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RIVERSIDE: A PRIVATE EQUITY ACQUISITION

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ABSTRACT

Private equity (PE) boomed in the 2000's, aligned with an increase in their debt levels. Traditionally, PE firms bought target companies using mostly debt to create short term growth and sell profitably. Nowadays, some PE firms transform their targets to create sustainable value. Yet, little work is published on leveraged buyouts (LBO) in the middle market with sustainable value creation for the target. The objective of this work is therefore to develop a real-world case study analyzing if a PE acquisition with LBO in the middle market fits the fund's strategy for sustainable growth. This single case study was developed in Spain using qualitative and quantitative research conducted in 2020. The case studies the successful 2015 investment of the American PE firm Riverside in Euromed, a Spanish herbal extracts manufacturer. It shows that PE can benefit from sustainable improvement of a target company if all steps of an investment decision-making process are executed rigorously.

Keywords: Private equity, Leveraged buyout, Middle market, Growth, Business valuation

PLAGERISM STATEMENT

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1. INTRODUCTION

The private equity industry received a lot of attention starting in the 1980's due to its high level of success, attaining its boom just before the 2008 financial crisis. Between 2006 and 2008, global private equity firms raised about €2 trillion of capital. Private equity (PE) is an alternate source of investment capital that is not listed in a public exchange (Segal, 2020). A PE firm is an organization that raises funds from high-net-worth individuals and institutions to finance transactions of buying and selling companies in a preset amount of years at a target profit through an exit strategy (Barber & Goold, 2007). PE executions vary from leveraged buyouts (LBO), using a combination of debt and equity to fund a transaction, to venture capital (VC), investing equity in a young company (Chen, 2020b). Nonetheless, the boom years of PE firms aligned with increase in their debt levels (Chen, 2020b), showing the contribution of LBO for PE success. However, PE success is not just about using debt in acquisitions in order to maximize returns. Consequently, it is important to understand how PE works and makes profit.

There are two ways PE firms make their money. First, a PE firm usually charges investors a 2% annual management fee of assets managed. Second, PE firms require approximately 20% of all the fund's profits from selling companies in their portfolio (Chen, 2020b). Most of such transactions happen in the middle ($50 million-$500 million) to lower-middle market ($10 million-$50 million). A common exit strategy is to sustainably improve a middle market company in order to sell it at a large profit to a large corporation. Given that the middle market has more sellers than buyers, a PE can acquire a target company at optimum price for a higher return (Segal, 2020). Finally, each fund will have specific criteria required for the investment, such as investment amount, which the PE firm must follow for its success (Barber & Goold, 2007). Even with funds of trillions of euro under PE management (Segal, 2020), there are debates on the advantages and disadvantages of PE.

The concept of PE offers several advantages for both target companies and investors. First, one of the greatest advantages for target companies is the access to liquidity as alternative to high interest bank loans. Liquidity and know-how for fast development and high growth is an advantage for every company receiving PE investments (GoCardless, n.d.). Second, good PE firms add sustainable value by executing excellent financial controls and enhancing performance including revenue, margin and cash flow. Furthermore, they improve governance structures by undertaking the roles of corporate managers and boards of directors to allow fast decision making. Additionally, PE firms generally have more freedom on how to use investor's money than regulated public companies due to their structure as private partnership (Barber & Goold, 2007). Third, by asking top managers of the target company to personally invest in their portfolios, PE firms assure the management's commitment. Possible large rewards due to a profitable sale at the end of the ownership make top management work more motivated. Finally, the business model of PE with use of debt and flexible exit strategies gives the investing company financing and tax advantages (Barber & Goold, 2007).

The following disadvantages can be considered criticisms of PE. First, it can be difficult to liquidate an investment increasing the risk on returns for investors (Chen, 2020b). PE firms often face the difficulty to find a buyer after the time of investment. Since the value has already been increased there is often little potential for further growth of the target company, making it less attractive to buyers (GoCardless, n.d.). Moreover, there is no "ready-made order book" matching buyers with sellers. So, the PE firm must search actively for a buyer to sell the target company (Chen, 2020b). Second, critics claim that PE is just about asset stripping and seeking profit for the PE firm (Barber & Goold, 2007) even if the target company continues to struggle financially when a LBO has left a heavy debt burden (Segal, 2020). Third, in order to execute a successful investment, a PE firm must have the following skills identified by Barber and Goold (2007) which are hard to find and replicate in every transaction. To start, PE firms must dedicate enough capacity to proactively search for a good target with improvement opportunities. Additionally, the success of PE is very limited if it is not able to put together a professional, highly motivated executive team inside the target company and identify few strategic levers to improve the company's performance. Last, managing a good balance between acquisitions and disposals is required. PE firms should already develop a profitable exit strategy during the acquisition process, which then gets adapted during the time of the project.

The arguments against PE are rooted in lack of research, plan for sustainable operation improvement and profitable exit strategy during the investment decision-making process for value creation. We believe that PE can generate and benefit from sustainable improvement of target companies if the main steps for a PE investment decision-making process are executed rigorously and with professionalism. Due to the great supply and little demand for good middle market companies to buy, we see further potential for PE to create sustainable growth in the middle market. Case studies that improve business judgement for investment decision-making processes generating sustainable growth can better prepare future fund managers for successful investments. The objective of this work is therefore to develop a real-world case study that analyzes in-depth if a private equity acquisition in the middle market fits the fund's strategy for sustainable growth, applying an LBO model with returns and risks. To develop this case, we analyzed Riverside's investment in Euromed, a producer of herbal extracts in Spain. Riverside, an American PE, created sustainable growth by improving R&D, enhancing management and international sales team and by completing an add-on acquisition. These actions resulted in doubled earnings and about 30% increase in production capacity. Two years ahead of schedule, Riverside sold Euromed in a trade sale exit strategy to Dermapharma at a great return for investors (The Riverside Company, 2019). Riverside was selected as a single case study because it is a success story of how a PE using LBO in the middle market can create sustainable growth for a target company at a high return for investors. The case study guides the reader through the context and analysis of a real-life situation so that he or she can comprehend the reasons under the decisions made. Thus, it will serve as a learning tool to hone the business skills needed to successfully execute the decision-making process of a PE investment using LBO for sustainable growth.

2. PRESENTATION OF THE CONTEXT

As pioneers of teaching with case studies, Harvard Business School Publishing (HBSP) provides over 20.000 business cases from more than 50 prominent institutes around the world (Harvard Business School Publishing, n.d.). Emerald Case Studies is another source for case studies that has over 1.000 teaching cases across different business and management subjects (Emerald Insights, 2020). Even though most private equity transactions occur in the middle market (Segal, 2020), most case studies found in both HBSP and Emerald Insights Case Studies focus on large buyouts (Chaplinsky, Oppenheimer, & Patra, 2017; Raviv, Feuer, Mehrotra, & Rossman, 2017; Smith, Halperin, & Friedman, 2017; Stowell & Rainor, 2017). Large buyouts constitute transactions larger than $500 million (Segal, 2020). Furthermore, private equity's new phase is to create sustainable value rather than just create short-term value (Ulrich & Allen, 2016). Yet, most of the identified LBO cases focus on short-term value creation and heavy use of debt transferred to the target company as exemplified in the Stowell & Rainor (2017) and Smith, Halperin, & Friedman (2017) cases. The heavy use of debt on target company's in these cases led to financial distress of the target company after the PE firm exits the investment. The few cases in the middle market use alternate forms of financing or focus in emerging markets (Ruback & Yudkoff, 2011; Quian Peng & Chow, 2013; Palepu, Khanna, & Bullock, 2007; Harris & Gaede, 2009; Rhodes-Kropf & Burbank, 2013; Loutskina, Sinha, & Ransler, 2010). The literature review on published teaching case studies shows that little work has been published on LBO transaction at the middle market with sustainable value creation for the target company.

The cases retrieved from Emerald Insights (2020), generally from the United States of America (USA), provided evidence that existing works focus on large buyouts (Chaplinsky, Oppenheimer, & Patra, 2017; Raviv, Feuer, Mehrotra, & Rossman, 2017; Smith, Halperin, & Friedman, 2017; Stowell & Rainor, 2017). The cases "Toys "R" Us LBO" and "The Restructuring of Danfurn LLC" are examples of LBOs ending in financial distress due to the large amount of debt transferred to the target company and lack of long-term value creation (Smith, Halperin, & Friedman, 2017; Stowell & Rainor, 2017). The purpose of the cases developed by Raviv, A., Feuer, R.N., Mehrotra, P. and Rossmann, P. (2017) and Stowell & Rainor, (2017) is to illustrate and practice valuation methods used in an LBO which include risk and return analysis such as the ones presented in this case using IRR and multiples.

While over 600 case studies focusing on private equity can be found in HBSP, only six focus on investments in the middle market. These analyzed cases take place in the USA and in emerging economies (Ruback & Yudkoff, 2011; Quian Peng & Chow, 2013; Palepu, Khanna, & Bullock, 2007; Harris & Gaede, 2009; Rhodes-Kropf & Burbank, 2013; Loutskina, Sinha, & Ransler, 2010). The case studies "Gemini Investors", "Cathay Capital: An Entrepreneurial Private Equity Fund with a Cross-Border Investment Model" and "Blue River Capital" focus on the analysis of successful business strategies of PE firms, rather than sustainable improvement of target companies' businesses (Ruback & Yudkoff, 2011; Quian Peng & Chow, 2013; Palepu, Khanna, & Bullock, 2007). Both "Cathay Capital" and "Blue River Capital" additionally analyze unique challenges faced by PE firms working in emerging markets.

"Lonestar Graphite" sets its focus on the introduction of PE to students to develop a business valuation for the first time (Harris & Gaede, 2009). But the large use of debt mentioned in the case to finance possible investments indicates no sustainable growth strategy for the target company. Although the case "Brazos Partners and the Tri-Northern Exit" analyzes a middle-market leveraged buyout group, it's purpose is the development of a successful exit strategy and to take a decision on when to exit from an investment (Rhodes-Kropf & Burbank, 2013). The most suitable case found in HBSP to learn how to develop a sustainable growth strategy for a target company is "Husk Power Systems: Financing Expansion". The objective is to "evaluate how and why the proposed financing structure fits the current stage of the company's development" (Loutskina, Sinha, & Ransler, 2010). However, taking into consideration the small investment size needed by the target company the case focuses on the development of a start-up in an emerging economy. Moreover, the financing structure offered by the PE firm in this case is not a leveraged buyout, but a short-term debt in form of a convertible note (Loutskina, Sinha, & Ransler, 2010).

Thus, there is a need for case studies that focus on the development of business skills and judgements for an investment decision in the middle market, using LBO with the purpose to create sustainable growth. The original contribution of this work is a case study of sustainable value creation measures successfully implemented by a private equity firm for an investment decision in the middle market. Moreover, the investment is between USA and Spain in an established industry. The information presented in this case allows to answer the key questions for a private equity investment decision (Martínez, 2012):

- What is the PE investing in?
- Why should the PE make the investment?
- What does the PE intend to do with the target company to obtain a return on investment?
- What is the expected return and price to get that return?
- What are the quantified risks in the investment?

3. METHODOLOGY

This work uses a single case study design as a research method. A single case study is suitable when the research explains a current event and traces a process over time (Ying, 2017). The case study describes the business situation set in 2015 of a private equity's decision-making process to acquire a target company. The companies analyzed for this case study were Riverside, the PE firm, and Euromed, the target company. Riverside's investment in Euromed was selected as a single case study because it is a success story of how a PE using LBO in the middle market can create sustainable growth for a target company at a high return for investors. The aim of the case study is to perform an in-depth analysis of a real-world situation and identify the problem in order to serve as a learning tool on private equity investment decisions. Subsequently, different valuation scenarios are evaluated, and a viable action plan is proposed from this analysis. Different methods were used to develop the case study, described as follows.

3.1. Qualitative Methods

Qualitative research was conducted to understand and obtain the necessary information to present the context, business situation, problem and the decision that had to be made in the case. Both primary and secondary sources were used. Primary research consisted of two face-to-face in-depth interviews via a video conference platform. Both interviews were conducted separately to avoid bias in the answers of each respondent; the presence of the other interviewee could influence their openness. Eduardo Martínez Abascal, professor of Financial Management at IESE Business School, served as moderator for the first interview. Martínez Abascal has developed over 90 different publications of teaching material including case studies, teaching notes and technical notes. Given his vast expertise, he contributed to this case study as a consultant for its development. The second interview was moderated by Martí Sagarra, professor of Multinational Finance at the University of Barcelona (UB). He served as supervisor for this case study. In both interviews, with top management of Riverside and Euromed, seniority was considered for selection of the moderator. Both authors of this paper assisted the video conferences and took turns asking questions to probe main topics. An in-depth interview guideline with main topics of discussions was elaborated before each interview and shared with each respective respondent to help them prepare for the interview (see Annex A and Annex B). Each interview lasted about two hours. Video was enabled through an online platform to build rapport with the respondents. Due to confidentiality issues, recording these sessions was not authorized by the respondents. However, minutes of the interviews were taken by the two authors of this paper using the interview guide form, which were later compared to validate information and consolidated. The minutes were used as reference in the development of the case study to ensure the accuracy of the information presented.

The first interview was conducted April 13th, 2020 with Rafael Álvarez-Nóvoa, a Riverside Partner in the transacting team based in Spain. He executed the transaction process of acquiring Euromed for the private equity firm. Álvarez-Nóvoa found Euromed in Spain when looking for new investments in the ingredients industry, two years before the acquisition process began. He was a key player in identifying investment opportunity and determining if the investment was aligned with the fund's strategy. The second interview took place on April 28th, 2020 with Xavier Roig, CEO of Euromed, the target company. Although Roig was not directly involved in the transaction, given that the seller was Meda AB, Euromed's parent company at the time, he was influential in the success of the transaction. Top management is directly accountable for the implementation of the private equity's sustainable growth plan and influential in the seller's decision. Additionally, as CEO of Euromed, he was able to provide in-depth insight of Euromed's business model, crucial to determine compliance with the fund's investment criteria and financial analysis.

Secondary research consisted of gathering published material on the internet of both companies and the acquisition to validate and complement the information provided during the interviews. Information validated and complimented with further detail from public sources included product lists, product usage and benefits, production process and sales growth. Published

material included the company's websites, articles and databases with descriptions of the companies and the acquisition.

3.2. Quantitative Methods

Quantitative research allowed for an in-depth financial analysis of the valuation, price proposal and acquisition of the target company. In general, a company's value can be different for different buyers or even between buyer and seller. The value of a company is not the same as the price, which is the amount agreed between buyer and seller. There are different methods for valuating a company (Martínez, 2012). According to Álvarez-Nóvoa (2020), discounted cash flow (DCF) and earnings before interest, taxes, depreciation and amortization (EBITDA) multiple were the two main valuation methods used by Riverside for the acquisition of Euromed. These two methods were recreated and executed for this case study. Secondary sources (Sabi database and Mercantile Registry) were used to retrieve financial data of the target company including historic Balance Sheet and Profit and Loss Statements (P&L) (see Annex C and Annex D). Data analysis up to the date of the acquisition in December 2015 was completed. P&L data analysis included:

- Size of sales, growth and evolution: Used to determine if they were positive, negative or stagnant. The size of sales also indicated the size of the business. Sales growth was indicative of the business's potential.
- Gross margin as percentage of sales, evolution and analysis: Margin size can bring insight on market competition (e.g. large margin can indicate that there is little competition (Martínez, 2012)).
- Operation expenses (Opex) and its evolution analysis: A comparison of Opex with gross margin gives insights on lack of profitability (if that were the case) (Martínez, 2012).
- Profitability analysis: Used to identify net income amount and evolution of other indicators such as return on sales (ROS), return on equity (ROE) and debt. This provided understanding on whether Euromed made enough money to cover its debt and make new investments (Martínez, 2012).

The P&L analysis answered if the target company made money and was profitable.

Analysis of the Balance Sheet included:

- Evaluation of need of funds for operation (NFO): These are the funds required to finance the operations of a company. It gave insights on the company's strategy and were it is investing its funds (Martínez, 2012).
- Analysis of investment in fixed assets and impact in sales: It provided insights on the company's strategy and were it is investing its funds in the long term (Martínez, 2012).
- Debt analysis: Indicated inflow or outflow of funds.
- Evolution of working capital (WC): An assessment of NFO with regards to WC indicated if NFO had increased, WC had decreased or both (Martínez, 2012).

Analysis of the Balance Sheet provided diagnosis of any problems in the company.

