ICADE BUSINESS SCHOOL

FUNDAMENTAL ANALYSIS OF REPSOL

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Abstract

Over the last years, oil companies have been seeing how their businesses do not go as well as they went years ago. The current competitiveness between the main producers of petroleum and the high volatility of that commodity really difficult an accurate valuation. Nevertheless, this paper tries to analyse by different approaches the value of the Company Repsol, which is considered as a reference in Spain

Free Cash Flow (FCF) and Multiples valuation are the two methods developed along the paper. Regarding FCF, three different scenarios have been carried out in order to be as accurate as possible. In this method, sales have been considered the starting point of each scenario, taking into account correlations between Repsol's sales and Brent quotation. According to Multiples, PER and EV / EBITDA have been chosen as the referenced ratios to compare with the sector average peers.

Finally, once understood its performance and possible correlations, results are obtained. Therefore, valuation takes place in order to observe whether the company is undervalued or overvalued according current situation to the Spanish Index IBEX-35 where Repsol is listed.

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Chapter 1

Introduction

1.1 Motivation

Over the last years there has been a thought about the importance of climate change and renewable energies that are constantly affecting the environment. The reason attributed to this dispute resides mainly in two facts. On the one hand, the notably increasing of pollution and green effects, which there is no doubt that if humanity keeps these levels, the problem will become much more important than ever before. On the other hand, in the scarcity of commodities that most the people and companies are worried about, such as the oil. Thus, it is important to remember the fluctuations of its price and the impact over the demand and supply, which can alter the value of some companies.

Regarding Spain, this problem should be treated in a cautious way, as there are some important companies which their businesses are related to the energy sector. The geographical situation of the country helps to develop this kind of businesses, taking for example, advantage of the great number of sunny hours in the peninsula. Therefore, companies such as Iberdrola, Repsol, Endesa or Gas Natural, among others, are just a few of some other entities which develop part of their businesses according to this type of energy.

Throughout the elaboration of this research, it has been chosen the oil sector as it is intended to study the value of the Spanish company Repsol and its correlation with that sector, which is considered one of the most volatile ones. In addition, the election of Repsol comes from the objective of evaluating a referenced company in Spain in a sector which is thought to have a high impact over the Spanish economy.

It is also important to know which are the sectors that affect the Spanish economy the most. Thereby and according to the Spanish Stock Market Index IBEX 35,

which is formed by the 35 biggest companies in the country. Inditex appears on the first position of the Index with a Market Capitalization of €91.848M . Then, the baking sector appears with strength on the following positions: Bank of Santander, BBVA and CaixaBank are the three banks in the top 10 with a market capitalization of €75.194M, €39747M and €22.275M respectively. After these two sectors, the energy sector does not go far away. In order of Market Capitalization Iberdrola appears the first one with €42.274M followed by Repsol with €25.876M. Afterwards, Gas Natural and Endesa appear with a Market Capitalization a little bit lower: €21.615M for the first one and €20.534M for the second one. Finally, the rest of the companies that are considered essential for the fluctuations of the Index are Telefonica (Market Cap. of €38.261M), Amadeus It Group (Market Cap. of €31.516M), Arecelormittal (Market Cap. of €27.678M) and AENA (Market Cap. of €23.318M).

The methodology that it is going to be followed resides, firstly, in a summary about the history of the company and its most important acquisitions since its constitution. Secondly and in order to understand the evolution of the project, it is going to be presented some theoretical models of company valuation and the different methods to calculate the variables needed to be as accurate as possible in the final result. Thirdly, other valuations of Repsol obtained from Bank of Santander and Ahorro Corporación Financiera will be studied. Also, although not considering Morningstar as a pure entity in charge of valuate companies, a brief description of their specialists will be considered and studied. Finally, it is going to be developed our own valuation of Repsol, taking in consideration all the possible variables which is thought could affect its final value, ending with some conclusions.

In order to success with the evaluation and according to current data, it is going to be developed a forecast of 2 years and, afterwards, observe carefully the evolution. In addition, as the oil sector is considered very volatile, there will be shown three different scenarios in order to accurate as possible, the final result. The first one will try to be as neutral as possible. The second one will involve the optimistic one. The last one will consider a pessimism scenario for the Repsol performance.

1.2 Summary of the Company's History

In order to start talking about Repsol, it is necessary to go back almost a century. The first steps of this company appear in 1927, when CAMPSA (*Compañía Arrendataria del Monopolio de Petróleos S.A.*) was found. Their main objective was to control and overview the functionality of the oil monopoly in Spain. At that time, CAMPSA became a reference in the sector and it would remain for several years. However, in order to see Repsol in scene, it is needed to wait until 1980

when the group appeared for the first time. Since 1962, Spain had been willing to negotiate about the incorporation to the European Union. Around 1968 the name Repsol appeared for the first time as the brand of lubricants of Refinera de Petroleos de Escombreras S.A. (REPESA). The decision of that name came from the facility to say it in different languages.

In 1987 the National Institute of Hydrocarbons (INH) found Repsol, S.A. as a consequence of the Spanish energetic restructuring. Thereby, the new company was firstly organized within 5 subsidiaries to perform their main services.

In 1989 Repsol shows its first step in the intention of privatize the company. This process will last 8 years, and it was made by the agreement among INH, Repsol, BBV. Finally, in 1997 the process ended with a final Public Offer that made it possible.

In 1997 the company started to open the market abroad. The first locations assigned to it were North and South America, Africa and Russia, where they mainly developed the business Upstrem . Nevertheless, areas such as innovation and technology also became more important and its development showed important changes worldwide.

In 1999 Repsol made one of their most important transactions: YPF (considered the most important companz of gas & oil in South America), acquiring the 97,81% of the company, allowing Repsol to obtain a more competitive position with a capital increase of 288 million of shares. In addition, a new project is launched: The Technologic Centre of Repsol YPF of research and development in Spain. It currently houses more than 400 employees.

2001 arrived and the situation in United States was not the desirable one. The terrorist attack on the 11th of September had a huge impact over the oil price. However, Repsol performed a strategy according to their competitive advantages and in December they made an agreement with Petrobras obtaining the 30% of REFAP refinery and 240 petrol stations.

From 2005 to 2020 there is a new stage of expansion and value generation for the company. The acquisition of Talisman Energy and the updated Strategic Plan (2016-2020) have been the two main relevant factors for the success.

In 2005 they acquired three more positions in petroleum and one more in gas. An agreement with Gas Natural in order to develop new projects regarding GNL (Gas natural licuado) in Upstream was the most important one. Nevertheless, the foundation of a mixed company for the midstream allowed Repsol to rise until the third position worldwide regarding volume.

In 2009 the new plan of regasification in Canada (Canaport LNG) is presented, which has been the first constitution in the East area of North American over the

last 30 years. It supplies up to 20% of the total demand of New York and New England.

In 2010 is inaugurated the first gas plant of liquefying in Pampa Melchorita, South America. The plant is supplied by the gas produced in Camisea and supplies the West coast of United States and Mexico.

In 2011 Repsol entered into the Asian markets, taking positions in Indonesia, Japan, China and Malaysia, offering their products in a total of 11 countries. In 2015 another important acquisition occurred: the Canadian oil company Talisman Energy for €10.400 million. With this operation Repsol got within the list of the 15th most important companies in the world, operating in more than 40 countries and having more than 27.000 employees.

1.2.1 Relevant Data of the Company

As it has been observed, Repsol is considered to be one of the biggest companies worldwide related to oil and gas sector. Their activity involves the whole chain of production, from exploration, production, transformation to development and trading. It is also important to mention that they supply energy to millions of people in a competitive and sustainable way.

Regarding some data and according to Repsol's publications, the number of employees that work in Repsol rise until 24.000 in 2017, and the diversification of nationalities among all of them dates of 84 different countries.

In the following graph it is observed all the countries that Repsol are involve:

Europe	Norway	Oceania	Australia
	United Kingdom	North America	Canada
	Ireland		United States
	France		Mexico
	Spain	South America	Venezuela
	Portugal		Aruba
	Italy		Trinidad y Tobago
	Germany		Guyana
	Rumania		Colombia
	Bulgari		Equador
	Greece		Peru
	Russia		Bolivia
Asia	Irak		Brazil
	China	Africa	Morocco
	Vietnam		Argelia
	Singapore		Libya
	Malaysia		Gabon
	Indonesia		Angola
	Papua Nueva Guinea		

Table 1.1: Main areas where Repsol operates. Source: Repsol

In addition, over the last 5 years, this number of employees has been constantly decreasing. This reason could be attributed to a reduction over the costs due to some desinvestments or a lost power on the markets. Earnings per employee can be analyzed in order to observe the evolution. Thus, and according to Repsol, when 5 years ago the company earned €1.990.066, nowadays it just earns €1.717.406. In other words, the average annual rate of growth stays nearly 3% in negative (per employee).

In terms of Net Profit, Repsol has increased the numbers. Nowadays the Net Profit adjusted to each employee stays at €85.957, whereas 5 years ago it was €68.674

Nevertheless and according to the main results obtained in 2017 it can be said that the Total Net Income of the entity has reached €2.121M, which means an increase of 22% regarding 2016. This result has been also considered to be the greater one over the last 6 years.

Earnings Before Interests, Taxes, Depreciation and Amortization (EBITDA) has shown an increment of 29% over 2016, representing the best result obtained since 2012.

Repsols share is always fluctuating in a very volatile way. In May 2012, its quo-

tation was around €8,13 the stock. Comparing it with current prices, which are around €16,5, a huge difference can be observed. Indeed, only over the last two years, the share has appreciated a 46%.

Net Debt of the company also were reduced for 2017. Specifically, the company could perform that efficient that they could decrease it by 22% in comparison to 2016.

According to the different lines of businesses, Repsol performance can be divided mainly into two main areas: Upstream and Downstream (although there is another one in between called Midstream):

Upstream:

This line of business resides on the exploration and production of the crude oil. Thus, every activity related to discovering new deposits of oil or gas are considered Upstream. According to Repsols performance of 2017. This area obtained last year a Net Income of €632M, which represents an increase of 1115% over the year before (€52M).

The behavior of the market regarding raw materials had remained at lower rates in the first semester of 2017 (Bren quotation of $54,1) However, the positive tendency of the second semester helped to rise the Bren price up to $65,9 per barrel, which represents a maximum from the last 3 years (according to Bloomberg). This, in addition to the development of new projects in Trinidad & Tobago (where greatest deposit of gas over the last 5 years has been found), Brazil and United Kingdom, involved higher production of Repsol, reaching 695.000 barrel per day.

2017 has also been a successful year for the exploration line. Repsol discovered in March the biggest deposit (onshore) of hydrocarbons for the last 30 years in Alaska, United States. Thereby, Repsol estimates that this new deposit could house 1.200M of barrels.

