

**MASTER OF SCIENCE IN  
FINANCE**

**MASTERS FINAL WORK  
PROJECT**

**EQUITY RESEARCH:  
PIRELLI**

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## **Abstract**

Pirelli is one of the best known tyre manufacturers in the world that stands out with high quality products, and a consistent and dominant presence on motorized sports. The company acts solely on the consumer tyres market, with a particular focus on high value tyres. Pirelli's position comes from large investments in R&D over the years and retaining talent, allowing the company to have some of the best tyres on the market in terms of safety and performance.

This project is a complete valuation of the company with the objective of analyzing the possible outcome of an investment on its stocks, with the disclaimer that unpredictable effects may affect the company's performance.

For the valuation, the Discounted Cash Flows method (DCF) was used, complemented with a Relative Valuation in order to support the overall conclusion.

The DCF model was built based on a complete analysis of the company and tyre industry, and it's supported by a number of additional analysis, such as sensitivity analysis and risk analysis.

This thesis will be done and presented following the CFA model.

## Resumo

A Pirelli é um dos fabricantes de pneus mais conhecidos do mundo, que se destaca pelos produtos de alta qualidade e uma presença consistente e dominante nos desportos motorizados. A empresa atua exclusivamente no mercado de pneus para consumidores, com foco especial em pneus premium. A posição da Pirelli surge de grandes investimentos em pesquisa e desenvolvimento ao longo dos anos e retenção de talentos, permitindo que a empresa tenha alguns dos melhores pneus do mercado em termos de segurança e desempenho.

Este projeto é uma avaliação completa da empresa com o objetivo de analisar o possível resultado de um investimento nas suas ações, com a ressalva de que efeitos imprevisíveis podem afetar o desempenho da empresa.

Para a avaliação, foi utilizado o método dos Fluxos de Caixa Descontados (DCF), complementado com uma Avaliação por Múltiplos, no sentido de suportar a conclusão final.

O modelo DCF foi construído com base numa análise completa da empresa e da indústria de pneus, e é suportado por várias análises adicionais, nomeadamente análise de sensibilidade e análise de risco.

Esta tese será feita e apresentada seguindo o modelo CFA.

## Acknowledgements

This project has revealed to be very satisfying and rewarding, and it would never be possible to accomplish without the help of my friends and family.

My dad and mother had a major role on my academic live and have always supported me and encouraged in many ways. During this project it was no different, and I feel fortunate to have had their trust and support throughout all the process.

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This marks the ending of an academic phase, that was both amazing and a major part of my personal and professional development. I want to thank all the professors and people that work at ISEG, and say that it was an honor to be part of this institution. I hope that someday I will be back when I decide to enroll on any other academic projects.

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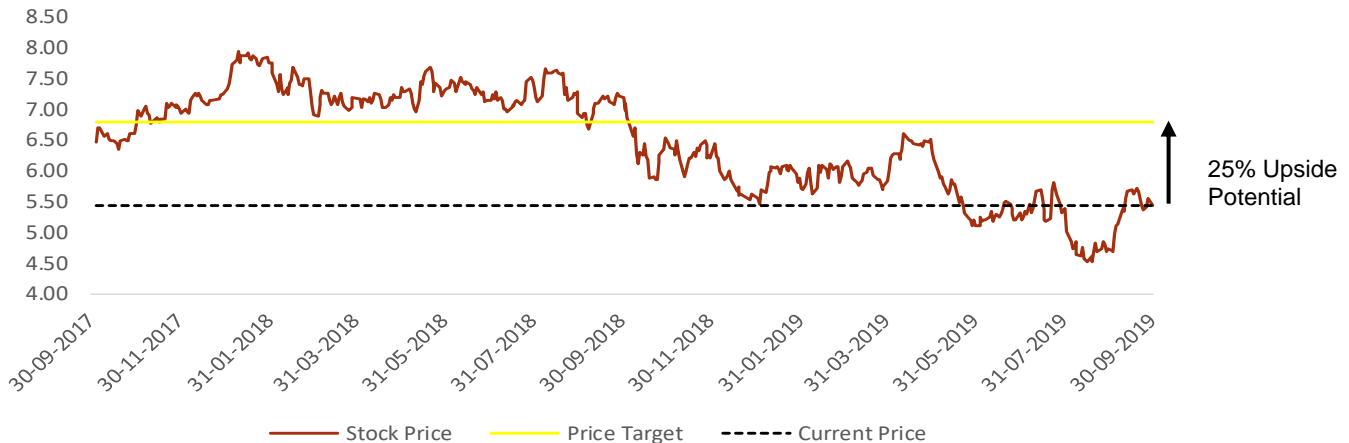
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## 1. Research Snapshot

Price Target of € 6,80, with an **upside potential of 25%** and medium risk. Our final recommendation is **BUY**.

**Figure 1 - Stock Price**



Source: Company Information

Our recommendation is **BUY**, with a Price Target of € 6,80 for the year end of 2019 with medium risk. The analysis performed on Pirelli made us conclude that the company is **undervalued** with and **upside potential of 25%**, when compared to the price at September 30<sup>th</sup>, 2019.

The price target was reached through the **Discounted Cash Flows method**, complemented with **Relative valuation**.

The tyre industry is currently mature and very competitive, in which product quality is a key factor for success. Technology is evolving fast, and it has been impacting the automotive industry, affecting the tyre industry. Cars are continuously improving and demand better tyres in terms of performance and safety, supporting Pirelli' strength in the market. The company' strategy to focus on consumer premium tyres has been proving successful, with innumerable opportunities for the company to continue its success in the future, namely the appearance of electric and autonomous cars.

Through the recent investment in these opportunities, Pirelli is one of the most well prepared tyre producers for the imminent changes on the tyre market.

Pirelli has registered positive results over the last years, with a continuous growth of revenues and striking EBITDA margins when compared to its peers. Our analysis concludes that this growth trend will continue for the tyre industry, including Pirelli.

The company's large investment in R&D and retaining talents allow it to maintain a relevant position in the market, supported by a strong connection with automotive sports, promoting the prestige image of its tyres in terms of quality and branding.

Being a multinational company, it remains sensitive to changes in Exchange rates and Macroeconomic factors. Nevertheless, forecasts point for a consistent future GDP growth worldwide.

**Table 1 - Investment Risk**

Low	Medium	High
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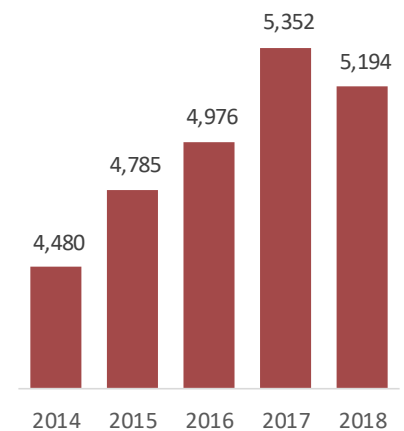
Source: Analyst

**Table 3 - Key Information**

Company	Pirelli & C. S.p.A.
Activity	Tyre Producer
Headquarters	Italy
Date	30-09-2019
Volume	3,175,679
52-week price range	€4,43 - €7,33
Closing Price	€5.43
Price Target DCF	€6.8
Price target Multiples	€6.01
Recommendation	Buy

Source: Analyst

**Figure 3 - Total Revenues (Thousands €)**



Source: Company data



## 2. Business Description

### Company description

**Pirelli & C. S.p.A.** is an Italian multinational company that stands next to the main tyre producers. It was founded in 1872 by Giovanni Battista Pirelli, producing only rubber band products. Following the second industrial revolution, and the exponential increase in car usage, Pirelli starts in the rubber band production line for carriages in 1885, and the first tyre for velocipedes is manufactured in 1894. In the early years of 1900, Pirelli's geographic expansion took off.

In 2017 Pirelli started focusing on its main profitable sector, shifting to produce only consumer tyres, commonly used for luxury cars and automobile sports. The objective is to consolidate its position on high quality consumer tyres, both on matters of performance and safety, while adding a factor of customization and personality to them. The remaining areas of business, such as industrial tyres, have been split out of the company.

It has around 31,500 employees, 19 factories in 12 countries (**Figure 3 - Factories location**

**Figure 3**), 15,900 points of sales in 160 countries and had about 5.2 Billion sales in 2018. Pirelli is a major player in the tyre industry, being the only global one focused on consumer tyres – including cars, motorcycles, and bicycles. The remaining main players also produce Industrial tyres and other rubber products. Pirelli maintains a strong position in selling premium tyres, leader even. It has a big presence in sport competitions and has been sponsoring them since 1907. It is the sole tyre supplier for the Formula One World Championship and for the World Superbike Championship since 2011. This strong presence, especially in Formula 1, is the payoff of the companies' major investment in research and development and market positioning. Pirelli's headquarters stand in Milan, and the company had a worldwide production capacity of 75 million car tyres in 2018.

### History

Giovanni Battista Pirelli founded a limited partnership in **1872** to produce elastic rubber items – "G.B. Pirelli & C.". The first factory to produce rubber items was established in Milan in 1873 and was built for the production of rubber bands for carriages.

The limited partnership was dissolved, and a Limited Shares Partnership was born under the name of Pirelli & C.

In **1894**, Pirelli produced its first tyres for velocipedes.

The production of car tyres started in **1901**, driven by a strong technological development happening and by an ongoing interest and connection with the racing world.

During the first years of **1900**, Pirelli's went through a strong geographical expansion, creating its first factories outside Italy - namely to Barcelona (Spain, 1902), Southampton (England, 1903), Buenos Aires (Argentina, 1917), Manresa (Spain, 1924), Burton on Trent (England, 1928) and Brazil (1929).

The Grand Prix of the automobile club of France was for the first time won by a car using Pirelli tyres, in **1907**.

In **1922**, the Limited Shares Partnership Pirelli & C. was listed at the Milan Stock Exchange. Soon after, there was a reorganization of the Company and it was listed on the New York Stock Exchange, becoming the first Italian group trading on the American market.

After the Second World War, following the rest of the world, Pirelli's development was strengthened, and two new factories were established in Latin America, namely in Brazil (1940) and Argentina (1955).

**Table 6 - Share information**

ISIN Code	IT0005278236
Bloomberg Ticker Symbol	PIRC:IM
ISIN Code	IT0005278236
Currency	Euro (€)
Primary Exchange	Milan Stock Exchange
Share Capital	€ 1,904,374,935.66
Number of Shares Outstanding	1,000,000,000
Type of Shares	No par value shares
IPO Date	October 4th, 2017

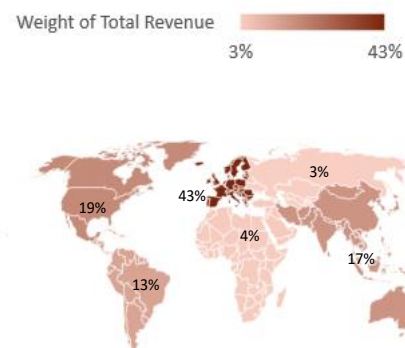
Source: Company data

**Figure 6 - Factories location**



Source: Company information

**Figure 9 - Weight of total revenue by Region in 2018**



Source: Company data

In **1949**, Pirelli created the Tyres Cinturato, a type of high quality tyres that were more advanced than the remaining competitors in both matters of performance and safety. The Cinturato tyres have evolved since then, but still stand today as one of the best tyres to use, and a Pirelli's reference product.

During the **sixties, seventies and eighties** Pirelli continued with its geographical expansion throughout the world and technological development, even acquiring its first company in 1986 - Metzeler Kaotschuck AG, a German company specialized in producing moto tyres. In 1988 Pirelli acquires Armstrong Tyre Company, an US based company with a relevant position in the North American market, and Pirelli's entry vehicle to that market. During the following years, Pirelli continued acquiring relevant companies, mainly in the rubber industry.

In the **early nineties** Pirelli failed an attempted acquisition of Continental AG, resulting in the slowing of its expansion progress until 1994, due to all the resources that were already spent on Continental's acquisition attempt. Eventually a joint venture was celebrated between the two companies in 2004, to produce steel cords.

By **2000**, Pirelli was involved in the production of many rubber products, resulting in part from regular purchases and sells of companies in the industry. A relevant deal for Pirelli was the selling of its cable and telecommunications systems business to Goldman Sachs in **2005**, with an Enterprise Value of 1.3 billion euros<sup>1</sup>.

By **2008** a new project took off, the "Settimo Torinese", resulting on the establishment of a new factory meant to be the most technological advanced of the entire group, and where the new Cinturato P7 was created, a new type of high performance tyre created under a friendly environment philosophy.

In **2010** Pirelli turned into a pure tyre company after selling its broadband solutions business and Real Estate investments<sup>2</sup>. It kept producing both industrial and consumer tyres.

A Long-term industrial investment partnership agreement was celebrated in March **2015** between Pirelli and three entities – Camfin, LTI, and CNRC (China National Tire & Rubber Corporation, Ltd.). CNRC is a Chinese company controlled by ChemChina. The deal resulted on the delisting of Pirelli from the Milan Stock Exchange, only to return on 2017.

### Re-listing of Pirelli – IPO in 2017

Pirelli was delisted in 2015, returning to the markets in 2017 through an IPO<sup>3</sup>.

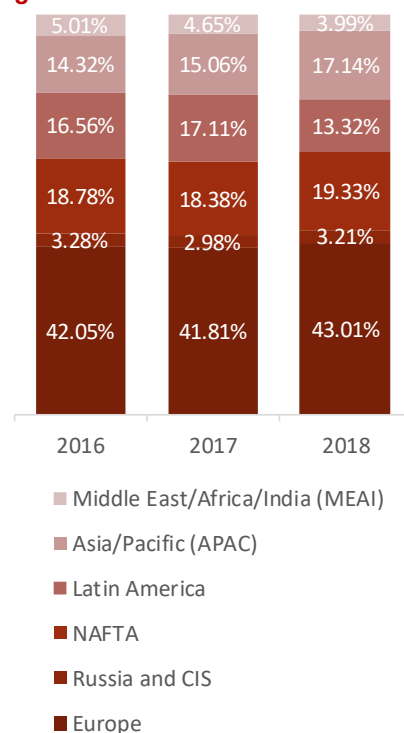
In 2015, ChemChina took 65% of Pirelli's stakes and delisted the company from the Milan Stock Exchange. For the past years, Chinese companies have been taking over innumerable European companies, making it up for a discussion on whether these interventions give too much power to China's enterprises and government.

ChemChina (China National Chemical Corp) is a Chinese state Company that has been around for only 14 years and stands as one of the biggest chemical companies of the world, standing as 167<sup>th</sup> on the Fortune Global 500<sup>4</sup>. ChemChina is also known for its many billionaire acquisitions. Pirelli's acquisition in 2015 was made through a subsidiary focused on rubber products - China National Tyre & Rubber Co. (CNRC)<sup>5</sup>. According to Pirelli, the Chinese company always gave autonomy to the Italian tyre manufacturer's management.

In 2017 ChemChina decided to give up control of Pirelli, launching an IPO of up to 40% of its capital, leaving the Chinese company with 45% of the company's stakes. This move intended to give more power and independence to Pirelli pursuing its goals and ideals, and to raise some money to face some debt that Pirelli was piling up. According to Reuters, ChemChina's decision was also taken as a way of showing that Beijing has a friendly market approach on European investments.

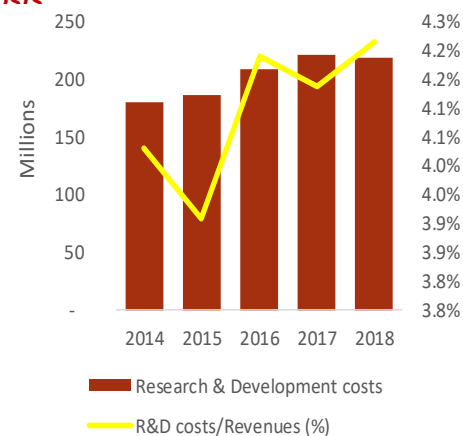
The first IPO shares were issued on **October 4<sup>th</sup>, 2017**, with prices ranging from 6.3 to 6.5 euros per share<sup>6</sup>. By the end of 2017 there were 853,232 shares on the market, and by the end of 2018 there were 1,000,000 ordinary shares, number that stands

**Figure 11 - Pirelli's Revenue evolution by region**



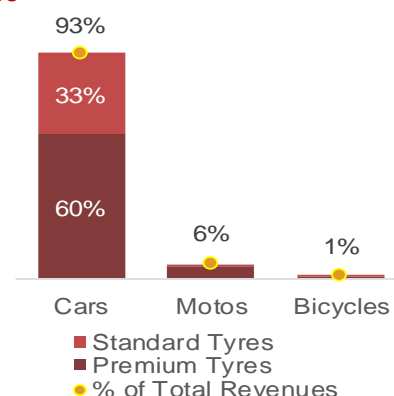
Source: Company data

**Figure 13 - Research and Development costs**



Source: Company data

**Figure 15 - Revenues by type of tyre in 2018**



Source: Company Information

unchanged until today. The IPO comes as a part of a reorganization process in Pirelli that includes the transfer of the industrial business to the shareholder Marco Polo, and redirects Pirelli to a solo focus on the Consumer business.