Financial statements analysis was then combined with Riverside's investment plan to formulate assumptions (see Annex H and Annex I) used to create a Balance Sheet and P&L forecast for the 5-year duration of the investment. This is what we called our base scenario. Based on the elaborated P&L and Balance Sheet forecasts, a DCF valuation analysis of Euromed, using cash flow for the shareholder, was carried out. DCF are generally the most suitable method to valuate a company because it determines the investments rate of return at a given initial price paid for the target company. It consists of discounting the future cash flows given that the value of a company comes from its capacity to generate cash (Martínez, 2012). Thus, the DCF analysis tries to determine the value of an investment today based on the forecast of how much money it is expected to make in the future (Chen, 2020a). In an investment project, such as the one presented in this case, the acquirer needs to know how much money they get to keep. The cash flow for the shareholder is the cash surplus after everything, including investments, taxes and debt, has been paid. So, cash flow for shareholder is used to calculate the return an investor can expect (Martínez, 2012). Cash flow for shareholder was calculated using the following method:

± Variation of net assets (NA): NA of last year – NA of this year

± Variation of debt: Debt of last year – debt of this year

+ Net income of current year

The calculation was applied to each year of forecast, starting from year of transaction (2015), up to the year of exit (2020).

We also calculated risk using the DCF method. Risk is the variability in expected profits due to changes in cash flow (Martínez, 2012). For this, we made hypothesis on variations that can occur in our assumptions to simulate a worst-case scenario, in which all the negative variations occur at once, and a best-case scenario, in which all the positive variations occur at once. We repeated the DCF analysis for each scenario to quantify risk. Finally, the DCF analysis also allows to determine the success of the exit strategy (selling Euromed for a profit after the 5-year investment) under all three scenarios (best, base and worst) by measuring the return of the investment project. This internal rate of return (IRR) is measured in Excel using the function "IRR ()". A second valuation analysis was made using industry multiples of EBITDA. A valuation with multiples tries to determine the value of a company based on the size of an indicator from the company's income statement, such as EBITDA. The steps used for the valuation using EBITDA multiple is detailed below (Martínez, 2012):

- Determined comparable companies based on industry, size, profitability and that have been recently purchased (we considered last 10 years).
- Identified EBITDA multiple at which comparable companies were purchased and calculated average and median. We increased and decreased multiple based on negotiation range required detailed in results section **5.4.1**.
- Multiplied EBITA multiples average by Euromed's EBITDA in 2015 to obtain enterprise value (EV).
- Subtracted debt and added cash surplus of that year to EV.

Since valuation with multiples requires acquisitions of comparable companies, they are used when a buyer wants a valuation based on market behavior. Comparable companies were determined from the interview with Rafael Álvarez-Nóvoa. Criteria for comparable companies are detailed in the *Valuation Process* section **4.5.4**. The multiple provides the price that should be paid for the company and should be compared with results from DCF method (Martínez, 2012). In summary, the two valuation methods chosen, DCF and EBITDA multiple, allow to valuate a company based on two perspectives: company's performance using DCF and market behavior using multiples to determine an initial price proposal.

3.3. Data Analysis and Interpretation

The results of the case study present the necessary analyses (steps) for a successful private equity acquisition as a learning tool to enhance the skills and business judgment in similar business situation. The analysis includes the target company's compliance with Riverside's investment criteria. The criteria were provided by Rafael Álvarez-Nóvoa in the interview. Additionally, the data interpretation from the valuation analysis of the target company includes the following: DCF analysis with IRR and sensitivity analysis to determine profitability and risk of the 5-year investment and EBITDA multiples to determine appropriate price to ensure profitability. Both the compliance of the criteria and the valuation data interpretation leads to the appropriate proposal for the transaction including bidding price and return for the fund.

4. PRESENTATION OF THE CASE

The information presented in this case allows to answer the key questions for Riverside's investment decision (Martínez, 2012):

- What is Riverside investing in? This requires a deep understanding of Euromed's business and historic financial performance.
- Why should Riverside make the investment? To answer this, an analysis of strategic fit should be made.
- What does Riverside intend to do with Euromed to obtain a return on investment?
- What is the expected return and price to get that return?
- What are the quantified risks in the investment?

Although the investment decision is based on profitability and risk, it is important to first look at the background information, what the investment entails and why Riverside wants to invest.

4.1. Background

Riverside, an American private equity firm, had successfully invested in the ingredient's companies Capol in 2009 and Mec 3 in 2014. They wanted to continue to invest in the ingredient's category. Through Riverside's partner in Spain, Rafael Álvarez-Nóvoa, in 2013 they found Euromed, a leading B2B herbal extracts manufacturer. Although at this moment Euromed was not for sale by its parent company, Meda AB, it allowed Riverside to build a relationship with Euromed and get to know the company well. By the time Euromed was for sale in 2015, Riverside had a head start in knowledge of the business and relationship with management (The Riverside Company, 2019).

In spring 2015 the teaser from Meda AB for the sale of Euromed arrived. This is "an anonymous document that provides just enough nonconfidential information to pique the interest of [possible] buyer" (Snow, 2018, p. 47). After executing a confidentiality agreement, in which buyers assure not to share any confidential information with third parties, Riverside received Euromed's information memorandum, often referred to as deal book. This deal book contains detailed information about financials, customers, products, operations, personnel, legal, etc. of the target company (Snow, 2018). Riverside immediately started elaborating a letter of intent (LOI), also known as a non-binding offer; the first offer made in a sales process. A LOI helps identify similarities and differences between the opinions of both seller and buyer on specific topics of the transaction. It normally consists of an indicative price and its clarification (in the presented case the indicative offer was legally not binding), the conditions of each party, timing issues, a definitive agreement, the confidentiality of the offer and an explanation of the terms of payment (Corporate Finance Institute, 2019a).Due to the former contact between Riverside and Euromed, the private equity firm already knew its target company and was – compared to other possible buyers – able to prepare a more detailed and closer oriented to the target's business LOI. Other investors, such as private equity firms or Euromed's competitors, were interested in buying Euromed as well. Moreover, the mergers and acquisition (M&A) process was characterized by a lot of advisors and consultancies in legal, tax, etc.

After the given period of three weeks, in which all possible buyers could submit their LOI, the phase of negotiation started (Álvarez-Nóvoa, 2020). This phase is intended for the in-detail discussion of concrete terms for the possible contract (Corporate Finance Institute, 2019a). During this time only four to five offerors with the best indicative prices were involved in negotiations with the seller, including Riverside (Álvarez-Nóvoa, 2020). Since both Riverside and Meda AB had set target prices, they collaborated on different issues other than price, such as strategic supply arrangements, to include in the negotiation. In order to reach an agreement on a specific contract, they adapted the zone of possible agreements (ZOPA), the "area where two or more negotiating parties may find common ground" (Halton, 2019).

Following the usual M&A procedure, a due diligence (DD) was exercised from Rothschild, Meda's financial assessor for the transaction, to Riverside (Álvarez-Nóvoa, 2020). In this process "a detailed examination and analysis of every aspect of the target company's operations – its financial metrics, assets and liabilities, customers, human resources, etc." (Corporate Finance Institute, 2019a) is completed. Riverside, on the other hand, contracted an advisor to

review the seller's DD and established an additional DD based on factors like products, markets, insurance, management, personnel, legal and fiscal aspects (Álvarez-Nóvoa, 2020).

Now, Riverside had to decide whether investing in Euromed aligned with the fund's strategy. If so, the private equity firm also had to decide the correct price for a successful investment. After the final agreement, both firms would have to sign the purchase and sale contract, often referred to as sales and purchase agreement (SPA). Additionally to the SPA, as agreed in the negotiations, a supply contract with the company currently owning Euromed was needed.

4.2. Sectoral Information

The first step in an investment decision is to understand the business (Martínez, 2012). From an industry-based view, insight on the industries competitive environment will provide understanding of Euromed's financial performance in 2015. As a producer of herbal extracts, Euromed operated in the botanical extract market, which is a segment of the global biotechnology market (Technavio, 2018). Based on this fact, biotechnology, as parent industry of the botanical extract market, is presented in this section. Market size and segmentation get analyzed, before main drivers, opportunities, key challenges and risks are described. Moreover, paragraph **4.2.6** gives insight in the competitive landscape. An analysis of the market for herbal and traditional products as Euromed's target market follows afterwards.

4.2.1. Market Definition & Application

The biotechnology industry included the development, manufacturing and commercialization of products with the support of advanced biotechnology research. Main activities of participating companies in this sector were product research and development (R&D), technology licensing, product sales as well as research funding (MarketLine, 2019). Biotechnology used technology "to modify and use biological systems for industrial purposes and human welfare" (Technavio, 2018). More accurately, it designed new products or technologies for food, energy, rare diseases or the environment by improvingly changing the structure of plants and animals (Technavio, 2018).

The market could be divided into five different category segments, namely 'Medical/Healthcare', 'Food & Agriculture', 'Environment & Industrial Processing', 'Service Provider' and 'Technology Service'. The most important segment was 'Medical/Healthcare' with a global market share of 58,4% by 2018 (see Table 1). This segment represented over 75% of the market share in Spain in 2014, at the time Riverside was looking for an investment.

Table 1: Biotechnology industry market share of category segmentation

Category	Global market share in 2018 [%]	Market share in Spain in 2014 [%]
Medical/Healthcare	58,4%	75,3%
Food & Agriculture	11,9%	9,6%
Environment & Industrial Processing	11,3%	3,8%
Service Provider	9,9%	9,7%
Technology Service	8,5%	1,7%
Total	100%	100%

Source: MarketLine (2019); MarketLine (2015)

4.2.2. Market Size

The year 2015 was marked by double digit growth of 10,3% down from a growth of 15,1% in 2014 for the biotechnology industry. This growth was expected to decelerate but remain strong. The global biotechnology industry value reached €282,7 billion in 2015 (MarketLine, 2019).

By 2018, the biotechnology industry was expected to grow a 9% versus the previous year and reach a value of €350,5 billion (see

Table 2) which represents a compound annual growth rate (CAGR) of 8,1% between the years of 2014-2018 (MarketLine, 2019).

Table 2: Global biotechnology industry value: € billion

Year	€ billion	% Growth
2014	256,2	15,1%
2015	282,7	10,3%
2016	299,3	5,9%
2017	321,6	7,5%
2018	350,5	9,0%

Source: MarketLine (2019)

The USA represented the greatest share by value (48,2%), followed by Asia-Pacific (24,0%) and Europe (18,1%) (MarketLine, 2019). In 2014, Spain accounted for 33,5% of the European biotechnology industry value reaching €23,6 billion. By 2015 it was projected to grow 9,8% at €23,6 billion. Forecast of Spain biotech industry value for 2018 was €32,6 billion with an annual growth rate of 7,0% between 2017 and 2018 (MarketLine, 2015).

4.2.3. Market Drivers

Main drivers of the biotechnology industry were increasing consumer spending, governmental initiatives to support technological development, new technology, accessible raw materials as well as funding budgets for R&D opportunities. A change in the consumers behavior and therefore consumer spending effected the whole value chain up to the research and production of biotechnological products. Moreover, planned governmental initiatives for the near future supporting technological innovations defined a chance for doing business in this sector in Germany. However, government regulations were very strict in most countries (MarketLine, 2019). Due to the importance of automated and semi-automated manufacturing and packaging equipment, as well as efficient and sustainable information technology systems like databases or enterprise resource planning (ERP) systems, technology was one of the most important market drivers. A distribution network of reliable suppliers and the importance of high-quality products let raw materials be an additional driver. The gained funding options from companies determined their financial resources for the R&D of new products (MarketLine, 2019).

4.2.4. Market Opportunities

First Research (2019) states four different opportunities for companies operating in the industry. The first market opportunity was ‘ingredient awareness’. In 2015, many people were more conscious about ingredients in the food they bought than in previous years. This awareness of healthy ingredients “could drive growth among consumers who [wanted] to know the quality of ingredients used in food and other consumable goods” (First Research, 2019). By offering products from natural botanicals, companies could attract more customers and thus, increase their sales. The second prospect for companies in this industry was ‘sports performance supplements’. With more consumers engaged in athletic activities, the interest in maintaining health and fitness concerns increased, which led to more people seeking nutritional food supplements. The ‘weight loss market’ as a third opportunity focused on the obesity epidemic in several countries around the world, mainly the USA. The awareness of this issue, awoken by governments and health organizations, increased the demand for healthy food alternatives. Lastly, the ‘growth in e-commerce’ gave companies the possibility to use the increasing demand of consumers via internet. Online education and targeted marketing could help promote a specific demographic market and increase not only the company’s revenue, but also its reputation.

4.2.5. Key Market Challenges & Risks

Although the industry was growing both at a global and local level in Spain, there were several challenges and risks that had to be taken into consideration. First, government requirements for ingredients quality were high. Officials in Europe scrutinized the use of unapproved or prohibited ingredients. Keeping up with requirements and guidelines faced a threat to disrupt some of the industries supply chain. Second, the biotechnology industry had a high liability risk. Claims that resulted from contaminated or tampered products led to costly litigation procedures. Third, negative claims also caused the risk of negative publicity, especially if there was noncompliance with regulation standards. Finally, many manufacturers produced products

with similar ingredients that could not always be protected with patents (First Research, 2019). Even if they had some protection of intellectual property, "bio-generics" were a growing concern (MarketLine, 2015) since they are similar or comparable to the original in composition (Merriam-Webster, n.d.).

4.2.6. Competitive Landscape

The global competitive landscape of biotechnology was dominated by firms that operated in the medical and healthcare segment. Particularly in economies where the biotechnology industry was more mature such as Europe, Japan and the United States, there was rivalry among several start-ups, SMEs together with a small number of large companies. The large revenues of these companies allowed them to invest strongly in R&D in order to create new and innovative products (MarketLine, 2019).

The Spanish competitive market by the end of 2014 is described below based on the Five Forces Analysis. Overall, it was an attractive industry for firms with high R&D capacities and intellectual property due to high entry barriers and moderate competition. Players taken into consideration are companies that had R&D related to biotech as well as offering products using biotech techniques. The buyers of the industry are identified as healthcare providers and B2B end users. On the other hand, suppliers are considered producers of biotech consumables, software and lab equipment (MarketLine, 2015).

- The level of rivalry among competitors was increased in Spain's mature market due to the existence of several start-ups and SMEs competing next to a few large companies such as Astra Zeneca. Many firms looked to differentiate by finding a niche market in which to focus. Regardless of the target company, competitors were on a race to discover new product solutions. Thus, constant, high-risk investments in R&D and clinical trials increased rivalry. However, as the industry was growing, the level of competition also diminished, allowing competitors to increase revenues without cutting into their competitors market shares. A race for innovation in a growing industry created a moderate level of competition (MarketLine, 2015).
- The buyers bargaining power was increased by the presence of large sized buyers ranging from healthcare providers to the agriculture market. Nonetheless, players in the biotech industry had specialized and differentiated products to offer to buyers. Specifically, for ingredients of prescription medicine, there was a possibility that prices were regulated by the government (MarketLine, 2015). Buyers, precisely pharmaceutical companies, had to register ingredients of their medicines in a Drug Master File, used to submit to government agencies for approval. The process for approval took between 2-3 years. Therefore, pharmaceutical companies only had 1 or 2 suppliers for each type of ingredient. The cost of changing suppliers from the biotech industry due to quality requirements and approvals was high for buyers. Finally, ingredients represented a small percentage of the cost of final products, so buyers rarely changed suppliers (Álvarez-Nóvoa, 2020). Considering the size of buyers was offset by the rigorous certification process requiring high quality biotech products, specifically in the pharmaceutical industry, the buyers bargaining power was moderate (MarketLine, 2015).

- Most importantly, the value of a biotech firm came from its intellectual property, thus they were not very dependent on suppliers. Furthermore, there was little differentiation amongst suppliers for the Spanish biotech market. Manufacturers of lab equipment and software were major suppliers for the biotech industry of which biotech firms had vast choices for quality and cost relationship. Nonetheless, quality raw materials were essentials for players in the biotech market and depended highly on lab equipment. The suppliers of both raw material and lab equipment also served clients in other industries and there was a low probability that biotech firms would vertically integrate to either markets. All things considered, the bargaining power of suppliers was also moderate (MarketLine, 2015).
- Although the growth of the industry was attractive for new entrants, proprietary knowledge in biotech was very high and critical for success. Thus, a lot of investment in R&D was required. Investment in R&D could be a challenge for start-ups as there were high fixed cost and profits were initially low given the long discovery and innovation period to bring a new product to market. Additionally, government regulations were strict and incurred in additional costs. These regulations took time (increasing time to market) and were costly as they required clinical trials and safety testing. Furthermore, these clinical tests had compulsory processes and standards for quality and safety established by different regulators. High entry barriers made the threat of new entrants weak (MarketLine, 2015).
- The main substitutes for the medical biotech industry were therapeutic drugs using chemical synthesis (MarketLine, 2015). However, the effectiveness of synthetics drugs had come into question (Gale, 2018) and therefore contributed to the growth of biotechnology. Patent protection slowed down the threat of alternative chemicals but over time other firms could produce similar products at a lower cost making the threat of substitutes moderate (MarketLine, 2015).