Downstream:

This other line of business resides in the refining of the oil and gas, and also their merchandising to the consumers.

The performance of this area has followed the same path as the previous year. Net Income of 2017 reached €1.877M, very close to the one obtained in 2016: €1.883M.

The department of Marketing did one a very well performance over 2017, increasing their sales. Therefore, petrol stations also raised their productivity, implementing new technology for the efficiency. To mention some improvements:

- Agreements with Amazon in order to have the opportunity to collect its products in the petrol stations.
- Agreements with El Corte Ingles in order to maintain their Supercor Stop & Go establishments in the petrol stations.
- New application launched: Waylet. It allows the customer to make payments with the use of the phone as well as obtain special offers and discounts.
- Implementation of a new car sharing with the collaboration of KIA. It will be named WIBLE and it is expected to be operated in July 2018.

In the following table, financial results of these two lines of businesses are shown:

Million euros	**2016**	**2017**	**Variation**
Upstream	52	632	580
Downstream	1.883	1.887	(6)
Corporate and other	(13)	(104)	(91)
Adjusted net income	1.922	2.405	483
Inventory effect	133	104	(29)
Special items	(319)	(388)	(69)
Net income	(1.736)	2.121	385

Table 1.2: Performance of Repsol: More Information. Source: Repsol

Upstream and Downstream in Spain:

According to the Spanish Market, where Repsol belongs, they operate this line of business since 1927. Regarding the Upstream line, Spain has 2 blocks engaged with the exploration activity and 10 with the production and development. This line resides mainly in Lubina and Montanazo (Tarragona) where Repsol discovered two deposits in 2009. According to the second line, the Downstream, Spain has got 5 refineries, producing nearly 1M of barrels per day. The two most important platforms in Upstream are the ones located in Cartagena and Bilbao.

In order to summarize the importance of these business lines of Repsol, it can be said that they have factories in:

- Refinery: 5 platforms distributed in A Corua, Bilbao, Tarragona, Puertollano and Cartagena.

- Chemicals: 5 platforms distributed in Tarragona, Puertollano, Gajano, Lantarn and Monzn.
- Lubricants: 2 platforms distributed in Puertollano and Cartagena.
- Petrol Stations: 3.445 stations formed by Repsol, Campsa and Petronor.

Chapter 2

Different Methods of Evaluation

In order to analyse the company, the two most used methods will be taking into account: discounted free cash flow and multiples valuation. First of all, a theoretical frame will be developed to understand correctly each model.

2.1 Discounted Free Cash Flow

This method is the most commonly used to evaluate a company and is the one that this paper will follow. Damodaran (2012) should be mentioned as one of the main references that uses it. It is also considered one of the most efficient models due to its availability to bring future performance, also called cash flows, into today's date. Depending on the estimations and assumptions, this model could vary a lot among the different analysts, but applying the standards variables, it is considered a very accurate model.

According to Revello (2013) this methodology is based in two fundamentals: the expected cash flows produced and the Enterprise Value . In the one hand, the first fundamental refers to the economic activity of the company and the transfer of its investments to the stockholders. On the other hand, the second one refers to the market capitalization and the level of indebtedness of the business.

Furthermore, there are other factors that must be considered in order to complete the valuation:

First of all, the weighted average cost of capital (WACC) should be defined. According to Koller, Goedhart and Wessels (2015), it represents the cost that the company has for funding their positions. It involves the total amount of debt and equity that the company has in the balance sheet. It is indeed, divided into

two costs: cost of debt and cost of equity. In other words, this cost must fulfill the requirements that the shareholders require for the use of their money, and the price of external debt, such as loans, credit or bonds, among others. Therefore, the WACC is made of cost of equity and cost of debt and their respective weights. The formula shown below will help us to understand the process and the composition of its variables:

$$\begin{aligned} WACC &= \text{Weighted Average Cost of Capital} = \\ &= K_d \cdot (1 - \text{tax rate}) \cdot \left(\frac{D}{E+D}\right) + K_e \cdot \left(\frac{E}{E+D}\right) \end{aligned} \tag{2.1}$$

where,

$$K_d = \text{Cost of Debt} \tag{2.2}$$

$$K_e = \text{Cost of Equity} \tag{2.3}$$

$$D = \text{Total Financial Debt of the Company} \tag{2.4}$$

$$E = \text{Equity (Market Capitalization)} \tag{2.5}$$

Cost of debt:

It represents the total cost of all financial liabilities within the balance sheet. There are different ways to calculate it and depending on the option, it could trigger different results. Nevertheless, it is important to understand that this cost must be always lower than the equity one, as the first one represents the price that shareholders are expected to receive by the use of their money. For these reasons, companies are constantly looking for this type of financing, levering their companies that in some cases, could reach too high. Indeed, it has been proven how leverage really works and its consequences over the performance of a company. Therefore, if those levels reach certain amounts, the profit of the company will become negative as the difficultness of repaying the debt. In the graph below it is shown this functionality:

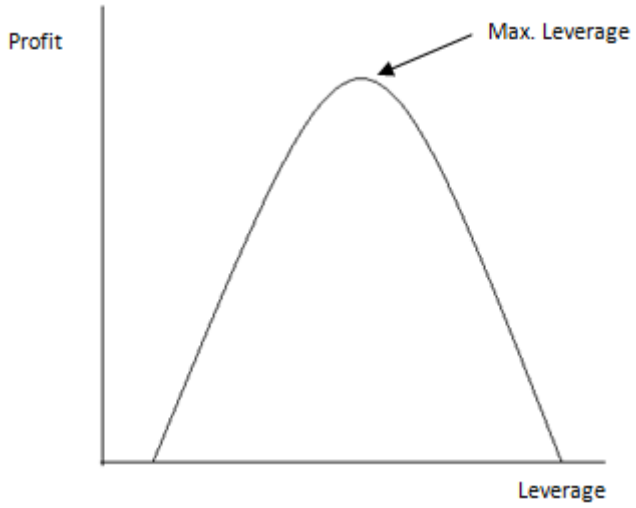

Figure 2.1: Leverage against Profit. Source: Revello de Toro (2013) and own development

Thus, it is important to understand that leverage means more profitability for the business but also more risk. Too much leverage could end with the impossibility to repay it, which therefore could trigger into bankruptcy.

The different ways to calculate the cost of debt are the following ones:

- **Rating:** According to the ratings obtained by Standard's and Poor's, Fitch or Moody's (among others) their possibilities to finance themselves can vary substantially. The better the rating the lower the cost of debt the financial institutions will require them, and the higher the amounts of money they are allowed to borrow. However, not every company is rated and in some cases is quite difficult to find it.
- **Floating rate:** This is one of the most accurate methods. The risk free is always given by the country and it represents the theoretical rate of return without any risk.

$$\text{Floating rate} = \text{risk free} + \text{Spread (or Premium)} \tag{2.6}$$

- **Corporate bonds issued:** If a company is listed, a very accurate way to obtain the cost of debt would be the Internal Rate of Return (IRR) of those bonds.
- **Difference between financial expenses and debt:** This method takes into account financial epxenses of the last year and the avarage financial debt of that year and the year before. In most cases, it is the only method that

is used. To obtain the figures it is needed to look at their balance sheet over the last year and the year before. It should be highlighted that the dominator must include short and long-term debt. This is the method used in this paper.

$$K_d = \frac{\text{Financial expenses}_{t-1}}{\left(\frac{\text{Financial debt}_{t-2}+\text{Financial debt}_{t-1}}{2}\right)} \tag{2.7}$$

Cost of equity:

It represents the return required by the shareholders. In most of the cases this cost is higher than the cost of debt so companies usually finance themselves with cost of debt. In this research there will be shown three methods:

- **Gordon-Shapiro model:** It is a method based on dividends rising at a constant rate. It is widely recommended for business with a low constant growth. This model was implemented by Myron J. Gordon and Eli Shapiro.

$$K_e = \left[\frac{\text{div}_0 \cdot (1-g)}{p_0}\right] + g \tag{2.8}$$

- **Shareholders requirements:** This method should be the one that every business must apply. It consists on asking to the shareholders what is the minimum rate of return that they are willing to expect. However, this method is very difficult to implement. For small businesses it could be an option as there are not too many shareholders, but for big businesses, such as Repsol with more than 50.000 shareholders, this method is unfeasible.

- **Capital Asset Pricing Model (CAPM):** This is the most used method by entities. It involves taking into account the risk free asset and the risk premium, which considers the risk of the market. Its formula results as following:

$$K_e = R_f + \beta \cdot (R_m - R_f) \tag{2.9}$$

According to some sources, Mascareñas (2008) said that this cost represents the minimum rate that companies are allowed in order to face the cost of financial resources. In other words, it is the minimum rate that the investors must receive to obtain their desired profitability.

Regarding the risk free, Pablo Fernandez, Vitaly Pershin and Isabel F. Acin (2018) have released the latest report about market risk premium and risk-free rate, where Spain receives a 6.7% of market risk premium and 2.1% for the risk free rate.

Finally, the beta represents the risk of the company in comparison to the market ($\beta = 1$), thus a beta higher than 1 stands for a company riskier than the market.

Nevertheless, it is important to remember that equity does not represent the best alternative of financing your business, as it remains much more expensive. The general idea is to obtain financing from both options at the same time. Regarding equity, it must be at least the minimum required by some regulation institutions, whereas the debt side, it will be increased as much as risks management allow it.

Steps for the valuation:

Once it has been developed the way to obtain the WACC, it is necessary to build the different steps for the valuation. In other words, it is necessary to obtain the Free Cash Flows from the company, which lately, will be discounted at the WACC rate.

Starting from the beginning, it is necessary to obtain the Earnings Before Interests and Taxes (EBIT). This figure will be obtained from the financial statements that Repsol publishes every year and, according to the forecast assumptions, future expected EBIT for the company will be obtained.

The following step needed for the valuation resides in the elimination of the taxes on EBIT, as they should not be accounted for calculating the Cash Flows.

Depreciation must be added as a positive figure. Although for the Profit and Losses Account (P&L) it is always subtracted, for the elaboration of the cash flows it must be added again. Regarding the forecast, this new depreciation will be accorded to the Capital Expenditure of those years. Thus, CAPEX should be subtracted at this step as well.

Working Capital Requirements is also important to consider. It represents the difference between current assets and current liabilities.

$$\text{Working Capital} = \text{Current Assets - Current Liabilities} \tag{2.10}$$

$$\text{Working Capital} = \text{Cash} + \text{Inventories} + \text{Accounts Receivables - Accounts Payables} \tag{2.11}$$

In a more precisely definition, the working capital represents a measure of the level of efficiency in the performance of a company. As a general understanding, it is wished to have a greater amount of Current Assets than Current Liabilities. Otherwise, the company may be involved in liquidity problems, as Non-Current Liabilities will be financing part of the Current Assets.

