone, founded 35 years ago, has been supplying high quality, premium Natural Stone and stone products. CDK offers products including Natural Stone, Neolith, Northstone, Tools & Equipment, Stone Care and Stone Working Machinery. With branches in five states of Australia and two locations in New Zealand, CDK Stone has become the leader in the Australian Stone Industry. Moreover, CDK was able to build strategic partnership with European and American suppliers.

IB Granite has been present in Melbourne for more than 20 years. They are the "industry leading provider of stone kitchen benchtops and bathroom vanity benchtops with sleek modern styles and designs bench-tops, kitchen islands, breakfast bars". They are selling: Reconstituted stone, Granite, Marble and Porcelain. They are using five type of axes: "waterjet, CNC edge polishers, CNC kitchen sink polisher and overhead cranes".

### 2.3 Contacts in the Country

The team analysed the contacts in the country, dividing among suppliers, possible clients, associations and magazines. The analysis showed a good amount of companies on both the demand and supply side. Moreover, the country presents a good amount of specialized magazines and fairs, as well as different associations linked with the natural stone business (Annex 3).

### 2.4 Market Revenue Potential

Starting with **supply analysis**, in 2019 M&Q Industry's gross value added was close to $105 billion, and production value of Stone Quarrying was around $518 million. (Annex 4&5) In 2018, inward FDI stocks in M&Q industry were of $258 billion (Annex 6) (WITS).

Regarding Industrial Production Industry, the market of Cement, Stone and Ceramic Products has a total size of $14 billion in 2019. In the same year, total production value was $13 billion and the expected growth rate in the next 10 years is significantly positive, at 43.77% (Annex 7). In 2019, 2 997 companies were registered in this market (Annex 8). Australia is a net importer, with total imports worth $1.8 billion and total exports $197.9 million. The top 3 countries from which Australia imports are in order: China, Italy and Japan (Annex 9) (Passport).

In 2018, Gross Value Added from Manufacture of Other Non-Metallic Mineral Products registered almost $6 billion. In the same year, Inward FDI stocks in Manufacturing accounted for $76 billion. Lastly, Industrial production presented an annual percent change of 3.19 in 2019 (Annex 10) (WITS).

Moving forward to **demand analysis**, as explained in the Customer Analysis in the previous part, we consider three industries as potential customers.

In 2019 the Stone CSF Industry total market size was $1.6 billion. In the same year, total production was $1.5 billion and the expected growth rate for the next ten years is 46.56%

(Annex 11). Total exports accounted for $7.7 million and total imports for $241.6 million, of which $184 thousand are Portuguese Natural Stone exports to Australia (Assimagra).

As for Construction Industry, in 2019 the total market size was of $300 billion. Total production was $290 billion (Annex 12) and the expected growth in the next 10 years is 30.68%. The Gross Value Added from Construction was $102 billion in 2019. The total number of firms operating in the market is 374,442 (Annex 14) (Passport). In 2018, Inward FDI stocks in Manufacturing registered the value of $15 billion (Annex 13) (WITS).

Finally, on Architecture & Industrial Design Industry, architectural services total market size in 2019 was $45 billion and total production of $10 billion (Annex 15). This market registers 58,899 companies (Annex 16) (Passport). In 2018, there were 28,798 industrial design applications and Australia received a total of 114 world design awards.

### 2.5 Company Revenue Potential

In order to forecast DP's potential sales in the Australian market, the team first estimated the stone CSF market size growth until 2025 (assuming that it will follow the same trend as GDP for 2020 and 2021 to capture the pandemic effect). Estimating the market penetration rate of DP was instead more complex, due to the specific nature of the industry. Product value in fact depends heavily on the characteristics of the sones requested, which can also vary a lot across different orders. To estimate the potential DP penetration rate, we then assume that the market share of the company could be initially equal to share of its revenues on the market size; this can be considered as a reasonable proxy for the market share that a company with similar revenues as DP could have in the market in 2021. For the subsequent years, we should expect DP's share to increase faster than the market growth rate due to the several competitive advantages of the company, as explained in the Company Overview section. To reflect this, we assumed that DP's production turnover will grow in the next years at the same rate of the market

plus a competitive advantage of 0.5% per year. The Market share timetable in Annex 17 is estimated based on this assumption.

# 3 Country Analysis-Germany

## 3.1 Country Overview and Market Entry Conditions

Germany is Europe's most industrialized and populous country. Due to the pandemics, the economy has experiences a recession in 2020, with the hospitality, leisure and manufacturing sectors being among the most affected ones. However, assuming the pandemic is contained, growth of real GDP should recover in 2021 reaching 4%. The full analysis of the German macro-environment can be found in the PESTLE (Annex 18).

Germany faces a long-term problem regarding population decline, with a birth rate of 9.4 (per '000) and approximately 500,000 people retiring per year, people from 15-65 years old account for 65.1% of the population, while 21.2% are older than 65 years.

The country's savings ratio was 16.2% of disposable income in 2019 and is expected to grow to 16.4% in 2020. In 2019, 41.5 million households were registered.

Total consumer expenditure is expected to represent 49.4% of GDP in 2020 and is expected to grow at an average annual rate of 1.5% until 2030. Germany scored 70/100 in Getting Credit index, being ranked in the 48$^{th}$ position.

On all categories and amongst the three countries analysed, Germany is surprisingly the one with the largest cultural distance from Portugal, having an average difference of 12.5. Germany presents lower power distance (35 vs 63) and uncertainty avoidance (65 vs 99) when compared to Portugal. Nevertheless, it presents higher values on Individualism (67 vs 27), Masculinity (66 vs 31), long term orientation (83 vs 28), and indulgency (40 vs 33) (Annex 19).

Germany scored 82.2/100 in Paying Taxes, being ranked in 46$^{th}$ place. The total tax and contribution rate as percentage of profits was 48.8%.

In Germany the dollar value of export contracted by 4.2% in real terms in 2019, but will recover by 0.7% in 2020. The share of exports in GDP amounted to 37.9% in 2019. The account surplus was 7.1% of GDP in 2019 and is expected to go down to 5.8% in 2020. The large surplus reflects the efficiency of the German industry and the high level of savings. Higher wage growth and stronger imports are expected to bring down the present large current account surplus. Currently, Germany's main export markets are the European Union (58.4%), China (7.2%), and Russia (2%), whose biggest trading partner in the EU is Germany. Germany scores 91.8/100 in trading across borders, being ranked in the 42$^{nd}$ place.

In 2019, the quality of ports, railroads, and roads infrastructures were evaluated relatively high, at 5.2, 4.9, and 5.3 respectively, where 7 is the highest. According to the logistics performance index, Germany scored 4.31/5. The country scored 58.2/100 in the Innovations index of 2019 and Research and Development expenditure represents 3.1% of GDP. Moreover, 46,617 patent applications were registered by residents and the charges for use of intellectual property account for $16 billion.

In Germany, the CSF stone industry's turnover has increased from 2018 to 2019, although it is forecasted to decrease in 2020, and to recover in 2022, surpassing the levels of 2019. Regarding the Attractiveness Index in Selected Industries 2019, Germany scored 8/10 in the Cement, stone and ceramics products; 10/10 in Construction; and 6/10 in Quarrying of stone, sand and clay, which translates into a positive outlook for the industry of CSF stone.

Industry exports have increased in real terms from 2018 to 2019 and the export share in percentage of turnover comes close to 22%. Imports have also increased from 2018 to 2019, recording around 19% imports share on turnover. In Germany, this industry is represented mostly by B2B buyers and few households. In 2019, the industry reached $45 billion. Regarding the cost structure, B2B costs account for the greatest part and labour costs are close the $10

billion per year. The whole industry presented close to $35 billion costs in 2019. The profit margin increased from 2018 to 2019 in real terms, coming close to 14.5% in 2019.

### 3.2 Competitive Environment Analysis

Germany has a total of 3071 companies specialized in the processing of stone and 521 stone suppliers. The top 3 in terms of value of total production are the following:

Lausitzer Grauwacke GMBH: in 2018 the company was able to produce turnover results for $25 million with 65 employees. The company was founded in 1968 and specializes in hard stones, with a quarry of 60 acres in Lieske. They sell mainly stones for road and rail constructions, mineral textures and material for port infrastructure and bank reinforcement.

Templer Natursteinwerk GMBH: in 2019 the company was able to produce turnover results for $23 million with 212 employees. Founded in 1990, Templer is specialized in selling natural stone, ceramic, quartz composite. Through the year, they invested in new equipment: “partly fully automated production line for kitchen countertops” “several water jet systems, CNC Saw and CNC machining centres”.

Naturstein Steinmann Gmbh: in 2019 had a turnover of $7 million with 32 employees. Created in 1997, they are specialized in natural stone for “Building and interior”, “Gardening and landscaping”, “Art and Décor”, “Tomb area”. They sell stones all over the world: “China, India, Turkey, Italy, Portugal, Hungary, England”. In 2017 the company won two awards in the “Growth champion” category for being the fastest growing company in Germany.

### 3.3 Contacts in the country

Compared with Australia, Germany has a more mature market for the natural stone industry and the supply and demand side are more developed. On top of that, there are more associations, trade-fairs and magazines specialized on the business as shown in Annex 20.

### 3.4 Market Revenue Potential

Starting with **supply analysis**, in 2019 M&Q Industry's gross value added was of $5.5 billion, and production value of Stone Quarrying was of $688 million (Annex 4 & Annex 5). In 2017, Inward FDI stocks by M&Q was $583 million (Annex 6).

Regarding Industrial Production Industry, the Cement, Stone and Ceramic Products has a total market size of $50 billion in 2019. In the same year, total production value was $46 billion and the expected growth rate for the next 10 years is significantly positive, being 10% (Annex 7).

Germany is a net exporter since total imports are worth $9.5 billion and total exports $12.6 billion. The top 3 countries Germany exports to are in order: the Netherlands, France and Poland (Annex 22). There are 18 thousand companies registered in the market (Annex 21). In 2018, Gross Value Added from Manufacture of Other Non-Metallic Mineral Products registered $22 billion. In 2017, Inward FDI stocks in Manufacturing amounted for $60 billion.

Lastly, for the Industry as a whole production dropped by 6.30% in 2019 (Annex 23), in contrast with the Australian case.

Moving forward to **demand analysis**, in 2019 the Stone CSF Industry total market size was $2,5 billion. In the same year, total production was $1.8 billion (Annex 11) and the expected growth rate for the next 10 years is 8.67%. Total exports accounted for $150.9 million and total imports for $620 million, among those $18 million are Portuguese imports of Natural stones.

On Construction Industry, in 2019 the total market size was of $467 billion. Total production was $427 billion, and the expected growth for the next 10 years is close to 20% (Annex 12). The Gross Value Added from Construction was $190 billion in 2019. The total number of firms in the market amount to 830 thousand (Annex 24). In 2018, Inward FDI stocks in Manufacturing registered the value of $2.5 billion (Annex 13).

Finally, on Architecture & Industrial Design Industry, architectural services total market size in 2019 was $87 billion and total production $14 billion (Annex 15). This market registers

298,652 companies (Annex 25). In 2018, there were 650 thousand industrial design applications and Germany received a total of 245 world design awards.

### 3.5 Company Revenue Potential

The same procedure as for Australia was used for Germany and, as a result, Market Penetration timetable was estimated, as showed in Annex 26.

## 4 Country Analysis-South Korea

### 4.1 Company Overview and Market Entry Conditions

South Korea has developed into one of Asia's most influent country and one of the world's major economy. As is the case for Australia and Germany, the economy is expected to contract in 2020, but by far less than the other two countries, despite the slowdown of China, the main importer for the Korean products. In 2021 GDP is expected to grow by 3.3%. The full analysis of the Korean macro-environment can be found in the PESTLE. (Annex 27)

South Korea's savings ratio is computed at 11% of disposable income in 2019 and is expected to increase to 11.5% in 2020. In 2019, 20.6 million households were registered. The consumer expenditure per capita is expected to decline by 2.6% in real terms in 2020. Total consumer expenditure is expected to represent 45.9% of GDP in 2020 and it is expected to grow at an average annual rate of 2.4% until 2030.