Leading companies in the Spanish biotech industry included AstraZeneca PLC, Esteve Group, Grifols, S.A. and Zeltia, S.A. The first company, AstraZeneca PLC, recorded revenues of $25.711 million in 2013, representing an 8,1% decrease compared to the previous year. Its only business segment was pharmaceuticals. On the other hand, Esteve Group operated in both pharmaceutical and chemical products but did not disclose its financial data. Grifols, S.A. recorded revenues of €1.417,9 million in 2013 with a 6,6% growth. The company had four divisions which included bioscience, diagnostic, hospital and raw materials. Finally, Zeltia, S.A. reported revenue growth of 5,6% in 2013, reaching €103,9 million in revenues. The group focuses in biopharmaceuticals and consumer chemicals (MarketLine, 2015). Euromed had revenues of about €37 million in 2013 with a 9% growth (Sabi, 2020).

Global competitors of natural extracts that had recently been acquired by Naturex, an American manufacturer of natural ingredients, included Berkem from France, Chart Corporation from the United States of America and Hammer Pharma from United Kingdom. The latter, Hammer Pharma, had the most amount of revenue with sales of €7,7 million. The American company Charter Corporation followed with sales of €5,7 million. Berkem was the smallest of the three with €4 million in sales (Álvarez-Nóvoa, 2020).

4.2.7. Target Market: Herbal / Traditional Products

Closely tied to the biotechnology industry, herbal/traditional medicine was making a strong comeback as consumers were looking for "safer and natural" alternatives (Euromonitor International, 2011). Natural health products analyzed in this section include the categories of 'OTC', 'Sports Nutrition', 'Vitamins and Dietary Supplements' and 'Weight Management and Wellbeing' (Euromonitor International, 2019). Pharmaceutical companies also returned to sources of herbal medicine since most synthetic drugs did not have the expected health impact (Gale, 2018). Nonetheless, increasing regulations in Western Europe, North America and Asia-Pacific constrained sales (Euromonitor International, 2011). By 2015, the total market size of natural consumer health products reached $40.000 million, representing a 4% global growth. Asia Pacific represented nearly 60% of the market size, followed by Western Europe with 16% and North America with 15% (Euromonitor International, 2019). Spain's herbal product sales increased 2,37%, reaching €302 million (Euromotinor International, 2020b). Although the Spanish growth rate was lower than the global growth rate, Spanish consumers showed a growing trend of going back to traditional products which resulted in a greater demand for herbal products. This trend of going back to traditional products was forecasted to continue as far as 2024 (Euromonitor International, 2020a).

Dietary supplements, substances intended to fill a nutritional or wellness gap, drove the sales in herbal products, followed by cough, cold and allergy remedies as the second largest global category. At a global level, ginseng led the market in natural supplements reaching a market size of $2,1 billion in 2014. Other supplements such as ginkgo, biloba and echinacea also had high levels of consumer awareness. However, ginseng's lead in the market could be explained by consumer perceptions of a 'cure all' product, which contributed to its global popularity (Euromonitor International, 2019).

The growth of natural supplements was driven by new ingredients and new demands. The best-known ingredients such as ginseng and ginkgo dominated the market. However, consumers were looking to expand benefits and functionality either through newer supplements or a combination of supplements to satisfy a new need such as immune response and brain function (Euromonitor International, 2019).

4.3. The Target Company: Euromed in 2015

The target company is the acquired entity in an investment. To further the understanding of the business from a resource-based view (focused on how individual firms differ from each other (Peng, 2013)), this section introduces Euromed as the target company and gives insight on its core business. First, main products, the sales structure and customers get analyzed. Then, paragraph **4.3.2** explains the production process and operations. The management, personnel and business climate are described afterwards. Finally, Euromed's strategy analysis closes this section.

4.3.1. The Business: Products, Sales & Customers

The Spanish company Euromed sold herbal extracts and natural active substances used as components for the final products of the pharmaceuticals, nutraceuticals, functional foods and cosmetic industries (Euromed S.A., n.d.). The company was global leader in two types of extracts due to their proven track record. The first types of extracts were taken from the Milk Thistle seed and were used as ingredients to treat liver failure. The second extracts came from the fruit of the Saw Palmetto plant growing in the Everglades, Florida. This last extract ingredient was used primarily to treat prostate cancer, but it was also used to treat hair loss (Álvarez-Nóvoa, 2020). Nonetheless, in 2015 Euromed had an extensive product list of over 20 different botanical species extracts including gingko biloba dry extract intended to treat memory loss due to aging, ginseng dry extract used to fight fatigue and echinacea angustifolia root dry extract used to promote and support the immune system (Euromed S.A., 2015b). Traditional products included St. John's Wort extract to treat depression and Horse Chestnut (The Riverside Company, 2019) for chronic venous insufficiency (National Center for Complementary and Integrative Health, 2016). Most of their products were free of additives and genetically modified organisms known as GMOs (The Riverside Company, 2019), enhancing Euromed's natural image. GMOs are life forms whose genetic makeup has been modified in a laboratory to obtain a desired trait (Fridovich-Keil & Diaz, 2020). Euromed's manufacturing plant in Mollet del Valles, Spain extracted more than 4.000 tons of biomass a year to produce about 600 tons of extracts to meet their customer's needs (Euromed S.A., 2015a). Revenue reached about €42,6 million in 2015 with 7% growth (see Annex C and Annex D for financial data).

Pharmaceuticals were Euromed's main customers, accounting for up to 65% of their sales (The Riverside Company, 2019). Euromed's herbal extracts and natural active substances were the Active Pharmaceutical Ingredient (API) for pharmaceutical products. API suppliers needed to be in a Drug Master File submitted to obtain approvals and certifications (Álvarez-Nóvoa, 2020) such as approvals from the Food and Drug Administration (FDA). The Drug Master File contains product traceability and analysis of impurities in the product (Roig, 2020). As part of their services, Euromed gave clients the option of providing documentation required for Drug Master File and other certifications (Álvarez-Nóvoa, 2020). Clients in this industry included global companies such as Pfizer and Merck. However, 30% of their total sales came from its parent company, Meda AB.

The nutraceuticals industry accounted for about 30% of Euromed's sales (The Riverside Company, 2019). Nutraceuticals are substances that provide a physiological benefit or protect against chronic diseases (Nasri, Baradaran, Shirzad, & Rafieian-Kopaei, 2014). This industry included clients like Herbalife that developed and sold dietary supplements (Roig, 2020) such as products for healthy aging or digestive health (Herbalife International of America, Inc., 2020). Although both nutraceuticals and pharmaceuticals had ingredients that cure or prevent diseases, only pharmaceuticals had governmental sanctions and therefore were much more regulated (Nasri, Baradaran, Shirzad, & Rafieian-Kopaei, 2014). Because nutraceuticals were less regulated, there was more competition for ingredients suppliers. Nonetheless, Euromed guaranteed its clients quality and traceability as well as clinical studies as a competitive advantage. Natural supplements, growing at close to 10% annually in the USA, presented a huge growth opportunity (Álvarez-Nóvoa, 2020).

Finally, only about 5% of their sales went to the functional foods and cosmetic industry (The Riverside Company, 2019). Herbal ingredients, such as aloe vera or olive oil, represent a very small percentage of the components of cosmetics. On the other hand, with the growing trends in health and fitness, herbal ingredients with physiological benefits represented an opportunity for sales growth in the functional foods industry. Nonetheless, this industry was not a mayor target for Euromed at the time (Álvarez-Nóvoa, 2020).

Through their products and services, Euromed supplied more than 350 customers located in 35 countries around the world (Euromed S.A., 2015a). Due to the strength of the phytopharmaceutical (herbal medicines) industry in Germany, the country represented almost 50% of its sales. With the growth of nutritional supplements, the USA became the second most important market. Asia, as a new market with high growth potential, was also important (Roig, 2020).

4.3.2. Production and Operation

All of Euromed's extracts complied with the global Good Manufacturing Practices (GMP) norms, international pharmacopoeias (this is a legally binding collection, elaborated by a governmental authority, with quality standards and specification for medicines in that jurisdiction (World Health Organization, 2020)), and international regulations. Furthermore, Euromed had validated and implemented mandatory methods for manufacture that included inspections to guarantee analytical, chemical and therapeutic (i.e. healing) quality standards. The company also applied their many years of expertise to establish R&D, laboratory analyses, processes and technologies. The main concern during production was the safety and effectiveness of the product (Euromed S.A., n.d.).

So, Euromed controlled the supply chain, from the farmers to the final product, in order to ensure traceability of their products (The Riverside Company, 2019). For starters, Euromed had rigorous procedures in place for botanical sourcing. The company made a strict selection of plant products that complied with the guidelines of Good Agricultural and Collection Practices (GACP) (Euromed S.A., n.d.). In some cases, Euromed sold their own seeds to farmers and oversaw cultivation process. For the cultivation of Saw Palmetto, in which the process of drying

the fruit was critical to guarantee product quality, Euromed installed their own drying plant near the supplier in Florida to control the process (Roig, 2020). Once Euromed received the raw material in their factories, it was conserved in optimum conditions to preserve freshness and integrity. The raw material was also tested in compliance with international regulations and pharmacopoeias. These tests included identification of species, control of active principles and possible impurities such as heavy metals and pesticides (Euromed S.A., n.d.).

Up-to-date technologies were applied for the extraction process. These technologies ranged from multiple extraction methods to specific drying procedures. Additionally, further steps of purification such as liquid-liquid extraction and crystallization were required for highly concentrated botanical derivatives (Euromed S.A., n.d.). The challenge Euromed faced was the drying capacity of an old piece of equipment to produce powder extracts that required a big investment to replace (The Riverside Company, 2019). Furthermore, the current plant in Mollet del Valle already operated at almost maximum of its capacity, limiting ability of significant growth (Álvarez-Nóvoa, 2020). It was also very difficult to increase production capacity of new and existing extracts at their current plant given the available space and machinery (Roig, 2020).

Quality was essential throughout the entire production process in Euromed. Thus, they were committed to continuous improvement of processes and quality control in all the supply chain. Euromed implemented and certified a Quality Assurance System that complied with the ISO 9001 standards, as the basis of their Total Quality Management System (Euromed S.A., n.d.). ISO 9001 is a standard that provides the criteria for a quality management system based on a number of quality management principles that include strong customer focus, involvement of top management, process approach and continuous improvement (ISO, 2020). A third-party verification of the quality system gave clients a guarantee of traceability and compliance of requirements made by the clients. The quality assurance system included raw material testing, during production controls and final extracts analyses. Cutting-edge laboratory instruments were used for identification and quantification of raw materials, extracts and natural active principles (Euromed S.A., n.d.).

In 2015, Euromed had inventory of about €26 million which represented almost 62% of its operating revenue (Sabi, 2020). Euromed stocked up when harvest was high and prices low for two main reasons. First, crop harvest volatility (supply can vary due to weather and geographical factors) made prices fluctuate. Second, some crops' harvests were seasonal. For example, Saw Palmetto only had one harvest a year. By stocking up, Euromed made sure they had enough inventory to meet their clients' demands (Álvarez-Nóvoa, 2020).

4.3.3. Management and Personnel

Euromed had around 165 employees worldwide, of which the majority worked in production. Some of the employees had been working over 30 years in the company, forming a reliable and well-rehearsed team of experts. Xavier Roig, CEO of Euromed, oversaw the company. As a trained pharmacist, he was a very professional and experienced CEO, with specialized knowledge of the production process. He was down-to-earth and passionate about his work. Together with the CFO and COO of the company he formed Euromed's senior management team. Since this team founded the company, they had profound industry expertise and know how (The Riverside Company, 2019). With structural independence from the existing organizational matrix and excellent management of quality, traceability and clinical studies, top management led Euromed as a pioneer in the pharmaceutical industry of Spain and leader in the European herbal extract sector. Moreover, due to the complex production process and required knowledge, Euromed's top management had a major influence on the decision of the company's ownership (Roig, 2020).

The entire management team was formed by the three senior managers and six heads of department including quality control, purchasing, documentation & services, quality assurance, legal department and IT (Euromed S.A., 2015a). The relationship between management and employees could be described as very trust-based, robust and open. Due to top management's transparent and communicative leadership style, the business climate was very good, and employees could enjoy working in the team. Highly motivated workers helped the company achieve its goals and continue its growth plan (Roig, 2020).

4.3.4. Strategy

With the development of new extracts just two years after the company's foundation, Euromed focused from the beginning on growth and customer expansion. Due to the early entrance into the Spanish market, the company excelled its production process and gained worldwide market leadership in the Milk Thistle plant and the Saw Palmetto palm tree extracts, mentioned in section **4.3.1**. The combination of focus on market leadership in these two extracts and further development of new products led to Euromed's rapid ascend as key player in the phytopharmaceutical industry. The expansion to the natural supplement market of the USA in 1995 helped the company grow further. This market grew around 7-8% annually, while the phytopharmaceutical sector grew only around 2-3% (Roig, 2020). Additionally, the expansion helped stabilize the fluctuation of seasonal sales caused by the European climate. Moreover, expanding to another market decreased the dependence on just one market. The following SWOT analysis helps identify internal key strengths (S) and weaknesses (W) of the company in 2015, while opportunities (O) and threats (T) analyze external market influences on the company.

First, Euromed's resources and capabilities must be identified to establish the company's strengths. Afterwards, with help of a VRIO framework (Peng, 2013) we analyze the value (V), rarity (R), inimitability (I), and organization (O) of Euromed's business model. Table 3 gives an overview of the most important resources and capabilities.

Table 3: Euromed's Resources and Capabilities

Euromed's Tangible Resources and Capabilities	
Financial	• Increasing sales and net income in recent years
Physical	• Saw Palmetto drying plants located close to supplier's farms • Commercial offices all around the world
Technological	• Up-to-date technologies applied for the production process • Several patent ownerships
Organizational	• Implemented and certified Quality Assurance System
Euromed's Intangible Resources and Capabilities	
Human	• Highly experienced management team • Over the years developed know-how (about production process) • Open communication and enjoyable business climate
Innovation	• Competitive R&D capabilities and product innovation
Reputation	• High customer satisfaction due to high quality standards and traceability • Strong partnerships within its supply chain network

Source: adapted from Peng (2013)

a. Euromed's Strengths: With the resources and capabilities listed in Table 3, Euromed was able to gain competitive advantage and an important position in the market. Through the close management of quality, traceability and clinical studies, the company was able to create value. The company perfected the quality of its products due to the production process know-how developed over the years. They could guarantee traceability by controlling the process from seed selection and plant cultivation up to the final extract. There were only about five competitors worldwide that had the same quality standards as Euromed (Álvarez-Nóvoa, 2020), indicative of the rarity of Euromed's competitive advantage. Close ties to its original mother company, Madaus in Germany, gave Euromed access to important clinical studies. Another key strength of the company was continuous product differentiation. Working together with business partners in several countries and hemispheres and offering a wide range of products for different types of markets guaranteed sales stabilization over the whole year. Euromed's supply chain network built over the years, its close relationship with suppliers and clients and strict procedures was something its competitors were unable to imitate. Lastly, the flexibility of the organizational matrix structure, the know-how of highly experienced employees and the good business climate were indicators of proper organization. These factors increased both employee satisfaction and motivation and resulted in improvement of the service level and thus customer satisfaction and loyalty (Roig, 2020).

b. Euromed's Weaknesses: Main weakness of Euromed's strategy in 2015 was the lack of financial investment. The company worked at near maximum level of its production capacity (Álvarez-Nóvoa, 2020). By procuring new machinery the company could have eliminated this bottleneck. Additionally, an investment in R&D could lead to the development of new extracts or further improvement of existing products. Furthermore, most of Euromed's products were oriented to pharmaceuticals, neglecting growth opportunities with other industries such as nutraceutical and food. Furthermore, about 30% of their sales were concentrated in one company, Meda AB. Not only was Euromed dependent on one industry, but on one client as well. A focus on pharmaceutical industry also limited innovation and product launches, since the certification process of a new pharmaceutical ingredient could last up to three years. To overcome dependence of the pharma industry and increase production, heavy investment in R&D and machinery was required. But without asking lenders for more debt the company was not able to spend such sums of money.

c. Opportunities for Euromed: Further expansion into the natural supplement market with an annual growth rate of 7-8% was a big opportunity for Euromed to increase the number of clients and growth. Since Euromed had vast experience in applying quality standards that went above and beyond current regulations, it was one step ahead of its competitors in the compliance of upcoming regulations (Roig, 2020). Even so, the natural supplements market allowed for a shorter time to market by eliminating the years of certification required in the pharma industry. Thus, innovation driven by consumer trends could increase sales for Euromed with more frequent product innovations. Greater focus on the natural supplements market also gave Euromed the opportunity to boost sales in territories where this market was growing, such as the USA and Asia.

d. Threats for Euromed: Although the natural supplement market promised a high growth rate, competition was also great. The industry attracted a lot of low-cost competitors, which increased the dynamics of the market. Low-cost products from competition was the biggest threat for Euromed back then. Euromed's high-quality standards and clinical studies were very expensive and increased the final price of the product. Slow industry growth and high exit costs were the only things to consider in the phytopharmaceutical market. The last threat was the great dependence on strategic business partners. Since Euromed sold its products business-to-business, a sustainable client network was key factor to consider. While changing their supplier was difficult for clients, losing them could be considered as even higher risk for Euromed (Roig, 2020).

