LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER'S DEGREE

MANAGEMENT / MBA

MASTER'S DEGREE FINAL WORK

PROJECT WORK

CASE STUDY ON JOSÉ DE MELLO'S TENDER OFFER ON

BRISA

JOÃO CARLOS MARQUES SILVA

SEPTEMBER - 2016

LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER'S DEGREE

MANAGEMENT / MBA

MASTER'S DEGREE FINAL WORK

PROJECT WORK

CASE STUDY ON JOSÉ DE MELLO'S TENDER OFFER ON

BRISA

JOÃO CARLOS MARQUES SILVA

SUPERVISOR: PROFESSOR JOSÉ AZEVEDO PEREIRA

SEPTEMBER - 2016

Abstract

This master's degree final project consisted of the full elaboration of a business case, alongside its resolution and two accompanying research papers. The business case is somewhat unusual, since it deals with a decision that involves exiting the stock market (instead of entering it), in an attempt to stop having the company's valuation dictated by the market.

Although the business case focuses on financial valuation, it has many other aspects that are exploited, such as leadership and negotiation skills, business ethics and a strong strategic component. The case was developed in order to be well suited for MBAs (especially at their final stage, serving as a consolidating case analysis). Alongside the business case, an excel sheet was devised in order to aid with the calculus (there are two versions; one for the students without the case solutions, and another for the teacher with all the answers).

The accompanying research papers deal with some aspects that were raised during the valuation phase of the analysed company (Brisa), namely the possibility of double counting the released free cash flows over the years when dividends aren't distributed (dealing with potential dividends usually causes some confusion), and the valuation correction needed to be done when the retained FCFE capital is applied in projects yielding a rate different than that of the cost of equity. Each paper was used in different questions, namely to calculate the company's expected "cash build-up" due to not distributing any dividends; and to assess the difference between two

different investment rates. The papers can be distributed alongside the business case in order to help students solve such questions.

This document is comprised of the state of the art in financial valuation, the business case (without most annexes; just the one with the case's main questions) alongside excerpts (due to size restrictions) of its resolution (teaching note) and Excel files, and finally a small comment on the two working papers focusing on the FCFE discount model for valuing companies.

As a final note, the business case was submitted to the FAE/EDP (Fórum de Administradores e Gestores de Empresas / Energias de Portugal) Business case contest with a specific format (less pages and different text styles), and its version is also included in the CD that accompanies this Master's degree final work.

CD content

- Case file and teaching note, both in word and pdf format
- Excel files (student's and teacher's version)
- Excel file with functions for cash build-up (add-in file with macro)
- FAE/EDP contest version of the case and respective resolution
- Research papers, both in word and pdf format
- Master's Degree Final Work, both in word and pdf format

Resumo

Este trabalho final de mestrado consistiu na elaboração de um estudo de caso, juntamente com a sua resolução e dois artigos de investigação que servem de ajuda para a resolução de duas perguntas, cada uma sobre um artigo diferentes. O caso em estudo é um pouco invulgar, visto lidar com uma decisão de saída do mercado de capitais (ao invés de entrar no mesmo), numa tentativa de deixar de ter a avaliação da companhia ditada pelo mercado.

Apesar do caso focar na avaliação financeira da companhia, tem muitos outros aspetos que são explorados, nomeadamente técnicas de liderança e negociação, ética empresarial e uma grande componente estratégica. O caso foi desenhado de forma a servir especialmente para MBAs (especialmente na sua fase terminal de consolidação), e é suportado por uma folha de Excel para cálculos (existem duas versões; uma para os estudantes apenas com os dados necessários para resolver as questões, e outra para o docente, com todas as soluções).

Os artigos de investigação que acompanham o caso lidam com alguns aspetos que foram abordados na fase de avaliação da empresa (Brisa), nomeadamente o erro (e sua quantificação) de valorizar em duplicado os fluxos financeiros libertados anualmente quando os dividendos não são distribuídos (lidar com dividendos potenciais geralmente causa alguma confusão), e o ajuste a fazer a uma avaliação quando a parte do FCFE retida não gera a taxa de rendimento esperada. Os artigos servem de apoio a duas das perguntas do caso, nomeadamente a questão que pede para calcular a acumulação de capital devido à companhia não distribuir dividendos

e a questão sobre reter capital a diferentes taxas de investimento. Os artigos podem ser distribuídos juntamente com o caso de forma a ajudar os estudantes a resolverem as questões correspondentes.

Este documento é constituído pelo estado da arte em avaliação de empresas, o caso (sem a maioria dos anexos, apenas aquele que contém as perguntas principais) e excertos (devido a restrições de tamanho) da sua resolução (teaching note) e dos ficheiros Excel, finalizando com um pequeno comentário sobre os artigos de investigação que analisam questões pertinentes à avaliação usando o modelo de FCFE descontado.

Como nota final, o presente caso foi submetido ao concurso de escrita de casos de negócio da FAE/EDP (Fórum de Administradores e Gestores de Empresas / Energias de Portugal) com um formato específico (menos páginas e tipos de letra diferentes), sendo que esta versão do caso é também incluída no CD que acompanha este trabalho final.

Conteúdo do CD

- Ficheiros do caso e respectiva resolução, em ambos os formatos word e pdf
- Ficheiros Excel (versão para o aluno e para o professor)
- Ficheiro Excel com funções para calcular a acumulação de capital (macro que se pode acrescentar aos ficheiros Excel como suplemento)
- Versão do caso para o concurso FAE/EDP
- Artigos de investigação, em ambos os formatos word e pdf
- Trabalho Final de Mestrado, em ambos os formatos word e pdf

Core Glossary

APV	Adjusted Present Value
DCF	Discounted Cash Flow Valuation
EBIT	Earnings Before Interest and Taxes
EBITDA	EBIT Depreciation and Amortization
EV	Enterprise Value
FCF	Free Cash Flow
FCFE / FCFF	FCF to Equity / FCF to Firm
GAAP	Generally Accepted Accounting Principles
IRR	Internal Rate of Return
NPV	Net Present Value
PE	Price to Earnings
S&P	Standard & Poor's ratings
TVC	Terminal Value Correction
WACC	Weighted Average Cost of Capital

Acknowledgements

I would like to begin by thanking my supervisor, Professor José Azevedo Pereira, for his patience and time dedicated to all our discussions and meetings. I learnt a great deal while doing this work with him.

I would also like to thank Dr. Joaquim Aguiar from José de Mello, since he was also a key element in disclosing the main facts to be included in the business case, and closed the gap to Brisa's head management. Dr. Aguiar followed the case with keen interest, and had lots of useful inputs and ideas.

A word of gratitude also goes out to Brisa's Vice-chairman of the board of directors, Eng. João Pedro Rocha e Melo, due to his attitude of full disclosure that facilitated everything.

Last, but not least, I would like to thank my family for supporting me in this new adventure, allowing me to reach my professional goals.

List of Figures

Project Index

Chapter 1 State of the art on Valuation

The proposed business case deals with many aspects, though the main issue centres on Brisa's valuation. Valuation is the name given to the process of determining the current worth of a company/ asset/ project, and thus is an essential tool to everything done both in finance and corporate strategy. Understanding what determines the value of a firm and how to estimate it is at the heart of every decision making process, being it to find the best investment solutions to increase the firm's value, to manage a business portfolio looking at companies trading at less than their true value and then generate profit as prices converge on value, or simply to study the market's efficiency.

There are many techniques that can be used to determine value, and all render different results (Damodaran, 2006). These models range from simple to sophisticated, making different assumptions as to the fundamentals that determine value. Generally, there are four approaches to valuation. The main model for valuing ongoing businesses and projects is the discounted cash flow valuation (used in the case solution), where the value of an asset is the present value of the expected cash flows on the asset, discounted back at an appropriate rate that reflects the risk of the endeavour. Due to its theoretical credentials, it is the model that gathers the most consensus. The other three valuation models are liquidation and accounting valuation (based on accounting estimates of value or book value of the firm), valuation by comparison to similar assets such as earnings, cash flows and sales,

and the last valuation model, contingent claim valuation, uses option pricing models to value assets that share option characteristics. Valuation on real options is a separate field on finance (and a complex one, involving several statistic models), and thus in this work we will merely mention it, concentrating on the first 3 valuation methods.

Discounted Cash flow Valuation

The essence of discounted cash flow valuation is simple; the asset is worth the expected cash flows it will generate, discounted to the value of today. A survey article was written in Parker (1968), where it stated that the earliest interest rate tables (use to discount value to the present) dated back to 1340. Later, in 1582, a Flemish mathematician, Simon Stevin wrote one of the first textbooks on finance, laying out the basis for calculating the present value in Stevin (1582). It was only after 3 centuries that a civil engineer, A.M. Wellington argued that the present value of future cash flows should be taken into account when calculating the up-front investment in Wellington (1887). The intellectual basis for discounted cash flow was described in both Bohm-Bawerk (1903) (with a home purchase example with 20 annual instalment payments) and Marshall (1907). Finally, present value equations were developed for annuities, in order to assess the need to either buy new equipment or retain old equipment in Pennell (1914).