Investors are attracted by South Korea's highly educated labour force and solid infrastructure. Infrastructure spending plans up to 2030 amounting to $16 billion were outlined by the Government in February 2019. South Korea scored 65/100 in Getting Credit index, being ranked in the 67th position.

Amongst the three countries analysed, South Korea presents a cultural distance from Portugal similar to the one of Australia, with an average difference of 8.3. South Korea presents lower power distance (60 vs 63), individualism (18 vs 27), uncertainty avoidance (51 vs 99), and

indulgence (29 vs 33) when compared to Portugal. Nevertheless, it presents higher values on masculinity (39 vs 31), long term orientation (100 vs 28), and indulgence (29 vs 33) (Annex 28).

South Korea scored 87.4/100 in Paying Taxes, being ranked in 21st place. The total tax and contribution rate as a percentage of profit is 33.2%.

South Korea is the world's largest exporter to China, and as such, it is highly exposed to China's slowdown. The dollar value of exports fell by 5.0% in 2019 and a fall of 8.7% is forecasted for 2020. Total exports made up 32.9% of GDP in 2019. Moreover, the dependence of South Korea's economy on exports has increased over time. The trade balance account surplus was 3.6% of GDP in 2019 and is expected to go down to 2.6% in 2020.

Furthermore, Korea has joined 16 free trade agreements since 2003, including with the EU, scoring 92.5/100 in trading across borders, being ranked in the 36th place.

In 2019, the quality of port, railroad, and road infrastructures were evaluated relatively high, at 5.5, 5.9, and 5.9 respectively, where 7 is the highest. According to the logistics performance index, South Korea scored 4,31/5. Moreover**,** South Korea scored 56.6/100 in the Innovations index of 2019. The charges for the use of intellectual property account for $9.95 billion.

The CSF stone industry is integrated in the Cement, stone and ceramic industry. The industry exports have shortly decreased in real terms from 2018 to 2019 and the export share in percentage of turnover was around 5% in 2019.

Imports have shortly increased from 2018 to 2019, recording around 12% imports share in percentage of turnover. In South Korea, the industry is represented mostly by B2B buyers and a few households. In 2019, the industry turnover reached almost $35 billion, counting for the vast majority on domestic production. Regarding the cost structure, B2B costs account for the greatest part and labour costs for less than $5 billion per year. The whole industry surpassed

$25 billion costs in 2019. The profit margin increased from 2018 to 2019 in real terms, coming close to 13% in 2019.

### 4.2 Competitive Environment Analysis

South-Korea has a total of 2845 companies specialized in the processing of stone and 253 suppliers. The top 3 in terms of value of total production are the following:

**Jungsun Aggregate Co., Ltd.**: established in 1979, the company has been operating in the Non-metallic Mineral Product Manufacturing industry. With its 96 employees and a total production of $68 million in 2019, it is the leading company in the market.

**Ilshin Stone Co., Ltd.**: founded in 1971, the company works with a wide range of products and materials. Currently it employs 81 workers and in 2019 the total value of its production amounted for $58 million.

**Hansuk System Co., Ltd**.: founded in 1998, currently the company employs only 26 employees, but was able to produce $86 million in products' value.

### 4.3 Contacts in the country

As showed in Annex 29, South Korea is the country with the least amount of contacts, especially in terms of specialized magazines and associations. Moreover, most of the companies do not have an English website, making an a-priori evaluation more difficult.

### 4.4 Market Revenue Potential

Starting with **supply analysis**, in 2019 M&Q Industry's gross value added was of $2,5 billion, and production value of Stone Quarrying was of $3 billion (Annex 4 & 5). In 2018, inward FDI stocks in M&Q were $42.8 million (Annex 6).

Regarding Industrial Production Industry, the market of Cement, Stone and Ceramic Products had a total market size of $29 billion in 2019. In the same year, total production value was $26 billion and the expected growth rate for the next 10 years is significantly positive, being 7.8% (Annex 7). In 2019 2 997 companies were registered in the market (Annex 30). South Korea is

a net importer since total imports are worth $4 billion and total exports $1.8 billion. The top 3 countries for imports are in order: China, Japan and USA (Annex 31).

In 2018, Gross Value Added from Manufacture of Other Non-Metallic Mineral Products registered $11.5 billion. In 2017, Inward FDI stocks in Manufacturing accounted $82 billion. Lastly, total Industrial production increased by 6.2% in 2019 (Annex 32).

As for **demand analysis**, in 2019 the Stone CSF Industry total market size was $1.8 billion. Total production was $646.4 million and the expected growth rate in the next ten years is 8% (Annex 11). Total exports accounted for $5.4 million and total imports for $984.1 million, of which $525 thousand are Portuguese Natural Stone exports to South Korea.

On Construction Industry, in 2019 the total market size was of $215 billion. Total production was $200 billion and the expected growth for the next 10 years is 34% (Annex 12).

In 2019 the Gross Value Added from Construction was $112 billion, with a total number of firms in the market of 196,323 (Annex 33). In 2018, Inward FDI stocks in Manufacturing registered the value of $1.6 billion (Annex 13). Finally, on Architecture & Industrial Design Industry, architectural services total market size in 2019 was $17 billion and total production $7 billion (Annex 15). Finally, this market registered 196,323 companies (Annex 34). In 2018, there were 122 thousand industrial design applications and South Korea received a total of 178 world design awards.

### 4.5 Company Revenue Potential

The same procedure as for Australia and Germany was used for South Korea and, as a result, Market Penetration timetable was estimated, as showed in Annex 35.

## 5 Conclusion

All the data gathered in the work were summarized in SWOTs for each country presented in Annex 37, 38 & 39. Using this information, the team assigned scores and weights to each main

category as showed in Annex 36. More weight was given to the market revenue potential, as this is the most reliable indicator for the potential demand for DP's products. Competitors were assigned the second highest weight. The difficulty in researching companies working in the CSF stone industry in Australia led the team to reduce the weight on this indicator to avoid biasing the comparison among the three countries. Contacts in the country was given the least weight, because even if there is a relatively large difference, in absolute term each country has a sufficiently level of contacts for DP to operate. Finally, a relatively high weight was given to the Entry conditions, but the difference across countries were not such to determine a larger impact in the ranking.

As a result, the Australian and German markets turned out to be the most attractive for the expansion of DP.

The **Australian** market is the one with the highest expected growth (40% in 10 years) and at the same time the competitive environment is still developing, giving DP more opportunities to enter and grow in the market. Currently the Portuguese companies exporting in the Australian stone business are few, giving DP the chance to become a main supplier of Portuguese stones.

**Germany**, on the other hand, came close second and the team valued it as another possible site for further expansion. Being Germany an EU member, expanding there would be much easier in terms of regulation for DP. At the same time, DP could benefit from the highly developed environment of trade-fairs, associations and contacts. However, the same higher maturity of the market would make much more difficult for DP to win market shares.

Finally, **South Korea** ended to be the least attractive option, mainly due to the smaller market, the long distance and the strong presence of Chinese companies.

The final results and scores are summarized in the graphs in Annex 40 & Annex 41.

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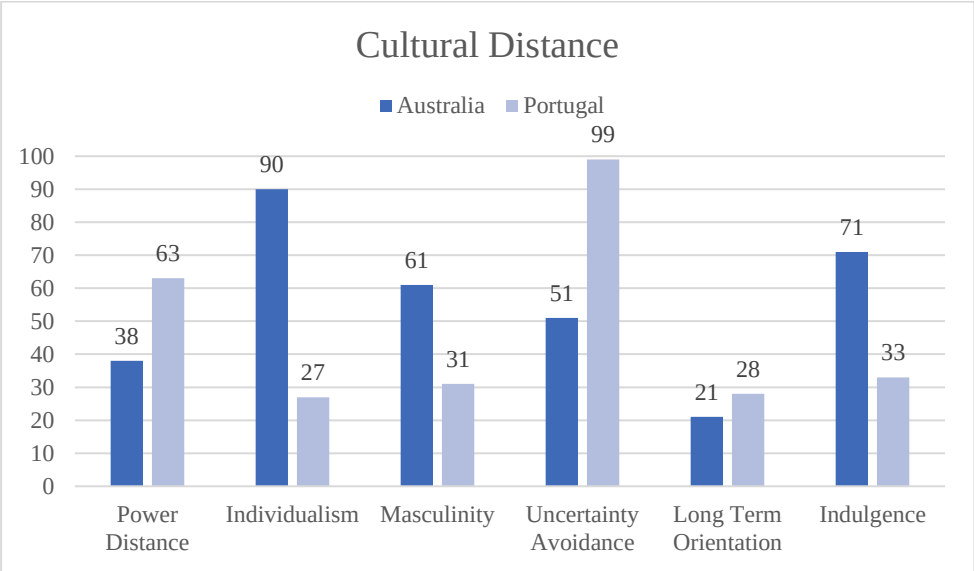
# 7 Annexes

*Annex 1.* PESTEL Australia

**Political:** Queen Elizabeth II reigns the Australian constitutional monarchy, with the governors representing her at the state level and the governor-general at the federal level. The head of the Australian government is the Prime Minister.
The country, other than being a member of the Commonwealth of Nations, is also connected to several organizations, including G20, the OECD and the World Trade Organization.
In the past, Australia has been highly criticized by other countries, above all New Zealand and the UN, especially for its deportation laws and its failures in protection of human rights.
**Economy:** Australia is the world's second largest island and the 14$^{th}$ largest economy. The economy is expected to contract by 6% (pandemic being the main reason), but then it is expected to recover from 2021 with an average growth of 2.3% per year by 2024-2027 (Passport). Business investments, inflation and household incomes are expected to follow the same trend. Inflation was recorded at 1.6% in 2019 and prices are expected to increase by 0.7% in 2020. The low rate of inflation translates the collapse in the oil prices. Private final consumption in real terms grew by 1.5% in 2019, however a 5.9% fall is expected by the end of 2020.
Unemployment is expected as well to rise to 6.7% in 2020 (a 1.2% increase). The key imports in the country are vehicles, oil and other mineral fuels, machinery and equipment, pharmaceuticals and medical apparatus, and plastic. On the other hand, metals like iron, copper and gold, coal, beef and wheat, financial and educational services are the top exports of Australia.
**Social:** Australia is considered one of the best countries to live worldwide. Thanks to the high quality of life, wealth, education and health. Compared with other countries, Australia has a small, but far more multicultural and multiracial, population, with only 25 million people.
**Technological:** Australia is one of the most advance countries in the world. In the last years, the country has witnessed a huge growth in technology, by being able to adopt new technologies at a faster rate than other developed countries. In 2019, technology purchases reached $65 billion in 2019.
Thanks to the government's funds that cover 50% of all R&D, local companies are investing in new technologies. Especially, cloud, AI, software and tech services are expected to be the main drivers of these investments.
**Legal:** Australia operates fair trading laws, competition laws, consumer laws and privacy laws, to ensure fair trading for both businesses and consumers. The primary piece of legislation is The Fair Work Act (2009).
**Environmental:** Australia is known for its widely biodiversity. However, the country faces some environmental problems and challenges. The 2019-20 bushfire season has shown how catastrophic could be to neglect the problem. Furthermore, since Australia is the driest inhabited continent, it needs also to deal with water insecurity, that could worsen as an outcome of climate change.