Once it has been calculated all the steps above, the result will trigger into the Free Cash Flows of the company. However, in order to obtain a complete valuation, the forecasted value of the company (terminal value) should be added to the last Cash Flow.

As previously stated, the accounting of future cash flows brought to the present is essential, but what can really determine the life of the business? There are some companies that may last for a long time, but there are some others (or projects) that are determined by a specific useful life.

To clarify this disruption, authors such as Birgham and Ehrhardt (2015) have developed an argument that performance life of companies must be accounted as unlimited. For that reason, unlimited cash flows should be brought to the present. Here is when is found the term Terminal Value, which, according to some variables such as the growth or the Weighted Average Cost of Capital (WACC), represents in the most possible accurate way, the theoretical future cash flows that the company would have if the business remain. However, this Residual or Terminal Value has brought several discrepancies along the history, as it comprehends some assumptions that not always are possible to fulfil. Moreover, this term is relatively manipulated according to the wished preferences. The best example of that manipulation and theoretical value of a company based in their terminal value are startups, and specially, those startaps whose business involve technology. Thereby, at the beginning of their business and when asking for financing, they usually have negative cash flows but a remarkable terminal value, as they expect that in the medium/long-term will earn profits.

Nevertheless, according to this project, it is expected that the terminal value will reflect future cash flows in the most precise way. To calculate its value, it is necessary to apply the following formula:

$$\text{Terminal Value} = CF_n \cdot \left[\frac{1+g}{WACC-g}\right] \tag{2.12}$$

where,

$$
\begin{gathered}
CF_n = \text{Last Cash Flow forecasted} \\
g = \text{growth} \\
WACC = \text{Weighted Average Cost of Capital} = \\
K_d \cdot (1 - \text{tax rate}) \cdot \left(\frac{D}{E+D}\right) + K_e \cdot \left(\frac{E}{E+D}\right)
\end{gathered} \tag{2.13}
$$

The sum of the previous variables will result in the final Free Cash Flows needed for the valuation. Those cash flows need to be discounted as Revello de Toro (2013) explains below:

$$
NPV = \frac{CF_1}{1+K} + \frac{CF_2}{(1+K)^2} + \frac{CF_1}{(1+K)^3} + \cdots + \frac{CF_n + TV_n}{(1+K)^n} \tag{2.14}
$$

Where,

$$
\begin{gathered}
NPV = \text{Net Present Value} \\
CF_i = \text{Cash Flow generated by the company in period } i \\
TV = \text{Terminal Value corresponding to the year-end} \\
K = \text{Discounted Rate to account the risk of the cash flows}
\end{gathered}
$$

Finally, the result is what is called the Net Present Value of the Cash Flows. Thus, substracting the Net Financial Debt to the NPV yields the total amount (value) of the company.

2.2 Multiples Valuation

This method of evaluation is considered to be one of the most powerful tool regarding peers. It allows you to compare your business with the competitors' one and there is not that pure technical analysis such as the one found in the Free Cash Flow Valuation.

Multiples Valuation bases its main approach in the financial result of the company. Therefore, there will not be any cash flow account as it was in the FCF. Its objective is to determine the value of the company according to different features, such as profits, sales, assets, etc, also called multiples (Pablo Fernandez, 2008).

The main advantage of this kind of evaluation resides in the opportunity to compare a company with some others, which usually perform in the same sector.

Considering some authors, such as Schreiner (2007), the valuation of companies throughout this method allows to have a wide range of possibilities. In order to give a general overview, some of the most important multiples are:

- Price Earnings Ratio (PER)
- Enterprise Value / EBITDA
- Multiple of Assets
- Multiple of Sales
- Multiple of EBIT
- Price to Cash Flow (PCF)

According to Eirk Lie and Heidi J. Lie (2002), the multiple of assets generates the most precisely way to estimate the value of a company. It represents an alternative more precise than the multiple of sales or the multiple of EBITDA. Moreover, they proved some theories such as the obtention of higher yields through the use of the multiple of EBITDA rather than the EBIT one.

Revello de Toro (2013), also contributed to the understanding of this method. He actually thinks that companies should be mainly evaluated based on two approaches, one regarding equity and the other one regarding Enterprise Value (EV). Both of them have a wide range of options, such as Price Earnings Ratio (PER) for the equity or Enterprise Value EBITDA (EV / EBITDA) for the second one.

In the case of Repsol, a comparable list with all possible competitors will be needed. In order to succeed with the target, Bloomberg has been used to subtract the main references and data from other companies to, afterwards, make an exhaustive valuation by multiples.

The two multiples method that will be used for this study are the PER and the EV / EBITDA. The first one could be interpreted as the number of times the profit of a company is placed on the price of its shares. In other words, it measures the number of times that an investor is willing to pay in order to receive €1 of profit. The second ratio, the EV/EBITDA, measures the value of the company regardless its financial situation. This second ratio is supposed to be more objective than the first one, as it bases the value without considering the different methods of accounting that companies could apply to benefit themselves, such as depreciation, taxation or interests.

In order to calculate both multiples, the following formulas are needed:

$$PER = \frac{\text{Market Value per Share}}{\text{Earnings per Share}} \tag{2.15}$$

Which can be rewritten as:

$$PER = \frac{\text{Market Capitalization}}{\text{Net Income}} \tag{2.16}$$

$$\text{EV/EBITDA} = \frac{\text{(Market Capitalization + Net Debt)}}{\text{EBITDA}} \tag{2.17}$$

2.3 Main Errors to Avoid in the Valuation

Finally, according to Pablo Fernández (2007), where he explains the most occurred errors, this paper tries to focus on his guidelines to be as accurate as possible this study without any trouble. Some of the examples that Pablo Fernández develops on his paper are shown below:

Regarding the Discounted Rate:

- The use of a wrong risk free rate, where some analysts sometimes take the historical average risk free rate or the short-term government bond as the reference.
- The use of an incorrect Beta, where analysts usually take an historical average beta of companies which perform in the same sector or the wrong use of the process of unleveraged and leverage the betas. Taking a closer look on the correct form of using this method, and taking into account the Beta of the peers, it should be deleveraged it firstly to, afterwards, leverage again with the data of the company that is wanted to be evaluated.
- The use of a wrong Market Risk Premium, where the main mistake resides in the misunderstanding of the concept. It is important to highlight, as Pablo Fernández mentions: the required market risk premium is NOT equal to the historical equity premium. Moreover, other mistakes regarding this variable are the assumption of it being equal to 0 or the use of the expected risk premium.

- The incorrect way of calculating the WACC. This issue, although it has been highlighting the importance of the accurate of the WACC, remains in the construction of it. Thus, it can be seen many discrepancies among different analysts and, in most of the cases, no one is wrong. However, it is important to remember what the WACC is really made of. Some of the most common mistakes are the following ones:

    - The implementation of a discounted rate lower than the risk-free rate does not make any sense.
    - The use of book values in weights when applying the formula.

Regarding the Forecast:

The misunderstanding of the real meaning of Cash Flows. In some cases, analysts forget including the changes in working capital (Working Capital Requirements). Moreover, it is important to not fail in the calculation of the taxes due to its implication over the final free cash flow. Finally, some analysts use Net Income as a cash flow, which is completely wrong.

Regarding the Terminal Value:

In this section is just observed that some analysts make some mistakes in the correct way of calculating the Terminal Value. Among others, it should be highlighted that one of the most common errors resides in the incorrect position of the figure, which sometimes is accounted on a different year instead of the one that corresponds: the last cash flow of the forecast. In some other cases, it is quite common to use the wrong formula or use arithmetic means instead of the geometric ones for calculating the growth rate.

Regarding Free Cash Flow Valuation:

The use of nominal discounted rates and real cash flows, which ends in a wrong valuation.

Regarding Multiples Valuation:

One of the most frequently errors ever is the use of multiples obtained from operations along a period of time very high.

Chapter 3

Perspectives of the sector's future

3.1 Short-term

2017 has been the first year since the plummet of the oil prices in 2014 that supply and demand has adjusted the imbalance of the oil market. These dynamics arise from the *Agencia Internacional de la Energía (AIE)* and it seems that they will keep that adjustment in the short-term period.

Following with the same idea, and in order to balance the market, the AIE bets for the agreements signed in 2016 between the Organization of the Petroleum Exporting Countries (OPEC) and the rest of the countries not included. Therefore, the accomplishment of those accords will be the main figure to control, which could reflect the oil quotation.

Regarding the producer's countries that are not included in the OPEP, the Agency expects an increase in their supply for 2018, being United States the main figure.

Attending to the demand it is expected that it will remain the same path. The OCDE countries will grow their consumption, reaching the fourth consecutive year in positive numbers. However, the no OCDE countries are expected to be the engine of the demand, reaching 1,20M of daily barrels.

Therefore, if agreements are fulfilled, the AIE expects deficit for 2018, lowering the global stock that could reach 500.000 barrels per day.

According to the gas sector, where Repsol is also highly involved, it is needed to observe the American market, as they are the first producer and consumer of this commodity. Thus, as it is presumed that the adjustment between demand and supply will remain in the short term, for 2018 and 2019 it is expected an increase in the demand by the implementation of new platforms of exportations (i.e. Mexico

tube gas). Moreover, weather conditions of this year seem to be propitious for the gas consumption (colder winter and warmer summer).

In conclusion, all these aspects suppose an increase in the price, which could overcome the 3$ / MM British Terminal Unit (Btu)

3.2 Long-term

Regarding the Long-term view, the *World Energy Outlook 2017* bet for a future with more renewable energies, more efficiency and less pollution (specially CO_2, although it is expected to remain as the main source of the world demand). The renewable energies are supposedly going to rise until the 20% of the energetic consumption, which represents an increase of 5% over the current level (15%). These movements come mainly from the increment in the sun and wind energies. Nevertheless, it is also expected that the core of the consumption will remain in the dependence of the non-renewable energies, such as oil (representing the 82% of the total demand), which will decrease until 75% in 2048.

It is true that the level of growth corresponding to advanced economies raised from 1,7% in 2016 to 2,3% in 2017. This, in addition to the deleverage of the private sector and the expansion fiscal policy of the recent years has helped to the recovery of the private consumption and the business investment. More in depth, according to the advanced economies, United States has shown an important increase in the level of growth (from 1,5% in 2016 to 2,3% in 2017). Europe also showed a positive tendency of 2,3% due to the re-availability of credits and the increase in exports. Finally, Spain has run a great scenario where its level of growth rises until 3,1% in 2017, showing a strong structure of the economy.

Another important factor to mention is the one referring to the depreciation of the dollar in comparison with the euro. This means a positive impact in global terms for two reasons. The first one refers to the improvement of the governments and businesses solvency that have had positions in that currency, allowing emerging countries still receiving money in a sustainable way. The second one, as the majority of the prices are in USD, they lower those positions into local currency, increasing the demand.