The principles of modern valuation were consolidated in Irving Fisher's books (1907 and 1930). In these books, there were four alternative approaches for analysing investments, namely choosing the investment that:

- had the highest present value at the market interest rate
- had the largest gap between benefits and cost at the present value
- had the highest "rate of return on sacrifice", above the market interest rate
- compared to the next most costly investment yielded a return in excess of the market rate

Note that the first two approaches represent the net present value rule, the third is the IRR – Internal Rate of Return approach and the last is the marginal rate of return approach. Later works from Boulding (1935) and Keynes (1936) derived the IRR for an investment. One year later, Samuelson (1937) compared the IRR and NPV (Net Present Value) approaches and argued that rational investors should maximize NPV and not IRR.

These previously mentioned works set the basis for the widespread of the discounted cash flow approach into all business areas, aided by developments in portfolio theory. There are four variants of discounted cash flow models, each with its own advantages and disadvantages. These are:

- Discounted cash flow with a risk-adjusted discount rate (used in the case)
- Adjusted cash flows for risk, termed certainty equivalent cash flows, discounted at the risk-free rate

- Adjusted Present Value (APV) approach, which consists of valuing a business without the effects of debt first, and then consider the effects of borrowing. This approach was first boarded by Modigliani&Miller (1963) with the isolation of the tax benefits from borrowing, but the APV in its current form was present in Myers (1974).
- Valuation based on excess returns on each investment.

In stocks, the dividend discount model was first mentioned in Williams (1938), where the present value concept was connected to the stock's dividends. Williams also drew a distinction between valuing mature and growth companies in Williams (1938). The value of stock with perpetual growth was derived in Durand (1957), but it was Gordon who popularized the model in subsequent articles and a book, giving it the title of the Gordon growth model (Gordon, 1962). Due to the non-realistic property of a single perpetual dividend growth, the two stage (and multi-stage) model was devised in Bernstein (1967) – an extensive categorization of multi-stage models is provided in Damodaran (1994). The H model, a two stage growth model where the first stage has a linearly descending growth until the stable (constant) growth figure of the second stage, was devised in Fuller&Hsia (1984).

The valuation of companies that pay no dividends due to reinvestment was analysed in Michaud&Davis (1981) (based on expected dividend pay-out when the growth rate declines). Shiller (1981) presents evidence that the volatility in stock prices is too high to be explained by variance in dividends over time, while Poterba&Summers (1988) argue that risk premiums can change over time. Fama&French (1988) noted that dividend yields vary much more than dividends, and Foerster&Sapp (2005)

analysed a long time period (from 1871 to 2003) and found that the dividend discount model does a good job explaining the main variations in the S&P 500 index, though there were systematic differences over time in how investors valued future dividends. In Sorensen&Williamson (1985), some analysis was also performed, valuing 150 stocks from the S&P 400 in December 1980, using the dividend discount model. The return on the stocks were estimated for the following 2 years (January 1981 – January 1983), where undervalued (overvalued) stocks from the dividend discount model outperform (underperform) the market index on a risk-adjusted basis.

The decline in paying of dividends was analysed in Fama&French (2001), where it was concluded that today's market portfolio is mostly made of high growth firms and that firms became less likely to pay dividends, as dividend paying firms went from 66,5% in 1978 to 20,8% in 1999. The work in DeAngelo et al (2004), Hoberg&Prabhala (2005), Baker&Wurgler (2004a) and Baker&Wurgler (2004b) tried to explain the decline in dividends over time, attributing it to a variety of factors. The fact remained that the gap between dividends paid and potential dividends did increase over time, posing a challenge to the use of dividend discount models.

The fix to the posed problem would be to replace dividends with potential dividends in the dividend discount model. Potential dividends can be estimated by three variants:

- Stock buyback as dividends: the work in Damodaran (2006) presents the modified dividend pay-out including stock buybacks, and argues that it works well in explaining the market prices of companies that return cash over regular intervals via stock buybacks

- Free Cash Flow to Equity model: the publication of Hagstrom (2004) describes how Warren Buffet argued that investors should value companies based on its “owner’s earnings”, which were defined as the cash flows left after capital expenditures and working capital needs.
- Earnings Model: The model of discounting earnings or variants of earnings is discussed in Ohlson (1995) and Felthan&Ohlson (1995), where a relationship between value and earnings is established. Penman&Sougiannis (1997) argued that GAAP (Generally Accepted Accounting Principles) earnings could be substituted for dividends in equity valuation, as long as analysts would reduce future earnings and book value to reflect dividend payments. All these models were prone to double-counting (Penman&Sougiannis(1997) described that “discounting earnings as if they were cash flows paid out to stockholders while also counting the growth that is created by reinvesting those earnings will lead to the systematic overvaluation of stocks”), something that was discussed in Glassman&Hassett (2000).

The model used in the case, and with widespread use is the FCFE / FCFF (Free Cash Flow to Equity and Free Cash Flow to Firm) model. The question however of using potential dividends versus real dividends endures, and care must be taken in order not to double count cash flows and to assess what use is given to that excess cash flow – if it is invested wisely, what returns will come of them, how it is accounted for, etc (Damodaran, 2006). The value of the firm to all stakeholders (the FCFF model) was originally introduced in Modigliani&Miller (1958). The perpetual growth formula for the FCFF (to calculate the value of the firm) was analysed in Miles&Ezzell (1980). The McKinsey books on valuation have also provided extensive coverage

on the estimation questions associated with discounted cash flow and the link between value and corporate financial decisions (Copeland et al, 1990), (Koller et al, 2005). The passage to forego between FCFF and FCFE (or firm valuation to equity valuation) is explained in detail in Damodaran (2006). Since it is fundamental to use notions of risk adjustment in order to correctly model expected cash flows, the Bernoulli model is often used (Bernoulli, 1738) and cited. Further works built up on this Gregory (1978), but a more practical approach was given in Robichek&Myers (1966), with the compounded risk premium calculation.

Book Value Based Valuation

Valuation based on the company's balance sheet represents the original ideal for accounting statements, in which a firm's income statement would provide a measure of the its earnings potential and its balance sheet would yield a reliable estimate of the firm's value (Daniels, 1934). Nowadays very few contend that a company's book value is a good measure of its market value (only good for mature firms with little or no growth opportunities and no potential for excess returns), though some works indicate that if a stock drops below its book value it's probably undervalued (Graham, 1949) (investing in these stock is called "value investing", and its potential was corroborated in Fama&French (1992)).

The firm's excess returns must be taken into account for valuation, jointly with its book value, as stated in Ohlson (1995), Feltham&Ohlson (1995) (basically stating that a firm's value of equity is equal to the current book value of equity and the

present value of the expected excess returns to equity in perpetuity). Ohlson's residual income model was received with enthusiasm (though it was not revolutionary), since similar models extending the dividend discount model to incorporate excess returns on future opportunities were divised in Walter (1966), Mao (1974). Later, Lundholm&Keefe (2001) showed that discounted cash flow models and residual income models yielded identical valuations of companies, as long as all assumptions were consistent. Accountants took a liking to Ohlson's model due to its explicit use of book value, and revitalizing the significance of accounting earnings, that was questioned in Lev (1989). The Ohlson model was posteriorly backed by Frankel&Lee (1998), Hand&Landsman (1999), Dechow et al (1999), though the work in Lo&Lys (2005) states that in order to really back up the Ohlson model, one should question if "changes in equity value are correlated with changes in book value of equity and net income", and that the Ohlson model "does no better on these tests than established models".

Recently, the notion of "fair value accounting", based on the original accountant's idea that the book value on a balance sheet alongside the resulting net worth for companies be a good measure for the fair value of the company, has gained some projection. There is a great amount of controversy on this matter; some advocate it's a good measure (Barth et al, 2001), while others point the potential for accounting manipulation (Holthausen&Watts, 2001), pointing out the example of Fabricant (1938), of widespread account manipulation in the USA until 1934, after which the measure was discouraged. The work in Barth (1994) concludes that fair value accounting provided useful information to markets in a variety of contexts; and the work in Nelson (1996) concluded that for the banking sector it was better to use the

market's values. Other works (Chen et al, 2004) point out that stock prices react negatively to goodwill impairments, indicating that fair value assessment provide information to the market. In essence, we can conclude that fair value valuation is a reflection of what will eventually happen in the market, and its use should be performed at least for internal accounting.