*Annex 2.* Cultural Distance – Australia




*Annex 3.* Contacts in Australia

| AUSTRALIA | | |
|---|---|---|
| **Supply** | | |
| Quarries and Factories | Tillett Natural Stone Industries | http://www.tillett.com.au/kitchens/# |
| | Heritage Stone | https://www.heritagestone.com.au/ |
| | RMS Natural Stone & Ceramics | https://www.rmsmarble.com/contact/ |
| | Rhodes Architectural Stone | https://www.rhodes-stone.com/contact-rhodes-stone |
| | CDK Stone | https://www.cdkstone.com.au/contact-us/ |
| | Stone Wholesalers | https://stonewholesalers.com.au/contact-us/ |
| | WK Quantum Quartz | https://www.wk.com.au/pages/Contact |
| **Demand** | | |
| Construction | CPB Contractors | https://www.cpbcon.com.au/en/contact-us |
| | ADCO Constructions | https://www.adcoconstruct.com.au/contacts |
| | Fulton Hogan | https://www.fultonhogan.com/contact-us/ |
| | John Holland | https://www.johnholland.com.au/contact-us/ |
| | Nexus Infrastructure | https://nexustsrc.com.au/ |
| | ProBuild | https://www.probuild.com.au/contact |

| | | |
|---|---|---|
| | Hutchinson Builders | https://www.hutchinsonbuilders.com.au/contact |
| | Laing O'Rourke | https://www.laingorourke.com/contact-us/australasia.aspx |
| | Lendlease Group | https://www.lendlease.com/au/contact-us/ |
| | Buckeridge Group of Companies | https://www.bgc.com.au/contact |
| Architecture | Francis-Jones Morehen Thorp | https://fjmtstudio.com/contact/ |
| | HASSELL | https://www.hassellstudio.com/contact |
| | John Wardle Architects | https://www.johnwardlearchitects.com/contact/ |
| | Denton Corker Marshall | https://www.dentoncorkermarshall.com/contact/ |
| | Koichi Takada | https://koichitakada.com/contact/ |
| | Austin Maynard Architects | https://maynardarchitects.com/contact |
| | Peter Stutchbury | http://www.peterstutchbury.com.au/contact.html |
| | Candalepas Associates | https://www.candalepas.com.au/contact-aca/ |
| | Woods Bagot | https://www.woodsbagot.com/contact/ |
| | Chenchow Little Architects | http://www.chenchowlittle.com/contact.html |
| | Hayball | https://www.hayball.com.au/contact/ |
| | Bunchan Group | https://buchangroup.com/studios-2/ |
| | COX | https://www.coxarchitecture.com.au/contact |
| Design | Coco Republic Interiors | https://www.cocorepublic.com.au/interior-design/contact/ |
| | Williams Burton Leopardi | http://designbywbl.com.au/contact/ |
| | Darren Palmer Studio | https://www.darrenpalmer.com/contact/ |
| | Splinter Society Interiors | https://www.splintersociety.com/contact |
| | Design + Industry | https://www.design-industry.com.au/ |
| | Buro North | https://buronorth.com/ |

| | | |
|---|---|---|
| | 4design | https://www.4design.com.au/contact/ |
| Wholesalers | Allcon | https://allcongroup.com.au/contact/ |
| | Big river group | https://www.bigrivergroup.com.au/contact-us/ |
| | Bunnings Warehouse | https://www.bunnings.com.au/contact-us |
| | Boral | https://www.boral.com.au/contact |
| | Metcash | https://www.metcash.com/our-businesses/hardware/ |
| **Associations and Organizations** | | |
| Australian Stone Advisory Association (ASAA) | | https://www.asaa.com.au/about-asaa/contact/ |
| Good Environmental Choice Australia | | https://geca.eco/contact-us/ |
| Australian Stone Industry Enterprises Association | | https://centreofstone.com/ |
| Australian Tile Council (ATC) | | https://www.australiantilecouncil.com.au/contact-us |
| Association of Professional Builders | | https://apbbuilders.com/contact-us/ |
| Australian Institute of Architects | | https://www.architecture.com.au/about/contact/ |
| **Government Agencies** | | |
| Embassy of Portugal in Canberra | | https://camberra.embaixadaportugal.mne.gov.pt/en/ |
| Embassy of Australia in Lisbon | | https://portugal.embassy.gov.au/ |
| **Universities** | | |
| University of New South Wales | | https://www.unsw.edu.au/contacts |
| RMIT University | | https://www.rmit.edu.au/contact |
| University of Sidney | | https://www.sydney.edu.au/contact-us.html |
| University of Melbourne | | https://www.unimelb.edu.au/contact |
| Australian National University | | https://www.anu.edu.au/contact-anu |
| University of Queensland | | https://contacts.uq.edu.au/contacts/ |
| **Magazines** | | |
| Architecture and design | | https://www.architectureanddesign.com.au/info/contact-us |
| Discovering Stone | | https://elitepublishing.com.au/magazines/discovering-stone-magazine/ |
| Tile Today | | https://elitepublishing.com.au/magazines/tile-today-magazine/ |
| | | |

| | |
|---|---|
| Architecture Australia | https://architecturemedia.com/magazines/architecture-australia/ |
| **Exhibitions** | |
| DesignBUILD | https://designbuildexpo.com.au/contact-us/ |

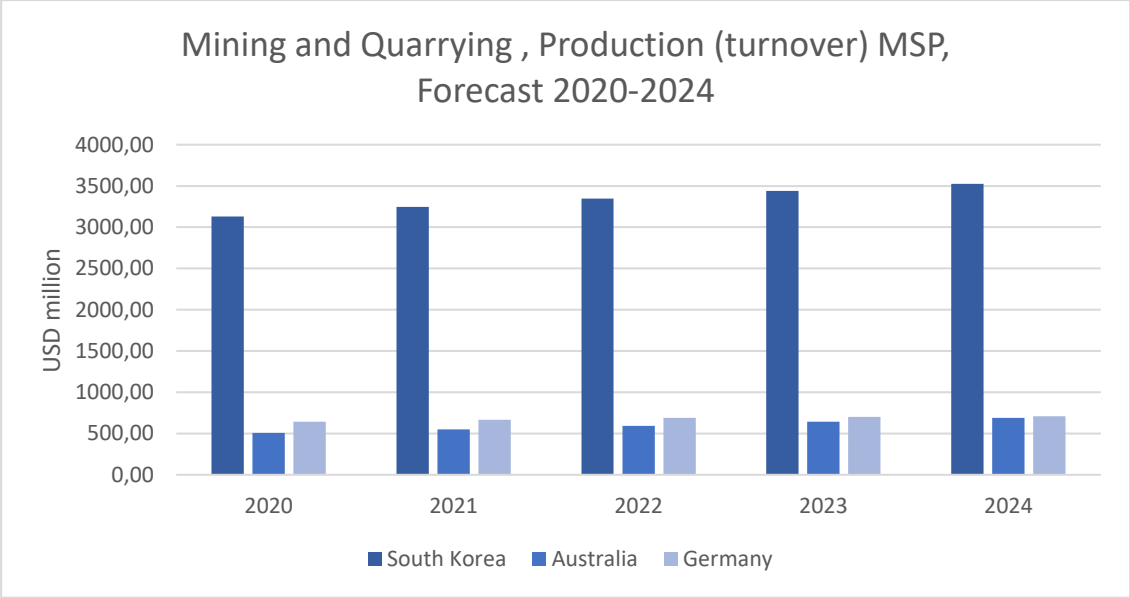
*Annex 4.* Stone Quarrying Production MSP

| Variable Name | Stone Quarrying, Production (turnover) MSP, Current Prices | | |
|---|---|---|---|
| Unit | USD million | | |
| Country | South Korea | Australia | Germany |
| 2014 | 2879.89 | 353.79 | 748.33 |
| 2015 | 2958.11 | 365.51 | 731.25 |
| 2016 | 3400.74 | 370.19 | 724.46 |
| 2017 | 3436.53 | 349.11 | 688.78 |
| 2018 | 3342.61 | 385.89 | 695.68 |
| 2019 | 3281.75 | 518.87 | 688.19 |
| 2020 | 3130.47 | 509.35 | 642.56 |
| 2021 | 3247.88 | 551.67 | 667.72 |
| 2022 | 3348.53 | 594.20 | 689.60 |
| 2023 | 3441.68 | 641.77 | 703.29 |
| 2024 | 3527.16 | 688.77 | 710.78 |
| 2025 | 3609.58 | 737.55 | 716.16 |
| 2026 | 3690.71 | 788.10 | 721.31 |
| 2027 | 3773.55 | 840.64 | 726.10 |
| 2028 | 3857.40 | 894.60 | 730.31 |
| 2029 | 3940.41 | 949.77 | 733.82 |
| 2030 | 4022.42 | 1005.72 | 736.63 |

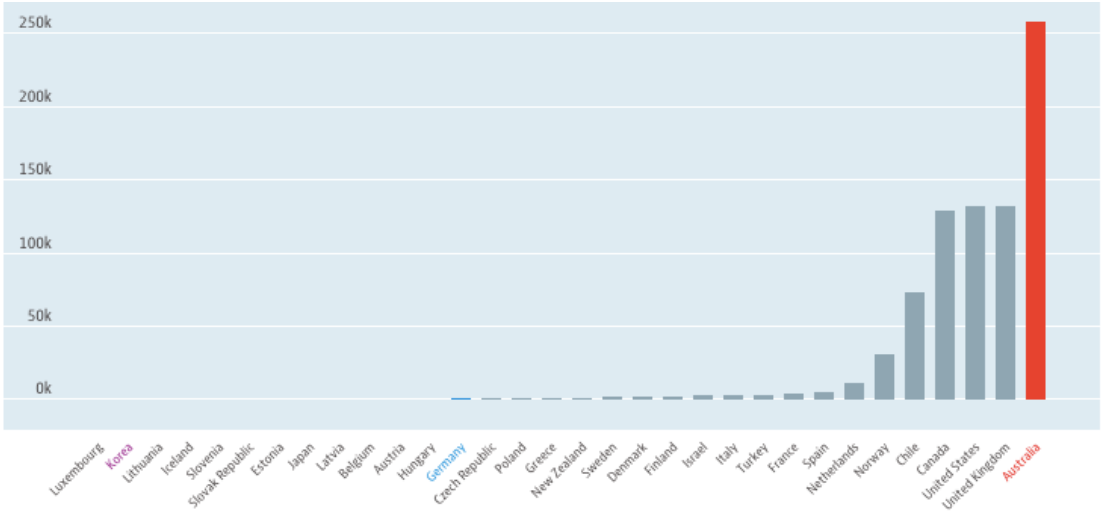
Source: Passport

*Annex 5.* Mining & Quarrying expected Production Growth rate and Forecast

| Industrial Production, Production (turnover) MSP, Current Prices | | | |
|---|---|---|---|
| **Country** | **South Korea** | **Australia** | **Germany** |
| Expected Growth Rate 2019-2030 | 22.57% | 93.83% | 7.04% |




*Annex 6.* Mining & Quarrying Industry: Inward FDI stocks by industry-Million USD, 2018