**Strategic direction**

As stated before, the current strategy to Pirelli is to focus on the consumer tyres production. The company is constantly investing in Research and development (Figure 6 - Research and Development costs

Figure 6), expense that totaled €219 million (4.2% of sales)<sup>7</sup> in 2018, aiming to continually create superior products and maintain its leadership position. Another relevant factor for Pirelli is marketing, aimed for car enthusiasts and luxury car owners, the company has been linked with many sports over the years (namely football and baseball), but its shining position comes from the sponsorship on Formula One Championships, where Pirelli has contracted to be the exclusive tyre supplier until 2023<sup>8</sup>.

This implies that Pirelli will focus mainly on High Value Tyres, aiming to be the leader in quality and branding, but also more expensive when compared to the remaining Tyre producing company's.

**Segment analysis**

Pirelli operates under a single segment worldwide – consumer tyres for cars, motorcycles and bicycles. It sells both standard and high value tyres, although the company main focus is the latter.

We can see the company's revenue by type of product on Figure 7 - Revenues by type of tyre in 2018

**Figure 7.**

We will explore the industry overview later on this project.

**Goals for the future**

According to the Annual Report of 2018, Pirelli's main objectives for 2019 were to increase in revenues between 4 to 6%, mainly supported by the increased focus on high value segments and increase of price/mix by around 5%. Another relevant factor is the plan to increase investment on the company's digital transformation, through the development of cyber solutions and the start-up of a joint venture in China.

The expectations on increasing sales were however adjusted to 3 to 4% by Pirelli to meet the first quarter data on tyre demand, since there was a general decrease around the globe, except North America where an increase of 2% was registered. Even considering the decrease in demand, Pirelli expects to increase profits from the increase of sales of high value tyres and increases in price, supported a continuous increase on the quality of tyres.

**Key drivers of global high value tyre market growth**

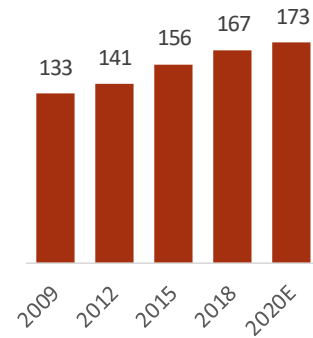
Based on the fact that the company is focused on producing high value tyres, the key drivers for this market growth are presented below<sup>9</sup>:

1. Penetration of Premium and prestige cars:

The number of cars in circulation has been increasing considerably over the years (Figure 8 - Passenger cars (stock per 1,000 pop)

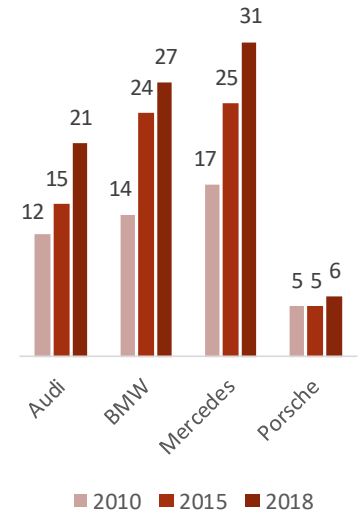
Figure 8), with forecasts supporting that this increase will continue in the future, in particular for prestige and premium cars. The same applies for the motorbike industry.

**Figure 18 - Passenger cars (stock per 1,000 pop)**



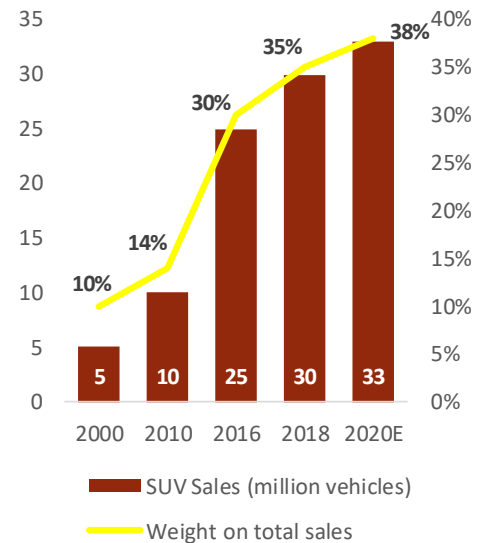
Source: The Economist IU

**Figure 20 - Number of car models by company**



Considers only models with >5,000 units sold. Source: Company data

**Figure 22 - SUV penetration**



2. Increase in number of homologations and growing demand for specialists:

Some of the premium car manufacturers are developing new models every year, which use different types of tyres (Figure 9 - Number of car models by company

Figure 9). This supports the development, specialization and homologation of new technologies to the different models on the market, reinforcing the value of high value products and their differentiation.

This evolution generates a demand for specialists that can answer the car manufacturers and meet consumer's needs.

3. Rising penetration of SUV's:

SUV's are most commonly equipped with high value tyres, and this kind of vehicles has been successfully penetrating the market. It is expected that, by 2020, about one third of all vehicle sales will be SUV's (Figure 10 - SUV penetration

Figure 10).

4. Car evolution:

As stated before, car manufacturers have been creating new models, and particularly for premium car brands, the development and commercialization of new models has been accompanied with several technological evolutions, namely on the tyres used. The usage of high quality and aesthetical attractive tyres has been increasing. A clear sign of that behavior is the continuous increase in Rim size of the used tyres (which are, generally speaking, the high value tyres).

5. New car technologies:

There are continuous technological developments on the car industry, such as the increasingly use of electric, autonomous, connected and shared cars. In this sense, Pirelli is already developing new tyres to adapt and take advantage of these new types of cars. For example, Pirelli has developed specific tyres with higher grip and lower noise for electric cars, while developing an Integrated real time analysis of tyres and car performance for autonomous vehicles.

**Shareholder structure**

The share capital of Pirelli & C. S.p.A. is 1,904,374,935.66 euros, divided into 1,000,000,000 ordinary shares, all of which with voting rights at Shareholders' Meetings with no par value. The Company does not hold treasury shares<sup>10</sup>.

The company's shareholders structure is presented on Figure 11 - Share Capital Structure

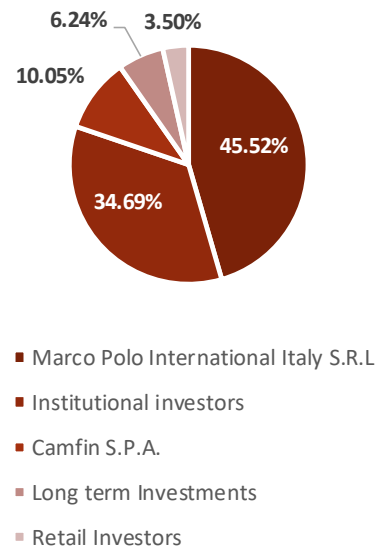
**Figure 12 - Institutional Investors by region**

The main participation is owned by **Marco Polo International Italy S.R.L.**, a company owned by CNRC International Holding HK Ltd., which in turn is a subsidiary of ChemChina, a Chinese state company.

**Camfin S.P.A.** is an Italian Company that invests mostly in steel and metallurgical sectors<sup>11</sup>.

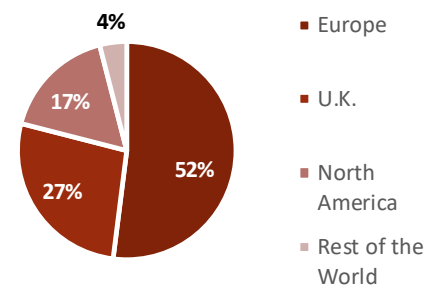
**Long-Term Investments Luxembourg S.A.** (LTI), owns a percentage of stakes that it transfers to third parties, under "Repurchase Agreements". The ownership of those Pirelli stocks will be transferred back to LTI when due. Those stocks have voting rights, according to the voting instructions given by LTI.

**Figure 24 - Share Capital Structure**



Source: Company data

**Figure 27 - Institutional Investors by region**



Source: Company data

**Table 9 - Dividend history**

Source: Company data

**Institutional and retail investors** represent the owners of stocks traded on the market. See **Figure 12 - Institutional Investors by region**

**Figure 12** for information by country regarding the institutional investors.

### Dividends

On August 31<sup>st</sup>, 2017 Pirelli's Board of Directors decided to assume a dividend policy, aiming to distribute about 40% of the consolidated net income during the years of 2018 to 2020.

Following this decision, 177 million euros were paid in dividends at May 21<sup>st</sup>, 2018 resulting in a € 0.177 payment by share, as there were 1,000 Million shares on the market at that moment.

This was the first time Pirelli has distributed dividends since 2014, as there were no dividends paid in 2015, 2016, or 2017 following the company's delisting in 2015. The dividend history of Pirelli is shown in **Table 4 - Dividend history**

**Table 4.**

## 3. Management and Corporate Governance

### Governance Structure

Pirelli follows the traditional Governance system, putting the Administration on the center of the decisions. The 15 Members on the Board of Directors are responsible for the business management, having included 8 Independent Directors with the main goal of supervising the company's activities. There is also a Board of Statutory Auditors, aimed to oversee the administration and compliance with laws and regulation.

The composition of the Board of Directors results from an agreement made between all shareholders, and stands as follows:

- Eight directors appointed by CNRC, including the chairman;
- Four directors appointed by Marco Polo International Italy S.R.L;
- Two independent directors jointly nominated by CNCR and Marco Polo International;
- One independent minority director.

The current Board was appointed at August 31<sup>st</sup>, 2017 and has a mandate of three years.

All eight independent members are qualified under the Legislative Decree 58/1998 ("TUF").

There are 5 committees responsible of making recommendations, advising and performing analytical functions for the board.

The traditional model of governance under which Pirelli operates is a traditional model that generally allows for the Board to have more power over the company when compared to other models like the Carver or Complementary one. An example of that is the ability to have a role on day-to-day operations or hiring and firing staff.

The Board manages and oversee the company through committees settled along the functional areas (for example, finance and human resources departments).

### Executive compensation system

**Table 12 - Directors list**

Name	Position
Ning Gaoning	Non exec. chairman
Marco Tronchetti Provera	Executive Vice Chairman and Chief Executive Officer
Yang Xingqiang	Non executive director
Bai Jinping	Non executive director
Giorgio Luca Bruno	Non executive director
Laura Cioli	Non exec. Independent director
Domenico De Sole	Non exec. Independent director
Zeev Goldberg	Non executive director
Tao Haisu	Non exec. Independent director
Marisa Pappalardo	Non exec. Independent director
Cristina Scocchia	Non exec. Independent director
Giovanni Tronchetti Provera	Non executive director
Fan Xiaohua	Non exec. Independent director
Wei Yintao	Non exec. Independent director
Giovanni Lo Storto	Non exec. Independent director

Source: Company data

**Table 15 - Remuneration committee**

Name	Office
Bai Jinping	Non executive director
Laura Cioli	Non exec. Independent director
Tao Haisu (Chairman)	Non exec. Independent director
Giovanni Lo Storto	Non exec. Independent director

Fiscal year	Dividend paid on Ordinary Shares	Dividend paid on Saving Shares	Payout Ratio
	(€/share) <sup>1</sup>	(€/share) <sup>1,2</sup>	
2011	0.27	0.34	41%
2012	0.32	0.39	40%
2013	0.32	0.39	43%
2014	0.367	0.431	41%

1 – Before Taxes; 2 – Saving shares were converted to ordinary shares in June 2017.

Source: Company data

The Board of Directors appoints the remuneration committee that is responsible to annually develop the remunerations plan for the following year (**Table 6 - Remuneration committee**

**Table 6).**

There are three components to the company’s remuneration package: gross annual fixed component, variable annual component and variable component of medium/long-term<sup>12</sup>.

**Social Responsibility**

Pirelli demonstrates interest and active behavior on matters of social responsibility, especially on matters related to environmental issues. It has been investing in the production of tyres that are environmentally friendly and contributes indirectly by being so connected with the introduction of electric cars.

Pirelli has a contract with the Italian Football team “Inter” that goes behind the sponsorship, as it supports an initiative from the club established in 29 countries that offers an educational opportunity to young children with less money to play football.

The company supports several programs in different countries that provide food and shelter for needy families. In several countries, Pirelli supports health services, by providing with medical supplies and making donations to research and voluntary programs. Pirelli also promotes and sponsors environmental initiatives linked to recycling and plantation of trees<sup>13</sup>.

The company has gained some awards related to social responsibility and environmental awareness, an example of that is the recent nomination by CDP (Carbon Disclosure Project) as a Global Leader in corporate climate action<sup>14</sup>.

**4. Industry Overview and Competitive Positioning**

**Macroeconomic Summary**

According to the latest forecasts from IMF published in July 2019, global growth is sluggish, with a forecast of 3.2 for 2019 and 3.5 in 2020<sup>15</sup>. Global economy has been affected negatively by the economic war between USA and China, with increasing tariffs on certain Chinese products and currency devaluation of the Chinese Yuan.

Inflation worldwide has been rising over the past years, reaching 3.3 % in 2018, and is expected to reach 3.7% in 2019.

Europe is an important area for Pirelli, considering that it holds 43% of the 2018’s total revenues. GDP in Europe was 1.7% in 2018 and the projections for 2019 and 2020 are of the same percentage – 1.7% per year.

**Raw materials**

During 2018 there was an increase in energy price and a decrease in the price of natural rubber.

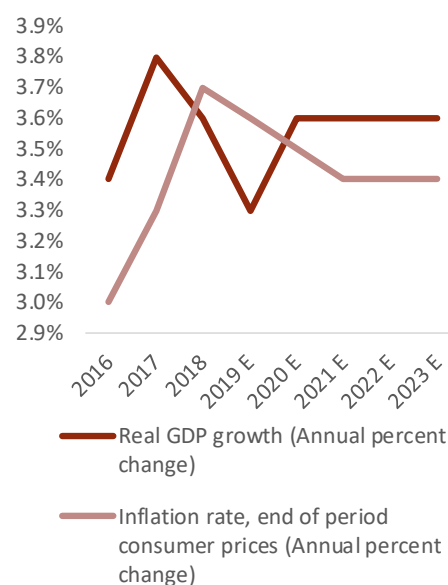
Production of Tyres requires 3 main Materials<sup>16</sup>:

- **Brent:** Sweet light crude oil used for manufacturing, has registered an average price of € 63 per barrel in 2018, an increase from 2017, when it registered an average of € 40 per barrel.

- **Natural rubber:** Elastic material obtained from trees to produce tyres. Pirelli has been increasing the use of green friendly materials on its products. There was a decrease in its average price between 2017 to 2018 from € 1.4 to € 1.2 per tonne.

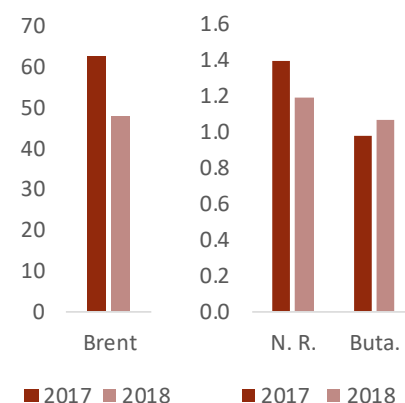
- **Butadiene:** Main component for the production of synthetic rubber, has also decreased in price, standing at an average of € 0.98 per ton in 2018, coming from € 1.07 per tonne in 2017.