Another special case of book value valuation is liquidation valuation. Due to the urgency of selling, the liquidation value will be a specified percentage of book value – Berger et al (1996) argue on this and provide evidence that book value operates as a proxy for the abandonment value in many firms, while Lang et al (1989) use book value as a proxy for replacement costs. The discount to book value varies greatly; Kaplan (1989) cited a Merryl Lynch estimate that the speedy sales of the Campeau stake in Federated would bring about 32% less than an orderly sale of the same assets, and Holland (1990) estimates a discount in excess of 50% in the liquidation of assets of a machine tool manufacturer. Williamson (1998) points out that assets that are not specialized and that can be redeployed elsewhere have a smaller discount due to great use opportunities, and Shleifer&Vishny (1992) argue that assets with few potential buyers or buyers with financial constraints are likely to sell for higher discounts.

Relative Valuation

In this case, assets are valued based upon how similar assets are priced in the market, something commonly used for buying houses or used cars. There are three steps that are essential to relative valuation

- Finding comparable market-priced assets
- Scale the market price to a common variable (assets may vary in size and units; one can't compare stock price, only value of equity, for instance)
- Adjust for differences across assets (assets usually are not 100% identical, and adjustments need to be done)

Some studies were done for finding suitable standardized values and multiples (of the earnings that an asset generates) (Damodaran, 2002). Fernandez (2001) discusses the use of different multiples at Morgan Stanley Europe, and notes that PE ratios and EV/Ebitda multiples are the most frequently employed. Liu et al (2002) compare how well different multiples do in pricing 19878 firm-year observations between 1982 and 1999 and suggest that multiples of forecasted earnings per share are best for explaining price differences; multiples of sales and operating cash flows are the worst to be used, and multiples of book value and EBITDA fall in the middle. Lie&Lie (2002) examined 10 different multiples across 8621 companies between 1998 and 1999 and arrived at similar conclusions.

Chapter 2 Main Case File

(without the blank pages)

LISBOA SCHOOL OF ECONOMICS & MANAGEMENT

Strategic Actions in Challenging Times[1]

José de Mello's predicament on its stake in Brisa

Authors: João Carlos Marques Silva, Ph.D. and José Azevedo Pereira, Ph.D.

[1] This case was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. All the information used to prepare the case is publicly available and all the "drama" related was created by the authors with the sole purpose of creating better conditions for class discussion. In spite of the fact that contacts were made with executives from José de Mello Group and Brisa, the views and statements made are only the result of the author's choices. More specifically, it is important to note that meetings and opinions mentioned in the case do not fully correspond to what really happened.

Abstract

Opportunities for value creation may be found in awkward and difficult circumstances. Good strategic thinking and ability to act swiftly are usually crucial to be able to take advantage of such tough environments.

Amidst a country-wide economic crisis and general disbelief, José de Mello Group (JMG) saw one of its main assets' (Brisa Highways) market value tumble down to unforeseen figures, and was forced to act on it. Brisa's main partners were eager in overpowering JMG's control of the company, and outside pressure from Deutsche Bank was rising, due to the use of Brisa's shares as collateral. JMG would have to revise its strategy and see if Brisa was worth fighting for; the market implicit assessment about the company's future prospects was very penalizing, but JMG's predictions on Brisa's future performance indicated that this could be an investment opportunity.

Would it be wise to bet against the market?

Keywords

Corporate Strategy, Financial Valuation, Economic Crisis, Business Ethics, Leadership, Negotiation

Case Index

Introduction

In the beginning of 2012, Portugal was immersed in austerity measures, and the overall outlook in everyone's mind was negative. For almost all Portuguese people, as compared to the previous year, wages were lower, taxes and unemployment were substantially higher and emigration was soaring. Adding to all this, Petrol prices were prohibitively high and companies were shutting down everywhere. Despite the situation, Portugal's main tolled motorway operator Brisa, was still growing and investing. Brisa operated mainly under a BOOT (Build, Own, Operate and Transfer) Public-Private Partnership (PPP) model in Portugal, and had international investments in India, Brazil, US and Russia.

Although the current investments promised a great amount of dividends in the future (opinion of Brisa's board), the value of Brisa's shares was being pulled down by the generalized crisis. Once valued over 10€/share, now Brisa stocks were under 3€/share, and this posed a great problem, not for Brisa itself (although struggling with the crisis, paying higher premiums and with less users paying the tolled roads, its financials were solid, with an operating profit in 2011 higher than in 2009 and 2010, due to the fruits of its investments), but for Brisa's main shareholders, who witnessed the value of their shares come down. This problem was aggravated for those that used their shares as collateral for loans. That was the case of José de Mello Group (JMG), one of Portugal's largest financial groups with interests in various sectors of the industry. JMG's president, Vasco de Mello, was also Brisa's chairman and CEO, which fully portrays the importance and investment that JMG had put in Brisa. Owning over 30% of Brisa's shares, JMG had the shares given as collateral at a value of 6€/share, and ever since their market value dropped below half that value, the problem was sprung. Although the Portuguese banks Millenium/BCP (Banco Comercial Português), BES (Banco Espírito Santo) and CGD (Caixa Geral de Depósitos), that held JMG's debt, were willing to weather out the storm, JMG's main international lender, Deutsche Bank, was exerting a high pressure towards renegotiating JMG's loans and premium. The other two major owners of Brisa, Abertis and the Arcus fund also had their concerns: Abertis, wanted to seize control of Brisa, whereas Arcus was worried that an eventual withdrawal of JMG from Brisa would lower the company's potential earnings in the future.

Another option on the table was to buy out Brisa from the market through a public takeover bid (equity tender offer), which would require a hefty amount of supplementary funding; something that had to be considered carefully amidst a situation with soaring interest rates and low economic activity. If Brisa was to be delisted, its valuation would no longer be dictated by market quotations, and thus pressure from the main lenders would tend ease; but changes in Brisa's ownership had to be negotiated. The overall strategic balance between shareholders would need to be redefined and this would include not only JMG, Arcus and Abertis, but the minority shareholders as well. The case story portrays JMG's predicament on what to do about this matter.

José de Mello Group (JMG)

José de Mello Group (JMG) was a major Portuguese family-owned business holding, with close ties to all economic sectors. The José de Mello family name was very well regarded in Portugal, and there was some kind of "moral debt" from the Government to the Mello family due to nationalizations that took place in the 1970's. During this process, in the aftermath of the Portuguese revolution of 1974, most of the banks and major industrial companies were nationalized. The most important Portuguese economic group at the time, was mainly owned by the Mello family, and was a natural target during this process. The family managed to recover part of its companies during the late 80's, but by then most of them were undercapitalized and faced some problems of obsolescence.

In 2012, JMG was a powerful holding with a diversified business portfolio and a clear strategic view on the future. JMG's President, Vasco de Mello, was someone with top-management experience in the banking, insurance, telecoms, energy and transport infrastructure sectors (Brisa), who was trying to (re)build his family's empire, though resorting to a very high financial leverage. The Portuguese financial situation, amidst Europe's political failure to provide a stable and trustworthy long-term solution to its member countries with credit problems, was worsened when Portugal's sovereign debt credit rating was lowered to sub-investment grade (aka "garbage", alongside Greece and Ireland). This fact threw all Portuguese companies to sub-investment grade due to the country risk premium, turning a bad situation into an almost impossible one, due to the increase of credit premiums in a country whose economy was already in a big downfall.

Vasco de Mello, JMG's president, had some decisions to make regarding the financial and overall group's growth strategy for the future – some investments would have to be cut short in order to minimize risk, and the question in everyone's mind was "what is he going to do, regarding Brisa?"

JMG's Brief History[2]

José de Mello was a business holding created in 1986 that aggregated various companies from different industries. The holding stemmed from the family José de Mello that was a branch of one of the most entrepreneurial families in the Portuguese history, whose status as industry captains dates back to the 1800's. In effect, via the creation of CUF (Companhia União Fabril) in the 1890s, the Mello family (more specifically Alfredo da Silva) got CUF involved in various activities, under the motto "what the country doesn't have, CUF creates". The group got involved in business as diverse as the construction of railways, ship building & repair docks, making soaps, olive oil, acids, salts, fabrics, libraries, youth centres, restaurants, medical care centres, cinemas, etc.

In the 1970s, CUF's business covered a wide spectrum of sectors that included some of the most important industries in the country. It included major financial sector holdings (Totta&Açores Bank, the 4th largest Portuguese bank and Império – the largest Portuguese Insurance company); besides significant assets in the chemical sector, textile and minerals, healthcare and food industries, large ships repair (Lisnave) and environmental protection.

After the Portuguese revolution of 1974, CUF was nationalized. The Mello family was forced to stall until after Portugal entered the European Union (at the time European Economic Community) in 1 January 1986. Once in the EU, the Portuguese government started a countrywide

[2] JMG history taken from MelloHistory (2016)

privatization phase, to which José de Mello, grandson to Alfredo da Silva and son of Manuel de Mello promptly responds. The holding "José de Mello" was created, and begun to reacquire its former businesses, as well as creating new ones. The crown jewel, the insurance company Império (that controlled the CUF hospital) was acquired in 1992, and the whole empire was strong and diversified once again by the end of the 1990s.