Euromed's strategy leveraged its strengths for differentiation in high-quality, traceability, and credibility through clinical trials. These competitive advantages were especially valuable for the phytopharmaceutical industry. Thus, of the 35 countries Euromed exported to in 2015, the most strategically important hereby was Germany, as main region for phytopharmaceuticals. Given the growth opportunity in the natural supplements market, the USA, a flourishing center of the natural supplements market, was the second most important region. Even though 95% of the products were sold to customers outside of Spain, keeping the production in Spain and the

USA was cheaper and easier to control. Therefore, Euromed only set up commercial offices in the rest of the countries and exported their products from their production centers in Europe and North America (Roig, 2020).

4.4. The Seller: Meda in 2015

The value of a company can be different to the seller and to the buyer, and therefore so is the price (Martínez, 2012). To prepare a proper investment offer, it was important to understand the value of the company from the seller's perspective to have an idea of how much the seller expects to receive. Additionally, there might be provisions, other than price, that the seller requires. This section sheds light on the ownership history, current owner and reasons for divestment.

4.4.1. Ownership History

Euromed was founded by the corporate parent Madaus in 1971. Madaus led the phytopharmaceutical market in Germany. The company was the first to isolate silymarin from the Milk Thistle seed used to treat hepatic insufficiency (liver failure). Euromed was created as a production center in Barcelona, with lower overhead costs than Germany, to vertically integrate the cultivation of silymarin, the API of Madaus' key products. By 1973 Euromed supplied other types of extracts, such as Saw Palmetto extracts. The main client was Madaus, but Euromed kept looking for more clients, particularly in Germany, Switzerland and France where the phytopharmaceuticals industry was strong. In the 70's and 80's Euromed focused on exports to European pharmaceuticals. However, in the 90's there was a boom in the natural supplements market, specifically in the USA. Therefore, in 1995 Euromed opened a subsidiary in Pittsburgh, USA to manage the natural supplements industry. After this, Euromed exported to Asia, Australia and South America. In 2007 the Italian firm Rottapharm, leader in glucosamine products (Roig, 2020) used to treat conditions caused by the inflammation, breakdown and loss of cartilage in the joints (Mayo Clinic Staff, 2017), acquired Madaus. Euromed continued as a satellite under Rottapharm Madaus with growing sales. The new parent company invested up to €20 million in Euromed between 2007-2014. Finally, an IPO of Rottapharm Madaus failed in 2014 due to unfavorable market conditions leading to "a rapid change in the expectations of investors on European assets" (Bray, 2014). Sweden's Meda AB stepped in and bought Rottapharm Madaus above market price (Roig, 2020) after the pulled IPO, as part of its strategy to create cost synergies (Griffin, 2014).

4.4.2. Current Owner & Reason for Divestment

Meda AB, a publicly listed company, operated as a specialty pharmaceutical firm with revenues of €2.140 million and over 4.000 employees in 2015 (Amadeus, 2020). The company manufactured and marketed pharmaceuticals, nutritional and health products (Bloomberg, n.d.). The products covered different therapeutic areas including dermatology, respiratory, gastroenterology, metabolism, pain and inflammation, among others (S&P Capital IQ, 2020b). Meda AB also offered services such as clinical research, registration and logistics (Bloomberg, n.d.). The divestment of Euromed aligned with Meda's strategy to focus on its core business of

selling and marketing prescription and over the counter pharmaceuticals. At the same time, it would increase their cash flow (Roig, 2020). Nonetheless, there were two key points that Meda AB required from the divestment. First, the company needed to secure Euromed as a long-term supplier for the API of their products with fixed prices. Second, as a publicly listed company, Meda AB required an attractive price offer to maintain their share value (Álvarez-Nóvoa, 2020). The company was clear that they did not want a manager buyout (MBO) (Roig, 2020). An MBO consists of the management team buying the assets and operations of the business (Hargrave, 2019). Thus, the company used Rothschild, an independent financial advisory group, as their assessor for the transaction (Álvarez-Nóvoa, 2020).

4.5. The Buyer: Riverside in 2015

To determine if the project (of investing in Euromed) fits Riverside's strategy, the private equity firm's operation, mission, structure and investment criteria are presented in this section. Furthermore, an analysis of the risks of the operation, plan for acquisition, and funding is detailed. Both risks analysis and plans for acquisition need to be quantified when making assumptions for financial forecast and valuation of the target company (Martínez, 2012). The type of funding presented in paragraph **4.5.5** also has an impact on the valuation analysis of the company.

4.5.1. General Overview of Riverside in 2015

The Riverside Company was founded in USA in 1988 with headquarters New York City. It operated as a private equity firm specializing in a wide range of investment strategies at the smaller end of the middle market companies in North America, Europe and Australasia (S&P Capital IQ, 2020c). Riverside stimulated sustainable growth through new products, expanding markets, operating improvements and add-on acquisitions. Areas in which Riverside invested ranged from technology, computer soft- & hardware, energy, telecommunication, industrial & consumer products, health & medical, up to consumer & industrial service and banking & finance (Capital-Riesgo.es, n.d.). The company preferred to work with sellers that would still be involved in the company to push growth. Riverside delivered a fair and fast process with successful results. Its mission was to create value (The Riverside Company, 2020b). Thus, they used as little leverage as possible to avoid creating financial distress on the target company. When they did use leverage, they did not pass the debt on to the target company (Álvarez-Nóvoa, 2020). This is further explained in the funding section **4.5.5**.

The company had over 300 employees in 15 offices throughout North America, Europe, Asia and Australasia. Riverside Europe had one office in Madrid with five employees (The Riverside Company, 2020a). The Partner in the Madrid office, Rafael Álvarez-Nóvoa, was responsible for the deal flow origination in Spain. He was experienced in identifying new investment opportunities (Álvarez-Nóvoa, 2020). The investment criteria required by the fund were as follows.

Table 4: Fund's Investment Criteria

1.	Target company value should be around €50-€250 million with EBITDA of €5-€25 million.
2.	The target company must be a market leader.
3.	The target company must have a solid business model. A solid business model includes a good margin and competitive advantage.
4.	The target company must have a clear business development plan and growth potential.
5.	The target company must be international, with more that 60% of their sales on exports.
6.	The management team of the target company must be excellent.
7.	Exit option with at least 20-25% return.

Source: Álvarez-Nóvoa (2020)

Riverside's objective was to invest in a company for 5 years to add value and make it grow in order to have a profitable exit (The Riverside Company, 2019).

4.5.2. Risks of the Acquisition

Considering the common objective to increase Euromed's EBITDA, both companies faced three major risks in the upcoming shared time of the operation. First, accounting for 30% of total sales not only gave Meda AB strong bargaining power but made Euromed vulnerable if it lost Meda AB as a client. Furthermore, focus on the European market made Euromed highly dependent on few clients for growth and diversification. Second, the company's focus on a mature pharma industry gave little room for growth. Limited product innovation in the pharma industry due to the long time to market stunted development. Third, Euromed was working at near maximum production capacity. This earlier mentioned bottleneck was a risk for spontaneous peaks in demand and could cause supply shortages. Lower service levels due to shortages could negatively influence customer satisfaction and lead to customer loss. Restricted production capabilities did not only limit increase of existing herbal extract, but also development of new herbal extracts to expand product portfolio for new markets (Álvarez-Nóvoa, 2020).

Both companies, Riverside as investor and Euromed as target, faced several risks when going into the agreement. Although the odds so far were high, it was still not confirmed that Riverside would win the bidding process. Resources invested in the elaboration of the letter of intent had to generally be considered as sunk costs ("money that has already been spent and which cannot be recovered" (Tuovila, 2019)) in the private equity business. Additionally, Riverside didn't have complete knowledge of the production process of the target company. So, they had to trust in the employee's know-how and operational recommendations. Another risk for Riverside was not achieving its goals in five years. The market could develop differently than expected and the desired growth not be achieved. However, the possibility for a bad development of the market was low due to the earlier mentioned market trends like increase in health awareness or demand for natural products (Álvarez-Nóvoa, 2020). Euromed, on the other hand, had to trust

in the private equity firm. It generally happened that new owners of a company want to dictate the operating business or even plan strategic changes like selling whole business units. But Riverside made clear in the negotiation process that they would not impose decisions on the core business and aim towards a sustainable growth of the company (Roig, 2020).

4.5.3. Riverside's Plans for Acquisition

Riverside wanted to obtain sustainable sales growth of over 50% in five years (The Riverside Company, 2019) by focusing on the mayor risks of Euromed's operation (Álvarez-Nóvoa, 2020). In order to address these risks, Riverside planned to take the following actions:

- Reduce the reliance on Meda AB sales by 50%, without reducing total sales (Álvarez-Nóvoa, 2020): The purpose was not to sell less to Meda AB, but to accelerate the increase of sales with other pharmaceuticals and increase sales to the natural supplement industry globally. This would create customer diversification for Euromed. In order to accelerate sales with other clients, Riverside planned on hiring a Scientific Marketing Manager. This new role would add credibility to their sales team by focusing on clinical trials as proof of concept to differentiate Euromed from its competitors. Furthermore, they would push new sales in the USA to grow the share of natural supplements industry clients. Since this industry was less regulated, it would be easier to accelerate growth by reducing time to market of new products. Although nutraceuticals and natural supplements were less regulated, Euromed could capitalize on their product quality by branding their ingredients to create awareness, credibility and differentiation. The branding, such as a certified logo (indicating adherence to quality standards), would be provided to Euromed's clients so that they could use it on their final product. They would also push sales to other clients in Asia and Australasia, especially in Japan, Korea and Australia (Álvarez-Nóvoa, 2020). These actions would increase the size of the sale's "pie" and consequently the dependence of sales to Meda AB would decrease.
- Grow innovation for nutraceutical and natural supplements clients: Most of Euromed's sales were focused on the mature and highly regulated pharmaceuticals industry. Thus, an opportunity to launch new products at a faster rate for nutraceutical clients could be exploited. This implied a change in work culture within Euromed. In 2015 the company's work culture had a pharma-oriented mentality, only focusing on product improvement and developing at most one new product in two years. Riverside wanted to shift Euromed's work culture to an innovative "scientific marketing" perspective (Álvarez-Nóvoa, 2020) of understanding how consumers spend their money on natural supplements, anticipate trends and provide a new solution. To keep up with consumer trends, an increase of up to three product launches a year was projected. Consequently, Riverside planned to create a new Product Development Committee, led by Carten Smith as chairman. Smith would bring over 25 years of experience to the team. Riverside also planned to build an innovation center for R&D with an estimated investment of €2,5 million. The "scientific marketing" perspective would promote R&D (usually an activity done only by Euromed's clients). For example, Euromed would now participate in trade shows to promote their product

innovations and planned agreements with universities would give access to clinical studies (Álvarez-Nóvoa, 2020).

- Increase production capacity: Riverside intended to incorporate an additional working shift in the production plant and replace an old drying machine that limited production with an investment of €2,3 million. (Álvarez-Nóvoa, 2020). The new dryer would double the capacity to produce powder extracts (The Riverside Company, 2019). Riverside also planned to invest in an add-on acquisition of Probelte Biotecnología (Álvarez-Nóvoa, 2020), a developer and manufacturer of ingredients used in natural supplements based in Murcia, Spain (S&P Capital IQ, 2020a). The add-on of Probelte would increase production of water-extracted products (an eco-friendly production method) and allow to produce new extracts. In total, it was expected to increase production by 25% (The Riverside Company, 2019).

4.5.4. Valuation Process

As stated before, Rafael Álvarez-Nóvoa's first contact with Euromed took place in 2013, two years before the actual acquisition process. Although Euromed was not for sale at the time, the first contact was worthwhile since understanding the business is the first step before analyzing financial statements. Financial data reflects how the company operates (Martínez, 2012). This gave Riverside an advantage to really get to know Euromed's operation in order to properly interpret financial data in time to present a well-rounded offer, if they decided to invest. The private equity firm used the DCF method with IRR and EBITDA multiples for business valuation.

Being the most suitable method to valuate a company (Martínez, 2012), the DCF method gave Riverside valuable information about a possible price range for the target company and profitability. Using DCF, Riverside could quantify their restructuring plan (previously detailed in section **4.5.3**) and the return on the investment by calculating internal rate of return (IRR). Calculating the IRR gives information about the profitability of a potential investment. The IRR is "the discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero" (Hayes, 2020a). The NPV is the "difference between the present value of cash inflows and the present value of cash outflows over a period of time" (Kenton, 2020). Since Riverside's objective was a profitable exit strategy, DCF must provide an IRR of at least 25%. But, DCF required a lot of assumptions for accurate forecasting. Main drivers of profitability that required accurate assumptions were initial price paid, sales growth and increase margin/sales from restructuring plan and exit strategy (selling price in five years). Consequently, to develop precise future assumptions and estimate different scenarios it was essential to understand Euromed's business and market dynamics well. Furthermore, even if Riverside studied Euromed's business for two years, uncertainties in combination of assumptions, such as sales growth and operational expenses, to create a forecast could create false expectations. Therefore, DCF was not Riverside's preferred valuation method if used alone (Álvarez-Nóvoa, 2020). Consequently, DCF was just one part of the valuation process. It would serve to prepare a reasonable price range for a comprehensive offer.

Valuation based on multiples, on the other hand, is used to calculate a company's value and compare it with other companies (Corporate Finance Institute, 2019b). Riverside used EBITDA multiples to value Euromed, which is the "most used enterprise value multiple; computed as the proportion of Enterprise Value to [EBITDA]" (Corporate Finance Institute, 2019b). In contrast to the DCF method, a business valuation based on EBITDA multiples uses only data of a specific date (in this case Euromed's EBITDA in 2015) and multiplies it with a reasonable multiple calculated from available information about other market players. Generating a table of comparable companies to calculate Euromed's company value with the right EBITDA multiple was quite challenging for Riverside. Euromed operated in a market niche. Thus, it was hard to find accessible information about comparable firms. However, Riverside was able to generate a table of comparable publicly listed competitors with their EV's and EBITDA's (see Annex L). Comparable companies were located all around the world but worked in the same industry as Euromed. Due to their publicly listed company status, all comparable competitors were bigger than Riverside's target company. By dividing the EV's by each respective EBITDA a multiple was calculated for each comparable firm. The average EBITDA multiple could have been used as orientation for a reasonable multiple to compute Euromed's value in 2015 but publicly listed companies were too big in value to use as reference. Thus, information about former market transactions (also see Annex L) gave insight about possible realistic values for the multiple (Álvarez-Nóvoa, 2020).

4.5.5. Funding

The structure used by the private equity firm to fund this investment would be a simple leveraged buyout using both equity and debt. It would be divided into 50% equity and 50% debt (Álvarez-Nóvoa, 2020). Due to the costly planned investment in capital expenses (capex) and required working capital (WC), Riverside could have used a bullet loan as debt fund. This type of loan schedules a one-time payment of the lump sum agreed in the contract at the end of the term. In such loans the borrowers often "have the option to make no payments over the life of the loan or to make interest-only payments along the way" (Kagan, 2019). Bullet loans usually have higher interest rates than other funding options due to less regular cash flow to the lender. In exchange, banks allow borrowers to have more flexibility to begin expensive projects immediately and adapt the duration of the loan based on the project time expectations (Kagan, 2019). Even though the company's management team had participations in Euromed, Riverside would buy 100% of the target in order to have total control for the restructuring plan. Payment would be made in cash, as required by the seller (Álvarez-Nóvoa, 2020).