**Figure 29 - GDP and Inflation rates**



Source: International Monetary Fund

**Figure 32 - Raw materials Price (€)**



Source: Company data

**Table 17 - Social Key Performance Indicators**

Social KPI's	2016*	2017	2018
Headcount at end of year	29,787	30,189	31,489
- % women in managerial positions	20.6%	21.6%	22%
- temporary workers	4.8%	4.6%	2.6%
Accident Frequency Index	0.33	0.27	0.29
Average number of training days per employee	9.8	8	8.2
Whistleblowing Reports	38	34	70
Number of independent audits on suppliers' sustainability	64	83	85

\*Excluding industrial Business

Source: Company data

## Automotive Market

There were 78.7 million new cars sold in 2018, registering a minor decrease when compared to 2017<sup>17</sup>, nevertheless, the number of cars in circulation has been increasing as seen previously in **Figure 8 - Passenger cars (stock per 1,000 pop)**

**Figure 8 - Passenger cars (stock per 1,000 pop)**. The car industry has been developing and continually growing over the years, even resisting recessions.

In particular for premium or prestige cars, which are the main target of Pirelli, represented in 2018 12.6% of all cars sold, an increase of 0.8% when compared to 2017<sup>18</sup>.

The consistent positive evolution of the automotive industry allows for a safe market demand of tyres.

## Tyre Market

According to a report from MarketLine19 that analyses the historical evolution of the tyre market and presents sustained forecasts for the future, the global tyres market had a consistent growth over the past, and is expected to continue this trend at a decelerated pace in the future.

The two regions that contribute to the growth of the market are America and Asia, mainly because those are the regions where the factories are established. Asia tyre companies are mostly mass market and low-cost companies, leading even to a petition launched in 2016 by American and European producers that called for heavier duties on imported Chinese tyres, claiming the Chinese were “dumping” tyres on the world market, affecting the American and European tyres companies. The U.S. International Trade Commission did not apply those increased duties, nevertheless with growing tensions between USA and China, it is possible that the Chinese tyre brands will eventually get barriers for selling on the western world, allowing for the remaining tyre producers to gain market.

According to MarketLine, the tyre market in 2018 had total revenues of € 545,556.61m and registered a CAGR of 7.2% between 2014 and 2018 (Table 8 - Tyre market overview

### Table 8).

The performed study concluded that tyres’ sales are correlated with Gross Domestic Product. With inflation maintaining itself at moderate levels and GDP rising, the demand for cars increase, and therefore for tyres as well.

In relation to the volume of sold tyres, there was an increase with a CAGR of 5.3% from 2014 to 2018, reaching a total of 4,415.7 million tyres consumed in 2018.

Considering the segment of car tyres, there are 2 main types of tyres: rim size equal or inferior to 17 inches (standard tyres), and rim size equal or superior to 18 inches (premium/high value tyres).

During 2018 there was a positive evolution of the premium tyres market, with an increase of 10% in use when compared to 2017, and a contraction of 1% on the segment of standard tyres.

The premium segment of tyres achieved 15% of the total tyres market in 2018, an evolution from the 14% in 2017.

**The main threat** for tyre producers is the possible increase in raw materials prices, which will force the companies to seek out alternative products, such as Pirelli has been doing by gradually increasing the use of natural rubber.

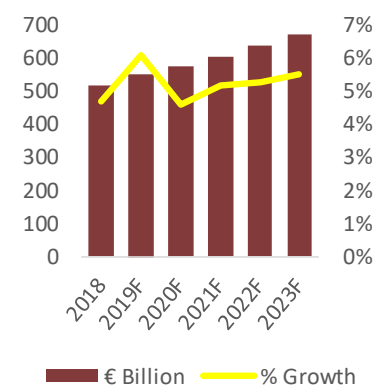
Oil prices have been increasing over the last years, and this will eventually limit the tyre market growth. However, this will be culminated with the increase in GDP worldwide, which will drive the increase in car demand.

**Table 19 - Tyre market overview**

Market value CAGR 2014-18	7.10%
Market volume CAGR 2014-18	5.30%
Mark. Val. forecast CAGR 2018-23	5.30%
Mark. Vol. forecast CAGR 2018-23	5.10%

Source: MarketLine

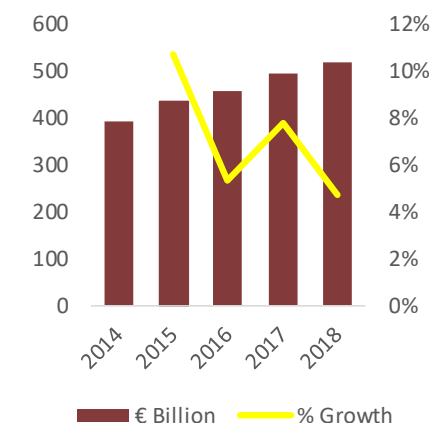
**Figure 36 - Global tyre market value forecast**



**Figure 39 - Global tyre market share**

Source: Company data

**Figure 34 - Global tyre market value**



Source: MarketLine

The overall tyre market is expected to grow at a decelerated rhythm, with forecasts pointing to a CAGR of 5.3% for the next five years (between 2019 to 2023).

### Competition

The main competitor for Pirelli is Nokian, a Finnish company specialized in consumer tyres and premium winter tyres. Both Nokian and Pirelli have higher product prices when compared to the remaining players.

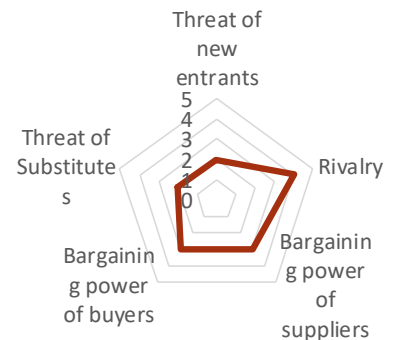
Next there are 4 main players on the market that also compete directly with Pirelli - Bridgestone, Michelin, Goodyear and Continental. These four company have no particular focus on a certain type of tyres and produce standard and high value tyres for both consumer and industrial markets.

We can see in **Figure 17 - Global tyre market share**

**Figure 17** the Global market share distribution, where we can notice Pirelli has 4.1% market share.

We present below a table with the general information about all the players on the tyre market.

**Figure 42 - Five Forces Analysis on Pirelli Business**



Source: Bridgestone

Tier	% of tyre sales	N.º of players	Average EBIT Margin	Focus	Company
Tier 1	49%	2	18%	Global High Value	<b>PIRELLI</b>
				Winter Tyres	<b>nokian</b>
Tier 2	23%	14	10%	Mainly mass - market	<b>BRIDGESTONE</b> , <b>MICHELIN</b> , <b>GOODYEAR</b> , <b>Continental</b>
					<b>SUMITOMO</b> , <b>COOPER</b> , <b>BRISEA</b> , <b>HANKOOK</b> , <b>MRF</b> , <b>TITAN</b> , <b>YOKOHAMA</b> , <b>KUMHO</b> , <b>CST</b> , <b>TOYO</b> , <b>petlas</b> , <b>NGV</b> , <b>apollo</b>
Tier 3	28%	>150	1-2%	Low - cost players	<b>Goodyear</b> , <b>Continental</b> , <b>Pirelli</b> , <b>Sumitomo</b> , <b>Hankook</b> , <b>Yokohama</b> , <b>Others</b>

Source: MarketLine

### Porter's Five Forces

#### Threat of new entrants (Low)

**Table 22 - Tyre market competitive overview**

rs, particularly in the segment that Pirelli is on. It requires high capital investments to establish factories that can produce in relevant volumes to have profit and generate economies of scale, which are required by the tyre industry. The production of tyres requires for advanced technologies and equipment's that are expensive.

Another relevant factor is the R&D, especially for tier 1 companies that have already spent significant amounts on R&D, strengthening their products and position.

Pirelli stands as one of the strongest players in terms of tyre technology and development, offering high performance and safe tyres which a new company would not have the knowledge to develop.

Pirelli also stands as an icon in Formula 1 and other relevant automotive competitions, aiding in its brand recognition. Many other competitors have relevant brands that have been built over years of presence and investment.

#### Rivalry (Significant)

There are over 170 companies performing in the market, however tier 1 covers almost 50% of the market. These companies are leaders in terms of price, quality and offer a wider range of products.

#### Threat to the business Legend:

- 1 - Insignificant
- 2 - Low
- 3 - Moderate
- 4 - Significant
- 5 - High



In particular for high value premium tyres, Pirelli stands out, although there is the possibility that other major player in the market start focusing on this segment at any time.

Bargaining power of suppliers (Medium)

Considering the three main products required to produce tyres (oil, synthetic rubber and natural rubber), there is a low number of suppliers in the market. However, the prices will always be volatile as they depend on many other factors.

Bargaining power of buyers (Medium)

For original equipment, the bargain power of buyers is significant, as there are low costs to switch from buyers - sales depend very much on the current automotive market trends and the automobile market is very concentrated on few automakers.

As for replacement products and services, such as technical assistance, garages or retail shops, the bargain power is much lower, as individually they are small size buyers that have no power to negotiate.

Threat of Substitutes (Low)

There is a very limited number of substitutes, as it is virtually impossible to substitute tyres for other similar product. The only relevant threat comes from an increase in the use of public transportation, thus reducing the use of cars.

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Focus on a profitable niche - premium consumer tyres</li> <li>• Brand recognition reinforced by motorsports presence</li> <li>• R&amp;D Investment and expertise</li> <li>• Strong Financial Statements with sustainable growth</li> </ul>	<ul style="list-style-type: none"> <li>• High debt</li> <li>• Large market share gap from the main players</li> </ul> <p style="text-align: right; color: red;"><i>Source: Analyst</i></p>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Technological innovations and advances</li> <li>• Evolving customer and car industry</li> </ul>	<ul style="list-style-type: none"> <li>• Competitors investing in the same segment</li> <li>• Environmental concerns</li> </ul>

**Table 25 - SWOT analysis of Pirelli**

*Source: Analyst*

## 5. Investment Summary

### Valuation

The final recommendation is **BUY**, with a **price target of € 6,80** representing an **upside potential of 25%** for the year end of 2019. We assume that the current undervaluation derives from performing below the overall goals for 2019, although with still positive results. Our valuation was achieved through the Discounted Cash flow method complemented with Relative Valuation. On both methods, our valuation considered the consolidated statements and the global position of the company.

### Company overview

The company is now solely focused on consumer tyres, in particular for high value ones, with no plans for expansion on the near future. Pirelli has been around for 147 years proving its resilience and strategic competence on a very competitive market.

The company success is driven by brand recognition and quality products achieved by considerable investments in R&D. We expect the company to perform well in the future as valuable opportunities may rise for high value tyres producers, such as electric and automotive cars that require specialized tyres.

### Company's market overview

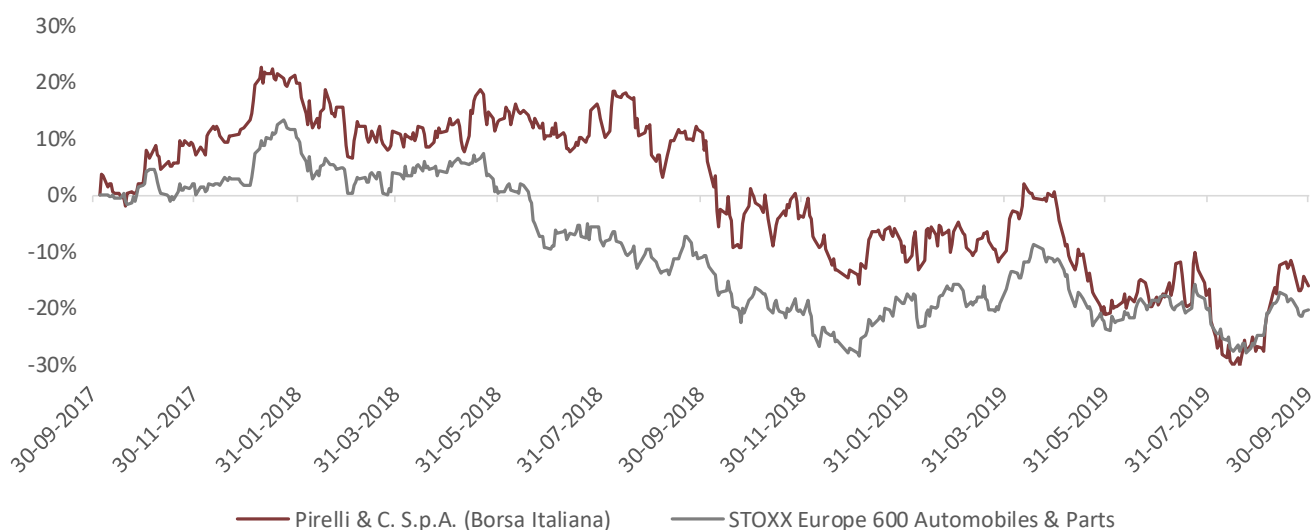
The industry overview is positive, with consistent historical growth, and forecasts pointing for a continuous growth of the market for at least the next five years.

On a competitive level Pirelli stands next to main peers on the tyres market, although with only a 4% market share, with the main player having around 15%.

Since the IPO in October 2017, Pirelli has shown positive performances, even above the STOXX Europe 600 automobile & Parts (constituted by companies from Europe that operate on the Automobile and Auto parts sector), as seen in **Figure 19 - Pirelli and STOXX Europe 600 Stock price evolution in %**

### Figure 19.

**Figure 45 - Pirelli and STOXX Europe 600 Stock price evolution in %**



Source: Company data

### Investment Risks

We consider this to be a medium risk investment considering that the company has registered some deceleration in 2018 when compared to the remaining years, it's

**Table 28 - Investment summary**

Date	30-09-2019
Equity value (thousands)	6,796,345 €
Outstanding Shares	1,000,000
Closing Price	€ 5.43
Price Target DCF	€ 6.80
Price target Multiples	€ 6.01
Recommendation	Buy
Upside Potential	25%

Source: Analyst

**Table 31 - Investment classification matrix**

	Low Risk	Medium Risk	High Risk
BUY	>15%	>20%	>30%
HOLD	>5% and <15%	>10% and <20%	>15% and <30%
REDUCE	>-10% and <5%	>-10% and <10%	>-10% and <30%
SELL	<-10%	<-10%	<-10%

Source: BPI Risk Matrix

vulnerable to the volatility of raw materials and it's partially owned by a Chinese corporation to which we have no visibility about long term plans for Pirelli. The risk assessment is expanded on chapter [8. Investment Risks](#).

## 6. Valuation

We will be evaluating Pirelli's through the Discounted Cash Flow to the Firm method, which will be complemented with a Relative Valuation.

A two-stage model was performed for a 5-year period of forecast, and a terminal value was also considered for the company.

### DCF Valuation

Trough the DCF valuation we reached a price target of € 6.8 for the end of 2019, with an upside of 25% from a closing price of € 5.43 on September 30<sup>th</sup>, 2019.

The Discounted Cash Flow stands as a valuation method that estimates the value of a company or investment analyzing forecasted future cash flows. The objective is to calculate the present value of those future cash flows using a discount rate.

This valuation method allows for an investor to estimate how much money an investment will generate.

There are two main steps to perform a Discounted Cash Flow valuation, which are to forecast and calculate Free Cash Flows to the Firm (FCFF) and apply a discount rate, which will be the Weighted Average Cost of Capital (WACC).

For the DCF Valuation we considered a five-year period forecasted (between 2019 and 2023), complemented with the terminal value.

FCFF are calculated as follow:

$$\text{FCFF} = \text{EBIT} * (1 - \text{Marginal Tax Rate}) + \text{D\&A} - \text{Net increase in WC} - \text{CapEx}$$

We will consider as relevant historical data the three latest years – 2018, 2017 and 2016 for two reasons:

- Due to the change in the company structure, any comparison between data from the years 2014-2016 would be inaccurate and not meaningful when compared to 2017 and 2018, as it includes the Industrial business numbers. This segment was sold during 2017, and 2016 statements were restated for comparability.
- The results of 2015 are impacted by the fact that the company was going through many changes and was different than what it is today, registering a negative net income of around € 380m, which opposes the growing positive results from previous years and from 2016 onwards.

### Forecast Assumptions

The DCF model is most sensitive to the following variables:

**Revenues:** According to a Pirelli Presentation<sup>20</sup>, the company expects the total revenues to increase fairly equally throughout the world, with an expectation to an increase on Premium tyres' sales in developed countries and a decrease on standard ones. Pirelli's sales are nowadays composed by 64% of High value tyres, and the forecasts indicate an increase to 67% by the end of 2019.