In 2000 the Mello group reconfigured its business and bet on new areas, namely in Brisa, Efacec (Portugal's leader in electromechanical equipment and devices) and retirement homes (José de Mello Residências e Serviços). Some old areas were also let down, such as Soponata (fuel maritime transport) and Finertec (alternate energies). In the first years of the millennium, JMG reinforced its position in Brisa to 30%, built the hospital "Cuf Descobertas" and opened the health clinic "Cuf Alvalade", merged the chemical companies Quimigal and Uniteca and acquired the chemical plant of Elnosa in Galiza.

The investment in the chemical department kept rising, as well as in Efacec, where further shares were bought in the market via a Public Offering. JMG also entered the capital of EDP – Energias de Portugal, the main Portuguese Electricity supplier. Further on, in 2007, JMG sold the shares it had in Millennium/BCP and bought further capital of EDP, to a total of around 5%.

José de Mello Saúde kept investing in hospitals and clinics, while JMG dropped the fertilizer business. Some public-private partnerships were also signed, in a period where the Portuguese government started to "disinvest" in the public healthcare, and people started to worry that health could turn out to be accessible only to the wealthy. Efacec was also pushed forward, with a new plant in the USA in 2009, Efacec Power Transformers, to serve primarily the great US utilities. The technological sector was further improved with the launch of company Innovnano, to develop nano-technology (focused on nano-materials).

JMG sought not only to diversify its investments and thus reduce its market risk, but also to exploit synergies between its diverse industries and businesses. The Via Verde automatic toll system sprung out of a synergy between the technological sector and the toll services, further developed into automatic payment of all sorts, including car parks, gasoline, etc. Efacec could certainly be useful in conjunction with Brisa, for highways with electrical charge capabilities for electric cars, on a "charge as you ride" philosophy. The JMG was proud to be in the forefront of the market, and to drive its business forward.

The company's network of customers was distributed across Portugal, Spain, Central Europe, Maghreb, South Africa, United States, Latin America, India and the international arena in general. JMG targeted an IRR (Internal Rate of Return) in excess of 10% on all its projects. For a better and clearer view of JMG's historical profile and path, Figure 1 was devised until March 2012.

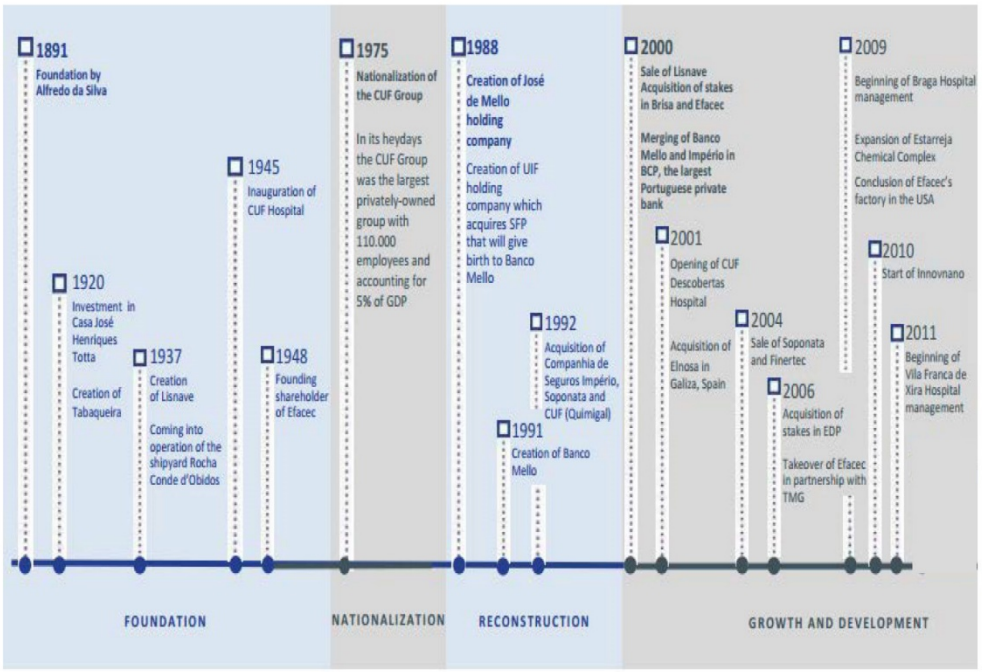


FIGURE 1 – JMG HISTORY AT A GLANCE

JMG's Strategy

JMG always planned its investments thoroughly, and had in mind a diversified business portfolio in order to minimize risk. JMG's growth however was not organic, and thus its investments were always subject to market risk, as was the case in 2012. JMG's strategy can be summarized by the following QFD matrix (Figure 2):

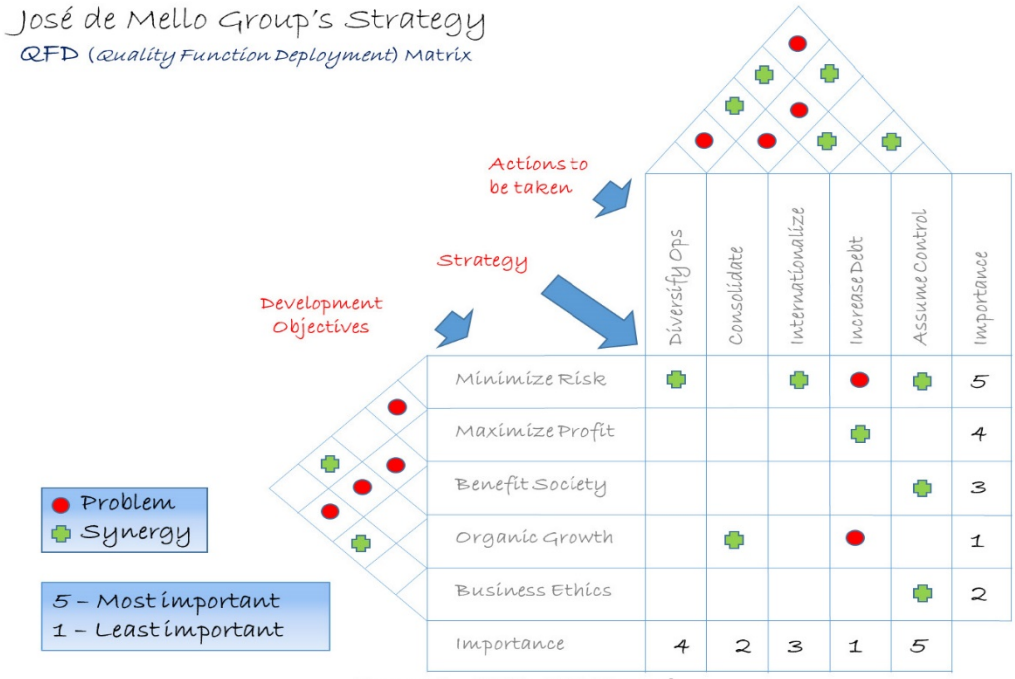


FIGURE 2 – JMG'S QFD MATRIX[3]

It is interesting to notice that JMG saw the need to assume control of its operations as a means to fulfil three development objectives; namely, risk minimization, benefit society and control the business ethics. On one hand, this certainly may have played an important part in the decision process of whether to take over Brisa or not, but on the other hand, the diversification of its business was seen as fundamental to minimize risk (buying out Brisa would mean to concentrate a huge financial effort on a single company). The rest of the QFD is self-explanatory of JMG's strategy, easily interpreted by identifying the problems and synergies of each objective and actions, either between themselves or each other.

[3] Solely from the authors' viewpoint, but validated by JMG

JMG's Finances

In terms of JMG's financial condition, the consolidated balance sheet and net results for the years 2009-2011 are portrayed in Figure 3 and Figure 4 respectively. Notice the continuous investments, funded mainly via the increasing debt through the portrayed 3 years. In 2010, the high financial results were an outcome of Brisa's sale of the Brazilian CCR, yielding a hefty profit.