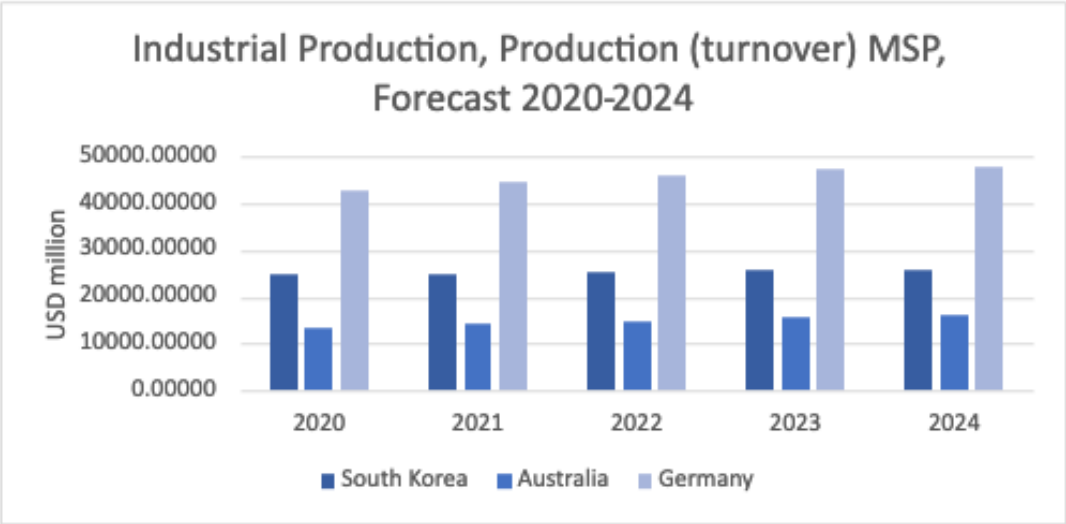



Source: OECD

*Annex 7.* Industrial Production Industry: Cement, Stone and Ceramic Products / Production (turnover) MSP / USD million / Current Prices / 2014-2030

| | Cement, Stone and Ceramic Products, Production (turnover) MSP, Current Prices | | |
|---|---|---|---|
| Unit | USD million | | |
| Country | South Korea | Australia | Germany |
| 2014 | 22917.76934 | 11808.44 | 41808.897 |
| 2015 | 23840.61530 | 11933.96 | 40311.414 |
| 2016 | 25543.21598 | 12056.37 | 41847.741 |
| 2017 | 26924.66858 | 12770.56 | 43270.344 |
| 2018 | 26298.23724 | 13320.74 | 45165.861 |
| 2019 | 25763.41874 | 13674.03 | 46228.455 |
| 2020 | 24658.53236 | 13567.39 | 42761.043 |
| 2021 | 25013.73794 | 14227.48 | 44450.172 |
| 2022 | 25310.52128 | 14846.10 | 46057.869 |
| 2023 | 25597.20909 | 15510.38 | 47187.972 |
| 2024 | 25926.03526 | 16131.13 | 47914.776 |
| 2025 | 26217.20534 | 16747.98 | 48501.414 |
| 2026 | 26513.44599 | 17354.25 | 49066.173 |
| 2027 | 26823.92011 | 17955.05 | 49600.512 |
| 2028 | 27143.77987 | 18542.79 | 50088.051 |
| 2029 | 27455.10398 | 19112.56 | 50514.165 |
| 2030 | 27766.25447 | 19658.69 | 50877.333 |

Source: Passport

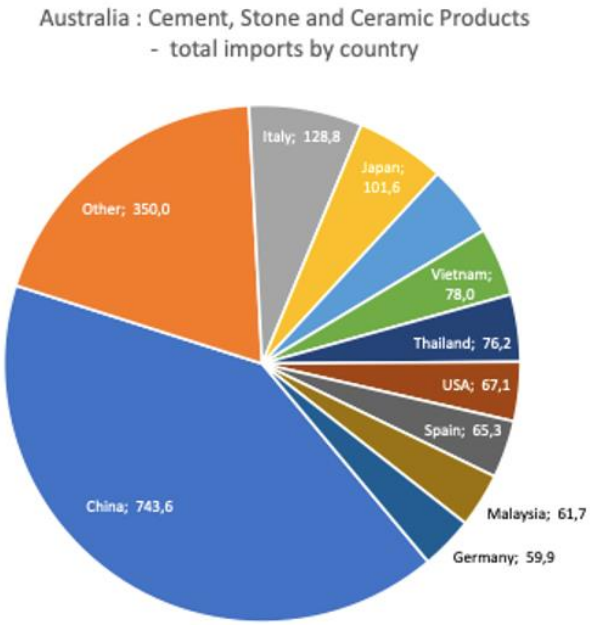



*Annex 8.* Industrial Production Industry: Firmographics

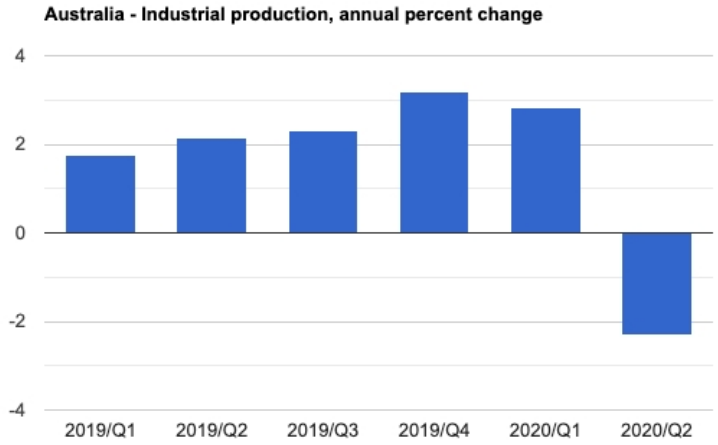
| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| Australia | Cement, Stone and Ceramic Products | Total companies | number | 2 997,0 |
| Australia | Cement, Stone and Ceramic Products | -- 0 - 9 employees | number | 2 382,0 |
| Australia | Cement, Stone and Ceramic Products | -- 10 - 19 employees | number | 405,0 |
| Australia | Cement, Stone and Ceramic Products | -- 20 - 49 employees | number | 153,0 |
| Australia | Cement, Stone and Ceramic Products | -- 50 - 199 employees | number | 37,0 |
| Australia | Cement, Stone and Ceramic Products | -- 200 + employees | number | 20,0 |
| Australia | Cement, Stone and Ceramic Products | Total turnover | USD million | 13 384,0 |
| Australia | Cement, Stone and Ceramic Products | -- 0 - 9 employees | USD million | 1 397,2 |
| Australia | Cement, Stone and Ceramic Products | -- 10 - 19 employees | USD million | 1 626,0 |
| Australia | Cement, Stone and Ceramic Products | -- 20 - 49 employees | USD million | 1 700,1 |
| Australia | Cement, Stone and Ceramic Products | -- 50 - 199 employees | USD million | 1 624,9 |
| Australia | Cement, Stone and Ceramic Products | -- 200 + employees | USD million | 7 035,8 |

Source: Passport

*Annex 9.* Industrial Production Industry: Cement, Stone and Ceramic Products/ Total Imports / USD million / 2019 / Australia



*Annex 10.* Australia Total Industrial Production, annual percent change (2019-2020)

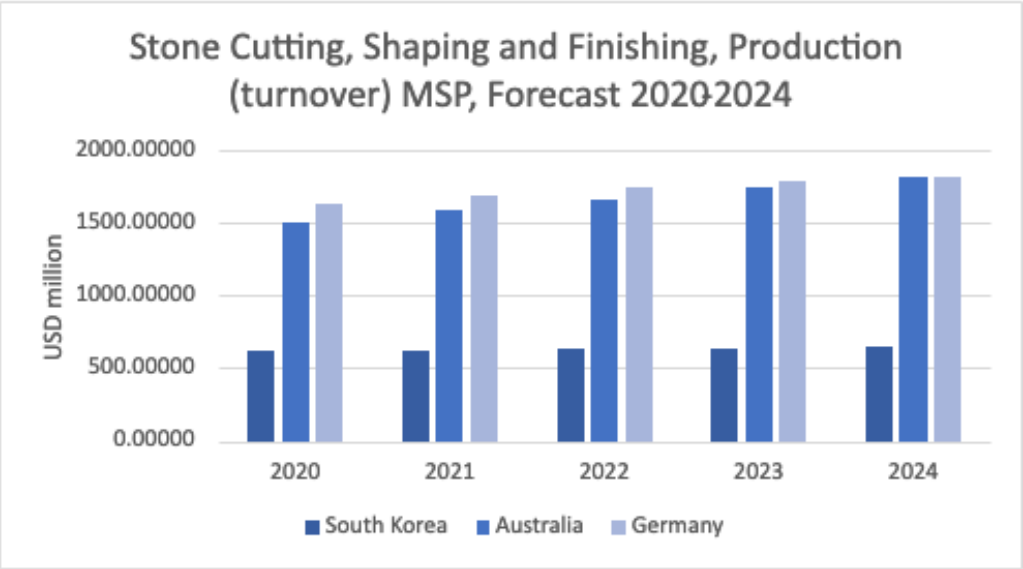



Source: OECD

*Annex 11.* Cutting, Shaping and Finishing Stone Industry: Production (turnover) MSP/ USD million/ Current Prices / 2014-2030

| | Stone Cutting, Shaping and Finishing, Production (turnover) MSP, Current Prices | | |
|---|---|---|---|
| Unit | USD million | | |
| Country | South Korea | Australia | Germany |
| 2014 | 529.70482 | 1121.23 | 1925.586 |
| 2015 | 541.65681 | 1130.68 | 1847.313 |
| 2016 | 632.09643 | 1310.02 | 1886.04 |
| 2017 | 623.62793 | 1373.42 | 1832.805 |
| 2018 | 665.52200 | 1473.18 | 1818.063 |
| 2019 | 646.41491 | 1545.17 | 1766.466 |
| 2020 | 617.43774 | 1506.41 | 1631.097 |
| 2021 | 626.78000 | 1585.86 | 1692.288 |
| 2022 | 634.60566 | 1661.12 | 1750.788 |
| 2023 | 642.14093 | 1742.06 | 1791.504 |
| 2024 | 650.69822 | 1818.52 | 1816.893 |
| 2025 | 658.26957 | 1895.06 | 1837.017 |
| 2026 | 665.92680 | 1970.82 | 1856.556 |
| 2027 | 673.89784 | 2046.43 | 1875.042 |
| 2028 | 682.05729 | 2120.98 | 1892.007 |
| 2029 | 689.94904 | 2193.97 | 1906.866 |
| 2030 | 697.77928 | 2264.62 | 1919.619 |

Source: Passport

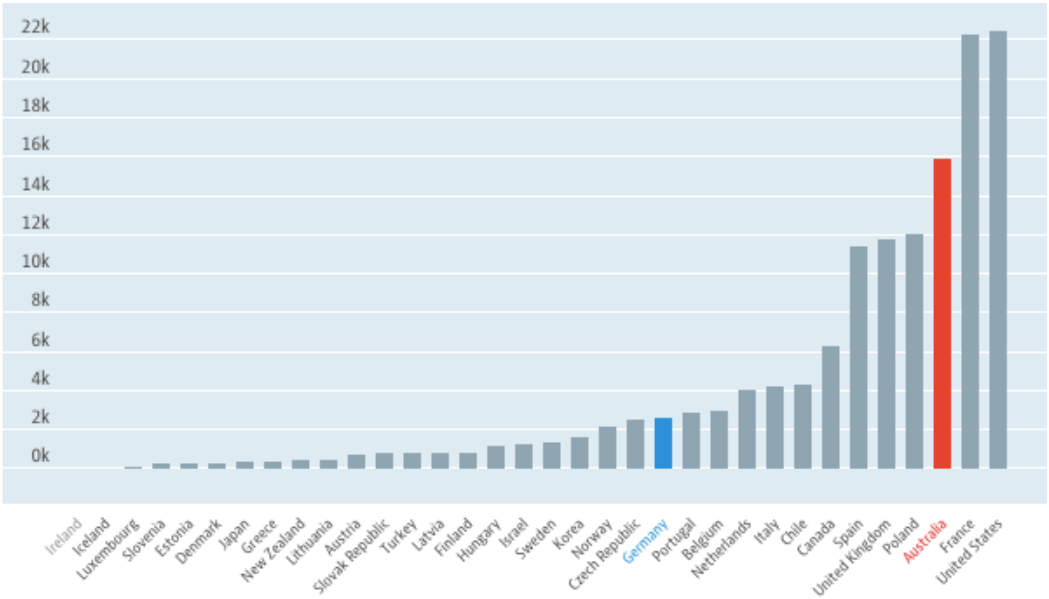

Stone Cutting, Shaping and Finishing, Production (turnover) MSP, Forecast 2020-2024
2000.00000
1500.00000
1000.00000
500.00000
0.00000
USD million
2020
2021
2022
2023
2024
South Korea
Australia
Germany