The car market is also favoring the growth of the high value tyres market, as stated before, and Pirelli plans to continue to focus on Premium tyres supported by investments on R&D and positioning/branding, allowing the company to also increase the prices of its products as planned.

For the revenue's projections, we considered the company's forecast for 2019<sup>21</sup>, consisting of an increase in 2% in revenues. A third party outside of Pirelli supports those forecasts and, analyzing the historical forecasts from the company, we conclude that they are regularly accurate<sup>22</sup>.

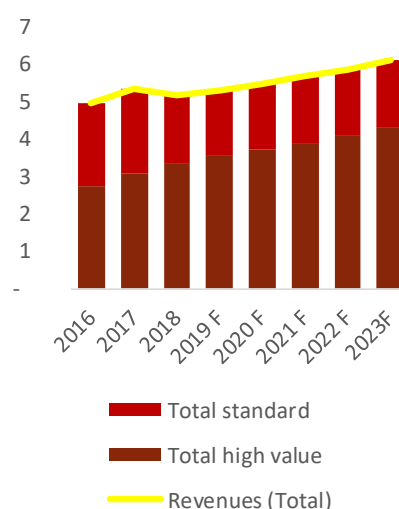
Between 2020 and 2023 we considered an average growth rate between the tyre market forecasts and Pirelli's revenue CAGR from 2016 to 2018, which amounted to 2.17%. As analyzed before, the tyres market value is expected to increase in the following years. Nevertheless, we have to take in consideration Pirelli's evolution and

Table 34 - Price Target calculation

Enterprise value (Thou.)	€ 10,269,213.71
Net debt (Thou.)	€ 3,472,868.23
Value of equity (Thou.)	€ 6,796,345.48
N.º shares outstanding	1,000,000
<b>Equity value per share</b>	<b>€ 6.80</b>

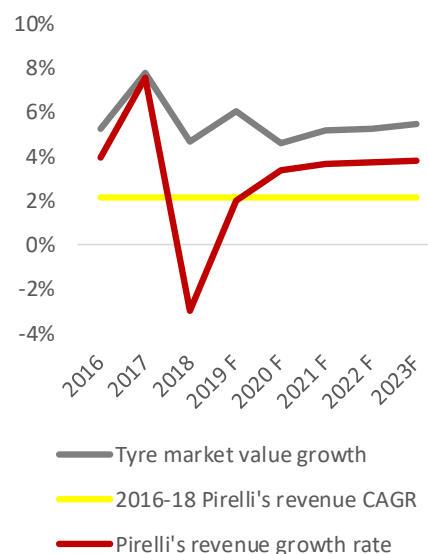
Source: Analyst

Figure 48 - Pirelli's Revenues in Billion euros



Source: Company data; Analyst

Figure 51 - Pirelli and tyre market revenue evolution in %



Source: Company data, MarketLine; Analyst

position in particular. Looking at the historical data from the market evolution, we can see that the Pirelli's revenue increased according to the market, except in 2018, when a decrease was noted. Also, Pirelli is mainly focused on consumer High value tyres, so we decided to take a more conservative approach and forecast the revenues evolution considering the market forecast, complemented by the historical evolution of Pirelli.

This approach resulted on revenues increasing between 3.4% to 3.8% from 2020 to 2023 as seen in **Figure 21 - Pirelli and tyre market revenue evolution in %**

**Figure 21.**

Cost of Raw materials: As analyzed before, there has been a general decrease on the price of tyres components except for Brent. Nevertheless, the prices for the main raw materials used, rubber and oil components, are very volatile and not viable to predict. We decided to consider that Pirelli would maintain similar gross margins for the following years, based on the historical information. The gross margin has been very stable on the last 3 years, and based on that, we will consider 68.45% gross margin as our forecast for the future.

Impact from discontinuing operations: Until 2018, it is still visible some loss on net income from discontinued operations. Those are non-recurring events that have been impacting the company, related to the sale of the industrial business in 2016. In 2019 Pirelli is now completely focused on consumer Tyres and following the company's deals and plans from the last years, there are no plans to expand or decrease the company's operations.

Operating costs: For all operating costs related to the company's business, such as utility or personnel expenses, a direct relation to the revenue's evolution was considered. Each item was individually analyzed, and its forecasted values are calculated based on the weight on total revenues for each year based on historical information.

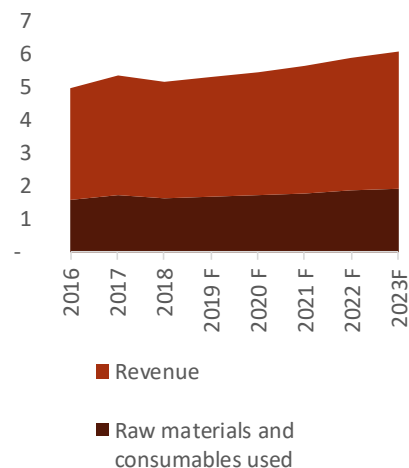
Debt: The D/E ratio in 2017 and 2018 was 1.07 and 1.04, respectively, which stands as a normal value for mature and well-established companies. Pirelli discloses information on its active debt structure, including its maturity date. Based on historical information, we assumed a minimal value that Pirelli will bear on borrowings, which comes from 2017 where Pirelli registered the lowest amount of borrowings of the last three years – € 4.5b. Considering this minimum amount, we estimated the debt of the company to decrease until 2020, following the available maturity dates, and to maintain stable for the remaining forecasted years. Pirelli has maintained a healthy amount of cash over the last years, consistent financial results and there are no plans for major investments such as expansions, which makes us believe that there will be no need to increase debt levels.

Capital Expenditures and Depreciation & Amortization: As stated before, R&D continues to be relevant for Pirelli's strategy. It has allowed the company to develop superior tyres in terms of performance and safety, sustaining the company's position. There are no plans for new factories, but looking at the company history, Pirelli continuously evolves and advances its facilities in order to produce better products and achieve greater margins. Considering the importance of the CAPEX factor for Pirelli, and historical information, we estimate that it will maintain high values, with a slight increase over the years, ranging from € 407m in 2018 to € 445m in 2023.

Depreciation and Amortization rates were calculated based on historical information, as they remain constant.

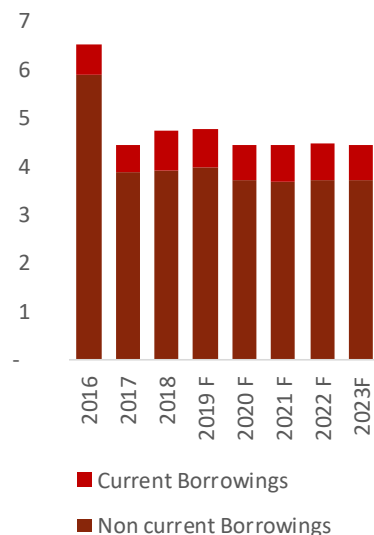
Net Working Capital: Net Working Capital was calculated summing current assets and liabilities, excluding cash and other financial or non-operational items. It includes other receivables and payables, taxes, inventories and trade receivables and payables. The forecasts for the considered items were made based on historical information and

**Figure 54 - Cost of materials used in Billion euros**



Source: Company data; Analyst

**Figure 56 - Pirelli's debt in Billions €**



Source: Company data; Analyst

**Table 36 - Enterprise value calculation in Thousands of euros**

Terminal growth rate	1.50%
Perpetuity WACC	6.61%
Terminal value	11,010,351
PV of terminal value	8,017,025
Source: Analyst	
NPV OF FCFF	2,252,189

<b>Enterprise value</b>	<b>10,269,214</b>
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individual relation with the forecasted sales. The changes in Net Working Capital were calculated through the forecasted years.

**Terminal Value:** For mature companies, such as Pirelli, it is expected that the perpetual growth will be below inflation and GDP levels, since there are no plans for expansion or significant changes in production capacity in the future.

Considering that Pirelli sells worldwide with more presence on western countries, it is not realistic to consider the raw global inflation forecasts. We have considered as inflation rate, the forecasted inflation for 2024<sup>23</sup> weighted by region, considering the total weight of each region on total revenues, resulting on an Inflation rate of 2.53%. Nevertheless, as stated before, we believe that Pirelli will grow below global Inflation and GDP rates, therefore we will consider a **terminal growth rate of 1.5%**. This rate is also in accordance to a research from Morgan Stanley<sup>24</sup>, which indicates the same terminal growth rate for Pirelli.

We calculated FCFF based on the forecasts previously stated in this paper, and the results are presented on the table below:

**Table 39 - Free cash Flow Projections**

Cash-Flow Projections						
€ in Thousands	2018	2019 F	2020 F	2021 F	2022 F	2023F
Sales	5,194,471	5,298,361	5,477,647	5,679,432	5,891,491	6,117,359
Cost of sales	-1,616,783	-1,671,805	-1,728,375	-1,792,045	-1,858,957	-1,930,225
<b>Gross profit</b>	<b>3,577,688</b>	<b>3,626,556</b>	<b>3,749,271</b>	<b>3,887,387</b>	<b>4,032,534</b>	<b>4,187,134</b>
Other operating income & expenses	-2,874,632	-2,903,839	-3,009,878	-3,128,924	-3,254,212	-3,387,753
<b>Operating Income</b>	<b>703,056</b>	<b>722,717</b>	<b>739,393</b>	<b>758,464</b>	<b>778,322</b>	<b>799,381</b>
Notional Taxes	- 175,764	- 180,679	- 184,848	- 189,616	- 194,581	- 199,845
<b>Operating Income After Taxes</b>	<b>527,292</b>	<b>542,038</b>	<b>554,545</b>	<b>568,848</b>	<b>583,742</b>	<b>599,536</b>
Investment in NWC	- 365,704	- 160,150	- 9,058	- 10,195	- 10,714	- 11,412
CAPEX	- 407,253	- 394,775	- 414,262	- 429,523	- 445,560	- 462,642
Depreciation	394,304	400,200	406,692	413,698	421,244	429,373
<b>Free Cashflow</b>	<b>148,639</b>	<b>387,313</b>	<b>537,917</b>	<b>542,828</b>	<b>548,711</b>	<b>554,855</b>

Source: Analyst

As a discount rate we used the **WACC**, which represents the rates of return of both the Company's debt and equity holders, weighted by the respective participation on the capital structure. The WACC formula is:

$$WACC = \frac{E}{E + D} * r_E + \frac{D}{E + D} * r_D * (1 - t)$$

Where:

E = Market Value of firm's Equity

D = Market Value of firm's Debt

$r_E$  = Cost of equity

$r_D$  = Cost of debt

t = Corporate tax rate

The **cost of equity** is the rate that reflects the required rate of return paid to investors, that compensate for the risk taken, and was calculated through Capital Asset Pricing Model (CAPM):

$$r_E = r_f + \beta_L * ERP + CRP$$

Where:

$r_f$  = risk free rate

ERP = Equity Risk Premium

$\beta_L$  = Levered beta

**Table 42 - WACC calculation**

COST OF EQUITY	
Risk Free Rate	0.2%
Country Risk Premium	3.1%
Equity risk Premium	5.96%
Beta Unlevered	0.63
Beta levered	1.50
<b>Cost of equity</b>	<b>12.3%</b>
COST OF DEBT	
Cost of debt	4.2%
Marginal tax rate	25.0%
<b>After-tax cost of debt</b>	<b>3.1%</b>
WACC	
Weight of equity	38.1%
Weight of debt	61.9%
<b>WACC</b>	<b>6.61%</b>

Source: Analyst

$CRP = \text{Country Risk Premium}$

For the **Risk Free Rate**, we considered the yield of 10 year German bonds, which are recognized as a safe investment, resulting in a risk free rate of 0.24%. We considered 10-year bonds because, according to Frykman and Tolleryd (2003)<sup>25</sup>, bonds with longer maturity tend to have lower liquidity.

For the **BETA**, we calculated the average unlevered Beta from similar competitors through information extracted from Bloomberg. We considered the same companies used for the relative valuation resulting in unlevered Beta of 0.63. To achieve the levered Beta of 1.5, we applied the following formula:

$$\beta_l = \text{Unlevered Beta} (1 + ((1 - \text{tax rate}) (D/E \text{ Ratio})))$$

As for the **ERP** and **CRP**, we used the values available on Aswath Damodaran's website, which are 5.96% and 3.06% respectively.

The **cost of debt** reflects the effective rate at which a company can borrow or lend money.

We used the average cost of debt of the Rubber & Tires industry available on Aswath Damodaran's website, which is 4.18%. The corporate Tax rate disclosed on the annual report of 2018 was 25%.

## Multiples Valuation

A relative valuation was also performed to support the DCF method and compare the results. Using this methodology, we achieved a final price Target of € 6.01, with an upside potential of 11%, supporting that the company is currently undervalued on the market.

Considering that all companies have different structures, strategies and act differently on the market, we used for the relative valuation the average Price Targets from companies that are similar and comparable to Pirelli.

The peers used for the relative valuation are the five main international tyre companies that stand as the main competitors for Pirelli and are also the only companies on the market that act on the same segment - high-value consumer tyres. Most of the remaining players act on mass market segments without a line of high value tyres or have other rubber business. (See Appendix L)

For the relative valuation we considered five ratios, three based on Enterprise value, and the remaining on Price multiples. The peer data used for the calculations was extracted from BBG, and when possible, we used Bloomberg forecasts for 2019.

**Table 47 - Multiples valuation Summary**

Company	EV/EBITDA	EV/EBIT	EV/S	P/EPS	P/B
Nokian Renkaat Oyj	8.22	10.98	2.32	8.26	2.20
Cie Generale des Etablissements Michelin SCA	5.30	7.98	1.02	10.29	1.49
Goodyear Tire & Rubber Co/The	4.97	12.25	0.57	8.19	0.68
Continental AG	4.53	7.80	0.57	10.11	1.32
Brisa Bridgestone Sabanci Sanayi ve Ticaret AS	1.02	1.35	0.17	19.69	2.05
<b>Average Ratio</b>	<b>5.25</b>	<b>8.48</b>	<b>1.09</b>	<b>10.95</b>	<b>1.49</b>
<b>Price Target</b>	<b>5.77</b>	<b>6.24</b>	<b>5.13</b>	<b>6.33</b>	<b>6.57</b>

Source: Analyst

## 7. Financial Analysis

### Profit and loss

Gross profit has increased from 2016 to 2017, whilst there was a decrease in 2018 due to a sales decrease, reaching the value of € 3.577B. For 2019, revenues are expected to increase again hitting € 3.626B, continuing that trend for the remaining forecasted years and reaching a value of € 4.187B in 2023. The costs of materials will also increase, although at a lower rate than the increase on sales explained by increased efficiency, technology and scale economies by Pirelli. The forecasted increase on

**Table 44 - Relative valuation Output**

Average ratio of Peers - Price Multiples:		
	Peers	Price Target
Price to Earnings per share	11.31	6.33
Price to Book	1.55	6.57
<b>Average Price Target:</b>		<b>6.45</b>

Average from Peers on EV Multiples:		
	Ratio	Price Target
EV/Sales	1.12	5.77
EV/EBITDA	5.75	6.24
EV/EBIT	9.75	5.13
<b>Average Price Target:</b>		<b>5.71</b>

<b>Relative Valuation:</b>	<b>6.01</b>
<b>Upside Potential</b>	<b>10.64%</b>

Source: Analyst

sales is explained with the expected growth of the tyre market for future years, sustained by the technological evolution of vehicles and tyres, and the increase on the volume of cars circulating, especially in developing countries. Our forecasts for revenues increase are conservative when compared to the tyre market projections.

CAPEX will also continue to increase over time, justified by the continuous investment made by Pirelli as part of its strategy.

### EBITDA

Pirelli's EBITDA has been increasing over the past years, reaching a value of €1.159B in 2018. On our forecasts, we expect EBITDA to decrease slightly in 2019 to € 1.122B justified by the increased expenses not being entirely covered by the increased income. Nevertheless, we predict that EBITDA will maintain a steady growth between 2020 and 2023, reaching a value of € 1.228B.

EBITDA margins have been steady, standing between 20 to 22% from 2016 to 2018. Considering our predictions, we expect this trend to maintain over future years without relevant changes. Pirelli's EBITDA Margin is the best of the Tyres sector<sup>26</sup>, and represents a consolidated position of a mature company that has proven successful and efficient with its production methods. This was achieved through Pirelli's strategy of focus and investment on a single sector (Consumer Tyres), allowing it to stand out of its peers in terms of profitability.