	2009	2010	2011
Goodwill	115	114	113
Tangible fixed assets	354	386	392
Financial investments	1952	1907	2065
Inventories	75	90	100
Cash and equivalents	180	174	171
Other Assets	1045	1209	1176
Total Assets	**3721**	**3880**	**4017**
Share capital	170	170	170
Reserves and retained earnings	181	6	320
Consolidated net profit	-31	192	-158
Equity attributable to shareholders	**320**	**368**	**332**
Non-controlling interests	27	43	34
Total Equity	**347**	**411**	**366**
Loans	2780	2860	2868
Provisions and benefits to employees	81	76	99
Other liabilities	512	533	684
Liabilities	**3373**	**3469**	**3651**

FIGURE 3 – JMG'S CONSOLIDATED BALANCE SHEET 2009-2011 (IN MILLION €)

	2009	2010	2011
Operating income	910	1173	1064
Operating costs	893	1143	1062
Operating results	**17**	**30**	**2**
Financial results	-40	168	-161
Income tax	-3	-7	-2
Non controlling interests	-4	1	3
Consolidated net result	**-30**	**192**	**-158**

FIGURE 4 – JMG'S CONSOLIDATED NET RESULTS 2009-2011 (IN MILLION €)

JMG's President Professional Roadmap

It is also interesting to look at the professional roadmap of JMG's president, Vasco de Mello, who was also the chairman and CEO of Brisa (Figure 5). Vasco de Mello had also previously been a member of Abertis and vice-president of bank BCP. The close relationship that JMG had with these companies is largely due to the personal relations and trust deposited in Vasco de Mello.

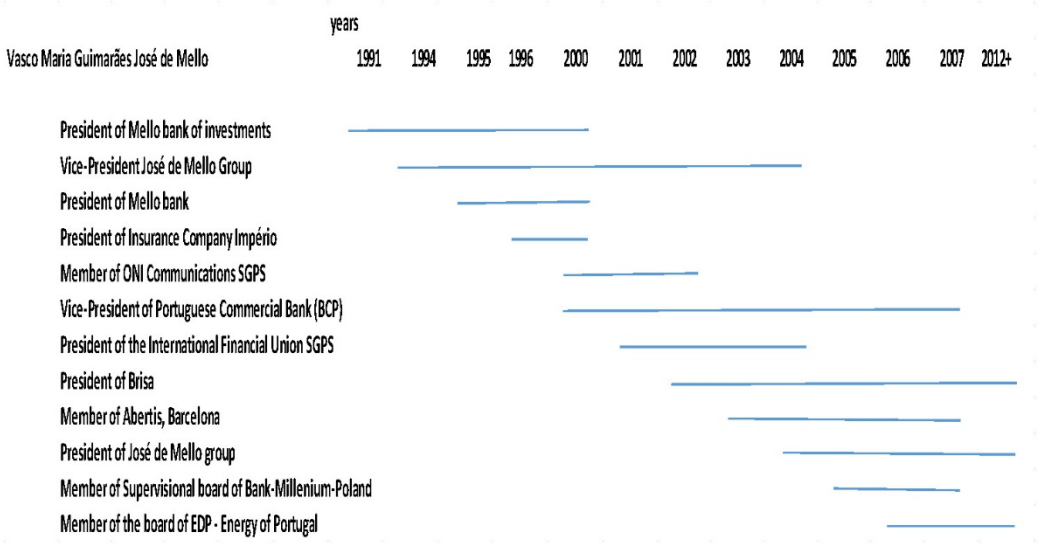


FIGURE 5 – VASCO DE MELLO'S OFFICES THROUGH TIME

Brisa – Overview

Although the case discusses JMG's decision on what to do regarding its current operations, it mainly centres on Brisa, and its potential to generate revenue in the future. JMG planned its operations so that Brisa would be a "cash cow"[4] at the centre of operations, deserving the full attention of Vasco de Mello, which was both president of JMG and Brisa. However in 2012, the market, subdued to international pressure, slashed the share's price to under even the most pessimistic projections, based on the fact that Brisa's credits were more expensive and Brisa's revenues were decreasing due to economic slowdown.

Brisa - Auto-estradas de Portugal (Highways of Portugal) was created in 1972. In 40 years it has become one of the largest tolled motorway operators in the world and the largest transport infrastructure company in Portugal. Brisa holds six road concessions in Portugal, namely Brisa Concessão Rodoviária (BCR – Brisa's main concession), Atlântico, Brisal, Douro Litoral, Baixo Tejo and Litoral Oeste, comprising a total of 23 motorways and covering 1705 km, operating mainly under a BOOT (Build, Own, Operate and Transfer) Public-Private Partnership (PPP) model. Abroad, Brisa is present in the United States, controlling Northwest Parkway concession in the United States; it also operates in the Netherlands, where it is active in electronic toll systems (30% stake in Movenience).

The critical factors in Brisa's development were the skills that the company held on financing, project management, construction, operation of infrastructure and technological leadership in the operation support systems. Brisa defined as part of its vision to be a manager of transport infrastructures, with a global presence. In this context, the company integrated the consortium for the construction of the New Lisbon Airport and participated in the ELOS consortium, which was awarded the concession for the section of high-speed train between Caia and Poceirão.

Brisa was proud of its commitment to be a key player in economic and social development of the country, contributing to the quality and accuracy of its engineering and its capacity to deliver on innovation, security, high levels of service and respect for the environment in the field of sustainable mobility. In 2012, Brisa's philosophy was seen as an extent of JMG's.

Brisa's Stock History

Created in 1972, Brisa won the concession for the construction of the Portuguese highway network. The Portuguese government entered 3 years later, after the Carnation Revolution of 25th April 1974 (overthrowing the authoritarian dictatorship of the "Estado Novo", bringing the country into a democracy), through the nationalization of the banks. Several banks were Brisa's partners, and as such, the State nationalized 27,5% of Brisa indirectly. The Portuguese State proceeded to buy directly stocks from Brisa, in 1976. By 1997, it owned 89,7% of its capital.

The Portuguese government ran a privatization program during 1996-1997, where the privatization of Brisa was one of the planned actions. In 1997, the first privatization phase of Brisa went into effect, with 35% of the company's capital being privatized, alongside the first privatization phase of the electricity company "Energias de Portugal" and the third privatization phase of "Portugal Telecom". This privatization was vastly contested by several political parties, since the company was seen as "highly lucrative" (e.g. Portuguese Communist Party, 22 November 1997).

[4] Using the nomenclature from the Boston Consulting Group Matrix, originally from the 1970s (BCG, 1998)

In the 25th November 1997, Brisa's stock went onto the market, at an adjusted price (adjusted by the escudo conversion and dividends distribution) of 2,42€ each. After the first session, the stock climbed to an adjusted price of 2,65€ - the lowest value of the company until 2011. The company's stock kept rising, and 3 more privatization phases came along. The second privatization phase took place in November 1998, where 31% of the capital was sold for 4,16€/share, and the third phase in May 1999, where 20% of the capital was sold at 4,35€/share. The fourth and final privatization stage took place in July 2001, where the last 4,76% were sold at 4,95€/share. It was after this phase that the José de Mello group owned more than 20% of the company.

Before the last privatization phase, Brisa made a 1:5 stock split operation in 1999, and the capital of the company went from being represented by approximately 51 million stocks to 253 million stocks (50,6x5). Further on, in 2002 and 2007, two capital gain operations made the company's social capital be represented by 600 million stocks. The stock price kept rising, going over 6€/share in 2004 and reaching 9€/share in 2006. In June 2007, the Mello group's participation in the company surpassed 30% of the voting rights, and in 3 December 2007, Brisa reached its maximum value of 10,41€/share.

Year 2008 saw the stock price tumble down, to below 6€/share. This was justified by the downfall of US-giant bank Lehman Brothers. The year started with promising projects, with the creation of a consortium between several companies (one of which was the Portuguese construction giant "Soares da Costa"), for the concession of high speed railway in Portugal and Spain. Even though 2009 witnessed a small recovery on the stock exchange, the following years saw the company's share price tumble down, with the year 2011 (the year when Portugal filed for an external aid program with the Troika) being the most negative – Brisa's stock price dropped from above 6€/share to below 3€/share. This was something common to all companies on the market, and generalized practices of short-selling exploited and forced the price to go even further down.

The performance of the Brisa stock (via the variables adjusted close and transaction volume) is depicted in the figures 5-8 below, both for the last 12 years and for the last year using as base the case's date March 2012. Note that in March 2012 there were 38.563.955 treasury shares, which accounts for a total of 561.436.045 outstanding shares of the total 600M shares.