When buying the target company, Riverside would not pass the debt on directly to the target company. A new company would be created as special purpose vehicle (SPV) to secure both the buying as well as target company (Álvarez-Nóvoa, 2020). A SPV is a subsidiary of the buyer to isolate assets, keep transactions structured and thus decrease the financial risk for all parties involved. Due to its legal status as new company, this subsidiary can continue operating despite bankruptcy of its parent company (Chen, 2019).

5. RESULTS

There are several steps that needed to be followed to determine if the target company in this case should be acquired by Riverside. This case provides the opportunity to refine business judgement for decision-making in private equity investment as a learning tool by developing business skills used in the following steps adapted from Martínez Abascal (2012):

- Examination of strategic fit with Riverside's criteria for investment,
- P&L and Balance Sheet analysis to determine if the company is profitable and identify risks and problems (if any) to solve,
- Forecast analysis, including Riversides contribution, to determine if the investment would be profitable,
- Calculation of profit at time of exit based on acquisition price using DCF and multiples,
- Risk analysis (sensitivity analysis) to quantify investment lost given a worst-case scenario.

This section covers all five steps adapted to the specific case of Riverside's decision process to invest in Euromed. The strategic fit and the historic P&L and Balance Sheet were analyzed before defining assumptions about the future and analyzing the profitability as well as risk of the investment. Finally, a reasonable decision about the investment was suggested.

5.1. Strategic Fit

This case shows that there is more to decision-making in private equity investment than just a comparison of valuation of the company and the price paid for the company. The first thing that the private equity must consider is if the acquisition meets the investment criteria. Table 5 provides Riverside's investment criteria and justifies Euromed's strategic fit.

Table 5: Investment Criteria Analysis

	Criteria	**Analysis**	**Met Criteria**
1.	Target company value should be around €50-€250 million with EBITDA of €5-€25 million.	The value of Euromed using EBITDA multiple of 8 (base scenario) was about €74 million with EBITDA of €9 million.	Yes
2.	The target company must be a market leader.	Euromed was herbal ingredients market leader.	Yes
3.	The target company must have a solid business model. A solid business model includes a good margin and competitive advantage.	Given its high-quality product, margin was at above 50%. The combination of traceability, quality and clinical studies for proof of concept gave Euromed a valuable, rare and hard to imitate competitive advantage.	Yes

4.	The target company must have a clear business development plan and growth potential.	There was high growth potential in new regions like the USA, existing markets with other phytopharmaceutical companies and in natural supplements category.	Yes
5.	The target company must be international, with more that 60% of their sales on exports.	95% of Euromed's sales were outside of Spain.	Yes
6.	The management team of the target company must be excellent.	There was a very low turnover in Euromed's management team. Many of the employees worked over 30 years in Euromed with "deep industry expertise and know how" (The Riverside Company, 2019). Xavier Roig had been working with the company since its foundation and was still very committed.	Yes
7.	Exit option with at least 20-25% return	The DCF analysis showed a potential IRR of 5% in a worst-case scenario, below the minimum acceptable return.	No

Source: adapted from Álvarez-Nóvoa (2020)

The analysis shows that Euromed was a good fit with Riverside's investment criteria. Strictly speaking, a worst-case scenario would go against the funds exit option. However, our base scenario was very conservative and resulted in an acceptable IRR. Furthermore, Riverside's structuring plan was aimed at limiting risk factors for a worst case scenario as discussed in section **5.6** on risk analysis.

5.2. Historic P&L and Balance Sheet Analysis

As mentioned in the case, the first step in an investment decision is to understand the business. The purpose of understanding a business is to make a judgement on the quality of the company evaluated for purchase (Martínez, 2012). Through due diligence, Riverside obtained and verified information on business operation and financial data. An analysis of Euromed's financial data without understanding the business would be purely theoretical and thus could lead to incorrect conclusions (Martínez, 2012). Accordingly, the following P&L and Balance Sheet analysis were conducted after completely understanding Euromed's business in order to correctly contextualize data and make accurate conclusions.

5.2.1. P&L Analysis

The objective of a P&L analysis was to determine if Euromed made money (i.e. if it generated revenue) and if it was profitable. If the analysis was positive, then we could continue with the valuation process. As a rule of thumb, the smaller number of items in a P&L, the easier the analysis (Martínez, 2012). See Annex C for the "big" numbers considered for this analysis. The "big" numbers are the items that allow to identify problems (if any) and solve them (Martínez, 2012). For definition of main items presented in Euromed's P&L, please see Annex F. We concentrated on relevant items to give a diagnostic on quality of the business and an action plan for the forecast. The concept, value and trends were analyzed to draw up opinions and conclusions where possible:

- Sales: Revenue closed at almost €43 million for 2015 with average growth of 7% in the last five years. The sales growth decreased from 12% in 2011 to 7% in 2014 but stabilized in the last two years, remaining constant at 7% growth in 2014 and 2015. The biotechnology industry was projected to decline in growth as it matured after 2014. Thus, Euromed followed the industry trend. The company did not exceed expectations in sales, so sales growths were neutral (neither good nor bad). Nonetheless, there was high potential to grow sales by exploiting nutraceutical and natural supplements market with new product launches.

- Margin: The average margin in the last five years was 56%. The margin was very stable and guaranteed by the pharma industry (buyers had high barriers to switch suppliers and moderate bargaining power). It decreased mildly from 57% in 2011 to 55% in 2015. Decrease in margin was due to increased changes of inventories of finished goods, which impacts the cost of goods sold (COGS). This was expected given the seasonality of raw material required for Euromed's production. Increased sales with a moderate decrease in margin gave a positive outlook. Price controls and checks on suppliers could help reduce COGS.

- Operating costs (Opex): Euromed's Opex represented 33% of sales, down from 37% in 2011. By 2015 it was around €14 million. A decrease in Opex while increasing sales is a positive indicator. Increase in COGS was compensated by the reduction of Opex.

  Operating income increased from €7 million in 2011 to €9 million in 2015. Over the last five years it maintained a 20%-21% EBITDA over sales ratio. Also, a good indicator.

- Profitability: Net income duplicated from €4 million in 2011 to €8 million in 2015. However, this was positively impacted by €4 million in extraordinary items from the sale of patents to its previous owner, Meda AB (Sabi, 2020). Return on sales (ROS) is calculated by dividing net income by sales of the same year. ROS increased significantly from 12% in 2011 to 19% in 2015. An increase in ROS means that sales growth is managed effectively to cover companies' expenses (Hayes, 2020b). Thus, Euromed is growing efficiently. Return on equity (ROE) on the other hand indicates how effectively management uses assets to turn them into profit (Hargrave, 2020b). ROE is calculated by dividing net income by equity of the same year. Euromed's ROE of 20% for 2015 was very

high compared to the S&P 500 long-term average of 14% (Hargrave, 2020b). Thus, Euromed's profitability was very attractive.

- Risk sensitivity analysis: Net income represented 19% of sales in 2015. Calculating the difference between gross margin as a percentage of sales in 2015 and net income over sales of the same year, provided the threshold at which profit would disappear. This meant that if margin reduced from 55% to 35%, there would be no profit for Euromed. A possible situation under this scenario meant that sales reduced significantly, resulting in reduced prices and at the same time increased COGS. Nonetheless, the risk that margin would be reduced by 20% was limited, even in a worst-case scenario.

Euromed had growing sales, good margin, growing net income and excellent ROE. Good margin is key for efficient growth. Even with growing profitability, Riverside's intention was to accelerate profitability during its 5-year investment. With Euromed's positive performance up to 2015 from the P&L analysis, in a maturing industry, an investment and strategic plan to speed up growth looked promising. Next we analyzed the balance sheet.

5.2.2. Balance Sheet Analysis

The main reason behind a Balance Sheet analysis was to examine the financial evolution of the company and determine its profitability, similar to the P&L analysis. But instead of comparing revenue with expenses (as the P&L analysis does) the Balance Sheet analysis helps analyze the assets and liabilities of the company (Martínez, 2012). Like the P&L analysis, we focused on the "big" numbers on the Balance Sheet to identify its key items, identify problems (if any) and solve them. While Annex D illustrates Euromed's Balance Sheet from 2011 to 2015, Annex G defines the main items to consider. For the detailed analysis we transformed all relevant data into the short Balance Sheet, presented in Annex E. The short Balance Sheet consists of net assets part, formed by the need of funds for operations of a company and fixed assets, and the financing part, formed by equity, provisions and other liabilities and debt. The last item of the short Balance Sheet is cash, which is produced (or needed) by the company over the analyzed years (Martínez, 2012).

- Need of funds for operations (NFO): Almost all investment in needed fund for operations was stock inventory with an average NFO share of 90% from 2011 to 2015. Such a high amount of inventory lowered Euromed's risk of shortages and customers got products when required, which increased customer satisfaction. However, high inventory automatically stands for high storage (and often insurance) costs and increased the risk of loss of high amount of products during an incident such as fire or theft (Leonard, 2019). The stable proportion of stock inventory in NFO over the last five years as well as continuous low payables to suppliers and other current liabilities indicated a good management of NFO. The only item with a high increase of 90% from 2011 to 2012 was receivables. This was a sign of a change in Euromed's payment terms with customers (Sagarra, 2019). Receivables continued stable (with little variation) from 2012 to 2015 at around €5,6 million. The NFO/sales ratio slightly increased in recent years due mainly to

a decrease of the payment period from 35 days in 2011 to 25 days in 2015. Average ratio of the last five years was 64%.

- Fixed assets (FA): Fixed assets increased about 23% from 2011 to 2013. This increase in FA represents the replacement of an extraction plant from 1979 to increase in-house production instead of outsourcing. Afterwards, from 2013 to 2015, these fixed assets decreased again about 20%.
- Net assets (NA): Since net assets are the sum of NFO and FA, they also increased from 2011 to 2013. Afterwards, they stayed relatively constant at around €40 million. NFO accounted for a little less than two thirds of NA during the analyzed period. NFO accounting for a bigger share of NA is common for most companies (Martínez, 2012). While there is no financial mismanagement, an increase of NA usually stands for increasing sales and a growing company (Sagarra, 2019), as in the case of Euromed.
- Equity (E): There was a logarithmic increase in equity during the last five years. Euromed's capital only made around 15% of the equity and stayed fixed at €5,4 million. Other shareholders funds (accounting for 85% of equity) leveled off from a 9% increase from 2011 to 2012 to 1% increase from 2014 to 2015. Increasing equity was a good sign for the company.
- Provisions & other liabilities: Provisions and other non-current liabilities amounted to no more than €1,4 million (€1,1 million on average) in the analyzed time period. No abnormalities were detected.
- Debt (D): Debt changed drastically from 0 in 2011 to its maximum value of almost €2,5 million in 2013. Subsequently, it slightly decreased to €1,8 million in 2015. This meant that Euromed needed (apart from the increasing equity) more funds to finance the increasing NA. However, the decrease in recent years (2014-2015) showed the company could repay this debt.
- Financing: The three earlier mentioned elements (equity, provisions and other liabilities and debt) form Euromed's financing, the funding available to finance NFO and FA (Sagarra, 2019). Due to the increasing equity from 2011 to 2014 and the sudden increase of debt in 2013, Euromed's financing grew rapidly in the beginning (10% in 2012 and 12% in 2013) and stabilized at around €43 million from 2013 on.
- Cash: Since the value of Euromed's financing side was greater than its asset side in all the analyzed years, the company generated money. Euromed ended the year of 2011 with a cash surplus of over €3 million. In both years 2012 and 2013 NA increased faster than financing, resulting in a decrease of the cash generated in both years (compared to the previous one respectively). Hardly any change of NA in 2014 and its decrease in 2015 as well as little increase of financing in both years let the amount of cash generated increase again. The average amount of cash during the last five years was €2,5 million, with an estimated maximum value of €4,1 million for 2015.

- Risk sensitivity analysis: Comparing the last two years of Euromed's short Balance Sheet there was little decrease in the company's net assets and increase in financing. This was a sign for raising the sources of funds (Sagarra, 2019). Additionally, while there was only little change in receivables and payables, inventory grew continuously. This was the only risk detected in the Balance Sheet. The very high proportion of stocks in NFO (90%) were risky because such an excess inventory ties up cash; its stable character stands for a long inventory turnover. In 2015, inventory turnover accounted for 225 days of inventory. This could be improved by a better inventory management. Collection period was 45 days, payment period 25 days. Although it took Euromed more time to receive money from customers than paying its suppliers, due to high liquidity both metrics can be considered acceptable and don't show signs for any risk. The leverage ratio (liabilities divided by equity (Sagarra, 2019)) was with 21% in 2015 rather low.

Summing up, it can be said that Euromed's Balance Sheet of the last five years also looked promising. While both net assets as well as financing increased during the time from 2011 to 2015, Euromed managed to generate cash in each year. The only abnormality detected, which could turn out risky for the future, was the high amount of inventory, resulting in a high inventory turnover. This was considered when making the company's forecast.

5.2.3. Business Analysis and Risks

Based on our analysis, the key of herbal extracts business was R&D investment, quality assurance, and credibility (proof of concept). Euromed's supply chain already guaranteed traceability and high-quality standards. Its long trajectory and clinical studies gave it credibility. Thus, there was no risk with quality assurance and credibility. Euromed's R&D had been successful with the pharma industry, but more R&D was needed to further penetrate the natural supplements market.

Herbal ingredients were gaining more strength as both pharma clients and end consumers were looking for more traditional products as detailed in section **4.2**. So, synthetic substitutes were a weak threat. Furthermore, given high barriers for pharma clients to change suppliers and Euromed's high quality, competitors were also a weak risk. Product prices and order quantities were secured by Euromed's high quality, required by their clients. Additionally, the ingredients represented a small percentage of their client's final product cost. Nonetheless, there was an unexploited market in natural supplements that required higher investment in R&D and production capacity. Finally, dependence on inventory to ensure supply could result in higher risk of damages and loss.

To conclude, Euromed had a high-quality product with a low cost to their client but crucial for the final product certification and success. The company was profitable with a strong competitive advantage and had good margins. However, investment in R&D and increase production capacity was required to maximize growth potential. So, through some restructuring, Riverside expected to improve Euromed's future cash flows and accelerate its profitability growth.

5.3. Forecast Analysis

After the P&L and Balance Sheet analysis, we were able to understand what type of business (including quality) was for purchase. We also concluded that the reason for purchase was to improve future cash flows through the plan for acquisition detailed in section **4.5.3**. The plan for acquisition was reflected numerically on the main assumptions for the P&L and Balance Sheet forecast (see Annex H and Annex I). To develop the forecast, we drew from the following assumptions:

- Initial price paid: The hypothesis of €80 million as initial price paid was used to develop the forecast. The price was determined using EV/EBITDA multiple between the ranges of 7,0x to 9,0x. Given the quality of the business as previously analyzed, we estimate that a value between €70 million to €95 million was realistic. Further analysis on EBITDA multiple valuation is presented in section **5.4.1**.
- Equity invested: Equivalent to 50% of the amount paid (Álvarez-Nóvoa, 2020), as described in section **4.5.5**. The purpose was not to overload the target company with debt and avoid financial strain after the exit strategy.
- Debt: As little burden as possible placed on Euromed was projected, using a bullet loan. This would allow the use of cash for Capex, needed for Riverside's acquisition plan (Álvarez-Nóvoa, 2020).

The forecast analysis had three main purposes. First objective was to determine if the improved company would make money at a profit for Riverside. Second objective was to define if there was a manageable debt balance. Third, this analysis concluded if by the end of the investment income and debt were similar to the values before the purchase (Martínez, 2012).

Under the assumption that the purchase was done using a new company as explained in section **4.5.5**, the analysis was executed individually for Euromed (without considering combination with the acquiring company). In the forecast analysis, we reviewed the company that Riverside wanted to create with its investment.

5.3.1. P&L Forecast Analysis

It is better to be conservative, or even pessimist in the assumptions used for the forecast (Martínez, 2012) due to uncertainty of expectations. With Euromed's previous performance as a starting point, assumptions based on Riverside's investment plan and market trends were applied to create the forecast (see Annex J). We followed the same steps used to analyze Euromed's P&L from 2011-2015. Below are our observations and opinions drawn from the P&L forecast analysis:

- A 10% sales growth from 2015-2020 was estimated based on Riverside's investments to diversify and grow client portfolio. Yearly growth rate was projected 3% higher than if Euromed continued to operate as it did in the past. Total assumed growth during the 5-year investment was 61%. The assumption was not as optimistic as it would be only considering Riverside's improvement plan, because industry sales growth, projected to decrease (but remain strong), was contemplated in the assumption.