### Equity Ratio

From 2016 to 2018 we see a strong change on Pirelli's equity ratio, coming from 20% in 2016 to 33% in 2017 and 35% in 2018. This means that the company is increasingly being financed by equity rather than debt. This evolution is mostly explained by the IPO done in 2017, as stated before. We expect this ratio to increase until 2020 to 38% and maintain stable for the remaining forecasted years.

### Return on Equity

Return on equity has been increasing from 2016 to 2018, between 5% and 9%. Considering our forecasts, we expect ROE to decrease in 2019 and continuously increase until 2023, ranging from 6% in 2019 to 7% in 2023.

Despite the low ROE, equity holders are rewarded with a consistently high dividend payout ratio.

### Dividend Policy

The dividend policy has been stable during the years that Pirelli was listed, with an average of 42% payout Ratio of total net income. The company has already stated that it will continue to distribute dividends at least until 2020, with the plan being of the distribution of 40% of the consolidated net income. We expect this trend to continue for the remaining forecasted years.

The company has proven to care about attracting investors and it is at a stable position that allows it to consistently distribute dividends.

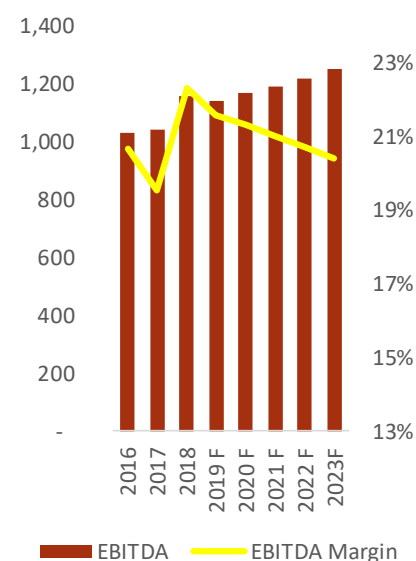
## 8. Investment Risks

### Market Risks

#### Macroeconomics (MR1)

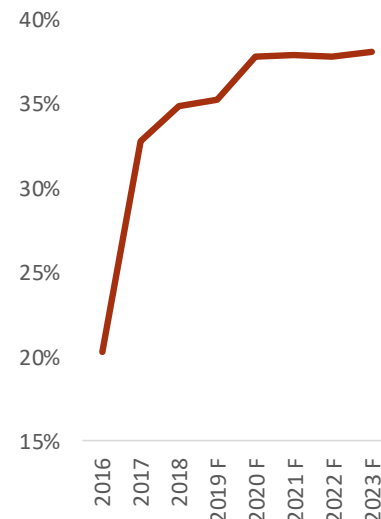
There are expectations that the world economy will weaken in the future, in particular for Europe and USA, with projections pointing for a deceleration of those major economies, which are the source of a significant part of Pirelli's revenue. Tensions between USA and China, as well as Brexit, have been contributing for increasing geopolitical tensions around the world, which can impact exchange rates, materials cost and the general cost of issued debt. Although the world has been on expansion,

**Figure 59 - Pirelli's EBITDA in Million euros**



Source: Analyst

**Figure 62 - Pirelli's Equity Ratio**



Source: Analyst



with positive Macroeconomic trends, there is the possibility that a recession will come in a near future.

Increase in interest rates (MR2)

Changes in Interest rates could negatively affect the company, which is highly financed with a D/E ratio of 186% in 2018 and an amount of € 4.7B in debt.

Around 85% of the company's debt is in Euros<sup>27</sup>, and the company has been contracting interest rate swaps to manage this risk.

Exchange rates effects (MR3)

Pirelli is very exposed to exchange rate effects, considering that more than 50% of its revenues are coming from countries with a different currency than Euro. Also, a considerable part of Pirelli's materials come from foreign countries, such as Petroleum derivatives. As stated before, there are growing geopolitical tensions around the world that may end up negatively influencing Exchange rates. The company has been mitigating this risk by having factories through various points of the world and using hedging strategies.

**Operational Risks**

Decrease in Demand (OR1)

Over the last years some trends have been arising that can decrease the number of cars in circulation, such as car sharing mentality and apps that provide good transportation services can eventually cause people to give less importance to owning a car.

Rising price of raw materials (OR2)

The main materials used for Tyre production are Natural rubber, synthetic rubber and raw materials that derivate from oil. Those have been registering volatile prices over the last years, mostly due to world tensions. Growing environmental concerns can also affect the availability and price of those raw materials. Pirelli has been analyzing the market and experimenting on the use of alternative materials to produce tyres.

Peers shifting their focus (OR3)

There are a significant number of competitors in market, some of which with relevant notoriety and resources that can affect Pirelli. At this point, Pirelli is the only tyre producer focused solely on consumer tyres, with a particular interest in premium tyres, but there is the possibility that other competitors start focusing more on the same market by increasing investment in R&D. Even though there are high barriers for the entrance of new companies, the large number of competitors can affect Pirelli's income and financial situation in the future.

ChemChina Holds 45.5% of the company (OR4)

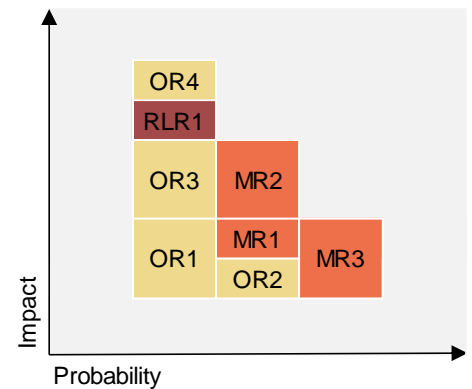
We have no clear visibility about ChemChina long-term plans for Pirelli, even though they have been giving autonomy for the company to maintain its strategy, There is no public information about their intentions to either keep or sell they share of the company.

**Regulatory and legal risks**

Increasing taxes/restrictions on car usage (RLR1)

As stated before, there are growing environmental concerns that have been resulting on increasing taxes on newer and better cars that have stronger engines. Adding the regulatory impositions to the public awareness of pollution matters, can result on a lower demand and use of cars, which will lead to a decrease on tyre sales.

**Figure 65 - Risk Matrix**



Source: Analyst

### Risks to Price Target

We have also performed a Sensitivity Analysis to analyze the Price Target sensitivity to changes on two key assumptions, the terminal growth rate and Perpetuity WACC.

For the Sensitivity analysis we considered changes of 1% for the perpetuity WACC and changes of 0.5% for the Terminal Growth rate (Figure 27).

**Figure 68 - Sensitivity Analysis**

		Perpetuity WACC				
		4.61%	5.61%	6.61%	7.61%	8.61%
Terminal Growth	0.50%	8.65	6.72	5.42	4.49	3.78
	1.00%	10.07	7.62	6.05	4.95	4.14
	1.50%	11.94	8.74	<b>6.80</b>	5.49	4.54
	2.00%	14.54	10.18	7.71	6.12	5.01
	2.50%	18.36	12.07	8.84	6.88	5.55

Source: Analyst

# Appendices

## Appendix A: Income Statement, in thousands

<b>INCOME STATEMENT</b>			
In thousands €	2016	2017	2018
Revenues from sales and services	4,976,396	5,352,283	5,194,471
Raw materials and consumables used (net of change in inventories)	(1,540,516)	(1,859,837)	(1,818,199)
Changes in inventories of unfinished, semi-finished and finished products	(22,406)	140,258	201,416
<b>Gross profit</b>	<b>3,413,474</b>	<b>3,632,704</b>	<b>3,577,688</b>
Other income	696,225	628,533	483,205
Other income from Prometeon Group	211,773	223,542	91,343
Sales of Industrial products	282,526	223,482	183,762
Gains on disposal of property, plant and equipment	43,835	1,865	7,848
Rent income	7,000	3,759	5,465
Insurance indemnities and other refunds	9,713	0	0
Recoveries and reimbursements	73,179	59,871	95,785
Government grants	6,875	8,596	14,515
Other income	61,324	107,418	84,487
Personnel expenses	(986,308)	(1,034,647)	(1,067,579)
- of which non-recurring events	-	(2,578)	(15,410)
Amortisation, depreciation and impairment	(342,584)	(371,457)	(414,523)
Other costs	(2,096,733)	(2,184,660)	(1,858,161)
Selling costs	(285,162)	(306,108)	(310,687)
Purchases of goods for resale	(491,093)	(478,745)	(434,201)
Purchases of natural rubber for Prometeon Group	(88,602)	(106,331)	-
Advertising	(272,091)	(286,178)	(231,981)
Consultants	(62,481)	(56,656)	(43,872)
Outsourcing	(65,753)	(73,643)	(38,572)
Key managers compensations	(7,388)	(9,610)	(8,229)
Other provisions	(20,622)	(33,063)	(37,867)
Other	(193,431)	(175,827)	(139,690)
Operating costs	(610,110)	(658,499)	(613,063)
Net impairment loss on financial assets	0	0	(21,273)
Increase in fixed assets for internal work	2,378	3,110	3,700
<b>Operating income</b>	<b>686,452</b>	<b>673,583</b>	<b>703,056</b>
Net income (loss) from equity investments	(20,019)	(6,855)	(4,980)
- share of net income (loss) of associates and j.v.	(1,227)	(8,252)	(11,560)
- gains on equity investments	8,297	5,997	4,007
- losses on equity investments	(33,739)	(14,434)	(1,603)
- dividends	6,650	9,834	4,176
Financial income	42,806	128,540	139,730
Interest	0	17,098	17,176
Hyperinflation impact	32,254	0	8,536
Other financial income	0	9,285	9,627
Net gains on exchange rates	10,552	102,157	0
Fair value measurement of currency derivatives	0	0	104,391
Financial expenses	(469,996)	(491,150)	(336,041)
Interest	(330,742)	(255,096)	(103,975)
Commissions	(58,187)	(29,587)	(20,522)
Other financial expenses	(8,694)	(9,250)	(13,183)
Net losses on exchange rates	(18,100)	0	(192,437)
Net interest costs on employee benefit obligations	(9,547)	(7,295)	(5,446)
Valuation at fair value of securities held for trading	(12)	0	0
Fair value measurement of exchange rate derivatives	(38,744)	(189,922)	0
Valuation at fair value of other derivatives	(5,970)	0	(478)
<b>Net income before tax</b>	<b>239,243</b>	<b>304,118</b>	<b>501,765</b>
Tax	(75,256)	(40,848)	(52,964)
- of which non-recurring events	128	103,881	60,607
<b>Net income from continuing operations</b>	<b>163,987</b>	<b>263,270</b>	<b>448,801</b>
Net income (loss) from discontinued operations	(16,362)	(87,563)	(6,429)
<b>Net income</b>	<b>147,625</b>	<b>175,707</b>	<b>442,372</b>
<b>Net income attributable to shareholders</b>	<b>135,063</b>	<b>176,392</b>	<b>431,606</b>
Non-controlling interests	12,562	(685)	10,766
<b>Total earnings/(loss) per share (in euro per share)</b>	<b>00.191</b>	<b>00.206</b>	<b>00.432</b>
Earnings/(loss) per share related to continuing operations (in euro per share)	0.219	0.309	0.438
Earnings/(loss) per share related to discontinued operations (in euro per share)	0.028	(0.103)	(0.006)

## Appendix B: Balance Sheet, in thousands

<b>BALANCE SHEET</b>			
In thousands €	2016	2017	2018
<b>ASSETS</b>			
<b>NON-CURRENT ASSETS:</b>			
Property, plant and equipment	2,925,493	2,980,294	3,092,927
Intangible assets	5,996,444	5,893,704	5,783,338
Of Which - Goodwill	1,877,363	1,877,363	1,886,900
Investments in associates and J.V.	47,010	17,480	72,705
Other financial assets	198,674	229,519	0
Other financial assets at fair value through income statement	0	0	0
Other financial assets at fair value through other comprehensive income	0	0	68,781
Deferred tax assets	116,046	111,553	74,118
Other receivables	192,978	204,051	225,707
Tax receivables	11,864	27,318	16,169
Derivative financial instruments	0	848	20,134
Derivative financial instruments included in Net Financial Position	0	0	20,134
Derivative financial instruments not included in Net Financial Position	0	848	0
<b>Total non-current assets</b>	<b>9,488,509</b>	<b>9,464,767</b>	<b>9,353,879</b>
<b>CURRENT ASSETS:</b>			
Inventories	873,962	940,668	1,128,466
Trade receivables	680,069	652,487	627,968
Other receivables	364,817	400,539	416,651
Other financial assets at fair value through income statement	0	0	0
Securities held for trading	48,597	33,027	27,196
Cash and cash equivalents	1,397,380	1,118,437	1,326,900
Tax receivables	63,089	35,461	41,393
Derivative financial instruments	21,784	27,770	98,567
Derivatives included in Net Financial Position	3,718	21,413	91,245
Derivatives not included in Net Financial Position	18,066	6,357	7,322
Accounts receivable	0	0	0
<b>Total current assets</b>	<b>3,449,698</b>	<b>3,208,389</b>	<b>3,667,141</b>
Assets held for sale	-	60,729	10,677
<b>TOTAL ASSETS</b>	<b>12,938,207</b>	<b>12,733,885</b>	<b>13,031,697</b>
<b>EQUITY AND LIABILITIES</b>			
<b>LIABILITIES:</b>			
<b>NON-CURRENT LIABILITIES:</b>			
Borrowings from banks and other financial institutions	5,886,253	3,897,089	3,929,079
Other payables	72,717	74,435	83,287
Provisions for liabilities and charges	139,987	127,124	138,327
Provisions for deferred tax liabilities	1,337,706	1,216,635	1,081,605
Employee benefit obligations	350,124	274,037	224,312
Tax payables	2,660	2,399	2,091
Derivative financial instruments	0	54,963	16,039
Derivative financial instruments included in the Net Financial Position	0	54,963	13,738
Derivative financial instruments not included in the Net Financial Position	0	0	2,301
Non-current accrued liabilities	0	0	0
<b>Total non-current liabilities</b>	<b>7,789,447</b>	<b>5,646,682</b>	<b>5,474,740</b>
<b>CURRENT LIABILITIES:</b>			
Borrowings from banks and other financial institutions	634,381	559,168	800,145
Trade payables	1,280,483	1,673,642	1,604,677
Contract liabilities	0	0	0
Other payables	491,701	565,255	436,752
Provisions for liabilities and charges	38,358	45,833	33,876
Employee benefit obligations	0	0	5,475
Tax payables	18,218	48,416	65,503
Derivative financial instruments	52,256	17,910	59,602
Derivatives included in Net Financial Position	35,414	11,248	53,510
Derivatives not included in Net Financial Position	16,842	6,662	6,092
Liabilities related to assets held for sale	-	-	-
Current accrued liabilities	0	0	0
<b>Total Current Liabilities</b>	<b>2,515,397</b>	<b>2,910,224</b>	<b>3,006,030</b>
<b>TOTAL LIABILITIES</b>	<b>10,304,844</b>	<b>8,556,906</b>	<b>8,480,770</b>
<b>EQUITY:</b>			
Share capital	1,342,281	1,904,375	1,904,375
Reserves	1,072,551	2,035,991	2,132,140
Net income (loss) for the period	154,809	176,392	431,606
<b>Equity attributable to the Group</b>	<b>2,569,641</b>	<b>4,116,758</b>	<b>4,468,121</b>
Reserves	54,544	60,936	72,040
Net income (loss) for the period	9,178	(685)	10,766
<b>Equity attributable to non-controlling interests</b>	<b>63,722</b>	<b>60,251</b>	<b>82,806</b>
<b>TOTAL EQUITY</b>	<b>2,633,363</b>	<b>4,177,009</b>	<b>4,550,927</b>
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>12,938,207</b>	<b>12,733,915</b>	<b>13,031,697</b>