FIGURE 6 – BRISA'S ADJUSTED CLOSE VALUE UP UNTIL THE CASE'S TIMELINE

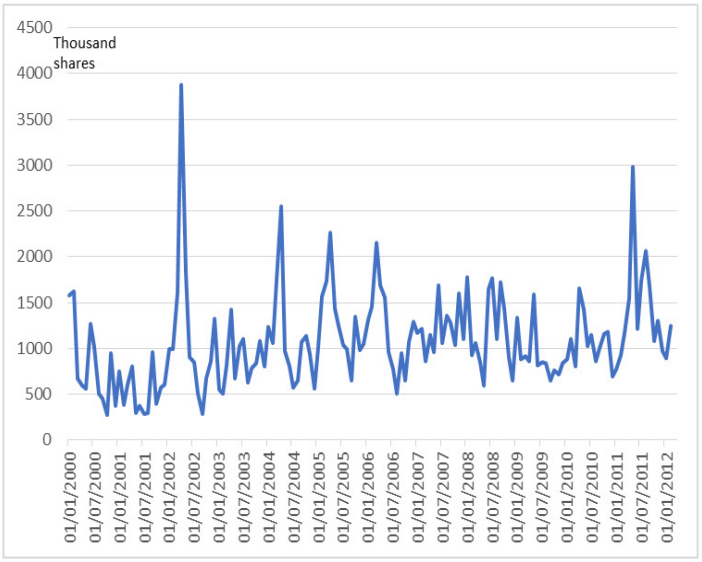


FIGURE 7 – BRISA'S SHARE TRADE VOLUME UP UNTIL THE CASE'S TIMELINE

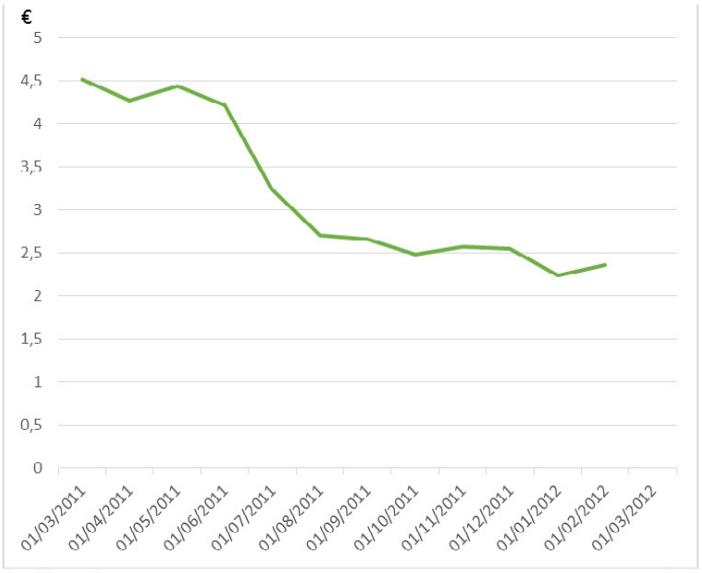


FIGURE 8 – BRISA'S ADJUSTED CLOSE VALUE DURING LAST YEAR OF THE CASE'S TIMELINE

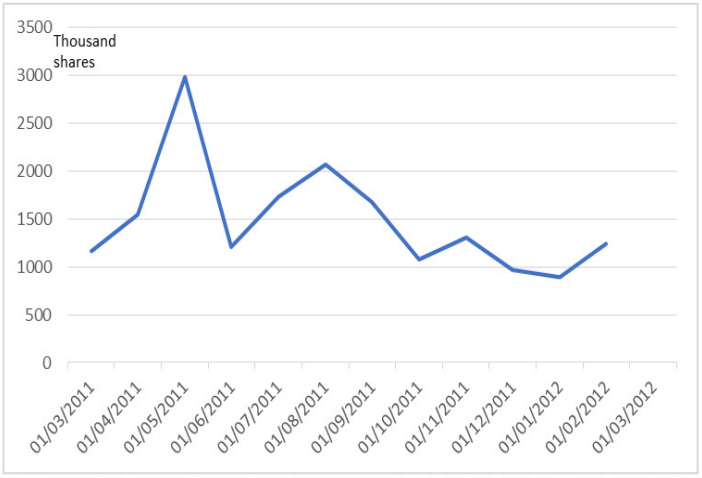


FIGURE 9 – BRISA'S SHARE TRADE VOLUME DURING LAST YEAR OF THE CASE'S TIMELINE

Brisa's Financial Statements

Brisa's financial statement up until 2011 is depicted in Figure 10. The consolidated financial statement depicted in Figure 10 needs some clarifications. In 2010 there were high financial gains due to the sale of Brisa's stake in the Brazilian CCR (Companhia de Concessões Rodoviárias), yielding a high net income (even though the EBIT was the lowest of the 4 depicted years). In 2011, Brisa gained control of AEDL (Auto-Estradas do Douro Litoral, S.A.). Due to this fact, December 2011, it was necessary to register an impairment loss in the amount of 249.917 thousand € associated to the right of Douro Litoral Concession, taking a major toll on the EBIT.

Brisa's consolidated debt profile is depicted in Figure 11. Auto-Estradas do Douro Litoral (AEDL), BCR and Brisal were where most of the debt was, with BCR debt due to originate big cash outflows in 2012, 2013, 2014 and 2016. Brisal and AEDL were highly indebted, and were project-financed. Should either Brisal or AEDL default, there would be no recourse to Brisa holding except for equity commitments of 295M€ in 2012 and 130M€ in 2015.

The BCR concession in particular had to be debt-free by the prior to it's ending (2035), with scheduled negotiations with the Portuguese Government due to begin in 2030, in order to assess the concession's situation and/or renegotiate. These scheduled negotiations (a clause in the lease contract) caused BCR's main creditor, EIB (European Investment Bank) to demand all debt to be paid by 2030.

Year	2007	2008	2009	2010	2011
Non-current assets	**5 084 659**	**5 341 669**	**5 065 764**	**4 618 336**	**5 398 039**
Non-current tangible assets	3 621 676	3 693 628	101 049	93 617	86 231
Non-current Intangible assets	866 692	1 220 925	4 410 197	4 248 794	5 013 289
Deferred tax assets	194 411	183 790	175 612	178 433	192 731
Current Assets	**274 388**	**252 657**	**247 628**	**1 467 255**	**1 085 212**
Inventories	6 055	5 646	4 034	4 964	7 928
Trade and other receivables	147 964	48 375	52 344	64 745	64 038
Other current assets	7 250	58 375	20 754	27 437	30 206
Cash and cash equivalent	113 119	140 261	170 496	1 355 939	969 197
Total Assets	**5 359 047**	**5 594 326**	**5 313 392**	**6 085 591**	**6 483 251**
Equity	**1 691 336**	**1 366 490**	**1 338 132**	**1 893 176**	**1 322 645**
Non-current liabilities	**3 189 132**	**3 600 026**	**3 314 416**	**3 611 472**	**4 374 155**
Non-current borrowings	3 059 102	3 339 580	2 986 397	3 155 744	3 809 524
Current Liabilities	**478 579**	**627 810**	**660 849**	**580 943**	**786 451**
Trade payables	20 922	18 859	17 969	26 744	18 537
Current borrowings	261 634	474 539	528 286	399 010	676 920
Suppliers of tangible fixed assets	68 368	24 300	27 443	26 375	19 292
Other current liabilities	127 655	110 112	87 151	128 814	71 702
Total Liabilities	**3 667 711**	**4 227 836**	**3 975 265**	**4 192 415**	**5 160 606**
Total Liabilities and Equity	**5 359 047**	**5 594 326**	**5 313 397**	**6 085 591**	**6 483 251**
Income Tax	26,50%	26,50%	26,50%	29,00%	31,50%
Revenue from Operations	646 471	686 046	677 016	764 805	787 322
Depreciations, amortisations	177 910	205 099	221 725	294 107	211 857
Operational Cost (includes depreciations)	365 059	410 262	454 124	712 718	519 882
Interest expense	112 980	173 115	141 730	133 501	114 585
Working Capital	- 55 676	- 40 875	- 55 431	- 84 787	- 7 359
Tax paid	- 31 727	47 532	39 619	22 744	20 645
Net Income	**254 731**	**135 835**	**139 974**	**740 919**	**- 78 170**

FIGURE 10 – BRISA CONSOLIDATED FINANCIAL STATEMENT – IN € THOUSANDS

BCR was downgraded to Ba1 by Moody's rating agency (29/11/2011), and such was the main reason invoked by Brisa to call for a dividend "lock-up" until BCR's rating was upgraded. BCR was however with a better outlook than the Portuguese sovereign debt, rated at Ba2 at the time (Portugal's rate would be even lowered to Ba3 on 13/02/2012). Note that although BCR was unable to distribute dividends (BCR's earnings were supporting the payment of the majority of Brisa's dividends), the main holding Brisa had excess cash for the sale of CCR in 2010, and thus that measure was highly controversial (measure approved on the general meeting of 2/4/2012,

where an expected dividend of 0,31€/share was called off). BCR was in fact the main part of Brisa holding, providing economies of scale that were able to sustain all other business units. Many people in Portugal usually mistook BCR for Brisa holding. Brisa's main concern with the future was knowing what was going to happen after the BCR ended; the most likely scenario being selling off the different units.

FIGURE 11 – BRISA'S REPAYMENT PROFILE OF CONSOLIDATED M/L TERM DEBT – IN € THOUSANDS

At the time (early 2012), Brisa's cost of debt was r_d=5,64% (Brisa, 2013). According to Brisa's financial research (Brisa, 2012), companies operating in the same business area had a mean (unlevered) beta of $\beta_u = 0{,}57$[5]; Brisa used this unlevered beta value for its own internal calculations. The mean market return expected from a stable market (such as S&P 500 or DAX) with a close to zero Country Risk Premium (CRP) was considered to be $r_m = 7{,}45\%$ (Brisa, 2013), which represented a 6% premium on top of the risk-free rate r_f=1,45%.