- An attractive supply agreement with Meda AB was crucial to close negotiations on the purchase. In order to achieve competitive prices for the supply agreement, we anticipated 4% of the margin would be sacrificed. However, margin would go back to 55% at the end of the 5-year investment by applying strict pricing tools with Euromed's suppliers, new product launches and diversifying client portfolio.
- To push sales and open new markets, a focus on R&D was needed. This new focus came with new hires, including an R&D committee and a Scientific Marketing Manager. Consequently, it was expected that Opex would increase from 4% to 7% a year during Riverside's investment. The assumption was that the increase in Opex would contribute to increase in sales; increasing R&D would increase product launches and therefore sales. The percentage of Opex over sales would slowly decrease from 32% in 2016 to 29% in 2020. This was a positive outlook.
- Finally, through all these actions, Euromed's EBITDA would likely increase by 97% at the time of exit from the investment. EBITDA increase was mainly due to increase in sales and controlled growth of COGS and margin. This would be favorable for an EBITDA multiple valuation at the time of exit. Additionally, ROS and ROE are a function of net income. The net income of Euromed in 2015 was positively impacted by €4 million in extraordinary items, identified in section **0**, increasing ROS and ROE for that year. Extraordinary items are infrequent, unusual and are not part of the company's ordinary operation, and therefore performance (Fuhrmann, 2019). If we did not include extraordinary items for 2015, net income was lowered, and so was ROS and ROE. See
- Table 6 below for evolution of ROS and ROE with and without extraordinary items. To make a better judgement on ROS and ROE at the end of the investment, we compared with ROS and ROE in 2015, without considering extraordinary items. Both ROS and ROE increased significantly in the forecast, indicating an efficient growth and use of assets to create profit.

Table 6: Impact of Extraordinary Items on ROS & ROE

	With Extra-ordinary items	**Without Extra-ordinary items**	**Forecast**				
Year / Ratios	2015	2015	2016	2017	2018	2019	2020
ROS	19%	10%	8%	10%	12%	14%	15%
ROE	20%	10%	10%	11%	12%	13%	14%

Source: own elaboration

To conclude, by the time Riverside exited this investment, Euromed would be very profitable, with high ROS and ROE. Furthermore, a company valuation based on EBITDA would be very attractive.

5.3.2. Balance Sheet Forecast Analysis

To generate Euromed's Balance Sheet forecast, the company's historic Balance Sheet, as well as Riverside's plan for acquisition presented in section **4.5.3** were taken into account. Annex I justifies all assumptions applied to the forecast illustrated in Annex K. To analyze the Balance Sheet forecast from 2016 to 2020, the same "big" numbers from the short Balance Sheet in section **5.2.2** have been studied. The following results were detected:

- Although Riverside planned to decrease Euromed's inventory level, NFO was assumed to stay fix at 64% of total sales. This was a conservative assumption and reflects a compensation of the inventory improvement with the extension of the payment period. Due to the sales growth assumption of 10%, NFO increases equal to sales, about 61% total in the time of the investment. Although the ratio of NFO over sales is not expected to decrease, considering the past five years, this is an acceptable outlook.

- Fixed assets were projected to increase about 44% from 2015 to 2020. With the objective of increasing sales, the company had to make several investments. The plan of a new innovation center as well as the purchase of new machinery explained the growth of fixed assets. With an increase of only 44% in fixed assets in 5 years, a sales growth of 61% of total sales within the same time period indicated an effective management strategy for that line in the balance sheet.

- Goodwill represented 51% of NA at €40,3 million. This meant, price paid was more than the adjusted book value of equity. Euromed's market leadership, high-quality standards in the production process and the industry EBITDA multiple justified the value of the target company. Furthermore, with operational improvements during investment years, a high return on investment was expected. As it is prohibited since 2001 by the Financial Accounting Standards Board (FASB) to amortize goodwill, and only permitted in some exceptional cases (Investopedia, 2019), we predicted it would stay fix over the years. This was an acceptable conservative assumption.

- Due to a fast growth of net income between 2016 and 2020, Euromed's equity was expected to grow from €40 million in 2015 (post sale) to over €75 million in 2020, an increase of 88%. For the purpose of this forecast, equity only increased with the net income of each current year respectively (shareholders were not expected to add capital). Thus, this high growth was a very good sign and reflected the company's ability to finance a high proportion of net assets with its own capital.

- Short-term debt was assumed to cover 100% of NFO, in order to maximize cash flow for shareholders and increase IRR So, it grew 61% in total, equal to NFO and sales. The great increase of NFO to almost €44 million meant a great sum of assets needed to be financed with short-term debt. However, with a share of 33% of the total financing part (compared to 57% equity) this amount of STD placed less financial burden on Euromed.

  Since we assumed to balance missing financing with long-term debt in form of a bullet loan, this part of debt stayed constant at €11,8 million for all five years. With only 15% of total financing in 2015, this LTD comprised a small proportion of funds in comparison to

STD with 34% or equity with 50%. Since both equity as well as STD increased, the proportion of LTD in the total financing part decreased to 9% in 2020, which was a positive outlook.

Total debt increased heavily in 2015 after the sale to finance the increase of net assets due to goodwill. Over the time of the investment total debt was assumed to grow about 43%. However, while total debt made almost 50% of financing in 2015, it was expected to only account for 42% of financing in 2020. This decrease of the share of total debt in financing was a positive sign for a manageable debt balance, reducing financial risk. It showed less dependence of Euromed on external fund from banks or other lenders.

- We assumed financing equaled net assets in 2015 after the sale. So, the cash account at the beginning of the project summed zero. NA were expected to grow about 28% from €80 million in 2015 (post sale) to €102,2 million in 2020. In contrast, financing would grow 65% total, from €80 million in 2015 to almost €132 million in 2020, based on forecast assumptions. With financing growing faster than net assets, the company was expected to generate cash in each year of the investment. Given the slightly exponential growth of financing and the rather linear growth of net assets, the expected cash generated per year increased from €2,8 million in 2016 to over €9,4 million in 2020.

Compared to the previous five years it was therefore estimated that Euromed's operations would be very profitable and that the company, with support from Riverside, would be able to establish a sustainable growth.

5.4. Profitability Analysis

The forecast analyses gave insight on whether the restructured version of Euromed would be profitable. The next step was to quantify how much money a five-year investment in Euromed would make for Riverside at the time of exit. In order to analyze profitability, we had to determine the price to pay for the required return on investment. This analysis included multiple valuation, DCF valuation from the buyer and seller perspectives, IRR analysis and closing negotiations.

5.4.1. Valuation with EBITDA multiple

There were no clear comparable companies, given the different operation combinations, profitability and sizes of companies in the natural extracts business, but Álvarez-Nóvoa (2020) had references based on recent acquisition transactions of natural extracts companies used to determine a reasonable EBITDA multiple. A summary of comparable companies and multiples is in Annex L. The total average for comparable companies EV/EBITDA multiple in 2015 was 8,2x. In order to have a price range for negotiation, price valuation was conducted with multiples between 7,0x and 9,0x. Valuation using three multiple options was calculated as indicated in methodology section **3.2.** See Table 7 for outcomes.

Table 7: EBITDA Multiple Results

Multiple EBITDA	Euromed EBITDA 2015 (in thousand)	Valuation Result (in thousand)
7,0x	€9.078	€64.817
8,0x		€73.896
9,0x		€82.974

Source: own elaboration

Given Euromed's quality, a price range between €70 and €80 million seemed reasonable. However, we needed to evaluate our return with these price ranges before determining our final price recommendation.

5.4.2. DCF Valuation and expected IRR

In order to reduce the risk of focusing on just one valuation method and thus, going into price negotiations with a possibly biased idea of the final price, we additionally calculated Euromed's company value with the DCF valuation method introduced in section **4.5.4**. Each respective cash flow for shareholders (CF_{share}) for each year was calculated as explained in section **3.2**.

The cash outflow due to expected increase in NA, from €80 million in 2015 (post sale) to over €102 million in 2020, was offset by predicted cash inflow from increased debt and net income. In the first project year, the company's debt was expected to grow about €2,8 million. This positive variation of debt increases annually around €0,3 million, resulting in a debt increase of €4,0 million between 2019 and 2020. Additionally, the slightly exponential growth of a positive net income over the five years contributed to increased cash flow for shareholders. Thus, CF_{share} was positive for all years of investment

At the end of the project we assumed the company would be sold using the same EBITDA multiple of 8,0x as in 2015; we didn't expect many new transactions of natural extracts companies' acquisition that would change the multiple. Considering the market expansion to the fast-growing natural supplement industry, this assumption was rather conservative. It is better to receive positive cash flows right from the start than cash flows close to zero in the beginning and a big cash flow at the end of the project (Martínez, 2012). In the case of Euromed, although we would have a great cash flow in 2020 due to the sale of the company, it was expected to generate positive cash flows for shareholders since the beginning. Annex M illustrates the calculated cash flows and resulting metrics (NPV and IRR) to analyze the projects profitability.

The calculated IRR of almost 33% and NPV of €12,4 million in the base scenario were positive signs for the profitability of the project. If we kept the assumption of a 50% equity, 50% debt project funding, the maximum acceptable price would be €95 million, resulting in an IRR of 25,35%, slightly above the minimum required by Riverside. Thus, any price under €95 million should be considered acceptable. We therefore widened our price range and propose a price between €70 and €95 million.

5.4.3. Value for the Seller

As part of preparation for the negotiation process, it was convenient to have an idea of the target company's value for the seller. Nonetheless, the value of the company might not be the same as the asking price (Martínez, 2012). In order to calculate the value of the company for the seller, we assumed that Euromed continued operating as it had in the past.

Based on financial statements up to 2015, we assumed that sales would continue to grow at 7%, as it had for the last two years. We also assumed that the margin would remain unchanged and Opex would continue as 4% of total sales. The valuation was under the assumption that the seller would invest the same amount on fixed assets as the annual amount they depreciate. We did not know the return required by the seller but expected it to be less than the 25% that Riverside required. Thus, we worked with an assumption of a required 15% return. This is an arbitrary number (it is whatever the investor finds reasonable (Martínez, 2012)). We used a 15% required return considering the following points of reference by Martínez Abascal (2012):

- Historic return of stock market (S&P500, DAX, IBEX) was around 10% in developed countries.
- Usually private companies required a 5% higher return than publicly listed companies.

Based on these assumptions that the seller would not improve Euromed, we calculated CF_{share} and present value (PV) of Euromed with a result for PV of €58,8 million (see Annex N). However, it was likely that the seller perceived less risk in their own operation and had more optimistic assumptions. Furthermore, it was also likely that their required return was less than we assumed. Therefore, more optimistic assumptions and lower required return would mean a higher value for the seller (Martínez, 2012). For example, a required return of 12% would result in a €66 million value and a 10% return gave a €71,7 million value.

5.5. Negotiation

This case study provided little room for negotiation since it was a sealed bid auction. Nonetheless, negotiations after the LOI can take place to determine final agreements in contracts. To close the transaction, we determined our recommended negotiation for this case study and the ZOPA based on seller's valuation. Key aspects we defined for recommended negation were:

- Buyer's walk away point: As mentioned before, the maximum acceptable price suggested for Riverside was €95 million, which resulted in an IRR of 25,35%. This can be considered as the walkaway point. Anything above would be too costly and not bring the desired return.
- Initial price (anchor): Based on the calculated price range between €70 and €95 million and the calculated seller's value of at least around €60 million, we would suggest a bid of €70 million as anchor price for Euromed in the first offer. While this offer would be above seller's value, it is the minimum reasonable price with a low EBITDA multiple. Riverside would, however, have enough negotiation opportunities to adapt this initial price to

increase chances for winning the auction process. If Meda AB accepted the anchor price of €70 million, it would result in a great return for Riverside (about 38,5% IRR).

- Seller's walk away point: As described in the previous section **5.4.3**, conservative assumptions from seller's side and the average required return of 15% would result in a PV of almost €60 million. However, we assumed the seller's minimum acceptable price to be higher, between €65 and €70 million. The seller might not consider any buyer offering a price below this walk away point.
- Aspiration value (our objective): Since our proposed price ranges from €70 to €95 million and we assumed the seller would push the price higher in order to gain more money from the transaction, our aspiration value was €80 million. With this price, both the seller and the buyer would be satisfied. This value would be around €10 to €15 million higher than the seller's walk away point. So, this would be a good deal for the seller. On the other side, Riverside would still pay €15 million less than its maximum acceptable price, generating an expected IRR for the investment's base scenario of 33%, eight percentage points above the required IRR.

5.6. Risk Analysis

Risk is any variability in investor's profit due to changes in expected cash flow (Martínez, 2012). To evaluate risk for the investor, we first identified risk factors and then we quantified them. All our hypothesis for assumptions were risk factors. We focused on sales growth, margin and Opex for the risk analysis, as they had direct impact on the company's profitability. By quantifying risk, we could determine how sensible IRR and NPV were to variations in these risk factors. First, we determined ranges considering a worst-case scenario and a best-case scenario for sales growth, margin and Opex, as detailed in Annex H. Then, we calculated the IRR and NPV for each range individually. By only changing one variable at a time, and keeping all others constant, we could determine which variable had the greatest impact on profitability (Martínez, 2012). See Table 8 for results.

Table 8: Sensitivity Analysis (all other things equal)

IRR and NPV for different sales growth rates				
Variable	**Worst**	**Base**	**Best**	**Range**
g Sales, annual	8%	10%	12%	
IRR	25%	33%	40%	15%
NPV (thousands $)	46	12,389	25,535	25,489
IRR and NPV for different increases of gross margin				
Variable	**Worst**	**Base**	**Best**	**Range**
g Margin	0%	1%	2%	
IRR shareholder	26%	33%	38%	12%
NPV (thousands $)	1,726	12,389	23,053	21,327
IRR and NPV for different increases of Opex				
Variable	**Worst**	**Base**	**Best**	**Range**
g Opex	9%	7%	5%	
IRR shareholder	28%	33%	37%	9%
NPV (thousands $)	4,297	12,389	19,976	15,679
IRR and NPV for different EBITDA Multiples at exit				
Variable	**Worst**	**Base**	**Best**	**Range**
Multiple	7	8	9	
IRR shareholder	29%	33%	36%	7%
NPV (thousands $)	6,533	12,389	18,246	11,713

Source: own elaboration

The sensitivity analysis applied to each variable individually allowed us to measure the degree of uncertainty and impact that each variable had on expected profitability (Martínez, 2012). The greater the range between the worst-case and best-case scenario, the higher uncertainty of the profitability that can be reached. Thus, the result of the sensitivity analysis showed that sales growth created the greatest uncertainty on expected profitability, followed by growth in margin and then by growth in Opex. The multiple used for the exit strategy generated the least uncertainty on potential profitability. On the other hand, value added or reduced with a percentage point increase showed the impact of the variable on profitability. One percentage point (pp) increase of sales growth per year added €6,3 million of value. Margin growth had the greatest impact per pp change, with an added €10,6 million of value for each pp increase. On the other hand, one pp increase of Opex decreased value by €3,9 million. Finally, an increase of one digit in the selling multiple added €5,86 million of value. Thus, results showed that to increase the profitability of Euromed, increasing margin growth was key to achieving the most effect.

We cannot assure that everything will not go wrong in the future. So, as investors, we should always prepare for the worst. In order to prepare for the worst, we performed a worst-case scenario sensitivity analysis. Our worst-case analysis assumed that everything went wrong with sales growth, margin and Opex at the same time (see Table 8 for worst case scenario of each variable). In a worst-case scenario, Riverside could get an IRR of almost 5%. Yet, Riverside's restructuring plan limited the risks for a pessimistic outcome in sales, margin and Opex growth. Given the controlled risk, we would recommend the acquisition of Euromed.

6. CONCLUSION

The objective of this work was to develop a real-world case study that analyzed if a private equity acquisition in the middle market fit the strategy of the fund to create sustainable growth. We therefore developed and analyzed the case of Riverside's investment in Euromed using both qualitative as well as quantitative methods. During the qualitative phase we conducted primary research by interviewing the CEO of the target company, Xavier Roig and the acquiring company's transaction team leader in Spain, Rafael Álvarez-Nóvoa. Secondary research on the internet was done to complement information obtained from the interview. The quantitative phase consisted in analyzing financial statements of the five years prior to the case to create a P&L and Balance Sheet forecast for the five-year investment period. We then used two valuation methods, DCF using CF_{share} and EBITDA multiple, to determine the price range for the desired return of investment and measure risk. The case study will serve as a learning tool to improve business judgement and skills required for a private equity investment decision making process in the middle market using LBO for sustainable growth. Through the development of this case study we drew three main conclusions that will serve as learning points, discussed in the following paragraphs.