## Appendix C: Statement of Comprehensive Income, in thousand

<b>STATEMENT OF COMPREHENSIVE INCOME</b>			
In thousands €	2016	2017	2018
<b>Total Net income (loss)</b>	<b>147,625</b>	<b>175,707</b>	<b>442,372</b>
Other components of comprehensive income:			
<b>B - Items that may not be reclassified to income statement:</b>			
- Net actuarial gains (losses) on employee benefits	- 46,567	- 14,656	28,727
- Tax effect	3,289	- 9,291	- 6,986
- Fair value adjustment of other financial assets at Fair value through other comprehensive income	-	-	8,642
<b>Total B</b>	<b>- 43,278</b>	<b>- 23,947</b>	<b>13,099</b>
<b>C - Items reclassified / that may be reclassified to income statement:</b>			
Exchange differences from translation of foreign financial statements			
- Gains / (losses) for the period	- 177,769	- 166,763	78,150
- (Gains) / losses reclassified to income statement	-	80,208	-
- Tax effect	12,598	-	-
Fair value adjustment of other financial assets available for sale:			
- Gains / (losses) for the period	- 16,487	40,486	-
- (Gains) / losses reclassified to income statement	- 26	1,439	-
Fair value adjustment of derivatives designated as cash flow hedges:			
- Gains / (losses) for the period	- 1,428	- 59,757	107,496
- (Gains) / losses reclassified to income statement	4,325	45,265	- 118,747
- Tax effect	- 1,449	2,983	548
Cost of hedging:			
- Gains / (losses) for the period	-	-	20,056
- (Gains) / losses reclassified to income statement	-	-	6,798
- Tax effect	-	-	1,446
Share of other comprehensive income related to associates and JVs net of tax	2,707	- 2,915	- 3,221
<b>Total C</b>	<b>- 177,529</b>	<b>- 59,054</b>	<b>80,262</b>
<b>Total other comprehensive income (B+C)</b>	<b>- 220,807</b>	<b>- 83,001</b>	<b>67,163</b>
<b>Total comprehensive income (loss)</b>	<b>- 73,182</b>	<b>92,706</b>	<b>375,209</b>
<b>Attributable to:</b>			
- Owners of the parent company	- 50,940	93,793	363,500
- Non-controlling interests	- 22,242	- 1,087	11,709
<b>Attributable to owners of the parent company:</b>			
- Continuing operations	125,065	101,148	369,929
- Discontinued operations	- 176,005	- 7,355	- 6,429
<b>Total attributable to owners of the parent company</b>	<b>- 50,940</b>	<b>93,793</b>	<b>363,500</b>

## Appendix D: Statement of Shareholder's Equity, in thousands

### STATEMENT OF SHAREHOLDER'S EQUITY

#### CONSOLIDATED STATEMENT OF CHANGES IN EQUITY AT 12/31/2018

(In thousands €)

	ATTRIBUTABLE TO THE PARENT COMPANY					Non controlling interests	TOTAL		
	Share Capital	Translation reserve	Total IAS reserves	Other reserves/retained earnings	Total attributable to the Parent Company				
<b>Total at 12/31/2017</b>	<b>1,904,375</b>	<b>-</b>	<b>220,624</b>	<b>-</b>	<b>70,265</b>	<b>2,503,272</b>	<b>4,116,758</b>	<b>60,251</b>	<b>4,177,009</b>
Adoption of new accounting standard IFRS 9	-	-	-	10,554	10,554	-	-	-	-
- Reclassification from available for sale financial assets to other financial assets at FV through income statement	-	-	-	-	1,023	-	1,023	-	1,023
- Change due to impairment of financial assets at amortised cost	-	-	-	-	-	-	-	-	-
<b>Total at 01/01/2018</b>	<b>1,904,375</b>	<b>-</b>	<b>220,624</b>	<b>-</b>	<b>80,819</b>	<b>2,512,803</b>	<b>4,115,735</b>	<b>60,251</b>	<b>4,175,986</b>
Other components of comprehensive income	-	-	82,314	14,208	-	-	68,106	943	67,163
Net income (loss)	-	-	-	-	431,606	431,606	-	10,766	442,372
<b>Total comprehensive income (loss)</b>	<b>-</b>	<b>-</b>	<b>82,314</b>	<b>14,208</b>	<b>431,606</b>	<b>363,500</b>	<b>11,709</b>	<b>11,709</b>	<b>375,209</b>
Dividend paid	-	-	-	-	-	-	-	8,366	8,366
Transactions with non-controlling interests	-	-	619	-	35,726	-	36,345	-	17,312
High inflation Argentina	-	-	-	-	26,242	26,242	-	-	26,242
Other	-	-	-	103	908	-	1,011	179	832
<b>Total at 12/31/2018</b>	<b>1,904,375</b>	<b>-</b>	<b>303,557</b>	<b>-</b>	<b>66,714</b>	<b>2,934,017</b>	<b>4,468,121</b>	<b>82,806</b>	<b>4,550,927</b>

	BREAKDOWN OF IAS RESERVES						Total IAS reserves				
	Reserve for fair value adjustment of available-for-sale financial assets	Reserve for fair value adjustment of financial assets at fair value through other comprehensive income	Reserve for cost of hedging	Reserve for cash flow hedge	Reserve for actuarial gains/losses	Tax effect					
<b>Total at 12/31/2017</b>	<b>19,410</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>13,454</b>	<b>-</b>	<b>59,110</b>	<b>-</b>	<b>17,111</b>	<b>-</b>	<b>70,265</b>
Adoption of new accounting standard IFRS 9	-	19,410	8,856	1,000	-	1,000	-	-	-	-	10,554
<b>Total at 01/01/2018</b>	<b>-</b>	<b>-</b>	<b>8,856</b>	<b>1,000</b>	<b>-</b>	<b>14,454</b>	<b>-</b>	<b>59,110</b>	<b>-</b>	<b>17,111</b>	<b>80,819</b>
Other components of comprehensive income	-	-	8,642	13,258	-	11,251	-	28,727	-	7,884	14,208
Other changes	-	-	107	-	-	-	2	2	-	-	103
<b>Balance at 12/31/2018</b>	<b>-</b>	<b>-</b>	<b>107</b>	<b>14,258</b>	<b>-</b>	<b>25,705</b>	<b>-</b>	<b>30,381</b>	<b>-</b>	<b>24,993</b>	<b>66,714</b>

#### CONSOLIDATED STATEMENT OF CHANGES IN EQUITY AT 12/31/2017

(In thousands €)

	ATTRIBUTABLE TO THE PARENT COMPANY					Non controlling interests	TOTAL				
	Share Capital	Translation reserve	Total IAS reserves	Other reserves/retained earnings	Total attributable to the Parent Company						
<b>Total at 12/31/2016</b>	<b>1,342,281</b>	<b>-</b>	<b>204,778</b>	<b>-</b>	<b>61,629</b>	<b>2,058,211</b>	<b>3,134,085</b>	<b>140,773</b>	<b>3,274,858</b>		
Other components of comprehensive income	-	-	86,153	3,554	-	-	82,599	-	402	83,001	
Net income (loss)	-	-	-	-	176,392	176,392	-	-	685	175,707	
<b>Total comprehensive income (loss)</b>	<b>-</b>	<b>-</b>	<b>86,153</b>	<b>3,554</b>	<b>176,392</b>	<b>93,793</b>	<b>-</b>	<b>-</b>	<b>1,087</b>	<b>92,706</b>	
Share capital increase	558,994	-	-	-	630,381	1,189,375	-	-	-	1,189,375	
Annulment of treasury shares	3,100	-	-	-	3,100	-	-	-	-	-	
Dividends paid	-	-	-	-	-	-	-	7,446	-	7,446	
Disposal of 38% Pirelli Industrial to Cinda fund	-	-	70,307	-	5,085	63,704	1,518	264,500	-	266,018	
Assignment of Pirelli Industrial to Marco Polo	-	-	-	-	6,958	282,480	-	289,438	-	616,117	
Acquisition of non-controlling interests (Brazil)	-	-	-	-	-	12,843	-	12,843	-	9,580	22,423
Other	-	-	-	147	415	268	-	230	-	38	
<b>Total at 12/31/2017</b>	<b>1,904,375</b>	<b>-</b>	<b>220,624</b>	<b>-</b>	<b>70,265</b>	<b>2,503,272</b>	<b>4,116,758</b>	<b>60,251</b>	<b>4,177,009</b>		

(In thousands of euro)

	BREAKDOWN OF IAS RESERVES								
	Reserve for fair value adjustment of available-for-sale financial assets	Reserve for cash flow hedge	Reserve for actuarial gains/losses	Tax effect	Total IAS reserves				
<b>Balance at 12/31/2016</b>	<b>-</b>	<b>19,282</b>	<b>1,038</b>	<b>-</b>	<b>44,023</b>	<b>638</b>	<b>-</b>	<b>61,629</b>	
Other components of comprehensive income	-	39,010	-	14,492	-	14,656	-	6,308	3,553
Assignment of Pirelli Industrial	-	-	-	-	602	-	11,441	-	12,043
Other changes	-	318	-	-	171	-	-	-	147
<b>Balance at 12/31/2017</b>	<b>-</b>	<b>19,410</b>	<b>-</b>	<b>13,454</b>	<b>-</b>	<b>59,110</b>	<b>-</b>	<b>17,111</b>	<b>70,266</b>

## Appendix E: Statement of Cash Flows, in thousands

STATEMENT OF CASH FLOWS			
In thousands €	2016	2017	2018
<b>OPERATING ACTIVITIES</b>			
<b>Net income (loss)</b>	<b>163,987</b>	<b>175,725</b>	<b>442,391</b>
Reversal of Net income (Loss) from discontinued operations	0	87,552	6,392
Reversal of Taxes	75,256	40,841	52,983
<b>Net income (loss) before taxes</b>	<b>239,243</b>	<b>304,118</b>	<b>501,765</b>
Depreciation, amortisation and impairment losses	342,584	371,457	414,523
Reversal of financial expenses	469,996	491,150	336,041
Reversal of financial income	(42,806)	(128,540)	(139,730)
Reversal of dividends	(6,650)	(9,834)	(4,176)
Reversal of gains / (losses) on equity investments	25,442	8,437	(2,404)
Reversal of share of net income from associates and joint ventures	1,227	8,252	11,560
<b>Net cash flows provided by (used in) operating activities before changes in working capital</b>	<b>1,029,036</b>	<b>1,045,040</b>	<b>1,117,579</b>
Ordinary taxes	(75,256)	(135,500)	(119,042)
Change in inventories	25,441	(109,768)	(199,919)
Change in trade receivables	12,200	73,644	(23,388)
Change in trade payables	73,262	447,385	104,663
Change in other receivables / other payables	(21,587)	(39,423)	(151,425)
Change in provisions for employee benefit obligations and other provisions	(60,216)	(102,010)	(57,227)
Other changes	(650)	(41,734)	(12,915)
<b>A. Net cash flows provided by (used in) operating activities</b>	<b>982,230</b>	<b>1,137,634</b>	<b>658,326</b>
<b>INVESTING ACTIVITIES</b>			
Investments in property, plant and equipment	(332,685)	(470,383)	(458,092)
Disposal of property, plant and equipment	95,704	73,505	16,223
Investments in intangible assets	(7,710)	(18,969)	(11,640)
Reimbursement of equity and reserves	100,353	8,556	0
Disposals (Acquisition) of investments in subsidiaries, associates	0	(15,639)	0
Disposal (Acquisition) of minorities	0	0	(49,722)
Disposals (Acquisition) of investments in subsidiaries, associates and JVs	-4692	17,183	(65,222)
Sale of 38% of Pirelli Industrial to Cinda fund	266,200	0	0
Sale of 10% of Pirelli Industrial	70,749	0	0
Acquisition of distribution network in Brazil - Caçula	0	0	(1,393)
Acquisition of 80% of Jiaozuo Aeolus Tyre Co. Ltd (net of acquired liquidity)	(53,395)	0	0
Disposals (Acquisition) of financial assets at fair value through income statement - Other financial	9,145	(2,465)	152,808
Dividends received (including dividends from associates and J.V.)	6,650	9,834	6,850
Proceeds from sale of assets held for sale	0	0	0
Proceeds from disposal of discontinued operations net of cash disposed	0	0	0
Purchase of investments and other long-term assets	0	0	0
Interest received	0	0	0
<b>B. Net cash flows provided by (used in) investing activities</b>	<b>150,319</b>	<b>(398,376)</b>	<b>(410,188)</b>
<b>FINANCING ACTIVITIES</b>			
Increase (reduction) in equity	-	1,189,375	-
Change in financial payables	- 270,734	- 2,060,304	168,952
Change in Financial receivables/Financial assets at fair value through income statement - Assets held	- 1,469	218,037	- 31,761
Financial income (expenses)	- 304,031	- 280,832	- 168,406
Dividends paid	-	- 12,742	- 8,366
Repayment of principal and interest payment on leasing debts	-	-	-
Other	-	-	4,500
<b>C. Net cash flows provided by (used in) financing activities</b>	<b>- 576,234</b>	<b>- 946,466</b>	<b>- 35,081</b>
D. Total financial cash flow provided by (used in) discontinued operations	-	- 135,597	37,101
<b>E. Total cash flows provided (used) during the period (A+B+C+D)</b>	<b>556,315</b>	<b>- 342,805</b>	<b>250,158</b>
F. Cash and cash equivalents at the beginning of the period	817,767	1,397,380	1,109,640
G. Exchange differences from translation of cash and cash equivalents	23,298	- 71,483	- 55,946
H. Venezuela deconsolidation	-	-	-
Cash adjustment from Carve-out Statements	-	126,548	-
<b>I. Cash and cash equivalents at the end of the period (E+F+G+H)</b>	<b>1,397,380</b>	<b>1,109,640</b>	<b>1,303,852</b>