*Annex 12.* Construction Industry: Production (turnover) MSP / USD million / Current Prices / 2014-2030

| | Construction, Production (turnover) MSP, Current Prices | | |
|---|---|---|---|
| Unit | USD million | | |
| Country | South Korea | Australia | Germany |
| 2014 | 168440.07778 | 256428.64 | 337788.477 |
| 2015 | 170856.59756 | 255575.51 | 343580.328 |
| 2016 | 191692.26762 | 254694.89 | 362577.852 |
| 2017 | 212894.14291 | 278369.84 | 377896.311 |
| 2018 | 210673.21924 | 287900.03 | 408221.775 |
| 2019 | 199992.34508 | 288842.77 | 427143.717 |
| 2020 | 201789.88474 | 265405.74 | 401010.363 |
| 2021 | 208724.41603 | 276469.31 | 424446.165 |
| 2022 | 215214.94764 | 286566.79 | 445220.685 |
| 2023 | 221608.14139 | 297560.57 | 459356.859 |
| 2024 | 227891.54124 | 308872.22 | 468799.461 |
| 2025 | 234219.32776 | 320605.26 | 476710.299 |
| 2026 | 240643.23325 | 332369.39 | 484511.976 |
| 2027 | 247262.28842 | 344118.68 | 492060.114 |
| 2028 | 254044.63172 | 355655.05 | 499191.147 |
| 2029 | 260919.19066 | 366825.55 | 505747.827 |
| 2030 | 267879.30268 | 377452.33 | 511718.103 |

Source: Passport


*Annex 13.* Construction Industry: Inward FDI stocks by industry – Construction, Million US dollars, 2018 or latest available




Source: OECD

*Annex 14.* Construction Industry: Firmographics

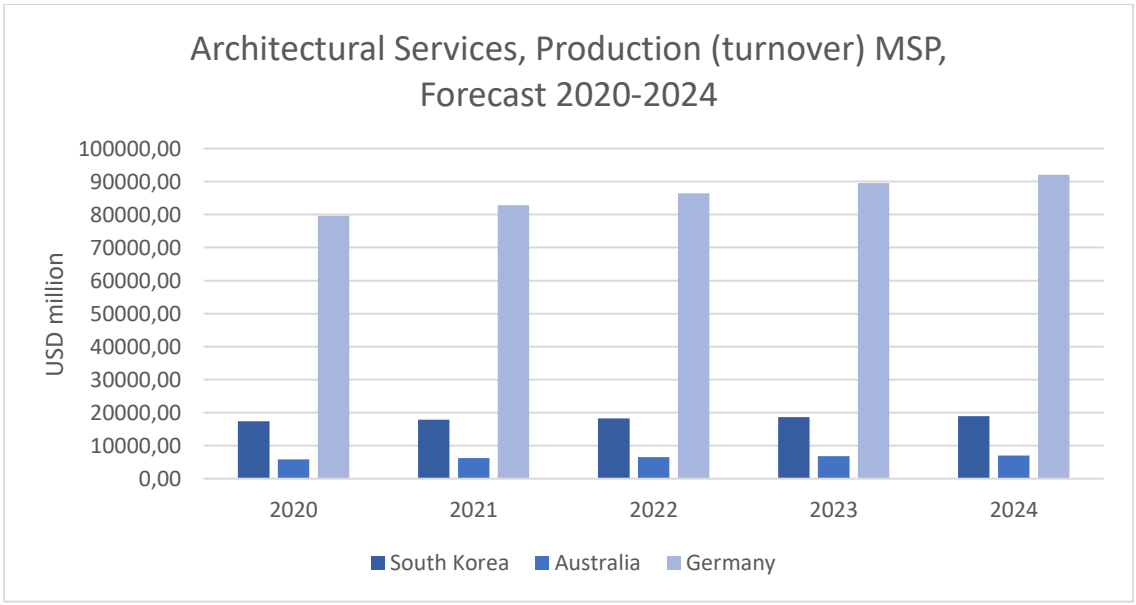
| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| Australia | Construction | Total companies | number | 374 442,0 |
| Australia | Construction | -- 0 - 9 employees | number | 355 735,0 |
| Australia | Construction | -- 10 - 19 employees | number | 13 282,0 |
| Australia | Construction | -- 20 - 49 employees | number | 4 632,0 |
| Australia | Construction | -- 50 - 199 employees | number | 578,0 |
| Australia | Construction | -- 200 + employees | number | 215,0 |
| Australia | Construction | Total turnover | USD million | 282 716,3 |
| Australia | Construction | -- 0 - 9 employees | USD million | 85 871,8 |
| Australia | Construction | -- 10 - 19 employees | USD million | 40 281,2 |
| Australia | Construction | -- 20 - 49 employees | USD million | 46 366,0 |
| Australia | Construction | -- 50 - 199 employees | USD million | 10 143,1 |
| Australia | Construction | -- 200 + employees | USD million | 100 054,2 |

Source: Passport

*Annex 15.* Architecture Industry: Cement, Stone and Ceramic Products Production (turnover) MSP / USD million / Current Prices / 2014-2030

| | Architectural and Engineering Services, Production (turnover) MSP, Current Prices | | |
|---|---|---|---|
| Unit | USD million | | |
| Country | South Korea | Australia | Germany |
| 2014 | 15152.76 | 5127.62 | 68332.91 |
| 2015 | 16066.19 | 5262.09 | 72593.12 |
| 2016 | 16484.47 | 5490.64 | 73673.85 |
| 2017 | 16309.08 | 5671.34 | 77026.01 |
| 2018 | 17005.00 | 5875.32 | 79137.05 |
| 2019 | 17948.00 | 6028.04 | 81831.79 |
| 2020 | 17375.15 | 5830.80 | 79620.49 |
| 2021 | 17900.01 | 6205.83 | 82873.21 |
| 2022 | 18308.06 | 6538.18 | 86414.09 |
| 2023 | 18642.14 | 6815.57 | 89526.53 |
| 2024 | 18973.17 | 7017.14 | 92086.49 |
| 2025 | 19337.32 | 7216.94 | 94767.89 |
| 2026 | 19691.48 | 7424.61 | 97404.72 |
| 2027 | 20053.88 | 7638.54 | 100041.44 |
| 2028 | 20429.24 | 7859.49 | 102690.08 |
| 2029 | 20806.62 | 8087.04 | 105352.07 |
| 2030 | 21178.29 | 8321.27 | 107957.30 |

Source: Passport



*Annex 16.* Architecture Industry: Firmographics

| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| Australia | Architectural and Engineering Services | Total companies | number | 58 899,0 |
| Australia | Architectural and Engineering Services | -- 0 - 9 employees | number | 54 770,0 |
| Australia | Architectural and Engineering Services | -- 10 - 19 employees | number | 2 725,0 |
| Australia | Architectural and Engineering Services | -- 20 - 49 employees | number | 1 104,0 |
| Australia | Architectural and Engineering Services | -- 50 - 199 employees | number | 236,0 |
| Australia | Architectural and Engineering Services | -- 200 + employees | number | 64,0 |
| Australia | Architectural and Engineering Services | Total turnover | USD million | 36 630,2 |
| Australia | Architectural and Engineering Services | -- 0 - 9 employees | USD million | 12 641,4 |
| Australia | Architectural and Engineering Services | -- 10 - 19 employees | USD million | 4 151,6 |
| Australia | Architectural and Engineering Services | -- 20 - 49 employees | USD million | 4 583,6 |
| Australia | Architectural and Engineering Services | -- 50 - 199 employees | USD million | 3 386,1 |
| Australia | Architectural and Engineering Services | -- 200 + employees | USD million | 11 867,5 |

Source: Passport

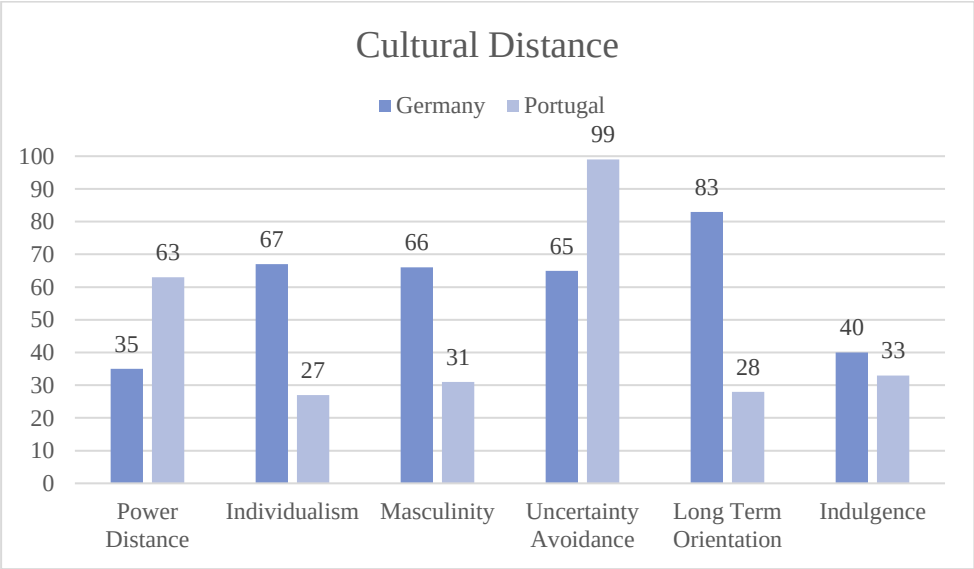
*Annex 17.* DP Revenue Potential-Australia

| Million-USD | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Australia-Stone CFS Market Size | 1596,75 | 1626,875 | 1637,814 | 1648,754 | 1659,693 |
| *Growth Rate %* | *3,000%* | *1,887%* | *0,672%* | *0,668%* | *0,663%* |
| DP's Proxy Market Share | 7,82 | 8,01 | 8,10 | 8,20 | 8,29 |
| DP's Penetration Rate | 0,49% | 0,49% | 0,49% | 0,50% | 0,50% |

*Annex 18.* PESTLE Germany

**Political:** As a Democratic Republic, Germany's Government is shaped by the legislature, judiciary and executive powers.
As well as being the biggest country in the EU, Germany is also a member of the G20, the UN and NATO.
**Economy:** Germany is the 4th largest economy in the world – 2nd for exports and 3rd largest importer – with a central position in Western Europe, sharing borders with 9 other countries. The real GDP is expected to decline by 6.9% in 2020. Unemployment as well is expected to rise to 4.3% in 2020.
However, assuming the pandemic is contained, Germany should be able to bounce back in 2021, reaching a positive expected growth of 1% per year by 2027.
Inflation was recorded at 1.4% in 2019 and prices are expected to increase by 0.5% in 2020. This increase was driven by a steady rise in wages. Gains of 1.6% in the real value of private consumption were recorded in 2019 and a fall of 5.7% is expected by the end of 2020. Germany imports about two-third of its energy and it is not rich in low materials compared to similar size countries. The service sector contributes 70% of the GDP, with the rest divided by the industry (29.1%) and agriculture (0.9%). Germany scores 83.7 in Starting a Business and is ranked in the 125th place, accounting for 8 days and 9 procedures to start a business.
**Social:** With 83 million people, Germany is the largest EU country. It is considered a modern and multicultural country.
**Technological:** In Germany, national laboratories and private research are widespread. On top of the national investments, the country provides also funding for European R&D, as well as offering scientists and laboratories.
**Legal:** The German government promotes the setup of new businesses and is very open to foreign companies that want to invest in the country. The minimum wage in Germany is €9.19 per hour.
**Environmental:** Germany faces some enormous environmental challenges. Water and air pollution, acid rain and high level of emission from industries and automobiles being a few. However, the German government has taken different initiatives to tackle these issues. Especially by focusing on solar power technology and wind turbines, for which Germany is the leading producer.
Germany has also set the objective to stop using coal as an energy source by 2038.