Perspectives for 2018 and onwards seem to remain in the same direction. It is expected a growth rate of 3,9% and a higher increment in the production in emerging markets of raw materials due to the new tax policy in the USA. Nevertheless, there is an uncertainty over this scenario due to the commercial war that is taking place nowadays, which could trigger the slowdown of the recovery. Moreover, it is also important to be aware about the geopolitics, which has gained leadership, and the left side parties or the independent ones that have become more popular.

Chapter 4

Effect of the oil prices' movement

Over the last years, it has been demonstrated that oil price changes have an enormous volatility over general economies. Indeed, it has been considered one of the commodities affecting the most when calculating inflation of a country. For this reason, financial institutions responsible of its measure must be aware about these two features.

According to this difference and in order to observe real data, it is better to remove commodities price changes (specially oil movements) from the rest of the variables needed to obtain the inflation. Furthermore, it has also been proved that this indicator may vary a lot between one month and the following and in some cases, there has been found a considerably difference between an inflation considering these commodities and the one without taking them into consideration. In real terms, it seems to be better attending the second option, as one could have ended thinking that they have lost purchasing power or maybe worried about the economy when the situation is not really that one. Indeed, discarding those commodities, one realizes that inflation has been remained within the same range and also, attending what is said in the European Central Bank's policy, the level of inflation has to be lower but close to 2% (as an average within the European Union).

Nevertheless, it is important to always observe the variations of inflation according to commodities price changes, as those movements could be linked with some relevant events regarding oil markets. Therefore, if that event has a considerably magnitude over the economy, everyone should be aware and cautious of that. Figure 4.1 shows a comparison between the general inflation in Spain and its underlying (referred to the current inflantion, which does not consider food or energy sectors) in a scenario where there has not been any transcendental event (just the volatility of commodities and the exposure of Spain).

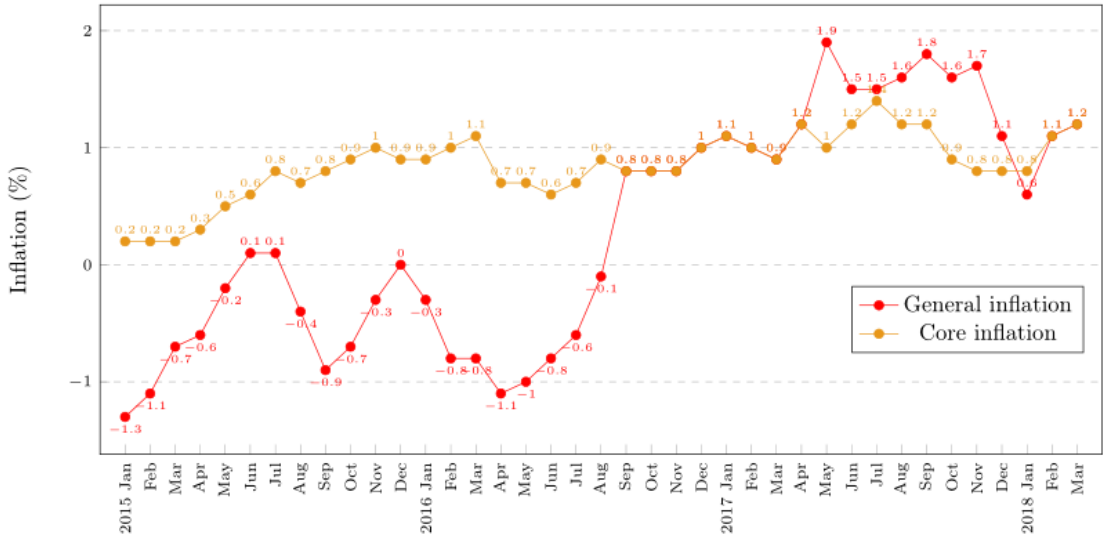

Figure 4.1: General inflation against core inflation. Source: INE

As it is observed, attending to the general inflation it seems to be constantly changing almost every month. If that were true in real terms, Spain would have to face a more important problem. However, regarding to the underlying inflation, commonly known as the core inflation, it reflects the real changes in worth of finished goods and services within Spain. Therefore, there are not substantial movements on prices, which reflect a normal evolution of the country according the Spanish government and the European guidelines.

Nevertheless, it is important to not forget the importance of those commodities as explained above. There are some countries which their economy is really exposure to this volatility, such as USA or Arabic ones. This exposure could lead to economic recessions and authors such as Hamilton (2003) researched about it regarding the USA, which suffered this impact several times.

Once covered the behaviour of the oil price changes over the economy of a country, the impact must be also reflected in some macroeconomic variables.

Attending to the literature, it is found that the XXth century has carried out several researches about the price of this commodity and its volatility, which seems that will remain in the following years.

Previous researchers have studied this subject trying to answer the relation between the economy and the fluctuations of oil prices. Authors such as Barsky and Kilian (2002) have gone more in depth and they studied the exogenous effect of Arabic countries and the OPEC decisions over the oil price. It seems to be clear that their political decisions could influence in the market with an enormous im-

pact. Furthermore, they have used a model to observe this effect, which results quite different depending on the reason that caused the oil price change (underlying shock). In the same atmosphere, Lippi and Nobili (2009) have followed their steps and focused on the oil price effect depending on the shock they suffer.

For some other researchers, this effect caused a negative impact over the world economy itself. As Hamilton (2003) developed in his study about the oil shock, he accuses this fact to several recessions in the USA. Specially, his paper tries to explain the relation between oil prices and the macroeconomic variable Gross Domestic Product (GDP) growth, arguing that when forecasting the GDP growth, the most accurate option, but not the only one, is using a nonlinear function of oil price changes. Moreover, Hamilton's paper said that the increase of movements in oil prices represent a more significant effect than the decreases one when calculating the GDP growth. Finally, he ended with the conclusion that oil shock really affect the GDP growth due to the importance of some customers or firms which their businesses are constantly being affected by this commodity.

Nevertheless, Hamilton was not the only one who researched about this subject and the different correlations among macroeconomic variables. Other authors, such as Keane and Prasad (1996) studied the relation between those oil changes in price and employment and real wages. They made an approach by the use of panel data to observe those effects, arguing that OLS models do not observe heterogeneity. They ended with the conclusion that oil price increases trigger a decrease in real wages in general terms, but for those workers who were more skilled, the relative wage increased.

After reviewing previous studies about correlations, alterations and implications of oil price changes over the economy, it has been found that the evidence is clear. Commodities have always been a variable that must be observed by governments due to its volatility. However, according to this study and the intention to link the oil with Repsol, does it really affect the value of its shares?

4.1 Correlation Between Oil Price Quotation and Repsol's Share

The answer seems to be obvious as the oil price have shown some correlations among the main variables of a country, specially the GDP growth. Therefore, considering the Brent quotation, an exhaustive analysis of its correlation has been carried out. This approach will be useful for the forcasting of the sales that will be done for the evaluation. In the graph below, the previously mentioned correlation is shown.

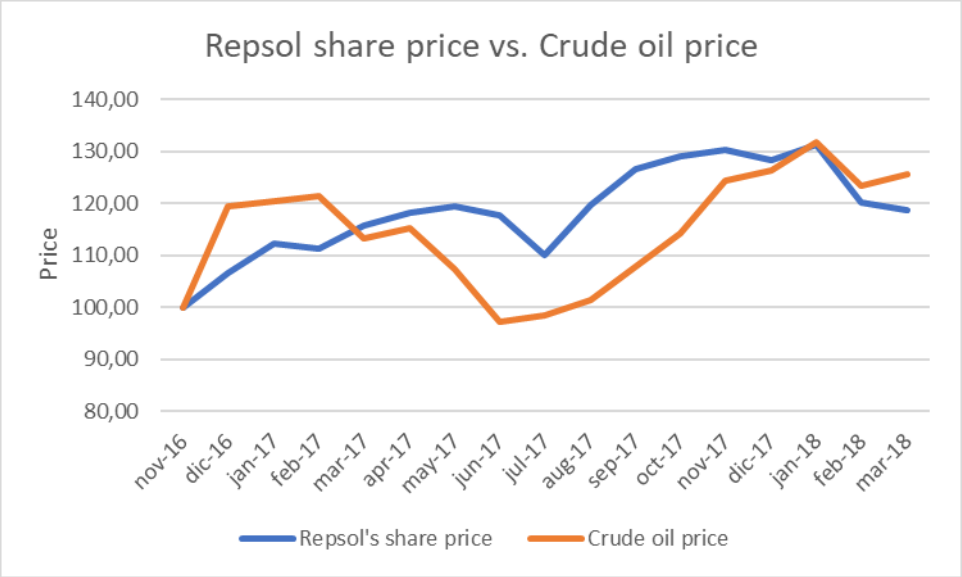

Figure 4.2: Repsol share price against crude oil price. Source: Bloomberg

Chapter 5

Analysis of Repsol by third parties

First of all, it is needed to observe different valuations that have been done for this company. Specifically, it has been found two recent valuations from *Bank of Santander* (Global Corporate Banking Division), *Ahorro Coporación Financiera*, and another analysis of *Morningstar* that could help us to understand better this study.

5.1 Bank of Santander: Valuation

Key recent points of Repsol according to Santander:

This analysis is based on the expansion of Repsol in the retail market of oil in Mexico. Its date of analysis dates back just few months; specifically, this study has been done in March 2018.

As it is referring to a company that represents high volatility in market changes, Bank of Santander considers any news of the sector vital for the analysis. Thereby, they explain the current situation in that environment that is needed to be taken into account.

Mexico has become one of the most important facts in Repsol's movements of nowadays. They have introduced several petrol stations in Ciudad de Mexico, reaching the number of 10 in total. Furthermore, they are considering an expansion within the country until reach the number of 40 petrol stations in the following months. In its Business Plan, Repsol has been carefully studying the goal of having 200-250 petrol stations before the end of 2018, with the clearly objective

of acquiring de 8-10% quote of the market in 2022.

It is also important to remind the importance of the Mexican market, which is considered the second greatest one within the Latin American and the sixth one Worldwide in terms of oil and diesel consumption. In order to fulfil with that project, Repsol estimates an investment of nearly €400M.

Regarding some history in Mexico, Repsol has introduced its business in the country due to the end of the monopoly of PEMEX (*Petróleos Mexicanos*) , which it remained 75 years until 2013. Nevertheless, as every lector will guess, Repsol is not the only one who has shown their interest in expanding their business in Mexico. BP, RD Shell or ExxonMobil, among others, have also started developing some petrol stations and the inclusion of part of their business in this country.

Santander Recommendations:

According to Santander preferences, they see Repsol with an attractive entry price. In other words, their expectations of the evolution of the value of Repsol can increase slightly in the following months. For that reason and based on a fundamental analysis of the company, the recommendation within the following 12 months is hold, with an objective price of €16,50.