Brisa's Corporate Governance

In Portugal, listed companies used the Anglo-US corporate governance model. Brisa's governance body from 2008 to 2011 is depicted in Figure 12 (where "EC" stands for executive

[5] Bloomberg's levered beta for Brisa was 0,73 in 2012 (calculated against the S&P 500 market over the course of 5 years). The unlevered beta, obtained using the mean Debt/Equity ratio and tax rate through 2007 to 2011 was 0,48. However, Brisa's financial research used the value of 0,57 for its unlevered beta, obtained via calculating the mean of unlevered betas for similar companies - Atlantia, SIAS and Abertis, alongside Brisa itself.

committee, and "members" stands for non-executive members), where it can be seen that, although there were some significant changes in 2011, the core of the human resources boasts a solid stability. Note that Vasco de Mello was both CEO and chairman of the board of directors (usually that's the case for most companies, although it's recommended that chairman and CEO be different persons to allow for cases where the CEO needs to be replaced, though in this case Vasco de Mello was seen as a precious asset for the company).

			Year 2008	2009	2010	2011
Board of the general meeting						
Chairman	António Manuel de Carvalho Ferreira Vitorino					
Vice-Chairman	Francisco de Sousa da Câmara					
Corporate Secretary	Tiago Severim de Melo Alves dos Santos					
Board of Directors						
EC / Chairman	Vasco Maria Guimarães José de Mello					
EC / Vice-Chairman	João Pedro Stilwell Rocha e Melo					
EC / Member	João Pedro Ribeiro de Azevedo Coutinho					
EC / Member	António José Nunes de Sousa					
EC / Member	Daniel Alexandre Miguel Amaral	(Arcus)			promoted to EC	
EC / Member	João Afonso Ramalho Sopas Pereira Bento					
Member	Daniel Alexandre Miguel Amaral	(Arcus)				
Member	Rui Alexandre Pires Diniz					
Member	Michael Gregory Allen	(Arcus)				
Member	António José Fernandes de Sousa					
Member	Martin Wolfgang Johannes Rey	(Arcus)				
Member	João Vieira de Almeida					
Member	Salvador Alemany Más (Chairman & CEO Abertis)	(Abertis)				
Member	Luis Manuel de Carvalho Telles de Abreu					
Member	António Nogueira Leite					
Member	Luis Eduardo Brito Freixial de Goes					
Member	Graham Peter Wilson Marr	(Arcus)				
Member	António Ressano Garcia Lamas					
Member	Pedro Jorge Bordalo Silva					
Member	Maria Margarida de Lucena de Castelo-Branco Corrêa de Aguiar					
Member	Jorge Manuel Pereira Caldas Gonçalves					
Member	António Lo Bianco	(Arcus)				
Member	Livio Fenati	(Arcus)				
Member	Francisco-José Aljaro Navarro	(Abertis)				

FIGURE 12 – BRISA'S GOVERNANCE BODY

The Remaining Brisa Stakeholders

Brisa's main stakeholders in 2012 are depicted in Figure 13. The stakeholders include all shareholders (JMG, Abertis, Arcus fund and minority shareholders), the stock market supervising entity CMVM (Comissão do Mercado de Valores Mobiliários) – that had a close link to the Portuguese Association of Traders and Investors ATM (Associação de Investidores e Analistas Técnicos), the Portuguese Government, and JMG's main creditors, namely three Portuguese banks (CGD, BES and Millenium/BCP) and the German Deutsche Bank. In purple we have the Portuguese instances; in red we have the German bank, JMG is in dark green while its main Brisa partners are in blue. A brief discussion on each stakeholder is given below.

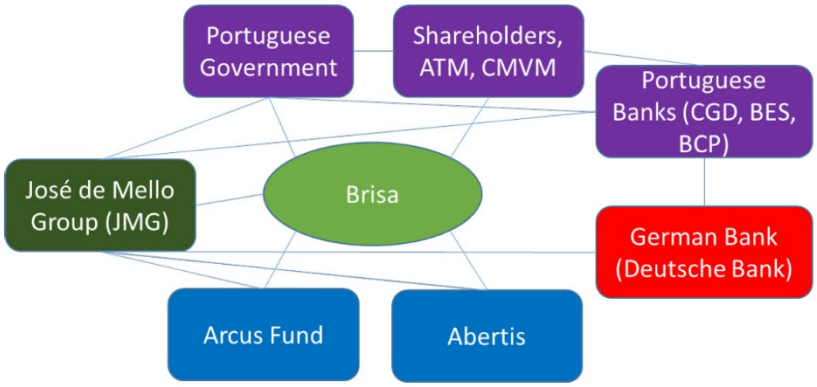


FIGURE 13 – PLAYERS INVOLVED IN THE CASE

Arcus Fund

Arcus was founded in July 2009 from a management buyout of part of Babcock & Brown's European infrastructure business, led by "Toto Lo Bianco" and "Simon Gray". Arcus Infrastructure Partners was a leading independent, specialist fund manager focused on the European infrastructure sector. The company's first fund, Arcus European Infrastructure Fund 1, was an unlisted fund with over 2 billion Euros of commitments, backed by over 40 institutional investors from around the world - the fund invested in high quality infrastructure assets throughout the European area.

Arcus owned 19.1% of Brisa (bought from 2007 to 2008), and had it marked as an investment with high potential. Figure 14 portrays Arcus' business portfolio in a clear manner.

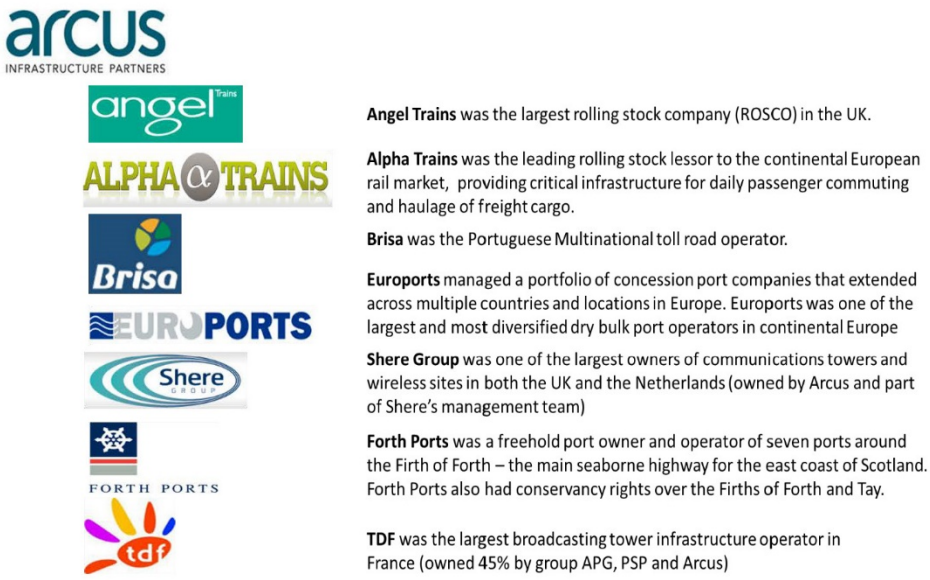


FIGURE 14 – ARCUS FUND COMPANY COMPOSITION

Abertis

In April 2003, Acesa Infraestructures (founded in 1967 as "Autopistas Concessionaria Española S.A."), merged with Áurea Concesiones de Infraestructuras, (founded in 1971 as "Autopistas de Mare Nostrum") to form Abertis. Abertis Infraestructuras, S.A. (Abertis, 2016) was a Spanish conglomerate corporation which ran over 7,300 kilometers of motorways in Europe and America. It was part of the IBEX-35 index and was being traded on the Madrid Stock Exchange and had its headquarters in Barcelona, Catalonia, Spain.

Abertis had a cooperation agreement with Brisa from 2002 to 2007. Even though the cooperation agreement was denounced in late 2007, Abertis invested heavily in Brisa, owning 15% of Brisa's capital by March 2012.

Portuguese Government

The Portuguese Government had a close commercial relationship with JMG, dating back to the nationalization of CUF, and posterior privatization. There were several businesses with the Mello family since the 1890´s (starting with the creation of CUF[6]), and Brisa was included in that lot. During CUF's golden years, CUF was seen as a main driver for the economy and the population's well-being, and this vision was reflected in the senior population of Portugal in the 2000s, with a feeling of a "governmental moral debt" subsisting. This close relationship was also beneficial for the approval of loaning operations next to the public bank CGD.