*Annex 19.* Cultural Distance-Germany




*Annex 20.* Contacts in the Country-Germany

| GERMANY | | |
|---|---|---|
| **Supply** | | |
| Quarries and Factories | Bamberger Natursteinwerk Hermann | https://www.bamberger-natursteinwerk.de/kontakt |
| | Franken-Schotter GmbH & Co.KG | https://www.franken-schotter.com/kontakt/ |
| | Hofmann Naturstein GmbH & Co | https://www.hofmann-naturstein.com/de/kontakt/ |
| | Kusser Granitwerke GmbH | https://kusser.com/de_INT/kontakt |
| | Lauster Steinbau GmbH | https://www.laustersteinbau.de/kontakt/ |
| | SSG Solnhofen Stone Group | https://www.ssg-solnhofen.com/contact/contact-information-service/ |
| | Meska Hartgestein-Prüfplatten GmbH | https://www.meska.de/formular-karte.html |
| **Demand** | | |
| Construction | Hochtief | https://www.hochtief.de/ |

| | | |
|---|---|---|
| | Strabag | https://searchex.strabag.com/formulare/kontakt_en.php |
| | Züblin | https://mobile.strabag.com/zueblin_de_search/formulare/kontakt_en.php |
| | Goldbeck | https://www.goldbeck.co.uk/contact/ |
| | Zech Group | https://www.zech-group.com/cms/kontakt.html |
| | Max Bögl | https://max-boegl.de/kontakt |
| | KaeferIsoliertechnik | https://de.kaefer.com/Kontakt-2.html |
| | Bauer | https://www.bauer.de/bauer_group/contact/ |
| | Leonhard Weiss | https://www.leonhard-weiss.de/de/kontakt.html |
| | Köster | https://www.koester-bau.de/kontakt.html |
| Architecture | J. MAYER | https://www.jmayerh.de/117-0-Contact.html |
| | Gmp | https://www.gmp.de/en/kontakt |
| | Behnisch Architekten's | https://behnisch.com/contact |
| | Sauerbruch Hutton | http://www.sauerbruchhutton.de/en/office |
| | LAVA | https://www.l-a-v-a.net/contact/ |
| | Kadawittfeldarchitektur | https://www.kadawittfeldarchitektur.de/kontakt/ |
| | Auer Weber | https://www.auer-weber.de/kontakt.html |
| | schneider+Schumacher | https://www.schneider-schumacher.de/service/kontakt/ |
| | Graft | https://graftlab.com/contact/ |
| | 3deluxe | https://www.3deluxe.de/ |
| Design | Joi-Design | https://joi-design.com/kontakt/ |
| | Kitzig Design Studios | https://www.kitzig.com/kontakt-kitzig-design-studios/ |
| | Susanne Kaiser | https://www.susanne-kaiser.com/Kontakt-Susanne-Kaiser-Architektur-Interiordesign |
| | Atelier Brückner | https://atelier-brueckner.com/en/contact |
| | DRAENERT | https://www.draenert.de/en/company/contact.html |
| | Pamono | https://www.pamono.de/kontakt/ |

| | | |
|---|---|---|
| | YUUE | https://yuuedesign.com/ |
| Wholesalers | OBI | https://www.obi.de/kontakt/ |
| | Bauhaus | https://www.bauhaus.info/service/kontaktformular |
| | Hornbach | https://kontakt.hornbach.de/de/c/0uzFxuiRT3-VTLR2hkNAtwYIA6K2KhQxeded9fPikA8Q54LnXsXkSemspGKOkxlqpg |
| | Hagebau | https://www.hagebau.de/service-faqs/ |
| **Associations and Organizations** | | |
| German Natural Stone Association | | https://www.natursteinverband.de/kontakt.html |
| German Design Council | | https://www.german-design-council.de/en/kontakt/ |
| Bundesverband Deutscher Steinmetze | | https://cms.bivsteinmetz.de/kontakt.html |
| Euroroc | | https://www.euroroc.net/ |
| TippZumBau | | https://tipp-zum-bau.de/ |
| BG BAU | | https://www.bgbau.de/kontakt/ |
| IG BAU | | https://igbau.de/Kontakt.html |
| Museum für Sepulkralkultur | | https://www.sepulkralmuseum.de/museum/museum-fuer-sepulkralkultur/team |
| Erhalten historischer Bauwerke e.V | | http://erhalten-historischer-bauwerke.de/kontakt/ |
| **Government Agencies** | | |
| Embassy of Portugal in Berlin | | https://berlim.embaixadaportugal.mne.gov.pt/en/ |
| German embassy in Lisbon | | https://lissabon.diplo.de/pt-pt |
| **Universities** | | |
| Technische universitat berlin | | https://www.tu.berlin/en/footer/contact/ |
| Technical University of Munich | | https://www.tum.de/en/global/contacts/ |
| Technical University of Darmstadt | | https://www.tu-darmstadt.de/kontakt_1/index.en.jsp |
| **Magazines** | | |
| Architecture Digest GER | | https://www.ad-magazin.de/ |
| Naturstein | | https://www.naturalstone-online.com/index.php?id=421 |
| Detail | | https://www.detail.de/service/ueber-uns/ |

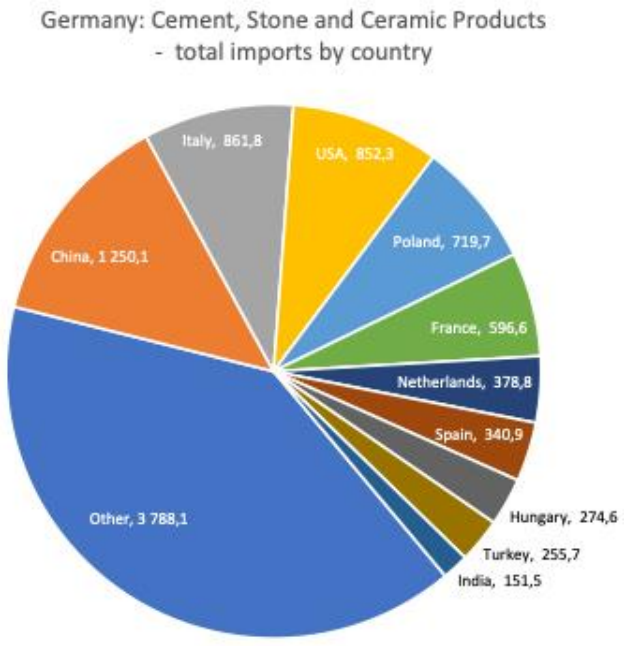
| | |
|---|---|
| Schöner wohnen | https://www.schoener-wohnen.de/kontakt |
| **Exhibitions** | |
| Stone+tec | https://www.stone-tec.com/en/contact |
| Denkmal | https://www.denkmal-leipzig.com/exhibitors/contact/project-team/ |
| European Stone Festival | http://www.stein-festival.de/en/6_contact/1.php |

*Annex 21.* Industrial Production Industry: Firmographics

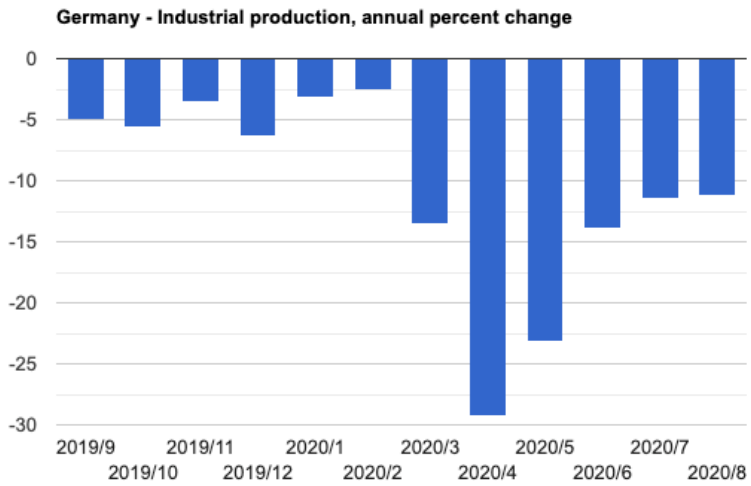
| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| Germany | Cement, Stone and Ceramic Products | Total companies | number | 18 000,0 |
| Germany | Cement, Stone and Ceramic Products | -- 0 - 9 employees | number | 16 156,0 |
| Germany | Cement, Stone and Ceramic Products | -- 10 - 19 employees | number | 754,0 |
| Germany | Cement, Stone and Ceramic Products | -- 20 - 49 employees | number | 496,0 |
| Germany | Cement, Stone and Ceramic Products | -- 50 - 299 employees | number | 505,0 |
| Germany | Cement, Stone and Ceramic Products | -- 300 + employees | number | 89,0 |
| Germany | Cement, Stone and Ceramic Products | Total turnover | USD million | 44 231,5 |
| Germany | Cement, Stone and Ceramic Products | -- 0 - 9 employees | USD million | 3 709,1 |
| Germany | Cement, Stone and Ceramic Products | -- 10 - 19 employees | USD million | 2 170,7 |
| Germany | Cement, Stone and Ceramic Products | -- 20 - 49 employees | USD million | 3 959,0 |
| Germany | Cement, Stone and Ceramic Products | -- 50 - 299 employees | USD million | 13 570,6 |
| Germany | Cement, Stone and Ceramic Products | -- 300 + employees | USD million | 20 822,3 |

Source: Passport

*Annex 22.* Industrial Production Industry: Cement, Stone and Ceramic Products / Total Imports / USD million / 2019 / Germany



*Annex 23.* Germany Total Industrial production, annual percent change (2019-2020)




Source: OECD

*Annex 24.* Construction Industry: Firmographics

| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| Germany | Construction | Total companies | number | 831 442,0 |
| Germany | Construction | -- 0 - 9 employees | number | 776 973,0 |
| Germany | Construction | -- 10 - 19 employees | number | 37 923,0 |
| Germany | Construction | -- 20 - 49 employees | number | 12 348,0 |
| Germany | Construction | -- 50 - 299 employees | number | 3 907,0 |
| Germany | Construction | -- 300 + employees | number | 291,0 |
| Germany | Construction | Total turnover | USD million | 408 692,5 |
| Germany | Construction | -- 0 - 9 employees | USD million | 122 704,8 |
| Germany | Construction | -- 10 - 19 employees | USD million | 84 978,4 |
| Germany | Construction | -- 20 - 49 employees | USD million | 72 047,4 |
| Germany | Construction | -- 50 - 299 employees | USD million | 80 863,1 |
| Germany | Construction | -- 300 + employees | USD million | 48 098,7 |

Source: Passport

*Annex 25.* Architecture Industry: Firmographics

| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| Germany | Architectural and Engineering Services | Total companies | number | 298 652,0 |
| Germany | Architectural and Engineering Services | -- 0 - 9 employees | number | 284 042,0 |
| Germany | Architectural and Engineering Services | -- 10 - 19 employees | number | 9 256,0 |
| Germany | Architectural and Engineering Services | -- 20 - 49 employees | number | 3 872,0 |
| Germany | Architectural and Engineering Services | -- 50 - 299 employees | number | 1 346,0 |
| Germany | Architectural and Engineering Services | -- 300 + employees | number | 136,0 |
| Germany | Architectural and Engineering Services | Total turnover | USD million | 78 297,0 |
| Germany | Architectural and Engineering Services | -- 0 - 9 employees | USD million | 21 007,7 |
| Germany | Architectural and Engineering Services | -- 10 - 19 employees | USD million | 11 235,5 |
| Germany | Architectural and Engineering Services | -- 20 - 49 employees | USD million | 12 747,4 |
| Germany | Architectural and Engineering Services | -- 50 - 299 employees | USD million | 16 230,0 |
| Germany | Architectural and Engineering Services | -- 300 + employees | USD million | 17 076,4 |

Source: Passport

*Annex 26.* Company Revenue Potential-Germany

| Million-USD | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Germany-Stone CFS Market Size | 2489,72 | 2304,432 | 2221,393 | 2138,353 | 2055,314 |
| *Growth Rate %* | *4,000%* | *-7,442%* | *-3,603%* | *-3,738%* | *-3,883%* |
| DP's Proxy Market Share | 7,82 | 7,28 | 7,05 | 6,82 | 6,59 |
| DP's Penetration Rate | 0,31% | 0,32% | 0,32% | 0,32% | 0,32% |

*Annex 27.* PESTLE South Korea

**Political:** South Korea is Constitutional Democracy. The President and head of state is elected by popular vote every 5 years. The Prime Minister, on the other hand, is appointed by the president after the consent of the National Assembly. South Korea is a member of NATO, OECD and G20.