For the analysis of the company it has been used the discounted free cash flow method.

Nevertheless, despite the hold recommendation of the Bank in the 12 months horizon, Santander also see an opportunity of buying within 1 to 6 months due to the low level of quotation of the shares (around €14 in March 2018).

Moreover, since the recent publication of the financial statements of the 4T of 2017, Santander foreseeing some important aspects that need to be considered:

First of all, Repsol will update their strategy around June, which could influence considerably the quotation of the share. Secondly, at the same time that Repsol was releasing their financial results, they were also announcing its perspectives for the future, being the prudence, profitability and confidence the protagonists of the season. Finally, although investors do not know yet where the money received from the sale of GAS SM will go for, the CEO has mentioned several times that they will find some investments where the rate of return will overcome the average cost of the investment. However, waiting until the third quarter of 2018 to start receiving the cash from the sale is needed in order to start receiving the cash provenent from the sale.

5.2 Ahorro Corporación Financiera: Valuation

Key recent points of Repsol according to Ahorro Coporacin Financiera (ACF):

In this case it has been developed a report made of ACF from April 2018. The main difference from the Santander ones is the date of the study. In this case, this report allows us to observe the performance of Repsol in the 1T of 2018, as the financial statements have already been announced.

According to some key aspects of last seasons, ACF bet for the high production of Repsol, although obtaining lower margin of refine. In the first quarter of 2018 estimations show a production of nearly 727.000 barrels per day, which means an increase of 1,6% in comparison with the fourth quarter of 2017 and an increase of 4,9% with the first quarter of 2017.

In addition, Repsol bet for an increase in the price of the brent reaching an average of $66,8 per barrel, representing a 9% higher than the$61,3 of the fourth quarter of 2017 and a 24,4% higher than the $53,7 of the first quarter of 2017.

Ahorro Corporacin Financiera Recommendations:

Therefore, ACF estimates these features as positives with an objective price of €18,00. The method used for these estimations has been once again the discounted free cash flow.

It is very important to observe the evolution of the two entities that have analysed Repsol. In the case of Bank of Santander, their estimations were holding but with an opportunity to buy in the short term, basing the decision in the lower quotation of the price at that time. Thus, one month later, ACF bets for buying once the financial results have been released and the tranquillity has been stablished. Moreover, ACF also bases its decision in the disappearance of the risk in buying assets due to the sale of the Gasnat (GAS SM for Santander).

5.3 Morningstar: Quick Analysis

Finally, although Morningstar is not considered to be an entity in charge of evaluating companies and giving some recommendations, it has been found some general data considered relevant to amplify the general overview of Repsol features.

	Current	5Y Average	Sector Median	Country Median
Price/Quant Fair Value	0,93	1,00	0,87	0,95
Price/Earnings	10,05	35,5	13,7	16,4
Forwards P/E	9,0	-	13,1	14,3
Price/Cash Flow	4,4	4,9	6,4	10,3
Price/Free Cash Flow	7,9	17,7	12,6	15,0
Trailing Divind Yield %	5,65	5,7	3,88	3,03
Price/Book	0,8	0,7	1,2	2,0
Price/Sales	0,5	0,5	1,3	1,6

Table 5.1: Morningstar valuation data. Source: Morningstar

As it is observed in the table above, Morningstar has decided to make evaluation taking into account the fourth last periods of time. Moreover, as it has been described at the beginning of this report, Morningstar also shows the volatility that this commodity represents, reaching a 24,79%.

What is really important about this valuation is the comparison that they give us between Repsol and the sector or country median. This allows us to obtain a general overview about the impact of this sector.

According to the valuation, they have obtained from the analysis that the energy sector seems to be undervaluated. However, Repsol is located in between undervalued and fairly valued.

Chapter 6

Full analysis of Repsol

Once analysed the three different valuations, the idea is to make our own study and try to match the results obtained with the sources founded. Therefore, if there is any contradiction, the necessity of conducting more researches should be considered.

6.1 Free Cash Flow Valuation

As a first approach, the method of Free Cash Flow is going to be used. Moreover, as Repsol performs in more than one country, it has been decided to focus the evaluation according to Spanish Data.

The idea to foresee the future cash flows is not an easy task when its main business resides in the oil sector. Its volatility really difficulties a regular tendency of the business and the great percentage of its business in dollar as well.

In order to make the forecast it has been firstly analysed the relation between the performance of sales and the Brent quotation over the last 13 years. Therefore, the different revenues and costs associated to the company will be estimated as a percentage over sales. The reason behind using this approach resides in the difficulty of predicting the future, so it has been decided to maintain the margins according to the sales. In the following graph it can be observed this relation:

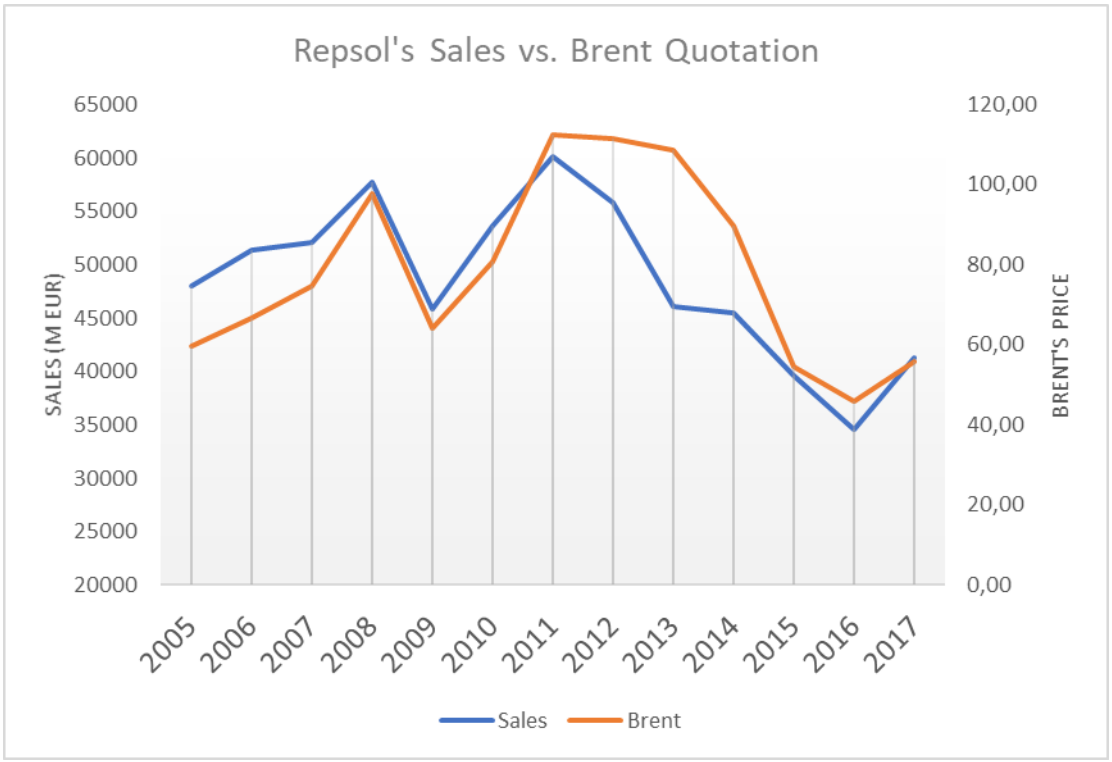

Figure 6.1: Repsol Sales against Brent's Quotation. Source: Repsol & Bloomberg

Furthermore, it is highly important to foresee the growth of the country. For this reason, it will be used some data obtained from European government bodies, and according to the Spanish one, it has been considered a rate of 2%. In addition, this rate of growth is needed to calculate the terminal value of the company as a perpetuity, and as the formula implies a growth rate that will affect the whole valuation, it must be very aware about it.

6.1.1 Weighted Average Cost of Capital

In order to obtain a complete valuation, it is needed to calculate the rate that the cash flows from the performance of the business will be discounted. In other words, it is needed to calculate the WACC.

First of all, it is needed to consider the total amount that Repsol has in the market, which means the Market Capitalization. Thanks to Bloomberg and Reuters, it has been possible to compare them and obtain a Market Capitalization of €25.590M (or 64%). The rest (€14.286M, 36%) corresponds to the financial debt (short and long term).

Secondly, it is important to determine the level of taxes that Repsol is paying. In

this case, the same tax rate of 2017 ($t = 40\%$) will be used.

Finally, it is needed to obtain the cost of equity and cost of debt to, therefore, obtain the Weighted Average Cost of Capital (WACC):

Cost of Equity

The CAPM method is going to be used. Thus, latest report of Pablo Fernandez, Vitaly Pershin and Isabel F. Acin (2018) about the ultimate risk-free rate and market risk premium are going to be used. In the case of Spain, the risk-free rate corresponds to a 2,1% and the market risk premium to 6,7%. Moreover, the Beta that is going to be used has been obtained from Repsol data uploaded in Bloomberg, obtaining a Beta of 0,892 (lower risk than the market). The cost of equity (Ke) will then result from the following equation:

$$K_e = R_f + \beta \cdot (R_m - R_f), \tag{6.1}$$

which can be rewritten as:

$$K_e = R_f + \beta \cdot \text{Market Risk Premium} \tag{6.2}$$

Therefore,

$$K_e = 0,021 + 0,892 \cdot 0,067 \implies K_e = 8,0764\% \tag{6.3}$$

Cost of Debt:

As explained above, there are several methods that could help us to obtain the exactly cost of debt. In this case, it has been calculated as the difference between the financial expenses and the average debt between the current year and the year before.Therefore, the cost of debt for Repsol is calculated as follows:

$$K_d = \frac{\text{Financial expenses}_{t-1}}{\left(\frac{\text{Financial debt}_{t-2} + \text{Financial debt}_{t-1}}{2}\right)} \tag{6.4}$$

Therefore,

$$K_d = \frac{677}{\left(\frac{(10.080+4206)+(9482+6909)}{2}\right)} \implies K_d = 4,4\% \tag{6.5}$$

WACC:

Then,

$$\begin{aligned} WACC &= K_d \cdot (1-t) \cdot (\frac{D}{E+D}) + K_e \cdot \frac{E}{E+D} \\ &= 4,4\% \cdot (1-0,40) \cdot 36\% + 8,0764\% \cdot 64\% \\ &= 6,13\% \end{aligned} \tag{6.6}$$

Once it has been obtained the WACC, it is important to calculate the different steps to complete de valuation. It has been also considered to forecast the performance of the company over 2 years (2018e and 2019e) due to the volatility and uncertainty of the behaviour of this sector. Nevertheless, this paper proposes 3 scenarios (negative, neutral and positive) in order to accurate as much as possible the different paths that the Brent could have.