First, based on our analyses results of Euromed's strategic fit with Riverside's criteria for investment, Euromed's profitability and risk prior and post investment, we would invest in Euromed if we were Riverside. The investment decision process is not just about profitability. Euromed met most of Riverside's criteria for an investment which included company value, international presence, strong business model, market leadership and strong management team. Financial statement analysis of the five years prior to the investment showed strong performance with constant sales growth and profitability. With Riverside's restructuring plan, our base scenario showed an IRR of 33% under initial price assumption of €80 million, well within our ZOPA. Risks of a worst-case scenario of 5% IRR are limited with Riverside's restructuring plan. Furthermore, under the industry-based point of view, Euromed's growth potential was strong given a moderate competition level overall with weak supplier bargaining power and high entry barriers. From the resource-based point of view, Euromed's competitive advantage in quality, traceability and clinical trials for credibility was extremely valuable for its clients, with less than five firms worldwide with these abilities (Álvarez-Nóvoa, 2020). Achieving these competitive advantages took many years and investment in R&D making it hard to imitate by competitors and integrate in the organization. Euromed's hard to imitate competitive advantage ensured the company's success.

Second, the decision-making process and valuation methods used to analyze this case gave a reasonable approximation to reality, which resulted in an exemplary investment for sustainable growth and high returns for investors. Furthermore, real results exemplify that sustainable growth can be obtained from an LBO. After negotiations and the due diligence in summer 2015 both parties agreed on the price of $87,05 million (S&P Capital IQ, 2020a), converted to a little over €80 million. Riverside complied all variables required by Meda AB and had two additional important advantages over the competition: The prior contact with the target company and high liquidity, which could serve Euromed for its future investments (Roig, 2020). After this agreement both firms signed the sales and purchase agreement and as agreed in the negotiations, a supply contract for over 10 years between Euromed and Meda AB was finalized. With this contract, Meda secured Euromed as their ingredient's provider for key products. The sale was closed on December 2015 (Álvarez-Nóvoa, 2020).

After the transaction, Euromed reached goals sooner than expected. With an average sales growth of 14% from 2015 to 2018 (Sabi, 2020), higher than expected by this time, the company was able to grow sales about 53% in just three years (The Riverside Company, 2019). COGS increased similar to sales. But since the company managed to control the growth of Opex, which only increased about 39%, Euromed's EBITDA was almost doubled from €9 million in 2015 to €17,6 million in 2018 (Sabi, 2020). The cooperation between Euromed and Riverside seemed like a dream team, reaching their objectives in just three years (The Riverside Company, 2019). Net income was improved from €8,2 million to €12,7 million, a significant increase of almost 55% (Sabi, 2020).

The positive transformation of Euromed was also rapidly notable in its Balance Sheet. NFO increased about 39%. And while the payment period was increased from 25 to 37 days, both the collection period (from 45 to 40 days) as well as days of inventory (from 225 to 190 days) decreased significantly. This resulted in a decrease of the NFO/sales ratio from 64% to 56%. FA increased about 32%, faster than we expected it to grow, but due to the faster sales growth, it is understandable. Equity increased as expected about 39%. Since goodwill is not accounted for in Sabi database, debt accounted for significantly less than expected and decreased about 24%. Cash surplus increased from €4,1 million in 2015 to over €5 million in 2018 (Sabi, 2020). Although we expected a faster growth of cash in our forecast, the company generated positive cash flow for shareholders from the beginning of the project on. This shows that, more cash was used to finance operations rather than investing this cash flow in equity.

Third, knowing Euromed's business well and the early timing of exit were two key factors for the successful outcome of Riverside's investment. The rapid achievement of goals, possibly reached so fast due to previously getting to know Euromed's business, let Riverside start an exit process earlier than planned. According to Álvarez-Nóvoa (2020) timing the right moment to sell was an important factor for a positive project outcome. On one hand, since all objectives had already been reached, the private equity firm and its investments were no longer necessary for the target company's success. It was time for an industry player to use the created assets and work with the established capital. As suggested by McKinsey & Company (2018) further growth potential of the target company makes it more attractive for possible new owners, as it

was the case of Euromed. On the other hand, the market offered attractive sale conditions with higher EBITDA multiples than the one used in its previous purchase. In 2017, M&A multiples "remained at their highest levels on more than a decade" (Green, Hayes, Seghers, & Zaets, 2018). So, Riverside decided to sell Euromed for over $220 million to Dermapharm AG (S&P Capital IQ, 2020a), a leading pharmaceutical company from Germany (Dermapharm AG, n.d.). The early exit brought Riverside an even higher IRR than planned. Xavier Roig is convinced that "after having enjoyed a fantastic experience with Riverside, [Euromed] continues to pursue the initiated course" (Roig, 2020).

Although this case study provides empirically rich contribution to the theory and application of decision-making process, it has limitations. A forecast is an educated approximation of the future. However, given the variability of critical factors that determine an investment's success such as sales growth, gross margin and Opex, a forecast cannot be 100% accurate. While risk can be limited, it cannot be eliminated. Furthermore, the generalization of a single case study must be done carefully, adapting to each situation as it is not a robust sample.

This case study provides evidence that a PE firm can create sustainable value in the middle market using an LBO. However, we are far from having diminishing marginal returns on case studies that improve skills for LBOs in middle market with value creation as very few case studies on this topic exist in published sources. Thus, there is room for further research on the subject for a more robust sample of successful PE invesments in this area of research.

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ANNEXES

Annex A: In-Depth Interview with Rafael Álvarez-Nóvoa Moderation Guide Topics

Topic	Justification
1. Understanding Euromed's business a. Product b. Clients c. Competitive advantage	The first step when investing in a company is to understand the business (Martínez, 2012). Understanding a business from the buyers perspective includes understanding what Euromed sold, their clients and their competitive advantage. This provides context to determine growth potential, problems that need to be solved (if any) and strategic fit with the fund's criteria. If the business fits with the fund's startegy (investment criteria), understanding the business also allows for more accurate assumptions for the financial forecasts used to valuate the company.
2. Identification of investment opportunity	It is important to comprehend what Riverside identified in Euromed that resulted attractive for them to invest in the company.
3. Investment criteria	The investment criteria provides the 3-5 main standards to determine if the target company fits the fund's strategy.
4. Acquisition process	Once the private equity knows why they are buying (strategic fit), it's important to understand all the steps the private equity made to make their final decision.
5. Valuation methods	Understating the valuation method a firm uses teaches us how the company determines how much it expects to make and how much it can pay. Thus, Riversides perspective provides insight on how Rivierside determined what Euromed was worth to them in 2015 and profitability of the investment at a given bid price.
6. Negotiation process	Insight on the negotiation process provides information on any significant detail to highlight, such as who they negotiated with and what information was used as leverage to determine price and other conditions.
7. Financing of the operation	A big part of the investment process is determening how the operation will be financed. This decision determines the debt burden placed on the target company. For example, a target will have a higher debt burden if levarage was used for the operation and debt was transferred to the target company. Financing of the operation impacts the forecast of future performance of the company used in DCF valuation menthod as it is related with the different elements used to determine internal rate of return (IRR) (Martínez, 2012).

8. Final agreements for acquisition	The final agreement serves as a point of reference for the decision making process that is being simulated in this case study as a teaching tool. Thus, by the end of the case study, we can conclude if we agree with the decision Riverside made and identify if anything could have been done differently.
9. Exit Strategy	A goal must be established to determine if an investment will be successful or not. Along with initial price paid and growth from restructuring plan, the exit strategy is one of the main drivers of profitability, which is a key determinant on whether to invest or not in the target company (Martínez, 2012).
10. About Riverside	Knowing about Riverside shed's light on their intentions with Euromed, track record, way of operation and gives context to their decision making process. Furthermore, it exemplifies the theoretical framework of how a private equity operates in a real case scenario.
11. Riverside's contribution to Euromed	Riverside's contribution to Euromed reflects the firms plans for acquisition (what Riverside intends to do with Euromed in order to get a return on their investment; this is their restructuring plan) and real outcome of the case as point of reference. Based on Riverside's restructuring plan, assumptions for P&L and Balance Sheet forecast can be fine tuned.

Source: adapted from Martínez Abascal, (2012)

Annex B: In-Depth Interview with Xavier Roig Moderation Guide Topics

Topic	**Justification**
1. Euromed's History	Euromed's history provides context to properly analyze evolution of financial statements. Looking at the past helps predict the future, which is needed to create assumptions for P&L and Balance Sheet forecasts for profitability and valuation analysis.
2. Understanding Euromed's business a. Product (including details of number of product families or types) b. Clients (markets, location, quantity) c. Competitive advantage	Obtaining business information directly from the source (Euromed) will provide context on Riverside's interpratation of the business. It also provides a deeper, more detailed, explanation of Euromed's operation to fine tune and critic Riverside's decision making process analysis.

3. Negotation Process	This will allow us to get Euromed's perspective of the negotiation, keeping in mind that the seller is Meda (Euromed's parent company at the time). It will give us insight on how top management felt about the acquisition. We can expect good performance from a content management team and visa versa.
4. Final agreements for acquisition	This information is used to complement and validate data provided from Riverside's perspective. It also allows to probe if management received any compensation in shares (a common practice in PE (Barber & Goold, 2007)).
5. Exit Strategy	Provides complementary information to data provided by Riverside.

Source: adapted from Martínez Abascal, (2012)

Annex C: P&L from 2011-2015

P&L (Thousand euros)	2011	2012	2013	2014	2015
Operating revenue / turnover	**34.124**	**34.027**	**37.115**	**39.872**	**42.592**
COGS	14.741	14.233	16.643	18.245	19.357
Gross profit	19.383	19.794	20.472	21.627	23.235
Cost of employees	5.310	5.458	5.630	5.946	6.477
Other operating items	6.788	7.027	7.251	7.627	7.680
Opex	12.098	12.485	12.881	13.573	14.156
EBITDA	7.285	7.309	7.591	8.054	9.078
Depreciation	1.589	1.535	1.595	1.962	2.047
EBIT Operating P/L	5.696	5.774	5.996	6.092	7.031
Financial revenue	21	74	108	67	24
Extraordinary P/L	*47*	*428*	*87*	*125*	*4.008*
P/L before tax	5.428	6.349	5.845	6.950	11.433
Taxation	1.489	1.353	1.499	2.158	3.198
P/L for period	**3.938**	**4.996**	**4.347**	**4.792**	**8.234**
P/L for period	**3.938**	**4.996**	**4.347**	**4.792**	**8.234**

P&L ratios	**2011**	**2012**	**2013**	**2014**	**2015**
Growth of sales	*12%*	*0%*	*9%*	*7%*	*7%*
Gross Margin / Sales	*57%*	*58%*	*55%*	*54%*	*55%*
Growth of opex	*8%*	*3%*	*3%*	*5%*	*4%*
Opex / Sales	*35%*	*37%*	*35%*	*34%*	*33%*
EBITDA / Sales	*21%*	*21%*	*20%*	*20%*	*21%*
ROS (Net income / Sales)	*12%*	*15%*	*12%*	*12%*	*19%*
RONA (EBIT / Net assets)	*18%*	*16%*	*15%*	*15%*	*18%*
ROE (Net income / Equity)	*12%*	*14%*	*11%*	*12%*	*20%*

Annex D: Balance Sheet from 2011-2015

						Changes
Balance sheet (Thousand euros)	**2011**	**2012**	**2013**	**2014**	**2015**	**2011-15**
Fixed Assets	12.625	13.673	15.551	14.368	12.522	*-103*
Stock Inventory	17.106	19.092	22.389	23.453	26.213	*9.107*
Receivables	2.971	5.653	6.109	5.445	5.299	*2.328*
Other current assets	2.639	2.744	1.397	1.419	1.443	*-1.196*
Cash & cash equivalent	3.116	1.545	1.173	2.538	4.100	*983*
Current assets	25.832	29.034	31.069	32.854	37.055	*11.223*
Total assets	**38.457**	**42.708**	**46.620**	**47.222**	**49.577**	*11.120*
						0
Equity	33.190	36.244	38.587	40.375	40.976	*7.786*
Long-term debt	0	184	253	1.844	1.318	*1.318*
Other non-current liabilities	1.058	1.399	1.281	1.008	1.010	*-47*
Non current liabilities	1.058	1.583	1.534	2.852	2.328	*1.271*
						0
Current liabilities	4.209	4.881	6.499	3.996	6.272	*2.063*
Total shareh. funds & liab.	**38.457**	**42.708**	**46.620**	**47.222**	**49.577**	*11.120*

Annex E: Short Balance Sheet from 2011-2015

						Changes
Short Balance sheet (Thousand euros)	**2011**	**2012**	**2013**	**2014**	**2015**	**2011-15**
NFO	18.507	22.609	25.631	26.824	27.186	*47%*
Fixed assets	12.625	13.673	15.551	14.368	12.522	*-1%*
Net assets	**31.132**	**36.282**	**41.182**	**41.192**	**39.708**	*28%*
Equity	33.190	36.244	38.587	40.375	40.976	*23%*
Proviss & Other Liab.	1.058	1.399	1.281	1.008	1.010	*-4%*
Debt (long & short term)	0	184	2.488	2.347	1.821	
Financing	**34.248**	**37.827**	**42.356**	**43.730**	**43.808**	*28%*
Cash	3.116	1.545	1.173	2.538	4.100	*23%*
NFO / Sales	***54%***	***67%***	***69%***	***67%***	***64%***	

Annex F: P&L Main Items Definition

In finance, it is common that confusion exists due to differences in terminology. Therefore, it is recommended to clarify the definition of the items used (Martínez, 2012). Below are the definitions for the main items used in the P&L of Euromed for this case study:

- Costs of Goods Sold (COGS): This cost is a percentage of sales. Therefore, it varies with changes in sales (Martínez, 2012). For Euromed, it includes the cost of materials (supplies) and changes of inventories of finished goods.
- Gross Margin: It is the sales minus the COGS. Consequently, it is also a percentage of sales.

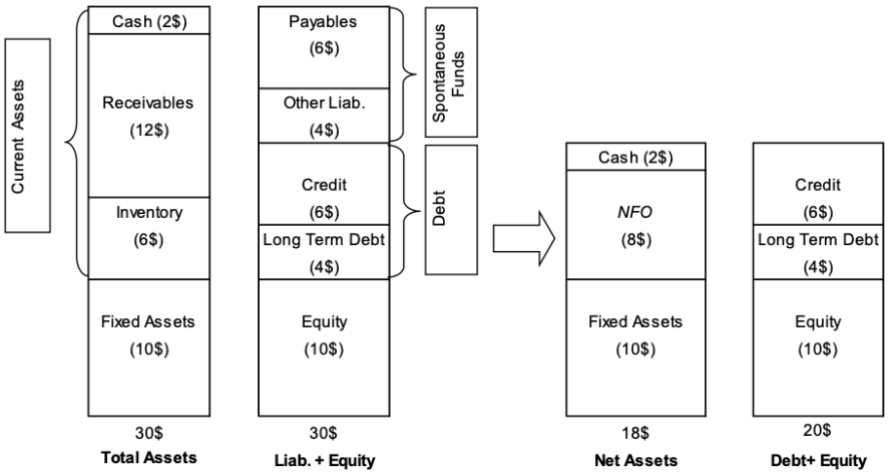
- Operating expenses (Opex): These expenses are salaries and other fixed costs such as utilities. Theoretically it is a fixed expense but in practice it varies with sales (Martínez, 2012).
- Earnings before interest, taxes, depreciation and amortization (EBITDA): Also known as operating income. The operating income is calculated by subtracting Opex from the gross margin (Martínez, 2012).