## Appendix F: Forecasted IS, in thousands

In thousands €	INCOME STATEMENT							
	2016	2017	2018	2019 F	2020 F	2021 F	2022 F	2023F
Revenues from sales and services	4,976,396	5,352,283	5,194,471	5,298,361	5,477,647	5,679,432	5,891,491	6,117,359
Raw materials and consumables used (net of change in inventories)	- 1,540,516	- 1,859,837	- 1,818,199	- 1,778,616	- 1,838,801	- 1,906,538	- 1,977,725	- 2,063,547
Changes in inventories of unfinished, semi-finished and finished products	- 22,406	140,258	201,416	106,811	110,425	114,493	118,768	123,322
<b>Gross profit</b>	<b>3,413,474</b>	<b>3,632,704</b>	<b>3,577,688</b>	<b>3,626,556</b>	<b>3,749,271</b>	<b>3,887,387</b>	<b>4,032,534</b>	<b>4,187,134</b>
Other income	696,225	628,533	483,205	497,358	497,358	497,358	497,358	497,358
Other income from Prometeon Group	211,773	223,542	91,343	91,343	91,343	91,343	91,343	91,343
Sales of Industrial products	282,526	223,482	183,762	229,923	229,923	229,923	229,923	229,923
Gains on disposal of property, plant and equipment	43,835	1,865	7,848	-	-	-	-	-
Rent income	7,000	3,759	5,465	5,408	5,408	5,408	5,408	5,408
Insurance indemnities and other refunds	9,713	-	-	-	-	-	-	-
Recoveries and reimbursements	73,179	59,871	95,785	76,278	76,278	76,278	76,278	76,278
Government grants	6,875	8,596	14,515	9,995	9,995	9,995	9,995	9,995
Other income	61,324	107,418	84,487	84,410	84,410	84,410	84,410	84,410
Personnel expenses	- 986,308	- 1,034,647	- 1,067,579	- 1,088,931	- 1,125,778	- 1,167,250	- 1,210,833	- 1,257,253
Amortisation, depreciation and impairment	- 342,584	- 371,457	- 414,523	- 400,200	- 406,692	- 413,698	- 421,244	- 429,373
Other costs	- 2,096,733	- 2,184,660	- 1,858,161	- 1,894,567	- 1,957,394	- 2,028,106	- 2,102,417	- 2,181,568
Selling costs	- 285,162	- 306,108	- 310,687	- 316,901	- 327,624	- 339,693	- 352,377	- 365,886
Purchases of goods for resale	- 491,093	- 478,745	- 434,201	- 442,885	- 457,871	- 474,738	- 492,464	- 511,344
Purchases of natural rubber for Prometeon Group	- 88,602	- 106,331	-	-	-	-	-	-
Advertising	- 272,091	- 286,178	- 231,981	- 236,621	- 244,627	- 253,639	- 263,109	- 273,196
Consultants	- 62,481	- 56,656	- 43,872	- 44,749	- 46,264	- 47,968	- 49,759	- 51,667
Outsourcing	- 65,753	- 73,643	- 38,572	- 39,343	- 40,675	- 42,173	- 43,748	- 45,425
Key managers compensations	- 7,388	- 9,610	- 8,229	- 8,394	- 8,678	- 8,997	- 9,333	- 9,691
Other provisions	- 20,622	- 33,063	- 37,867	- 37,867	- 37,867	- 37,867	- 37,867	- 37,867
Other	- 193,431	- 175,827	- 139,690	- 142,484	- 147,305	- 152,732	- 158,434	- 164,508
Operating costs	- 610,110	- 658,499	- 613,063	- 625,324	- 646,484	- 670,299	- 695,327	- 721,984
Net impairment loss on financial assets	-	-	- 21,273	- 21,273	- 21,273	- 21,273	- 21,273	- 21,273
Increase in fixed assets for internal work	2,378	3,110	3,700	3,774	3,902	4,045	4,196	4,357
<b>Operating income</b>	<b>686,452</b>	<b>673,583</b>	<b>703,956</b>	<b>722,717</b>	<b>739,393</b>	<b>758,464</b>	<b>778,322</b>	<b>799,381</b>
Net income (loss) from equity investments	- 20,019	- 6,855	- 4,980	- 4,980	- 4,980	- 4,980	- 4,980	- 4,980
- share of net income (loss) of associates and j.v.	- 1,227	- 8,252	- 11,560	- 11,560	- 11,560	- 11,560	- 11,560	- 11,560
- gains on equity investments	8,297	5,997	4,007	4,007	4,007	4,007	4,007	4,007
- losses on equity investments	- 33,739	- 14,434	- 1,603	- 1,603	- 1,603	- 1,603	- 1,603	- 1,603
- dividends	6,650	9,834	4,176	4,176	4,176	4,176	4,176	4,176
Financial income	42,806	128,540	139,730	33,339	31,339	29,339	27,339	26,803
Interest	-	- 17,098	17,176	17,176	17,176	17,176	17,176	17,176
Hyperinflation impact	32,254	-	8,536	6,536	4,536	2,536	536	-
Other financial income	-	9,285	9,627	9,627	9,627	9,627	9,627	9,627
Net gains on exchange rates	10,552	102,157	-	-	-	-	-	-
Fair value measurement of currency derivatives	-	-	104,391	-	-	-	-	-
Financial expenses	- 469,996	- 491,150	- 336,041	- 376,983	- 376,983	- 376,983	- 376,983	- 376,983
Interest	- 330,742	- 255,096	- 103,975	- 229,938	- 229,938	- 229,938	- 229,938	- 229,938
Commissions	- 58,187	- 29,587	- 20,522	- 36,099	- 36,099	- 36,099	- 36,099	- 36,099
Other financial expenses	- 8,694	- 9,250	- 13,183	- 10,376	- 10,376	- 10,376	- 10,376	- 10,376
Net losses on exchange rates	- 18,100	-	- 192,437	- 44,023	- 44,023	- 44,023	- 44,023	- 44,023
Net interest costs on employee benefit obligations	- 9,547	- 7,295	- 5,446	- 10,376	- 10,376	- 10,376	- 10,376	- 10,376
Valuation at fair value of securities held for trading	- 12	-	-	-	-	-	-	-
Fair value measurement of exchange rate derivatives	- 38,744	- 189,922	-	- 44,023	- 44,023	- 44,023	- 44,023	- 44,023
Valuation at fair value of other derivatives	- 5,970	-	- 478	- 2,149	- 2,149	- 2,149	- 2,149	- 2,149
<b>Net income before tax</b>	<b>239,243</b>	<b>304,118</b>	<b>501,765</b>	<b>374,093</b>	<b>388,769</b>	<b>405,840</b>	<b>423,698</b>	<b>444,221</b>
Tax	- 75,256	- 40,848	- 52,964	- 69,136	- 71,848	- 75,003	- 78,304	- 82,096
<b>Net income from continuing operations</b>	<b>163,987</b>	<b>263,270</b>	<b>448,801</b>	<b>304,957</b>	<b>316,921</b>	<b>330,836</b>	<b>345,395</b>	<b>362,125</b>
Net income (loss) from discontinued operations	- 16,362	- 87,563	- 6,429	-	-	-	-	-
<b>Net income</b>	<b>147,625</b>	<b>175,707</b>	<b>442,372</b>	<b>304,957</b>	<b>316,921</b>	<b>330,836</b>	<b>345,395</b>	<b>362,125</b>
<b>Net income attributable to shareholders</b>	<b>135,063</b>	<b>176,392</b>	<b>431,606</b>	<b>297,409</b>	<b>309,373</b>	<b>323,289</b>	<b>337,847</b>	<b>354,577</b>
Non-controlling interests	12,562	685	10,766	7,548	7,548	7,548	7,548	7,548
<b>Total earnings/(loss) per share (in euro per share)</b>	<b>0.191</b>	<b>0.206</b>	<b>0.432</b>	<b>0.297</b>	<b>0.309</b>	<b>0.323</b>	<b>0.338</b>	<b>0.355</b>
Earnings/(loss) per share related to continuing operations (in euro per share)	0.219	0.309	0.438	0.297	0.309	0.323	0.338	0.355
Earnings/(loss) per share related to discontinued operations (in euro per share)	- 0.028	- 0.103	- 0.006	-	-	-	-	-



## Appendix G: Forecasted BS, in thousands

BALANCE SHEET								
In thousands €	2016	2017	2018	2019 F	2020 F	2021 F	2022 F	2023F
<b>ASSETS</b>								
<b>NON-CURRENT ASSETS:</b>								
Property, plant and equipment	2,925,493	2,980,294	3,092,927	3,203,569	3,317,475	3,435,906	3,559,195	3,687,885
Intangible assets	5,996,444	5,893,704	5,783,338	5,667,271	5,560,935	5,458,328	5,359,356	5,263,934
Of Which - Goodwill	1,877,363	1,877,363	1,886,900	1,886,900	1,886,900	1,886,900	1,886,900	1,886,900
Investments in associates and J.V.	47,010	17,480	72,705	72,705	72,705	72,705	72,705	72,705
Other financial assets	198,674	229,519	0	0	0	0	0	0
Other financial assets at fair value through income statement	0	0	0	0	0	0	0	0
Other financial assets at fair value through other comprehensive income	0	0	68,781	68,781	68,781	68,781	68,781	68,781
Deferred tax assets	116,046	111,553	74,118	74,118	74,118	74,118	74,118	74,118
Other receivables	192,978	204,051	225,707	230,221	238,011	246,779	255,993	265,808
Tax receivables	11,864	27,318	16,169	16,492	17,050	17,679	18,339	19,042
Derivative financial instruments	0	848	20,134	20,134	20,134	20,134	20,134	20,134
<b>Total non-current assets</b>	<b>9,488,509</b>	<b>9,464,767</b>	<b>9,353,879</b>	<b>9,353,291</b>	<b>9,369,210</b>	<b>9,394,430</b>	<b>9,428,621</b>	<b>9,472,407</b>
<b>CURRENT ASSETS:</b>								
Inventories	873,962	940,668	1,128,466	1,166,869	1,206,354	1,250,794	1,297,496	1,347,239
Trade receivables	680,069	652,487	627,968	670,170	692,847	718,370	745,193	773,762
Other receivables	364,817	400,539	416,651	424,984	439,365	455,550	472,559	490,676
Other financial assets at fair value through income statement	0	0	0	0	0	0	0	0
Securities held for trading	48,597	33,027	27,196	27,196	27,196	27,196	27,196	27,196
Cash and cash equivalents	1,397,380	1,118,437	1,326,900	1,316,132	1,360,667	1,410,791	1,463,467	1,519,574
Tax receivables	63,089	35,461	41,393	48,165	49,795	51,629	53,557	55,610
Derivative financial instruments	21,784	27,770	98,567	100,392	103,541	107,086	110,811	114,778
<b>Total current assets</b>	<b>3,449,698</b>	<b>3,208,389</b>	<b>3,667,141</b>	<b>3,753,908</b>	<b>3,879,765</b>	<b>4,021,416</b>	<b>4,170,279</b>	<b>4,328,836</b>
Assets held for sale	-	60,729	10,677	10,677	10,677	10,677	10,677	10,677
<b>TOTAL ASSETS</b>	<b>12,938,207</b>	<b>12,733,885</b>	<b>13,031,697</b>	<b>13,117,876</b>	<b>13,259,651</b>	<b>13,426,523</b>	<b>13,609,577</b>	<b>13,811,920</b>
<b>EQUITY AND LIABILITIES</b>								
<b>NON-CURRENT LIABILITIES:</b>								
Borrowings from banks and other financial institutions	5,886,253	3,897,089	3,929,079	3,978,741	3,702,913	3,697,928	3,717,868	3,702,913
Other payables	72,717	74,435	83,287	84,953	87,827	91,063	94,463	98,084
Provisions for liabilities and charges	139,987	127,124	138,327	141,094	145,868	151,241	156,888	162,903
Provisions for deferred tax liabilities	1,337,706	1,216,635	1,081,605	1,081,605	1,081,605	1,081,605	1,081,605	1,081,605
Employee benefit obligations	350,124	274,037	224,312	228,798	236,540	245,254	254,411	264,165
Tax payables	2,660	2,399	2,091	2,133	2,205	2,286	2,372	2,463
Derivative financial instruments	0	54,963	16,039	16,039	16,039	16,039	16,039	16,039
Non-current accrued liabilities	0	0	0	0	0	0	0	0
<b>Total non-current liabilities</b>	<b>7,789,447</b>	<b>5,646,682</b>	<b>5,474,740</b>	<b>5,533,363</b>	<b>5,272,998</b>	<b>5,285,416</b>	<b>5,323,646</b>	<b>5,328,172</b>
<b>CURRENT LIABILITIES:</b>								
Borrowings from banks and other financial institutions	634,381	559,168	800,145	810,259	754,087	753,072	757,132	754,087
Trade payables	1,280,483	1,673,642	1,604,677	1,552,293	1,604,820	1,663,938	1,726,066	1,792,240
Contract liabilities	0	0	0	0	0	0	0	0
Other payables	491,701	565,255	436,752	445,487	460,561	477,528	495,358	514,349
Provisions for liabilities and charges	38,358	45,833	33,876	34,554	35,723	37,039	38,422	39,895
Employee benefit obligations	0	0	5,475	5,585	5,773	5,986	6,210	6,448
Tax payables	18,218	48,416	65,503	44,713	46,226	47,929	49,718	51,624
Derivative financial instruments	52,256	17,910	59,602	59,602	59,602	59,602	59,602	59,602
Liabilities related to assets held for sale	-	-	-	-	-	-	-	-
Current accrued liabilities	0	0	0	0	0	0	0	0
<b>Total Current Liabilities</b>	<b>2,515,397</b>	<b>2,910,224</b>	<b>3,006,030</b>	<b>2,952,491</b>	<b>2,966,792</b>	<b>3,045,093</b>	<b>3,132,507</b>	<b>3,218,244</b>
<b>TOTAL LIABILITIES</b>	<b>10,304,844</b>	<b>8,556,906</b>	<b>8,480,770</b>	<b>8,485,854</b>	<b>8,239,789</b>	<b>8,330,509</b>	<b>8,456,153</b>	<b>8,546,416</b>
<b>EQUITY:</b>								
Share capital	1,342,281	1,904,375	1,904,375	2,122,885	2,498,761	2,560,997	2,603,849	2,699,199
Reserves	1,072,551	2,035,991	2,132,140	2,132,140	2,132,140	2,132,140	2,132,140	2,132,140
Net income (loss) for the period	154,809	176,392	431,606	297,409	309,373	323,289	337,847	354,577
<b>Equity attributable to the Group</b>	<b>2,569,641</b>	<b>4,116,758</b>	<b>4,468,121</b>	<b>4,552,435</b>	<b>4,940,274</b>	<b>5,016,426</b>	<b>5,073,836</b>	<b>5,185,916</b>
Reserves	54,544	60,936	72,040	72,040	72,040	72,040	72,040	72,040
Net income (loss) for the period	9,178	(685)	10,766	7,548	7,548	7,548	7,548	7,548
<b>Equity attributable to non-controlling interests</b>	<b>63,722</b>	<b>60,251</b>	<b>82,806</b>	<b>79,588</b>	<b>79,588</b>	<b>79,588</b>	<b>79,588</b>	<b>79,588</b>
<b>TOTAL EQUITY</b>	<b>2,633,363</b>	<b>4,177,009</b>	<b>4,550,927</b>	<b>4,632,022</b>	<b>5,019,862</b>	<b>5,096,014</b>	<b>5,153,423</b>	<b>5,265,504</b>
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>12,938,207</b>	<b>12,733,915</b>	<b>13,031,697</b>	<b>13,117,876</b>	<b>13,259,651</b>	<b>13,426,523</b>	<b>13,609,577</b>	<b>13,811,920</b>