Every evaluation analyses the impact of the different quotation of the Brent over Sales. The starting point considered resides in 2017 (year 0) and the forecast goes for 2018 and 2019 (year 1 and year 2 respectively). This assumption is based on historical data.

6.1.2 Neutral Scenario

In this scenario is intended to follow the recent tendency of the Brent quotation and its impact over the performance. It has been stablished a target on the Brent price of 70$ for 2018 and 80$ for 2019. Therefore and based mainly on years previous the last Financial Crisis of 2008 (in order to minimize the volatility and operate with stable prices), the forecast over sales obtained for 2018 and 2019 are 51.313M and 53.811M respectively.

Assuming the same percentage as 2017 for operating revenues and cost of goods sold (COGS) Earnings Before Interests and Profit (EBIT) is obtained, which will be out starting point to obtain the Free Cash Flows. Secondly, Taxes on EBIT should be subtracted as they do not really reflect a cash flow of the company. Thirdly, Depreciation should be added again. In this case it has been considered the average according to the 5 previous years as shown as follow:

Depreciation and amortization of non-current assets	-2499	-1520	-1796	-3124	-2529	-2399
Average Depreciation	**-2311**					

Table 6.1: Average depreciation of the last six years. Source: Repsol and own development

Fourthly, Capital Expenditure (CAPEX) is necessary to be considered as it supposes an investment over certain intangible assets that are considered they could have a longer useful life (it also could suppose a new investment in intangible assets). In order to keep same levels as previous years, it has been decided to maintain the average CAPEX from historical data (2.300 €), which makes sense as covers approximately the levels of depreciation.

Fifthly, Working Capital Requirements should not be forgotten as it is important to observe the behaviour of the financing of the current assets (whether to invest more money or even recover part of it).

Current Working Capital (2017) is obtained from the Balance Sheet (see Table 9.1). Afterwards, it is calculated the ratio Working Capital / Sales (16,97%), which reflects the percentage of Working Capital according to Sales. This ratio is lately, applied to each different year of the forecast. The difference in Working Capital between one year and the follow one is what is called Working Capital Requirements. If the Working Capital of the current year is lower than the following one, it would mean that it is needed to invest in Working Capital (negative sign as it is produced a disbursement). Otherwise, this figure will be positive.

In the following table is observed the calculations needed to obtain it:

WC 2017	7000
WC/Sales	16.97%

	2017	2018e	2019e
Sales	41242	51113	53511
WC	7000	8675	9082
WC Needs		-1675	-407

Table 6.2: Working Capital requirements: Neutral scenario. Source: Repsol and own development

Finally, Terminal Value of the company is calculated as a perpetuity. Thus, it is calculated over the last Cash Flow of the forecast.

According to sum of previous steps, the consequently calculation of the Cash Flows and the application of the formula explained above, the Terminal Value is shown as follow:

Free Cash Flow	2017	2018e	2019e
EBIT	2789	3457	3619
-EBIT*TAX RATE	-1116	-1383	-1447
+DEPRECIATION	2399	2311	2311
-CAPEX	-2300	-2300	-2300
-WC NEEDS	-110	-1675	-407
Total/Cash Flow	1662	410	1775

Table 6.3: Cash Flows: Neutral scenario. Source: Own development

Thus, taking into account a level of growth of 2%, Terminal Value can be calculated as:

$$\text{Terminal Value} = \frac{CF_n \cdot (1+g)}{WACC - g} \implies \text{Terminal Value} = 43.116 \tag{6.7}$$

Finally, in order to obtain the Free Cash Flow, Terminal Value is added to the previous cash flows. In the following table it is observed all steps needed to obtain the final free cash flow:

Free Cash Flow	2017	2018e	2019e
Total/Cash Flow	1662	410	1775
Terminal Value			43116
FREE Cash Flow	1662	410	44892

Table 6.4: Free Cash Flows: Neutral scenario. Source: Own development

Taking in consideration that the WACC of Repsol is 6,13%, the Net Present Value of the Free Cash Flows is needed to be calculated. Afterwards, Financial Debt should be subtracted to obtain the Market Capitalization. Finally, if desirable, it can be obtained the price per share (remembering the 1.550M of shares). In the following figures, it can be observed all the calculations:

Variable	Value
Net Present Value	40.243,14
- Debt	-14.286
Max price	25.957,14
Number of shares	1550
Max Price per share	16.75

Table 6.5: Evaluation results: Neutral scenario. Source: Own development

6.1.3 Positive Scenario

In this second scenario it is going to evaluate a more optimistic performance of Repsol for 2018 and 2019 than the neutral does. In this case, the target of the Brent quotation resides in 85$ and 95$ respectively.

Sales of those years will be higher than the previous scenario as it is expected a more positive environment (see Table 9.5). Hence, and maintaining the same proportion of the rest of the variables over sales (as it has been done with the neutral scenario) it can be obtained the EBIT for 2018 and 2019, being €3.668M and €3.819M respectively.

Depreciation and Capital Expenditure remains in the same proportion as the previous scenario.

According to the Working Capital Requirements, they are calculated as shown below:

WC 2017	7000
WC/Sales	16.97%

	2017	2018e	2019e
Sales	41242	53741	56275
WC	7000	9121	9552
WC Needs		-2121	-430

Table 6.6: Working Capital requirements: Positive scenario. Source: Repsol and own development

For the calculation of the Terminal Value is needed to apply the formula as a perpetuity over the last Cash Flow. As done with the previous scenario, it is firstly shown the table of Cash Flows:

Free Cash Flow	2017	2018e	2019e
EBIT	2789	3634	3806
-EBIT*TAX RATE	-1116	-1454	-1522
+DEPRECIATION	2399	2311	2311
-CAPEX	-2300	-2300	-2300
-WC NEEDS	-110	-2121	-430
Total/Cash Flow	1662	70	1864

Table 6.7: Cash Flows: Positive scenario. Source: Own development

Thus, Terminal Value is calculated as following:

$$\text{Terminal Value} = \frac{CF_n \cdot (1+g)}{WACC - g} \implies \text{Terminal Value} = 45.279 \tag{6.8}$$

Therefore, Free Cash Flows are:

Free Cash Flow	2017	2018e	2019e
Total/Cash Flow	1662	70	1864
Terminal Value			45279
FREE Cash Flow	1662	70	47144

Table 6.8: Free Cash Flows: Positive scenario. Source: Own development

Considering again a WACC of 6,13% to discount the future performance, it is obtained the Net Present Value. Lately, deducting the Financial Debt to obtain the Market Capitalization. Finally, if desirable, it is calculated the price per share for this positive scenario:

Variable	Value
Net Present Value	41.921
- Debt	-14.286
Max price	27.635
Number of shares	1550
Max Price per share	17,83

Table 6.9: Evaluation results: Positive scenario. Source: Own development

6.1.4 Negative Scenario

In this third scenario, perspectives of the future are treated as more pessimistic as the neutral one. For that reason, the target of the Brent quotation resides in 50$ for 2018 and 45$ for 2019. Sales of those years will be lower than the previous scenarios. For its calculation, it has been considered the years previous the Financial Crisis of 2008 due to the better economic stability. Thus, taking into account those years and considered the ones where the Brent was quoted around 50$, it has been estimated the amount of sales.

The rest of the variables have been calculated as a different percentage over sales (see Table 9.6). Instead of using 2017 as a reference, it has been used 2016 due to worse performance (lower sales), which is thought that it could represent a more accurate path.

Therefore, EBIT, which is always the starting point of the evaluation, suffer some changes. In this scenario the expected EBIT for 2018 and 2019 are 2.215M and 2.114M respectively.

Depreciation and Capital Expenditure remains in the same proportion as the rest of the scenarios.

Regarding Working Capital Requirements, they are needed to be calculated again, obtaining:

WC 2017	7000
WC/Sales	16.97%

	2017	2018e	2019e
Sales	41242	40052	39227
WC	7000	6798	6658
WC Needs		202	140

Table 6.10: Working Capital requirements: Negative scenario. Source: Repsol and own development

According to the Terminal Value, it is again calculated as a perpetuity considering the last Cash Flow of the forecast. Thus, it is firstly needed the different Cash Flows as shown below:

Free Cash Flow	2017	2018e	2019e
EBIT	2789	2215	2169
-EBIT*TAX RATE	-1116	-886	-868
+DEPRECIATION	2399	2311	2311
-CAPEX	-2300	-2300	-2300
-WC NEEDS	-110	202	140
Total/Cash Flow	1662	1542	1453

Table 6.11: Cash Flows: Negative scenario. Source: Own development

$$\text{Terminal Value} = \frac{CF_n \cdot (1+g)}{WACC - g} \implies \text{Terminal Value} = 35.282 \tag{6.9}$$

Finally, the Free Cash Flow will result as follow:

Free Cash Flow	2017	2018e	2019e
Total/Cash Flow	1662	1542	1453
Terminal Value			35282
FREE Cash Flow	1662	1542	36735

Table 6.12: Free Cash Flows: Negative scenario. Source: Own development

Considering again a WACC of 6,13% and the same Financial Debt, it is applied the Net Present Value to calculate the Market Capitalization. Hence, it is possible to obtain the new price per share:

Variable	Value
Net Present Value	34.067,23
- Debt	-14.286
Max price	19.781,23
Number of shares	1550
Max Price per share	12,76

Table 6.13: Evaluation results: Negative scenario. Source: Own development

6.2 Multiples Valuation

6.2.1 Price Earnings Ratio (PER)

This type of evaluation, as explained above, is really useful for comparison with yours peers. In this case, it has been found that the main competitors of Repsol are BP PLC, Royal Dutch Shell PLC, Equinor ASA, MOL Hungarian Oil & Gas PLC and OMV AG. Therefore, this study helps us to observe if Repsol is undervalued or overvalued according to the sector.

It is important to remember that this ratio measures the relation between the share's price and the profits of the company. In other words, it represents the total amount (€) that an investor could expect to invest in order to receive €1 corresponding to the earnings of the company.

In order to obtain the PER correspondent to Repsol, it can be calculated as follows:

$$PER = \frac{\text{Market Value per Share}}{\text{Earnings per Share}} \tag{6.10}$$

As mentioned before, it can also be rewritten as:

$$PER = \frac{\text{Market Capitalization}}{\text{Net Income}} \tag{6.11}$$

The Market Capitalization is the one that has been used for the Free Cash Flow Valuation (25.590M). Net income is obtained from the forecast of P&L corresponding to the Neutral Scenario (see Table 9.4). Therefore,

$$PER = \frac{25.590}{2605} \implies PER = 9.8\text{x} \tag{6.12}$$

The interpretation of this number will be that an investor is willing to pay up to 9,8€ in order to receive 1€ of profits. However, this number is needed to be compared with the sector's ones. Otherwise, it would be impossible to assess if Repsol is well priced or not. Hence, the average PER of the sector has been used being, according to Bloomberg, 13.1x.