**Economy:** Thanks to its rapid transformation into one of the leading countries in terms of high-tech, South Korea was able to become one of the richest countries - 12$^{th}$ in the world by nominal GDP - in the world after being one of the poorest in the '50s. As a result, the annual income per person shifted from $100 in the '60s to $20,000 in the late 2000s. In 2020, the real GDP is expected to decline by 1.2% in 2020 and the unemployment rate will grow to 4% as a result of the COVID-19 situation.

Wage subsidies and assistance for the unemployed have been introduced as a response.

Assuming the pandemic is contained, the South Korean economy is expected to bounce back with a growth of 3.3% in 2021 and annual rates of growth are expected to be around 2% from 2024 to 2027.

Inflation was recorded at 0.4% in 2019 and prices are expected to increase by 0.5% in 2020.

South Korea scores 93.4 in Starting a Business and is ranked in the 33$^{rd}$ place, accounting for 3 days and 8 procedures to start a business.

**Social:** South Korea's industrialization and urbanization have led the population to concentrate in major cities, Seoul above all. According to the OECD, with 34.6% South Korea has the biggest gender wage gap among the major members of the OECD.

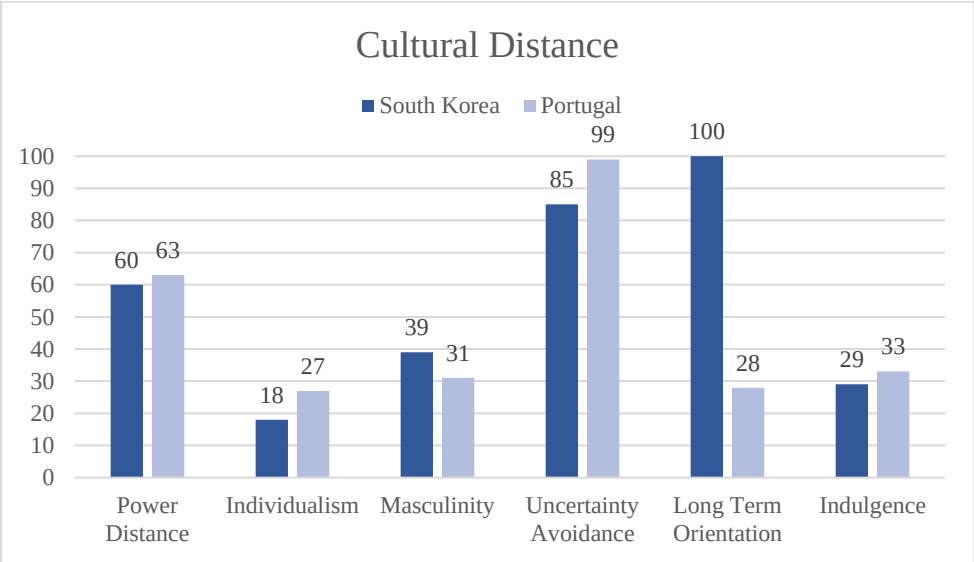
In the business environment, South Korean value highly personal connections.

**Technological:** As said before the country's specialization into technology has determined its fast-economic growth. Automobiles, computers, smartphones and other electronics are the main drivers the country. To fuel these industries, South Korea spends around 4% of GDP on R&D every year.

**Legal:** The South Korean legal system is a combination of European civil law and Anglo-American law. In the past, the judiciary power, even if highly professional, has shown to be not completely independent from government pressure. As a result, in the Transparency International's corruption perceptions index South Koreas ranks 40$^{th}$, out of 180 nations. Even if the country has investment-friendly laws, protectionist measures and the lack of actions against corrupt practices has made the system highly inefficient.

**Environmental:** South Korea is aiming to increase the share of renewable energy, with the objective of reaching 20% by 2030. From March 2019, the South Korean government has also started to adopt emergency measures to tackle the issue of air pollution.

*Annex 28.* Cultural Distance-South Korea




*Annex 29.* Contacts in the Country-South Korea

| SOUTH KOREA | | |
|---|---|---|
| **Supply** | | |
| **Quarries and Factories** | KWSNS | http://www.kwsns.co.kr/eng/?pgCode=p0502 |
| | Ilshin stone | http://www.ilshinstone.co.kr/english/company/history4 |
| | Hanwha L&C Corp. | http://www.hanwhaflooring.com/kr/about/about.php |
| | Eunsuk Granite & Marble CO, Ltd | ystrdgco@hanmir.com |
| | Taeyoung EMC Co Ltd | https://www.bloomberg.com/profile/company/7859393Z:KS |
| **Demand** | | |
| **Construction** | Samsung C&T | http://www.secc.co.kr/en/html/customer/contactus01.asp |
| | HYUNDAI E&C | http://en.hdec.kr/ |
| | Daelim Industrial | https://www.daelim.co.kr/eng/etc/ContactUs.do |
| | GS E&C | http://www.gsenc.com/en/ |
| | Posco E&C | https://www.poscoenc.com:446/eng/about/contact_us.asp |
| | Daewoo E&C | https://www.daewooenc.com:4441/eng/contact |
| | Hyundai Engineering | https://www.hec.co.kr/ko |

| | | |
|---|---|---|
| | HDC | https://hdc-dvp.com/eng/customer/inquiries.do |
| | Hoban Construction | https://www.ihoban.co.kr/web |
| | Lotte E&C | http://www.lottecon.co.kr/eng/# |
| **Architecture** | Samoo | https://www.samoo.com/home/about/contact.do |
| | Heerim | http://www.heerim.com/contact/oversea?lang=en |
| | Haeahn | http://www.haeahn.com/en/contact/contact.do |
| | Gansam | http://www.gansam.com/eng/contactus |
| | Sunjin | http://www.sunjin.co.kr/about/location_N.html |
| | Kunwon | https://www.kunwon.com/en/cont/cont.php |
| | Space Group | http://www.spacea.com/eng/html/about/location.html |
| **Design** | FICT Studio | https://www.fictstudio.com/contact |
| | Studiohoon | https://studiohoon.com/ |
| | S2Victor | https://www.s2victor.com/contact |
| | Creative Chang | http://www.creativechang.com/contact/contact.html |
| **HWholesalers** | **Home CC** | https://www.homecc.co.kr/ |
| | Lotte Shopping | http://www.lotteshoppingir.com/eng/ |
| | E-Mart | http://www.emartcompany.com/en |
| | Hansol Home Deco | http://www.hansolhomedeco.co.kr/ |
| **Associations and Organizations** | | |
| Construction association of Korea | http://www.cak.or.kr/know/knowShareView.do?menuId=133&know_question_id=621 | |
| Korean Society of Design Culture | http://www.ksdc.or.kr/en/introduction.asp | |
| Korean Ceramic Society | http://kcers.or.kr/ | |
| **Government Agencies** | | |
| Portuguese Embassy in Seoul | https://seul.embaixadaportugal.mne.gov.pt/pt/ | |
| Korean Embassy in Portugal | http://overseas.mofa.go.kr/pt-pt/index.do | |

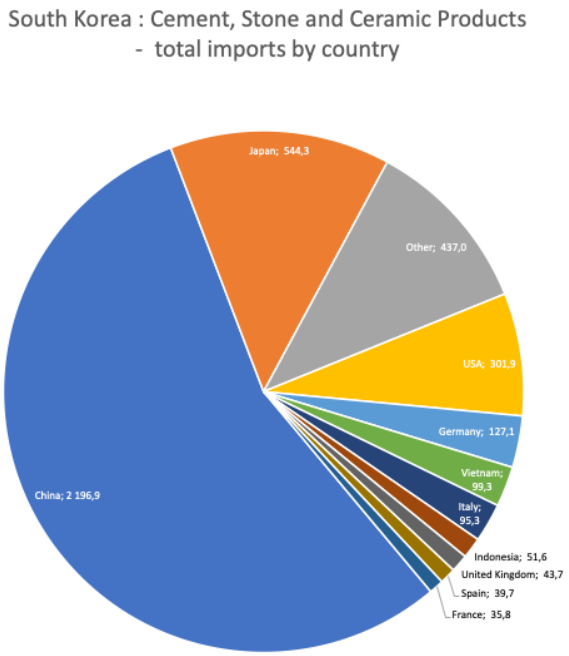
| Universities | |
|---|---|
| Korea Advanced Institute of Science and Technology | https://www.kaist.ac.kr/en/html/footer/0802.html |
| Seoul National University | https://en.snu.ac.kr/contact_us |
| Korea University | http://www.korea.ac.kr/mbshome/mbs/en/subview.do?id=en_080500000000 |
| Sungkyunkwan University | https://www.skku.edu/eng/index.do |
| Yonsei University | https://www.yonsei.ac.kr/en_sc/index.jsp# |
| Pohang University of Science and Technology | http://www.postech.ac.kr/eng/ |
| **Magazines** | |
| Space | http://www.spacea.com/eng/html/about/location.html |
| Design | http://mdesign.designhouse.co.kr/ |

*Annex 30.* Industrial Production Industry: Firmographics

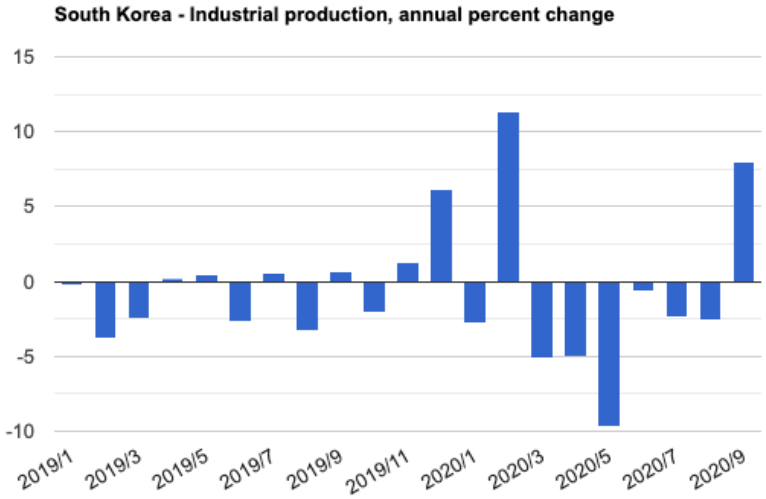
| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| South Korea | Cement, Stone and Ceramic Products | Total companies | number | 16 386,0 |
| South Korea | Cement, Stone and Ceramic Products | -- 0 - 9 employees | number | 14 329,0 |
| South Korea | Cement, Stone and Ceramic Products | -- 10 - 19 employees | number | 982,0 |
| South Korea | Cement, Stone and Ceramic Products | -- 20 - 49 employees | number | 762,0 |
| South Korea | Cement, Stone and Ceramic Products | -- 50 - 299 employees | number | 299,0 |
| South Korea | Cement, Stone and Ceramic Products | -- 300 + employees | number | 14,0 |
| South Korea | Cement, Stone and Ceramic Products | Total turnover | USD million | 25 122,6 |
| South Korea | Cement, Stone and Ceramic Products | -- 0 - 9 employees | USD million | 3 931,5 |
| South Korea | Cement, Stone and Ceramic Products | -- 10 - 19 employees | USD million | 5 226,3 |
| South Korea | Cement, Stone and Ceramic Products | -- 20 - 49 employees | USD million | 5 318,3 |
| South Korea | Cement, Stone and Ceramic Products | -- 50 - 299 employees | USD million | 6 752,3 |
| South Korea | Cement, Stone and Ceramic Products | -- 300 + employees | USD million | 3 894,2 |