Annex G: Balance Sheet Main Items Definition

In finance, it is common that confusion exists due to differences in terminology. Therefore, it is recommended to clarify the definition of the items used (Martínez, 2012). Below are the definitions for the main items used in Euromed's Balance Sheet for this case study:

- Cash: In form of liquid money (cash), this represents current accounts and temporary financial investments (Martínez, 2012).
- Receivables: Invoices representing the money that customer owe the company (Martínez, 2012).
- Stock inventory: Stock necessary for operations (Martínez, 2012). This inventory accumulation can be raw materials, work-in progress and/or finished goods (Kenton, 2019).
- Fixed assets (FA): Long-term assets minus accumulated depreciation. Usually they are assets like buildings, offices, plants, machinery, etc. Thus, they barely change over time, reason why they are called "fixed" (Martínez, 2012).
- Payables: Money that the company owes to its suppliers due to a purchase on credit (Martínez, 2012).
- Short-term debt (STD): Usually a credit line or other form of debt for a short period of time. Mostly given by banks or other institutions of the capital market. Therefore, the company pays interest to the lenders (Martínez, 2012).
- Long-term debt (LTD): A financing item negotiated usually with banks for a long period of time. The company pays interest to the lenders. Often in form of loans, mortgages or others (Martínez, 2012).
- Debt (D): The sum of STD and LTD.
- Equity (E): Money invested by the shareholders plus previous net income (Martínez, 2012).

The Balance Sheet can be transformed into the short Balance Sheet presented below. The following items must be defined for the short Balance Sheet:



Source: Sagarra (2019)

- Need of funds for operations (NFO): Martínez Abascal (2012) defines it as funds required to finance daily operations of a company. It is calculated by the following formula:

  NFO = cash necessary + receivables + stock inventory - payables - other liabilities

  If we assume zero cash necessary and a small amount of other liabilities, then the formula is reduced to:

  NFO = receivables + stock inventory - payables

- Net assets (NA): The sum of NFO and FA.
- Financing: Consists of the company's equity, debt and provisions and other liabilities.

Annex H: Main Assumptions for P&L Forecast

Below are assumptions used for P&L forecast. These assumptions are hypothesis of how Riverside's restructuring plan will impact financial data. Thus, we analyzed how Euromed would perform if it continued to operate as it did in the past, considering industry data and then quantified the impact of Riverside's investment.

- Sales growth of 10% annually from 2016-2020. Total sales growth during Riverside's 5-year hold on Euromed was projected at around 60%. Pessimist scenario is 8% growth a year and the optimistic scenario is 12% annual sales growth from 2016-2020.

  Justification: Total sales growth provided by Rafael Álvarez-Nóvoa was spread out evenly amongst the last 5-year investment plan for organic growth. A 2% difference was considered to evaluate a worse and best-case scenario. In a best-case scenario specific actions that would be taken by Riverside to push sales growth were considered for the 2% sales growth increase assumption. In the worst-case scenario, sales growth would be

aligned with the CAGR of 8.1% between 2014-2018 projected for the biotechnology industry (MarketLine, 2019).

- Margin/Sales ratio are expected to increase by 1% every year, starting in 2016. For the pessimistic scenario the Margin/Sales ratio was assumed to increase 0%, and 2% increase was assumed for the optimistic scenario.

  Justification: Due to the competitive supply agreement with Meda AB to close the negotiations, it was expected that Margin/Sales ratio would decrease by 4% the first year of the operation. Riverside's plan to introduce new product launches every year and regular price controls was intended to increase margin by 1% a year starting 2016. Worst case, the new product launches would have no effect on the margin/sales ratio and in the best case an additional 2% increase would be expected.

- A new systematic approach to R&D would require incorporating a new Scientific Marketing Director and creating an R&D committee with industry experts from around the world. Investments in R&D would represent 7% increase in Opex starting 2016. In a worst-case scenario Opex would increase 9% and in the best-case scenario the increase would be 5%.

  Justification: Data in Mercantile Registry of Spain indicates Opex growth of 38,6%, in accordance with investments made to increase product development and production. By 2018 Euromed reached investment forecast, thus final numbers in 2018 are taken as reference for investment goals and budget.

- For depreciation, we assumed 1,9 million euros a year.

  Justification: This is based on average depreciation of Euromed's financial data in Sabi database for 2016-2018. The assumption is revalidated with average depreciation for the years 2013-2015, which have the same average for this account as in years 2016-2018.

- Interest rate at 2,5% for STD and 7,5% for LTD.

  Justification: Fixed interest rates were considered for both STD and LTD. Interest rates assumptions for debt were estimated based on criteria by Martínez Abascal (2012) for common bank commissions. Criteria included Euromed's operational risk, Riverside's profitability and economic environment (i.e. profitability of short-term treasury bills and the profitability of 5-year bonds). The final values were defined by Martínez Abascal, as consultant for this case study.

Annex I: Main Assumptions for Balance Sheet Forecast

The following assumptions for the forecast of Euromed's Balance Sheet have been made based on historical data and the planned actions during the company's ownership by Riverside.

- Need of funds for operations (NFO) from 2016-2020 make 64% of total sales of each respective year.

  Justification: Historical data from Sabi database from the past five years shows that the NFO made around 64% of total sales on average. Due to no further planned changes of the payment terms by Riverside, this share is assumed to stay fix over the time of the investment project. However, it is notable that Euromed should lower the relative share of its inventory of NFO, resulting in a decrease of the days of inventory and a decrease of NFO. Due to a low payment period, Euromed had more flexibility on this factor and could increase the payment period, increasing the proportion of payables of NFO. We assumed that this adjustment of the shares of inventory and payables of the NFO balance out. As result, NFO continues stable at 64% of sales.

- Fixed assets (FA) grow annually around €3 million from 2016 to 2020.

  Justification: Reason behind this assumption is the purchase of the new innovation center for €2,5 million and new machinery for the drying process for around €2,3 million (Álvarez-Nóvoa, 2020). Both investments are assumed to get depreciated over the time of the project. For simplicity, the total sum of almost €5 million is spread over the five years of the project. Assuming to invest the same amount of €1,9 million of annual fix depreciation in fixed assets explains the annual growth of €3 million.

- Goodwill was calculated to be €40,3 million, which was added to the net assets (NA).

  Justification: The goodwill is the intangible asset, "the portion of the purchase price that is higher than the sum of the net fair value of all of the assets purchased in the acquisition and the liabilities assumed in the process" (Hargrave, 2020a). It this case it can be calculated as the difference between the initial price paid and the net assets in 2015 before the sale of the company.

- The equity invested in 2015 (post sale) was estimated at €40 million. This equity grows every year about the difference between the net income of the respective year and the dividends paid in this year.

  Justification: The equity invested in 2015 can be calculated with the information from section **4.5.5**. With the initial price of €80 million, funded with 50% equity and 50% debt (Álvarez-Nóvoa, 2020), the equity for 2015 after the sale would be €40 million. It is assumed that the net income got invested into the equity of the company.

- Provisions and other liabilities (Proviss & Other Liab.) stay fix at €1 million annually from 2016-2020.

  Justification: Historical data from Sabi database proves that provisions and other liabilities didn't change dramatically during recent years before the sale and have been around €1 million per year. So, we expect them to continue stable at this value.

- Short-term debt finances 100% of NFO from 2016 to 2020.

  Justification: In order to maximize the cash flow for shareholders we assume short-term debt to cover 100% of NFO. Furthermore, this simplifies the calculations of forecast volatility.

- Long-term debt stays fix at €11,8 million for the entire project duration.

  Justification: We assume the needed source of fund to finance all net assets at the beginning of the project to be a bullet loan. The value of the bullet loan was calculated as difference between net assets and the sum of equity, short-term debt and provisions and other liabilities. As typical for a bullet loan this amount stays fix over the time of the project and gets paid back when the project ends.

- Cash flow for the shareholders can be calculated as generated cash per year. The generated cash per year is the difference of cash surplus in this year and the cash surplus of the previous year.

  Justification: We assume the cash surplus to be zero after the sale in year 2015. Thus, we don't have any cash in the balance sheet when the project starts. This cash account changes with the cash surplus generated (or cash needed) every year. The cash surplus (or cash needed in form of credit) is calculated as difference between financing and net assets. When financing is bigger than net assets, meaning the company has more funds than needed, it generates additional money in the cash account. On the other side, when net assets are bigger than the financing part, the company needs more credit to finance its assets (Martínez, 2012, p. 37).

Annex J: P&L Forecast

				Forecast				
P&L in 000€	**Assumptions**	**2015**		**2016**	**2017**	**2018**	**2019**	**2020**
Sales (turnover)		42.592		46.851	51.536	56.690	62.359	68.595
COGS		19.357		22.957	24.737	26.644	28.685	30.868
Gross margin		23.235		23.894	26.799	30.046	33.674	37.727
Opex / Overhead		14.156		15.147	16.208	17.342	18.556	19.855
EBITDA		9.078		8.747	10.591	12.704	15.118	17.872
Depreciation	**1.900**	2.047		1.900	1.900	1.900	1.900	1.900
Goodwill Depreciation	**0%**	n.a.		0	0	0	0	0
EBIT		7.031		6.847	8.691	10.804	13.218	15.972
Interests (S/T debt)	**2,5%**	n.a.		-680	-750	-825	-907	-998
Interests (L/T debt)	**7,5%**	-393		-886	-886	-886	-886	-886
Extraordinary P/L		4.008						
EBT		11.433		5.281	7.056	9.093	11.425	14.088
Taxes	**25%**	3.198		1.320	1.764	2.273	2.856	3.522
Net Income		8.234		3.961	5.292	6.820	8.568	10.566

P&L ratios			***Assumptions (in bold and green)***				
Growth of sales		*7%*	**10%**	***10%***	***10%***	***10%***	***10%***
Margin / Sales	**1%**	*55%*	**51%**	***52%***	***53%***	***54%***	***55%***
Opex / Sales		*33%*	*32%*	*31%*	*31%*	*30%*	*29%*
Change in opex		*4%*	**7%**	***7%***	***7%***	***7%***	***7%***
EBITDA / Sales		*21%*	*19%*	*21%*	*22%*	*24%*	*26%*
ROS (Net income / Sales)		*19%*	*8%*	*10%*	*12%*	*14%*	*15%*
ROE (Net income / Equity)		*20%*	*10%*	*11%*	*12%*	*13%*	*14%*
RONA (EBIT / Net assets)		*18%*	*8%*	*10%*	*12%*	*14%*	*16%*

Guidelines for P&L forecast:

(1) Sales growth from 2016 on, see assumptions “Growth of sales”

(2) Gross margin 2015 post sale: Gross margin pre-sale. From 2016 on: see annual increase assumptions in “Margin / Sales”

(3) Opex 2015: Increase due to investment in R&D and Equipment (see assumptions in “Change in opex”).

(4) Depreciation from 2016 on: see assumptions in line “Depreciation”.

(5) Goodwill Depreciation assumption 0%.

(6) Interests for the short-term debt: 2,5% of total debt of previous year.

(7) Interests for the long-term debt: 7,5% of total debt of previous year.

(8) Taxation: see assumptions in line “Taxes”.

Annex K: Balance Sheet Forecast

		PreSale	PostSale	*Forecast*				
Balance (000€)	**Assumptions**	**2015**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
NFO	**64%**	27.186	27.186	29.985	32.983	36.281	39.910	43.901
FA, Fixed assets net	**3.000**	12.522	12.522	13.622	14.722	15.822	16.922	18.022
Goodwill			40.292	40.292	40.292	40.292	40.292	40.292
NA, Net assets		39.708	80.000	83.899	87.997	92.395	97.123	102.214
E, Equity		40.976	40.000	43.961	49.253	56.072	64.641	75.207
Proviss & Other Liab.	**1.000**	1.010	1.000	1.000	1.000	1.000	1.000	1.000
D-S, S/T debt		n.a.	27.186	29.985	32.983	36.281	39.910	43.901
D-L, L/T debt	**1.000.000**	n.a.	11.814	11.814	11.814	11.814	11.814	11.814
D, Debt total		1.821	39.000	41.799	44.797	48.095	51.723	55.714
Financing		43.808	80.000	86.759	95.050	105.167	117.364	131.921
Cash surplus (+)		4.100	0	2.861	7.053	12.772	20.241	29.707
Cash generated per year		1.562	n.a.	2.861	4.192	5.720	7.468	9.466

NFO vs. WC					
NFO	29.985	32.983	36.281	39.910	43.901
WC	42.153	46.344	52.064	59.533	68.999
Cash (+) or credit (-) net	12.168	13.361	15.783	19.623	25.098

Guidelines for Balance Sheet forecast:

(1) NFO 2015 Post Sale: NFO pre-sale. From 2016 on, see NFO/sales ratio assumptions.

(2) FA in 2015 Post Sale: FA pre-sale. From 2016 on, see FA annual growth assumptions.

(3) Equity 2015 Post Sale: Initial equity invested. From 2016 on: Equity = previous one + net income of current year.

(4) Proviss & Other Liab. stay fix over the time of the project, as assumptions suggest.

(5) Short-term debt to finance 100% of NFO.

(6) Long-term debt as bullet loan for the time of the project. Stays fix at the value from 2015 Post Sale.

(7) We will have cash in the Balance Sheet. The difference of cash from one year to other is the cash flow for the shareholders.

(8) Goodwill in 2015 Post Sale can be calculated as: Goodwill = Initial Price – Net assets Pre Sale.

(9) Long-term debt in 2015 Post Sale can be calculated as: L/T debt = NA – (Equity + Proviss & Other Liab. + S/T debt). If the result is negative, no L/T debt is needed.

Annex L: Multiples of Euromed's comparable companies

Listed companies

Company	Country	Market Cap. (€ Mn)	EV (€ Mn)	EV/Sales (x) 2014A	EV/Sales (x) 2015E	EV/Sales (x) 2016E	EV/EBITDA (x) 2014A	EV/EBITDA (x) 2015E	EV/EBITDA (x) 2016E	EBITDA margin 2015	Sales Growth (14A-15E)
Kerry Group	Ireland	11.851	13.133	2,3	2,2	2,2	18,2	16,3	15,2	13,6%	2,4%
Royal DSM	Netherlands	9.465	11.978	1,3	1,4	1,5	14,8	10,5	10,2	13,7%	-8,8%
Symrise	Germany	7.795	8.997	4,2	3,4	3,2	n.m.	15,2	14,3	22,4%	24,4%
Sensient	United States	2.879	3.386	2,6	2,7	2,6	n.m.	14,2	12,6	19,1%	-5,5%
Frutarom	Israel	2.282	2.454	3,5	3,1	2,8	19,1	16,1	14,5	19,0%	13,6%
Naturex	France	640	801	2,4	2,1	2,0	n.m.	15,7	13,0	13,4%	15,6%
Average				**2,7**	**2,5**	**2,4**	**17,4**	**14,7**	**13,3**	**16,9%**	**7,0%**
Median				**2,5**	**2,5**	**2,4**	**18,2**	**15,5**	**13,7**	**16,4%**	**8,0%**

Transactions. Natural extracts

Date	Target	Country	Bidder	EV (€ Mn)	EV/Sales (x)	EV / EBITDA (x)	EBITDA margin (%)
Feb 15	Ingrenat	Spain	Frutarom	8	1,0	n.a.	n.a.
Okt 11	Burgundy Botanical Ex	France	Naturex	13	1,3	n.a.	n.a.
Jan 08	Berkem	France	Naturex	10	2,5	7,3	n.a.
Dez 07	Chart Corporation	USA	Naturex	12	2,1	6,8	31%
Jan 07	Hammer Pharma	UK	Naturex	10	1,3	10,5	12%
Average					**1,6**	**8,2**	**22%**
Median					**1,3**	**7,3**	**22%**

Annex M: DCF Valuation of Euromed Buyer's Perspective

CF Calculation	2015	2016	2017	2018	2019	2020
± Variation of NA		-3.899	-4.098	-4.398	-4.728	-5.091
± Variation of Debt		2.799	2.998	3.298	3.628	3.991
± Net Income		3.961	5.292	6.820	8.568	10.566
Final sale at multiple = 8						116.969
Initial equity invested	-40.000					
CF shareholder/ Equity CF	**-40.000**	**2.861**	**4.192**	**5.720**	**7.468**	**126.436**

PV with a K = 25% **PV = 52.389** **IRR = 32,79%** **NPV = 12.389**

Assumptions to change => **Initial price = 80.000** **Equity invested= 40.000**

Annex N: DCF Valuation of Euromed Seller's Perspective

CF Calculation	2015	2016	2017	2018	2019	2020
± Variation of NA		-1.981	-2.042	-2.185	-2.338	-2.501
± Variation of Debt		1.981	2.042	2.185	2.338	2.501
± Net Income		3.807	4.548	5.356	6.235	7.189
Final sale at multiple = 8						83.324
Initial equity invested	0					
CF shareholder/ Equity CF	**0**	**3.807**	**4.548**	**5.356**	**6.235**	**90.513**

PV with a K = 15% **PV = 58.837** **IRR = n.a.** **NPV = n.a.**