	PER
Repsol	9,8x
Avg. peers	13,1x

Table 6.14: Repsol's PER against peers. Source: Bloomberg and own development

Finally it can be said that Repsol is undervalued according to the average's sector. However, being quite close to the sector's average PER, the recommendations are close to hold or buy.

6.2.2 Enterprise Value (EV)/EBITDA

Apart of the PER it has been considered to evaluate the EV / EBITDA ratio. The reason attributed to this decision resides in the objectivity of the results. Whereas PER could be interpreted as a more subjective ratio due to the different assumptions to predict earnings for the following year, EV / EBITDA tries to be as much neutral as possible. This ratio takes into account the EBITDA, which helps to obtain the value of the company regardless the financial structure. In other words, it does not consider the different methods of accounting that could be applied to interests, taxes, depreciation or amortization.

In order to obtain the EV / EBITDA of Repsol, it can be calculated as follow:

$$\text{EV/EBITDA} = \frac{(\text{Market Capitalization} + \text{Net Debt})}{\text{EBITDA}} \tag{6.13}$$

$$\text{EV/EBITDA} = \frac{(25.590 + 14.286)}{7.572} \implies \text{EV/EBITDA} = 5.27\text{x} \tag{6.14}$$

The interpretation of this number could be that the company (Repsol) has a value of 5,27 times the EBITDA. However, it is needed again to compare the results with Repsols peers within the sector, being, according to Bloomberg, 6.2x.

	EV/EBITDA
Repsol	5,27x
Avg. peers	6,2x

Table 6.15: $\frac{EV}{EBITDA}$ of Repsol against peers. Source: Bloomberg and own development

Therefore, Repsol seems to be again undervalued by this method, being recommendations close to hold or buy.

Chapter 7

Conclusions

To conclude with the elaboration of this study it could be said that Repsol is placed in a sector where volatility represents the main aspect to be considered. As it has been developing along the research, the uncertainty of the Brent quotation, which can vary a lot among the different years, really difficult the valuation of Repsol. Therefore, it has been decided to evaluate the company through the two most used method: Free Cash Flow and Multiples.

Regarding to the Free Cash Flow Valuation it has been developed three different scenarios: neutral, positive and negative.

The first one refers to current evolution of the Brent quotation and the forecast has been done following the same tendency of previous months. Results show a Market Capitalization of €25957,14M with a price per share of €16,75 being reasonable taking into account other current valuations studied.

The second scenario tries to place Repsol and the sector in a more optimistic path. Therefore, the Brent quotations of the forecast has been stablished at higher levels. Results show a Market Capitalization of €27635M, which represents an increase in the value of the company and the price per share (€17,83)

The third scenario, the negative one, tries to be more pessimistic allocating the Brent quotation in lower levels. In this case, results show a Market Capitalization of €19781,23M, decreasing the price per share until €12,76.

In addition, it has been decided to evaluate Repsol by the Multiples method. This decision resides in the intention to observe the value of Repsol according to its peers. Thus, PER and EV / EBITDA have been analyzed in a neutral environment (as the neutral scenario of FCF).

Regarding the PER, it has been obtained a result of 9.8x, leaving Repsol in a

position slightly lower than its peers, which can be understood that it could be a good opportunity to include or hold Repsol in your portfolio.

Attending to the EV / EBITDA ratio, which is considered to be a more objective ratio, it has been obtained a result of 5.27x, also lightly lower than its competitors with the possibility to buy or hold it as well.

Finally, this study helps to obtain a general overview of the performance of Repsol with the intention to show the importance of the volatility of these commodities. The three different scenarios of Free Cash Flow and the inclusion of a Multiple Valuation have been designed to accurate as much as possible the fundamental analysis of Repsol.

Chapter 8

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Chapter 9

Appendix

Million euros	2012	2013	2014	2015	2016	2017
Non-Current Assets						
Goodwill	2678	490	498	3099	3115	2764
Other intangible assets	2836	1239	1361	1683	1994	1820
Property, plant and equipment	28227	16026	17141	28202	27297	24600
Investment property	25	24	23	26	66	67
Investments accounted for using the equity method	737	10340	11110	11797	10176	9268
Non- current assets held for sale subject to expropriation	5392	3625	0	0	0	-
Non-current financial assets	1313	1888	593	715	1204	2038
Deferred tax assets	3310	4079	3967	4743	4746	4057
Other non-current assets	242	60	155	179	323	472
Current Assets						
Non-current assets held for sale	340	1692	98	262	144	22
Inventories	5501	4938	3931	2853	3605	3797
Trade an other receivables	7781	4935	5685	5681	5885	5912
Other current assets	221	141	176	271	327	182
Other current financial assets	415	354	2513	1237	1280	257
Cash and cash equivalents	5903	5716	4638	2448	4687	4601
Total Assets	64921	55547	51889	63196	64849	59857
Total Equity						
Attributable to equity holders of the parent	26702	27207	27937	28534	30867	30063
Attributable to minority interests	770	243	217	228	244	270
Non-Current Liabilities						
Grants	61	10	9	7	4	4
Non-current provisions	2258	2700	2386	5827	6127	4829
Non-current financial liabilities	15300	8469	7612	10581	9482	10080
Deferred tax liabilities	3063	1866	1684	1600	1379	1051
Other non-current liabilities	3457	1676	1801	1942	2009	1795
Current Liabilities						
Liabilities related to non-current assets held for sale	27	1457	0	8	146	1
Current provisions	291	249	240	1377	872	518
Current financial liabilities	3790	5833	4086	7073	6909	4206
Trade payables and other payables:	9202	5837	5917	6019	6810	7310
Total Equity and Liabilities	64921	55547	51889	63196	64849	59857

Table 9.1: Repsol's Balance Sheet from the last six years. Source: Repsol

Income Statement						
Million euros	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Sales	55780	46089	45433	39582	34556	41242
Services rendered and other income	1442	765	409	155	133	426
Changes in inventories of finished goods and work in progress inventories	-379	-241	-224	-524	129	206
Income from reversals of impairment losses and gains on disposal of non-current assets	273	19	290	661	1625	864
Allocation of grants on non-financial assets and other grants	13	1	1	0	0	0
Other operating income	723	697	1383	1867	990	710
Operating Revenue	57852	47330	47292	41741	37433	43448
Supplies	-43744	-38439	-38254	-28833	-23615	-30251
Personnel expenses	-1975	-1671	-1729	-2129	-2501	-1892
Other operating expenses	-5825	-4610	-4847	-6455	-5930	-5195
Depreciation and amortization of non-current assets	-2499	-1520	-1796	-3124	-2529	-2399
Impairment losses recognised and losses on disposal of non-current assets	-143	-131	-588	-3924	-947	-922
Operating Expenses	-54186	-46371	-47214	-44465	-35522	-40659
Operating Income/EBIT	3666	959	78	-2724	1911	2789
Finance income	151	94	134	150	176	194
Finance expenses	-976	-651	-576	-707	-741	-677
Changes in the fair value of financial instruments	20	-129	529	1052	189	34
Net exchange gains/ (losses)	23	125	-304	-204	94	151
Impairment and gains/ (losses) on disposal of financial instruments	-28	79	369	170	48	-14
Financial Result	-810	-482	152	461	-234	-312
Share of results of companies accounted for using the equity method after taxes	47	805	892	-89	194	904
Net Income Before Tax	2903	1282	1122	-2352	1871	3381
Income tax	-1406	-431	-146	996	-391	-1220
Net income for the period from continuing operations	1497	851	976	-1356	1480	2161
Net income for the period from continuing operations attributable to minority interests	-75	28	39	-42	-43	-40
Net Income For The Period From Continuing Operations Attributable To The Parent	1422	879	1015	-1398	1437	2121
Net income for the period from discontinued operations after taxes	747	-684	597	0	0	0
Net income for the period from discontinued operations attributable to minority interests	-109	0	0	0	0	0
Net Income For The Period From Discontinued Operations Attributable To The Parent	638	-684	597	0	299	0
Total Net Income Attributable To The Parent	2060	195	1612	-1398	1736	2121

Table 9.2: Repsol's Profits and Losses account (P&L). Source: Repsol

Year	Sales	Brent
2005	48024	59,65
2006	51355	66,80
2007	52098	74,68
2008	57740	97,68
2009	45827	64,09
2010	53663	80,65
2011	60122	112,26
2012	55780	111,55
2013	46089	108,44
2014	45433	89,77
2015	39582	54,40
2016	34556	46,00
2017	41242	55,71

Table 9.3: Relation between Repsol's sales and Brent quotation. Source: Own development

Income Statement									
Million euros	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	*% over sales*	**2018e**	**2019e**
Price Barrel						**55**		**70**	**80**
Sales	55780	46089	45433	39582	34556	41242		51113	53511
Services rendered and other income	1442	765	409	155	133	426	*1.03%*	528	553
Changes in inventories of finished goods and work in progress inventories	-379	-241	-224	-524	129	206	*0.50%*	255	267
Income from reversals of impairment losses and gains on disposal of non-current assets	273	19	290	661	1625	864	*2.09%*	1071	1121
Allocation of grants on non-financial assets and other grants	13	1	1	0	0	0		0	0
Other operating income	723	697	1383	1867	990	710	*1.72%*	880	921
Operating Revenue	57852	47330	47292	41741	37433	43448		53847	56373
Supplies	-43744	-38439	-38254	-28833	-23615	-30251	*-73.35%*	-37491	-39250
Personnel expenses	-1975	-1671	-1729	-2129	-2501	-1892	*-4.59%*	-2345	-2455
Other operating expenses	-5825	-4610	-4847	-6455	-5930	-5195	*-12.60%*	-6438	-6740
Depreciation and amortization of non-current assets	-2499	-1520	-1796	-3124	-2529	-2399	*-5.82%*	-2973	-3113
Impairment losses recognised and losses on disposal of non-current assets	-143	-131	-588	-3924	-947	-922	*-2.24%*	-1143	-1196
Operating Expenses	-54186	-46371	-47214	-44465	-35522	-40659		-50390	-52755
Operating Income / EBIT	3666	959	78	-2724	1911	2789		3457	3619
Finance income	151	94	134	150	176	194	*0.47%*	240	252
Finance expenses	-976	-651	-576	-707	-741	-677	*-1.64%*	-839	-878
Changes in the fair value of financial instruments	20	-129	529	1052	189	34	*0.08%*	42	44
Net exchange gains/ (losses)	23	125	-304	-204	94	151	*0.37%*	187	196
Impairment and gains/ (losses) on disposal of financial instruments	-28	79	369	170	48	-14	*-0.03%*	-17	-18
Financial Result	-810	-482	152	461	-234	-312		-387	-405
Share of results of companies accounted for using the equity method after taxes	47	805	892	-89	194	904	*2.19%*	1120	1173
Net Income Before Tax	2903	1282	1122	-2352	1871	3381		4190	4387
Income tax	-1406	-431	-146	996	-391	-1220	*Assumption of 40% due to historical*	-1676	-1755
Net income for the period from continuing operations	1497	851	976	-1356	1480	2161		2514	2632
Net income for the period from continuing operations attributable to minority interests	-75	28	39	-42	-43	-40		-12	-20
Net Income For The Period From Continuing Operations Attributable To The Parent	1422	879	1015	-1398	1437	2121		2503	2613
Net income for the period from discontinued operations after taxes	747	-684	597	0	0	0		0	0
Net income for the period from discontinued operations attributable to minority interests	-109	0	0	0	0	0		0	0
Net Income For The Period From Discontinued Operations Attributable To The Parent	638	-684	597	0	299	299		102	259
Total Net Income Attributable To The Parent	2060	195	1612	-1398	1736	2121		2605	2872