Source: Passport

*Annex 31.* Industrial Production Industry: Cement, Stone and Ceramic Products / Total Imports / USD million / 2019 / South Korea




*Annex 32.* South Korea Industrial Production, annual percent change (2019-2020)




Source: OECD

*Annex 33.* Construction Industry: Firmographics

| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| South Korea | Construction | Total companies | number | 196 323,0 |
| South Korea | Construction | -- 0 - 9 employees | number | 174 733,0 |
| South Korea | Construction | -- 10 - 19 employees | number | 11 323,0 |
| South Korea | Construction | -- 20 - 49 employees | number | 6 772,0 |
| South Korea | Construction | -- 50 - 299 employees | number | 3 074,0 |
| South Korea | Construction | -- 300 + employees | number | 421,0 |
| South Korea | Construction | Total turnover | USD million | 195 018,0 |
| South Korea | Construction | -- 0 - 9 employees | USD million | 35 596,1 |
| South Korea | Construction | -- 10 - 19 employees | USD million | 21 093,2 |
| South Korea | Construction | -- 20 - 49 employees | USD million | 27 462,7 |
| South Korea | Construction | -- 50 - 299 employees | USD million | 43 077,5 |
| South Korea | Construction | -- 300 + employees | USD million | 67 788,4 |

Source: Passport

*Annex 34.* Architecture Industry: Firmographics

| Geography | Category | Categorization Type | Unit | 2019 |
|---|---|---|---|---|
| South Korea | Architectural and Engineering Services | Total companies | number | 26 920,0 |
| South Korea | Architectural and Engineering Services | -- 0 - 9 employees | number | 23 676,0 |
| South Korea | Architectural and Engineering Services | -- 10 - 19 employees | number | 1 608,0 |
| South Korea | Architectural and Engineering Services | -- 20 - 49 employees | number | 1 097,0 |
| South Korea | Architectural and Engineering Services | -- 50 - 299 employees | number | 460,0 |
| South Korea | Architectural and Engineering Services | -- 300 + employees | number | 79,0 |
| South Korea | Architectural and Engineering Services | Total turnover | USD million | 17 501,6 |
| South Korea | Architectural and Engineering Services | -- 0 - 9 employees | USD million | 5 223,0 |
| South Korea | Architectural and Engineering Services | -- 10 - 19 employees | USD million | 1 168,0 |
| South Korea | Architectural and Engineering Services | -- 20 - 49 employees | USD million | 2 420,9 |
| South Korea | Architectural and Engineering Services | -- 50 - 299 employees | USD million | 3 588,0 |
| South Korea | Architectural and Engineering Services | -- 300 + employees | USD million | 5 101,7 |

Source: Passport

*Annex 35.* Company Revenue Potential-South Korea

| Million-USD | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| South Korea-Stone CFS Market Size | 1836,78 | 1946,931 | 1976,011 | 2005,09 | 2034,17 |
| *Growth Rate %* | *3,300%* | *5,997%* | *1,494%* | *1,472%* | *1,450%* |
| DP's Proxy Market Share | 7,82 | 8,33 | 8,49 | 8,66 | 8,83 |
| DP's Penetration Rate | 0,43% | 0,43% | 0,43% | 0,43% | 0,43% |

*Annex 36.* Country Assessment of Dimensions

| Countries | Market Revenue Potential | Weight | Competitors | Weight | Contacts in the Country | Weight | Market Entry Conditions | Weight |
|---|---|---|---|---|---|---|---|---|
| Australia | 4 | 40% | 2.5 | 25% | 3.5 | 15% | 4 | 20% |
| Germany | 3 | 40% | 3 | 25% | 4,5 | 15% | 5 | 20% |
| South Korea | 2 | 40% | 4 | 25% | 2 | 15% | 4 | 20% |

*Annex 37.* Country Summary-Australia

| **Australia** | |
|---|---|
| ***Strengths***<br>• Currently, Australian Cement, Stone and Ceramics Products market has the greatest score in attractiveness index (9); Highest profit margin in Cement, Stone and Ceramics Products (20%).<br>• Biggest gross value added by mining and quarrying industry in 2019.<br>• With the lowest value of Portuguese Natural Stone exports to Australia, it is expected less Portuguese competition there.<br>• Productivity levels benefits from the resources sector<br>• FDI inflows could support economic development<br>• Low corporate taxes and on average only 2 days to start a business<br>• Well stablished magazines and websites related to the demand markets such as architecture and design.<br>• High number of world-recognized architecture companies. | ***Weaknesses***<br>• The exports are highly exposed to China and could suffer from a possible slowdown of the Asian giant<br>• The large resources sector could expose the country to possible commodity price shocks<br>• Small population<br>• Distance to Portugal<br>• Transport time |
| ***Opportunities***<br>• Low number of stone suppliers.<br>• Fewer number of international stone offerings<br>• Australian Cement, Stone and Ceramics Products market (/industrial production) | ***Threats***<br>• High and strong presence of Australian stone, it is not clear if there is demand for other types |

| | |
|---|---|
| registers the highest production expected average growth rate of next 10 years (43,77%).<br>• On CSF industry, Australia presents a production expected average growth rate (46,36%) 5 times bigger than those of Germany and South Korea. Consequently, it is expected to have the highest production value in million dollars in 2030.<br>• A record low benchmark interest rate may help to fund investment growth<br>• Significant plans for infrastructure in the long term could boost construction activity<br>• Geographically close to South-East Asia<br>• Take advantage of Top Universities in the country for partnerships in R&D projects. | • Consumer expenditure could slow down in the wake of higher savings and stricter bank lending<br>• The population is ageing relatively rapidly, which could increase healthcare outlays<br>• Difficult to invest in R&D |

*Annex 38.* Country Summary-Germany

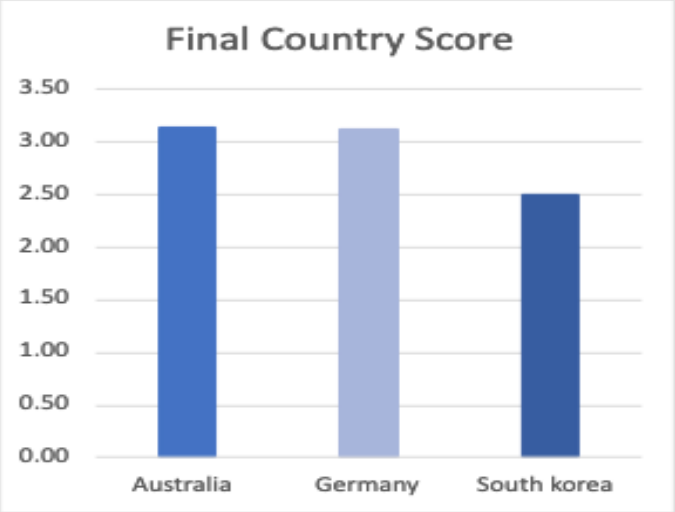
| **Germany** | |
|---|---|
| ***Strengths*** | ***Weaknesses*** |
| • Strong **architecture market** (highest market size in million USD; greatest number of companies and consequently highest total turnover) and **design market** (greater number of industrial design applications and number of awards received).<br>• Strong current **industrial production** Industry (greater number of companies and consequently highest total turnover)<br>• Strong current **construction industry** (highest market size in million USD; greatest number of companies and consequently highest total turnover; scoring 10 out of 10 in attractiveness index).<br>• Strong **CSF** industry, having the highest value in total market size and in production.<br>• One of the largest economies in the world is attractive to consumer-facing businesses<br>• Significant planned spending on transport infrastructure could result in major road upgrades<br>• Easy to start a business for foreign companies, highest population in EU<br>• A wide range of national and international organizations in the natural stone industry and related industries.<br>• Important fairs and exhibitions with worldwide visibility.<br>• An European company can enter the German Market with the same regulations as national companies | • Reported the lowest, and negative, industrial production annual percent change (-6,30)<br>• Considerable reliance on Europe for trade exposes the country to supply and demand shocks arising within the region<br>• A large current account surplus could increase US protectionist policies towards Germany<br>• High corporate taxes<br>• Highest presence of companies similar to DP, when compared with Australia and South Korea, which might reflect a more saturated market. |

| *Opportunities* | *Threats* |
|---|---|
| • Despite **industrial production having** the lowest growth rate, on absolute terms, Germany is still expected to have the highest production value in million dollars in 2030.<br>• A new round of quantitative easing could revitalise bank lending and investment<br>• The budget surplus could allow the state to resume spending to drive economic growth<br>• Strategic position in the centre of Europe<br>• Take advantage of Top Universities in the country for partnerships in R&D projects. | • High number of stone supplier and stone specialised enterprises.<br>• With the highest value of **Portuguese Natural Stone exports to Germany**, it is expected to be found significant Portuguese competition there, which makes entering the market and successfully run a business there more difficult.<br>• Brexit could be harmful to German manufacturers and exporters<br>• A large and expanding ageing population is likely to place additional pressure on public finances in the long run<br>• Country risk index: eurozone recession, global downturn: reduce output and income levels by around 4%<br>• Mature market |

*Annex 39.* Country Summary-South Korea

| **South Korea** | |
|---|---|
| ***Strengths***<br>• In 2019, South Korean **industrial production** presented the highest annual percent change, (+6,20%).<br>• With a low value of **Portuguese Natural Stone exports to South Korea**, it is not expected much Portuguese competition there<br>• Innovation and strength in IT equipment production will continue to appeal to investors<br>• Low public debt compared to peers is likely to remain sustainable<br>• Growing market<br>• Low COVID-19 impact | ***Weaknesses***<br>• A lack of hydrocarbon reserves will continue to significantly expose the country to global oil price fluctuations<br>• Substantial reliance on China for exports could be negatively affected by a Chinese economic slowdown<br>• High corruption for a developed country<br>• No stone related fairs or exhibitions<br>• Most of companies within the natural stone industry don't have their own website, difficulty in communication.<br>• Language barrier<br>• Distance to Portugal<br>• Transportation time |
| ***Opportunities***<br>• Biggest production value of **stone quarrying** in 2019 – which indicates good place to import stone from.<br>• Attractive **construction** industry with good forecasts (scores 10 in attractiveness index, high production expected average growth rate of next ten years – 33,94%).<br>• Infrastructure spending allocated for border regions is likely to boost the construction sector in the medium term<br>• A widening budget surplus gives more room for the state to increase welfare spending<br>• Strong investments in technology<br>• Take advantage of Top Universities in the country for partnerships in R&D projects. | ***Threats***<br>• High quality machinery<br>• Regarding **industrial production**, South Korean faces the lowest expected production average growth rate of next ten years (+7,77%).<br>• Restricted chemicals import from Japan are likely to negatively impact crucial semiconductor production<br>• The potential of conflict with North Korea would have a major negative impact on South Korea's economic prospects<br>• Country Risk Index (CRI): estimates that, on average, downside scenarios would reduce output and income levels by around 6.0% relative to the baseline forecast over three years, if they were to materialise. CRI is highly related to their sensitivity to global economic shocks and exposure to the Chinese economic slowdown<br>• Culturally very different from Portugal |

*Annex 40.* Final Score



*Annex 41.* Country comparison