## Appendix H: Common-Size Income Statement

COMMON-SIZE INCOME STATEMENT								
In thousands €	2016	2017	2018	2019 F	2020 F	2021 F	2022 F	2023F
Revenues from sales and services	100%	100%	100%	100%	100%	100%	100%	100%
Raw materials and consumables used (net of change in inventories)	-30.96%	-34.75%	-35.00%	-33.57%	-33.57%	-33.57%	-33.57%	-33.57%
Changes in inventories of unfinished, semi-finished and finished products	-0.45%	2.62%	3.88%	2.02%	2.02%	2.02%	2.02%	2.02%
<b>Gross profit</b>	<b>68.59%</b>	<b>67.87%</b>	<b>68.87%</b>	<b>68.45%</b>	<b>68.45%</b>	<b>68.45%</b>	<b>68.45%</b>	<b>68.45%</b>
Other income	13.99%	11.74%	9.30%	9.39%	9.08%	8.76%	8.44%	8.13%
Other income from Prometeon Group	4.26%	4.18%	1.76%	1.72%	1.67%	1.61%	1.55%	1.49%
Sales of Industrial products	5.68%	4.18%	3.54%	4.34%	4.20%	4.05%	3.90%	3.76%
Gains on disposal of property, plant and equipment	0.88%	0.03%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%
Rent income	0.14%	0.07%	0.11%	0.10%	0.10%	0.10%	0.09%	0.09%
Insurance indemnities and other refunds	0.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Recoveries and reimbursements	1.47%	1.12%	1.84%	1.44%	1.39%	1.34%	1.29%	1.25%
Government grants	0.14%	0.16%	0.28%	0.19%	0.18%	0.18%	0.17%	0.16%
Other income	1.23%	2.01%	1.63%	1.59%	1.54%	1.49%	1.43%	1.38%
Personnel expenses	-19.82%	-19.33%	-20.55%	-20.55%	-20.55%	-20.55%	-20.55%	-20.55%
Amortisation, depreciation and impairment	-6.88%	-6.94%	-7.98%	-7.55%	-7.42%	-7.28%	-7.15%	-7.02%
Other costs	-42.13%	-40.82%	-35.77%	-35.76%	-35.73%	-35.71%	-35.69%	-35.66%
Selling costs	-5.73%	-5.72%	-5.98%	-5.98%	-5.98%	-5.98%	-5.98%	-5.98%
Purchases of goods for resale	-9.87%	-8.94%	-8.36%	-8.36%	-8.36%	-8.36%	-8.36%	-8.36%
Purchases of natural rubber for Prometeon Group	-1.78%	-1.99%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Advertising	-5.47%	-5.35%	-4.47%	-4.47%	-4.47%	-4.47%	-4.47%	-4.47%
Consultants	-1.26%	-1.06%	-0.84%	-0.84%	-0.84%	-0.84%	-0.84%	-0.84%
Outsourcing	-1.32%	-1.38%	-0.74%	-0.74%	-0.74%	-0.74%	-0.74%	-0.74%
Key managers compensations	-0.15%	-0.18%	-0.16%	-0.16%	-0.16%	-0.16%	-0.16%	-0.16%
Other provisions	-0.41%	-0.62%	-0.73%	-0.71%	-0.69%	-0.67%	-0.64%	-0.62%
Other	-3.89%	-3.29%	-2.69%	-2.69%	-2.69%	-2.69%	-2.69%	-2.69%
Operating costs	-12.26%	-12.30%	-11.80%	-11.80%	-11.80%	-11.80%	-11.80%	-11.80%
Net impairment loss on financial assets	0.00%	0.00%	-0.41%	-0.40%	-0.39%	-0.37%	-0.36%	-0.35%
Increase in fixed assets for internal work	0.05%	0.06%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%
<b>Operating income</b>	<b>13.79%</b>	<b>12.58%</b>	<b>13.53%</b>	<b>13.64%</b>	<b>13.50%</b>	<b>13.35%</b>	<b>13.21%</b>	<b>13.07%</b>
Net income (loss) from equity investments	-0.40%	-0.13%	-0.10%	-0.09%	-0.09%	-0.09%	-0.08%	-0.08%
- share of net income (loss) of associates and j.v.	-0.02%	-0.15%	-0.22%	-0.22%	-0.21%	-0.20%	-0.20%	-0.19%
- gains on equity investments	0.17%	0.11%	0.08%	0.08%	0.07%	0.07%	0.07%	0.07%
- losses on equity investments	-0.68%	-0.27%	-0.03%	-0.03%	-0.03%	-0.03%	-0.03%	-0.03%
- dividends	0.13%	0.18%	0.08%	0.08%	0.08%	0.07%	0.07%	0.07%
Financial income	0.86%	2.40%	2.69%	0.63%	0.57%	0.52%	0.46%	0.44%
Interest	0.00%	0.32%	0.33%	0.32%	0.31%	0.30%	0.29%	0.28%
Hyperinflation impact	0.65%	0.00%	0.16%	0.12%	0.08%	0.04%	0.01%	0.00%
Other financial income	0.00%	0.17%	0.19%	0.18%	0.18%	0.17%	0.16%	0.16%
Net gains on exchange rates	0.21%	1.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Fair value measurement of currency derivatives	0.00%	0.00%	2.01%	0.00%	0.00%	0.00%	0.00%	0.00%
Financial expenses	-9.44%	-9.18%	-6.47%	-7.12%	-6.88%	-6.64%	-6.40%	-6.16%
Interest	-6.65%	-4.77%	-2.00%	-4.34%	-4.20%	-4.05%	-3.90%	-3.76%
Commissions	-1.17%	-0.55%	-0.40%	-0.68%	-0.68%	-0.64%	-0.61%	-0.59%
Other financial expenses	-0.17%	-0.17%	-0.25%	-0.20%	-0.19%	-0.18%	-0.18%	-0.17%
Net losses on exchange rates	-0.36%	0.00%	-3.70%	-0.83%	-0.80%	-0.78%	-0.75%	-0.72%
Net interest costs on employee benefit obligations	-0.19%	-0.14%	-0.10%	-0.20%	-0.19%	-0.18%	-0.18%	-0.17%
Valuation at fair value of securities held for trading	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Fair value measurement of exchange rate derivatives	-0.78%	-3.55%	0.00%	-0.83%	-0.80%	-0.78%	-0.75%	-0.72%
Valuation at fair value of other derivatives	-0.12%	0.00%	-0.01%	-0.04%	-0.04%	-0.04%	-0.04%	-0.04%
<b>Net income before tax</b>	<b>4.81%</b>	<b>5.68%</b>	<b>9.66%</b>	<b>7.06%</b>	<b>7.10%</b>	<b>7.15%</b>	<b>7.19%</b>	<b>7.26%</b>
Tax	-1.51%	-0.76%	-1.02%	-1.30%	-1.31%	-1.32%	-1.33%	-1.34%
<b>Net income from continuing operations</b>	<b>3.30%</b>	<b>4.92%</b>	<b>8.64%</b>	<b>5.76%</b>	<b>5.79%</b>	<b>5.83%</b>	<b>5.86%</b>	<b>5.92%</b>
Net income from discontinued operations	-0.33%	-1.64%	-0.12%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Net income</b>	<b>2.97%</b>	<b>3.28%</b>	<b>8.52%</b>	<b>5.76%</b>	<b>5.79%</b>	<b>5.83%</b>	<b>5.86%</b>	<b>5.92%</b>
<b>Net income attributable to shareholders</b>	<b>2.71%</b>	<b>3.30%</b>	<b>8.31%</b>	<b>5.61%</b>	<b>5.65%</b>	<b>5.69%</b>	<b>5.73%</b>	<b>5.80%</b>
Non-controlling interests	0.25%	-0.01%	0.21%	0.14%	0.14%	0.13%	0.13%	0.12%
<b>Total earnings/(loss) per share (in euro per share)</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
Earnings/(loss) per share related to continuing operations (in euro per share)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Earnings/(loss) per share related to discontinued operations (in euro per share)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

## Appendix I: Common-Size Balance Sheet

COMMON-SIZE BALANCE SHEET								
In thousands €	2016	2017	2018	2019 F	2020 F	2021 F	2022 F	2023F
<b>ASSETS</b>								
<b>NON-CURRENT ASSETS:</b>								
Property, plant and equipment	22.61%	23.40%	23.73%	24.42%	25.02%	25.59%	26.15%	26.70%
Intangible assets	46.35%	46.28%	44.38%	43.20%	41.94%	40.65%	39.38%	38.11%
Of Which - Goodwill	14.51%	14.74%	14.48%	14.38%	14.23%	14.05%	13.86%	13.66%
Investments in associates and J.V.	0.36%	0.14%	0.56%	0.55%	0.55%	0.54%	0.53%	0.53%
Other financial assets	1.54%	1.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other financial assets at fair value through income statement	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other financial assets at fair value through other comprehensive income	0.00%	0.00%	0.53%	0.52%	0.52%	0.51%	0.51%	0.50%
Deferred tax assets	0.90%	0.88%	0.57%	0.57%	0.56%	0.55%	0.54%	0.54%
Other receivables	1.49%	1.60%	1.73%	1.76%	1.80%	1.84%	1.88%	1.92%
Tax receivables	0.09%	0.21%	0.12%	0.13%	0.13%	0.13%	0.13%	0.14%
Derivative financial instruments	0.00%	0.01%	0.15%	0.15%	0.15%	0.15%	0.15%	0.15%
<b>Total non-current assets</b>	<b>73.34%</b>	<b>74.33%</b>	<b>71.78%</b>	<b>71.30%</b>	<b>70.66%</b>	<b>69.97%</b>	<b>69.28%</b>	<b>68.58%</b>
<b>CURRENT ASSETS:</b>								
Inventories	6.8%	7.4%	8.7%	8.9%	9.1%	9.3%	9.5%	9.8%
Trade receivables	5.3%	5.1%	4.8%	5.1%	5.2%	5.4%	5.5%	5.6%
Other receivables	2.8%	3.1%	3.2%	3.2%	3.3%	3.4%	3.5%	3.6%
Other financial assets at fair value through income statement	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Securities held for trading	0.4%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Cash and cash equivalents	10.8%	8.8%	10.2%	10.0%	10.3%	10.5%	10.8%	11.0%
Tax receivables	0.5%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%
Derivative financial instruments	0.2%	0.2%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
<b>Total current assets</b>	<b>26.7%</b>	<b>25.2%</b>	<b>28.1%</b>	<b>28.6%</b>	<b>29.3%</b>	<b>30.0%</b>	<b>30.6%</b>	<b>31.3%</b>
Assets held for sale	0.0%	0.5%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
<b>TOTAL ASSETS</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>EQUITY AND LIABILITIES</b>								
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019 F</b>	<b>2020 F</b>	<b>2021 F</b>	<b>2022 F</b>	<b>2023F</b>
<b>NON-CURRENT LIABILITIES:</b>								
Borrowings from banks and other financial institutions	45.50%	30.60%	30.15%	30.33%	27.93%	27.54%	27.32%	26.81%
Other payables	0.56%	0.58%	0.64%	0.65%	0.66%	0.68%	0.69%	0.71%
Provisions for liabilities and charges	1.08%	1.00%	1.06%	1.08%	1.10%	1.13%	1.15%	1.18%
Provisions for deferred tax liabilities	10.34%	9.55%	8.30%	8.25%	8.16%	8.06%	7.95%	7.83%
Employee benefit obligations	2.71%	2.15%	1.72%	1.74%	1.78%	1.83%	1.87%	1.91%
Tax payables	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Derivative financial instruments	0.00%	0.43%	0.12%	0.12%	0.12%	0.12%	0.12%	0.12%
Non-current accrued liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Total non-current liabilities</b>	<b>60.20%</b>	<b>44.34%</b>	<b>42.01%</b>	<b>42.18%</b>	<b>39.77%</b>	<b>39.37%</b>	<b>39.12%</b>	<b>38.58%</b>
<b>CURRENT LIABILITIES:</b>								
Borrowings from banks and other financial institutions	4.90%	4.39%	6.14%	6.18%	5.69%	5.61%	5.56%	5.46%
Trade payables	9.90%	13.14%	12.31%	11.83%	12.10%	12.39%	12.68%	12.98%
Contract liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other payables	3.80%	4.44%	3.35%	3.40%	3.47%	3.56%	3.64%	3.72%
Provisions for liabilities and charges	0.30%	0.36%	0.26%	0.26%	0.27%	0.28%	0.28%	0.29%
Employee benefit obligations	0.00%	0.00%	0.04%	0.04%	0.04%	0.04%	0.05%	0.05%
Tax payables	0.14%	0.38%	0.50%	0.34%	0.35%	0.36%	0.37%	0.37%
Derivative financial instruments	0.40%	0.14%	0.46%	0.45%	0.45%	0.44%	0.44%	0.43%
Liabilities related to assets held for sale	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Current accrued liabilities	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Total Current Liabilities</b>	<b>19.44%</b>	<b>22.85%</b>	<b>23.07%</b>	<b>22.51%</b>	<b>22.37%</b>	<b>22.68%</b>	<b>23.02%</b>	<b>23.30%</b>
<b>TOTAL LIABILITIES</b>	<b>79.65%</b>	<b>67.20%</b>	<b>65.08%</b>	<b>64.69%</b>	<b>62.14%</b>	<b>62.05%</b>	<b>62.13%</b>	<b>61.88%</b>
<b>EQUITY:</b>								
Share capital	10.37%	14.96%	14.61%	16.18%	18.84%	19.07%	19.13%	19.54%
Reserves	8.29%	15.99%	16.36%	16.25%	16.08%	15.88%	15.67%	15.44%
Net income (loss) for the period	1.20%	1.39%	3.31%	2.27%	2.33%	2.41%	2.48%	2.57%
<b>Equity attributable to the Group</b>	<b>19.86%</b>	<b>32.33%</b>	<b>34.29%</b>	<b>34.70%</b>	<b>37.26%</b>	<b>37.36%</b>	<b>37.28%</b>	<b>37.55%</b>
Reserves	0.42%	0.48%	0.55%	0.55%	0.54%	0.54%	0.53%	0.52%
Net income (loss) for the period	0.07%	-0.01%	0.08%	0.06%	0.06%	0.06%	0.06%	0.05%
<b>Equity attributable to non-controlling interests</b>	<b>0.49%</b>	<b>0.47%</b>	<b>0.64%</b>	<b>0.61%</b>	<b>0.60%</b>	<b>0.59%</b>	<b>0.58%</b>	<b>0.58%</b>
<b>TOTAL EQUITY</b>	<b>20.35%</b>	<b>32.80%</b>	<b>34.92%</b>	<b>35.31%</b>	<b>37.86%</b>	<b>37.95%</b>	<b>37.87%</b>	<b>38.12%</b>
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

## Appendix J: Financial Indicators and Ratios

	2016	2017	2018	2019 F	2020 F	2021 F	2022 F	2023F
EBITDA (Net Income deducted of D&A)	1,029,245	1,045,628	1,159,072	1,144,190	1,167,358	1,193,435	1,220,839	1,250,027
EBITDA Margin	21%	20%	22%	22%	21%	21%	21%	20%
ROE	5%	4%	9%	6%	6%	6%	7%	7%
ROA	1%	1%	3%	2%	2%	2%	2%	3%
Equity Ratio	20%	33%	35%	35%	38%	38%	38%	38%
D/E Ratio	391%	205%	186%	183%	164%	163%	164%	162%

## Appendix L: Considered companies for the Relative Valuation

Company	Peer?
Nokian Renkaat Oyj	Yes
Cie Generale des Etablissements Michelin SCA	Yes
Goodyear Tire & Rubber Co/The	Yes
Continental AG	Yes
Brisa Bridgestone Sabanci Sanayi ve Ticaret AS	Yes
Autoliv Inc	No
Titan International Inc	No
Faurecia SE	No
Hankook Tire & Technology Co Ltd	No
Toyo Tire Corp	No
Yokohama Rubber Co Ltd/The	No
Kumho Tire Co Inc	No
Varroc Engineering Ltd	No
Hyundai Wia Corp	No
Nexen Corp	No
Multistrada Arah Sarana Tbk PT	No
Shanghai Sinotec Co Ltd	No
Denso Corp	No
Trelleborg AB	No
Valeo SA	No
Huada Automotive Technology Corp Ltd	No
Keihin Corp	No
IKD Co Ltd	No
Triangle Tyre Co Ltd	No
Bridgestone Corp	No
Endurance Technologies Ltd	No
GITI Tire Corp	No
TI Fluid Systems PLC	No
Changchun Faway Automobile Components Co Ltd	No
Tupy SA	No
Ceat Ltd	No
Nan Kang Rubber Tire Co Ltd	No
Cheng Shin Rubber Industry Co Ltd	No
Prinx Chengshan Cayman Holding Ltd	No
Huayu Automotive Systems Co Ltd	No
Weifu High-Technology Group Co Ltd	No
Sumitomo Rubber Industries Ltd	No
Shandong Linglong Tyre Co Ltd	No
Jiangsu General Science Technology Co Ltd	No
Sailun Group Co Ltd	No
Balkrishna Industries Ltd	No
FAWER Automotive Parts Co Ltd	No
Shanghai Daimay Automotive Interior Co Ltd	No
Guangdong Wencan Die Casting Co Ltd	No
Mahindra CIE Automotive Ltd	No
Kenda Rubber Industrial Co Ltd	No
Apollo Tyres Ltd	No
MRF Ltd	No
Nexen Tire Corp	No
Bethel Automotive Safety Systems Co Ltd	No
Yapp Automotive Parts Co Ltd	No
Cooper Tire & Rubber Co	No
Wuxi Lihu Corp Ltd	No

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- <sup>4</sup> <https://fortune.com/global500/2019/chemchina>
- <sup>5</sup> <https://exame.abril.com.br/negocios/quem-e-a-chemchina-a-nova-dona-da-pirelli/>
- <sup>6</sup> From: Press release published on: Oct 4, 2017, 7:32 AM CET
- <sup>7</sup> Pirelli's Annual Report of 2018
- <sup>8</sup> <https://www.motorsport.com/f1/news/pirelli-tyre-supply-deal-2023/4303665/?nrt=54>
- <sup>9</sup> Based on the company presentation from may 2019.
- <sup>10</sup> From Pirelli Annual Report of 2018.
- <sup>11</sup> Information from Bloomberg site
- <sup>12</sup> From Pirelli Remuneration Policy for 2019
- <sup>13</sup> From Pirelli Annual Report 2018
- <sup>14</sup> [https://press.pirelli.com/pirelli-recognized-by-cdp-as-a-leader-in-actions-to-combat-climate-change/?\\_ga=2.159894911.398416347.1564390373-853977617.1563966290](https://press.pirelli.com/pirelli-recognized-by-cdp-as-a-leader-in-actions-to-combat-climate-change/?_ga=2.159894911.398416347.1564390373-853977617.1563966290)
- <sup>15</sup> From World Economic Outlook - <https://www.imf.org/en/Publications/WEO>
- <sup>16</sup> From Pirelli Annual report 2018
- <sup>17</sup> <https://www.statista.com/statistics/200002/international-car-sales-since-1990/>
- <sup>18</sup> From Pirelli Annual report 2018
- <sup>19</sup> Report from MarketLine "Global - Tires and Rubber" from April 2019
- <sup>20</sup> From Pirelli Presentation May 2019
- <sup>21</sup> <https://corporate.pirelli.com/corporate/en-ww/investors/outlook/2019-financial-outlook>
- <sup>22</sup> From Pirelli's Presentaion may 2019
- <sup>23</sup> From International Monetary Fund - <https://www.imf.org/external/datamapper/PCPIPCH@WEO/OEMDC/>
- <sup>24</sup> From Morgan Stanley Research: "Pirelli & C SpA - OE declines leak into RT pricing?"
- <sup>25</sup> Frikman, D. & Tolleryd, J. 2003. Corporate Valuation: An Easy Guide to Measuring Value. Great Britain: Pearson Education Ltd.
- <sup>26</sup> From Pirelli's Presentantion may 2019
- <sup>27</sup> <https://corporate.pirelli.com/corporate/en-ww/investors/debt/capital-structure>