Table 9.4: Repsol's P&L and forecast: Neutral scenario. Source: Own development

Income Statement									
Million euros	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	*% over sales*	**2018e**	**2019e**
Price Barrel						**55**		**85**	**95**
Sales	55780	46089	45433	39582	34556	41242		53741	56275
Services rendered and other income	1442	765	409	155	133	426	*1.03%*	555	581
Changes in inventories of finished goods and work in progress inventories	-379	-241	-224	-524	129	206	*0.50%*	268	281
Income from reversals of impairment losses and gains on disposal of non-current assets	273	19	290	661	1625	864	*2.09%*	1126	1179
Allocation of grants on non-financial assets and other grants	13	1	1	0	0	0		0	0
Other operating income	723	697	1383	1867	990	710	*1.72%*	925	969
Operating Revenue	57852	47330	47292	41741	37433	43448		56616	59285
Supplies	-43744	-38439	-38254	-28833	-23615	-30251	*-73.35%*	-39419	-41278
Personnel expenses	-1975	-1671	-1729	-2129	-2501	-1892	*-4.59%*	-2465	-2582
Other operating expenses	-5825	-4610	-4847	-6455	-5930	-5195	*-12.60%*	-6769	-7089
Depreciation and amortization of non-current assets	-2499	-1520	-1796	-3124	-2529	-2399	*-5.82%*	-3126	-3273
Impairment losses recognised and losses on disposal of non-current assets	-143	-131	-588	-3924	-947	-922	*-2.24%*	-1201	-1258
Operating Expenses	-54186	-46371	-47214	-44465	-35522	-40659		-52981	-55479
Operating Income / EBIT	3666	959	78	-2724	1911	2789		3634	3806
Finance income	151	94	134	150	176	194	*0.47%*	253	265
Finance expenses	-976	-651	-576	-707	-741	-677	*-1.64%*	-882	-924
Changes in the fair value of financial instruments	20	-129	529	1052	189	34	*0.08%*	44	46
Net exchange gains/ (losses)	23	125	-304	-204	94	151	*0.37%*	197	206
Impairment and gains/ (losses) on disposal of financial instruments	-28	79	369	170	48	-14	*-0.03%*	-18	-19
Financial Result	-810	-482	152	461	-234	-312		-407	-426
Share of results of companies accounted for using the equity method after taxes	47	805	892	-89	194	904	*2.19%*	1178	1234
Net Income Before Tax	2903	1282	1122	-2352	1871	3381		4406	4613
Income tax	-1406	-431	-146	996	-391	-1220	*Assumption of 40% due to historical*	-1762	-1845
Net income for the period from continuing operations	1497	851	976	-1356	1480	2161		2643	2768
Net income for the period from continuing operations attributable to minority interests	-75	28	39	-42	-43	-40		0	0
Net Income For The Period From Continuing Operations Attributable To The Parent	1422	879	1015	-1398	1437	2121		2643	2768
Net income for the period from discontinued operations after taxes	747	-684	597	0	0	0		-12	-20
Net income for the period from discontinued operations attributable to minority interests	-109	0	0	0	0	0		0	0
Net Income For The Period From Discontinued Operations Attributable To The Parent	638	-684	597	0	299	299		102	259
Total Net Income Attributable To The Parent	2060	195	1612	-1398	1736	2121		2734	3008

Table 9.5: Repsol's P&L and forecast: Positive scenario. Source: Own development

Income Statement									
Million euros	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	*% over sales*	**2018e**	**2019e**
Price Barrel						**55**		**50**	**45**
Sales	55780	46089	45433	39582	34556	41242		40052	39227
Services rendered and other income	1442	765	409	155	133	426	*0,38%*	154	151
Changes in inventories of finished goods and work in progress inventories	-379	-241	-224	-524	129	206	*0,37%*	150	146
Income from reversals of impairment losses and gains on disposal of non-current assets	273	19	290	661	1625	864	*4,70%*	1883	1845
Allocation of grants on non-financial assets and other grants	13	1	1	0	0	0			
Other operating income	723	697	1383	1867	990	710	*2,86%*	1147	1124
Operating Revenue	57852	47330	47292	41741	37433	43448		43386	42493
Supplies	-43744	-38439	-38254	-28833	-23615	-30251	*-68,34%*	-27371	-26807
Personnel expenses	-1975	-1671	-1729	-2129	-2501	-1892	*-7,24%*	-2899	-2839
Other operating expenses	-5825	-4610	-4847	-6455	-5930	-5195	*-17,16%*	-6873	-6732
Depreciation and amortization of non-current assets	-2499	-1520	-1796	-3124	-2529	-2399	*-7,32%*	-2931	-2871
Impairment losses recognised and losses on disposal of non-current assets	-143	-131	-588	-3924	-947	-922	*-2,74%*	-1098	-1075
Operating Expenses	-54186	-46371	-47214	-44465	-35522	-40659		-41172	-40323
Operating Income / EBIT	3666	959	78	-2724	1911	2789		2215	2169
Finance income	151	94	134	150	176	194	*0,51%*	204	200
Finance expenses	-976	-651	-576	-707	-741	-677	*-2,14%*	-859	-841
Changes in the fair value of financial instruments	20	-129	529	1052	189	34	*0,55%*	219	215
Net exchange gains/ (losses)	23	125	-304	-204	94	151	*0,27%*	109	107
Impairment and gains/ (losses) on disposal of financial instruments	-28	79	369	170	48	-14	*0,14%*	56	54
Financial Result	-810	-482	152	461	-234	-312		-271	-266
Share of results of companies accounted for using the equity method after taxes	47	805	892	-89	194	904	*0,56%*	225	220
Net Income Before Tax	2903	1282	1122	-2352	1871	3381		2169	2124
Income tax	-1406	-431	-146	996	-391	-1220	*Assumption of 40% due to historical*	-867	-850
Net income for the period from continuing operations	1497	851	976	-1356	1480	2161		1301	1274
Net income for the period from continuing operations attributable to minority interests	-75	28	39	-42	-43	-40		0	0
Net Income For The Period From Continuing Operations Attributable To The Parent	1422	879	1015	-1398	1437	2121		1301	1274
Net income for the period from discontinued operations after taxes	747	-684	597	0	0	0		-12	-20
Net income for the period from discontinued operations attributable to minority interests	-109	0	0	0	0	0		0	0
Net Income For The Period From Discontinued Operations Attributable To The Parent	638	-684	597	0	299	299		102	259
Total Net Income Attributable To The Parent	2060	195	1612	-1398	1736	2121		1392	1514

Table 9.6: Repsol's P&L and forecast: Negative scenario. Source: Own development

Income Statement									
Million euros	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	*% over sales*	**2018e**	**2019e**
Price Barrel						**55**		**70**	**80**
Sales	55780	46089	45433	39582	34556	41242		51113	53511
Services rendered and other income	1442	765	409	155	133	426	*1.03%*	528	553
Changes in inventories of finished goods and work in progress inventories	-379	-241	-224	-524	129	206	*0.50%*	255	267
Income from reversals of impairment losses and gains on disposal of non-current assets	273	19	290	661	1625	864	*2.09%*	1071	1121
Allocation of grants on non-financial assets and other grants	13	1	1	0	0	0		0	0
Other operating income	723	697	1383	1867	990	710	*1.72%*	880	921
Operating Revenue	57852	47330	47292	41741	37433	43448		53847	56373
Supplies	-43744	-38439	-38254	-28833	-23615	-30251	*-73.35%*	-37491	-39250
Personnel expenses	-1975	-1671	-1729	-2129	-2501	-1892	*-4.59%*	-2345	-2455
Other operating expenses	-5825	-4610	-4847	-6455	-5930	-5195	*-12.60%*	-6438	-6740
EBITDA	6308	2610	2462	4324	5387	6110		7572	7928
Depreciation and amortization of non-current assets	-2499	-1520	-1796	-3124	-2529	-2399	*-5.82%*	-2973	-3113
Impairment losses recognised and losses on disposal of non-current assets	-143	-131	-588	-3924	-947	-922	*-2.24%*	-1143	-1196
Operating Expenses	-54186	-46371	-47214	-44465	-35522	-40659		-50390	-52755
Operating Income / EBIT	3666	959	78	-2724	1911	2789		3457	3619
Finance income	151	94	134	150	176	194	*0.47%*	240	252
Finance expenses	-976	-651	-576	-707	-741	-677	*-1.64%*	-839	-878
Changes in the fair value of financial instruments	20	-129	529	1052	189	34	*0.08%*	42	44
Net exchange gains/ (losses)	23	125	-304	-204	94	151	*0.37%*	187	196
Impairment and gains/ (losses) on disposal of financial instruments	-28	79	369	170	48	-14	*-0.03%*	-17	-18
Financial Result	-810	-482	152	461	-234	-312		-387	-405
Share of results of companies accounted for using the equity method after taxes	47	805	892	-89	194	904	*2.19%*	1120	1173
Net Income Before Tax	2903	1282	1122	-2352	1871	3381		4190	4387
Income tax	-1406	-431	-146	996	-391	-1220	*Assumption of 40% due to historical*	-1676	-1755
Net income for the period from continuing operations	1497	851	976	-1356	1480	2161		2514	2632
Net income for the period from continuing operations attributable to minority interests	-75	28	39	-42	-43	-40		-12	-20
Net Income For The Period From Continuing Operations Attributable To The Parent	1422	879	1015	-1398	1437	2121		2503	2613
Net income for the period from discontinued operations after taxes	747	-684	597	0	0	0		0	0
Net income for the period from discontinued operations attributable to minority interests	-109	0	0	0	0	0		0	0
Net Income For The Period From Discontinued Operations Attributable To The Parent	638	-684	597	0	299	299		102	259
Total Net Income Attributable To The Parent	2060	195	1612	-1398	1736	2121		2605	2872

Table 9.7: Repsol's P&L and forecast: Neutral scenario. EBITDA. Source: Own development