[6] Referred in JMG's Brief History

Portuguese Banks (CGD, BES, BCP)

The three Portuguese banks involved with the JMG were as follows:

Caixa Geral de Depósitos – CGD

Caixa Geral de Depósitos (CGD) was a Portuguese state-owned banking corporation and the second largest bank in Portugal. CGD was also the Portuguese largest public sector bank and was established in Lisbon, Portugal, in 1876. CGD was also quite active outside Portugal, with commercial activities in 7 other countries worldwide, spread across Europe, Africa and Asia. In June 2012, the Portuguese state had to inject 900M€ into the bank, in order to keep up its capital ratio to European regulations (the bank's financial situation was known at the beginning of the year)[7].

Banco Espírito Santo – BES

Banco Espírito Santo was one of Portugal's traditional banking institutions (2nd biggest), whose origins dated back to 1869, when José Maria do Espírito Santo e Silva was dealing in currency exchange, securities and lottery businesses. José Espírito Santo had since created several banking institutions that were later consolidated by his family into a single bank, named Casa Bancária Espírito Santo Silva & Companhia, which, in turn, was transformed into a public limited-liability company in 1920, under the name Banco Espírito Santo.

Again, later, in 1937, the bank merged with Banco Comercial de Lisboa, to form Banco Espírito Santo e Comercial de Lisboa (BESCL), which in turn changed the name back to the original BES in 1999. In 2012, BES stated that it didn't need any capital injection from the Portuguese Government[8].

Banco Comercial Português – BCP / Millenium

Banco Comercial Português (BCP) was founded in 1985 and was the largest private bank in Portugal. It developed a sub-brand, Millennium BCP for personal banking in 2004, whereas it kept the nomenclature BCP for operations with large corporations and investments. BCP also owned the banking operations called "Banque BCP" and the internet bank "Activo Bank".

In June 2012 the bank ran into financial difficulties and had to be bailed out by the Portuguese state with the injection of 3B€ into its funds (the bank's financial situation was known at the beginning of the year)[7].

German Bank (Deutsche Bank)

Deutsche Bank AG (meaning "German Bank") was a German global banking and financial services company (Deutsche, 2016) with its headquarters in the Deutsche Bank Twin Towers in Frankfurt. Being the main bank in Germany, and being Germany the main financial institution in Europe, the Deutsche Bank was perceived by Europeans as the most stable and strongest bank in Europe. It had more than 100,000 employees in over 70 countries, and had a

[7] These funds were taken mostly from Portugal's IMF/EU bailout package for the country.

[8] Although BES appeared to be doing well in 2012, it went bankrupt in 2014.

large presence in Europe, the Americas, Asia-Pacific and the emerging markets. In 2009, Deutsche Bank was the largest foreign exchange dealer in the world with a market share of 21 percent. The company was a component of the Euro Stoxx 50 stock market index and was listed on both the Frankfurt (FWB) and New York stock exchanges (NYSE).

The bank offered financial products and services for corporate and institutional clients along with private and business clients. Services included sales, trading, research and origination of debt and equity; mergers and acquisitions (M&A); risk management products such as derivatives, corporate finance, wealth management, retail banking, fund management and transaction banking.

Shareholders, ATM, CMVM

Brisa's small shareholders didn't really have any decision power and thus relied on the Portuguese main capital market supervising body CMVM and the investor's "right arm" ATM to aid them. These entities are briefly described below:

Comissão do Mercado de Valores Mobiliários – CMVM

The "Comissão do Mercado de Valores Mobiliários" (CMVM) was the official entity that supervised and regulated the Portuguese capital market, having as its main priority the protection of the investors. It also had an investor helpdesk in order to provide the investors all necessary information pertaining to any listed company, as well as legal advice.
The CMVM had the power to suspend / request information / enlist or delist a company from the Portuguese capital market.

Associação de Investidores e Analistas Técnicos – ATM

The "Associação de Investidores e Analistas Técnicos" (ATM, in English "Association of Investors and Technical Analysts") was founded in 11 September 1998, with the purpose of providing training and information to investors in the capital market. It was a founding member of the World Federation of Investors Corporations (2000) and was a member of the International Federation of Technical Analysts (which it left in order to create its own course of technical analysis). ATM was also a full member of the Eurosharehoders 2001.
ATM was often contacted by the small investors in order to uphold the law and formally file claims next to the CMVM, besides providing information / advice and training.

This business case poses two pertinent valuation questions:

1. What is a share worth if it is controlled by a private entity that doesn't plan on distributing dividends?
2. How much is the share worth to the controlling entity?

If a Tender Offer (TO) was to be made on Brisa's shares, small investors could choose to sell or not to sell for the offered price – but if the offered price was low and there was the possibility that the company could be delisted after the TO (if successful), the shareholders that didn't sell risked never getting any dividends on their shares in the future, and would be unable to sell their shares in the open market – this "pressure" on the shareholders should be/ was supervised by CMVM (with some exterior pressure from ATM), especially by assuring that the offered price in the TO was fair.

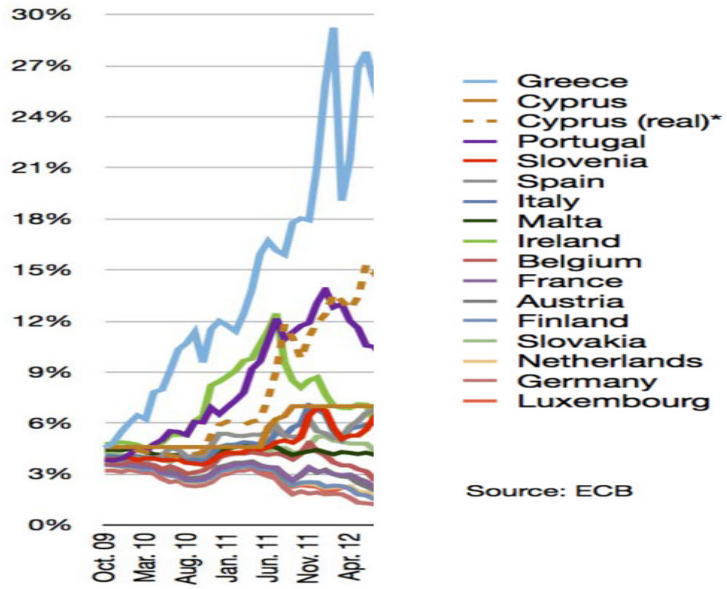
Macroeconomic Aspects – Portugal and the applied Austerity Measures

Portugal's main public expenditures were social protection (40%), General Public Services (16%), Health (14%) and Education (14%) (INE, 2012). The public expenditure was named by Portugal's 2012 President Cavaco Silva as "an uncontrollable monster" (in public statements dating back to 2000), and that designation became current in the Portuguese politics, alluring that there was much inefficiency in the country's budget. Costs with retirement pensions were excessive, previously supported by population growth, and it was recognized that many inefficiencies needed to be corrected in order to be able to lower taxes and further promote the economy.

Unfortunately, additional factors added to an already heavy structural expenditure, pushing Portugal into an official financial crisis, namely financial collapses from the banking sector and ruinous Public-Private Partnerships (PPPs) deals (IMF, 2015). As far as the banking sector is concerned, the financial collapses of Banco Português dos Negócios - BPN (that the government nationalized) and Banco Privado Português - BPP (which was dissolved and guarantees were paid by the government), alongside ruinous swap deals contracted by state-owned businesses, yielded losses well over 8.000M€.

Some PPPs also contributed to the financial downfall, namely those that had major budgetary slippage, with high incidence to the rents paid to road concessions which were paid 425.5 M€ more than it was budgeted in the period 2008-2010. In 2011 the slippage with the rents of the road concessions rose 28% to 197.4 M€ above what was budgeted and rose 42.3% to 266.3 M€ above what had been forecasted for 2010. This major slippage had a simple explanation; the PPPs were drawn considering a minimum amount of traffic that the government would guarantee the owner of the concession – if traffic dropped below the minimum amount, the government would pay for the difference, thereby reducing the risk for the concession owner and effectively transferring it to the public sector (hence Brisa's relative resilience to the financial crisis, having only to worry about the rising premiums on its debt). Even though the national toll-free roads were under-dimensioned and in need of repairs, a great amount of drivers started using them, avoiding the toll costs whenever they could – especially true for companies that needed to travel the roads frequently. Further contests and budget slips were also made to PPPs in other sectors, namely in the health and rail sectors, though the deficits in these areas were of much lower values (~20% of the slips in the road concessions).

In order to cope with the financial crisis, a bailout programme was devised (Economic Adjustment Programme for Portugal) (PFC, Wiki) (EDC, Wiki), (PEO, 2015). A 3-year programme with a €78 billion bailout package was approved in 16 May 2011 by the Portuguese Government (a new government took place prior to asking for the bailout programme) on one hand, and on the other hand by the European Commission on behalf of the Eurogroup, the European Central Bank (ECB) and the International Monetary Fund (IMF) – this latter group of 3 popularly known as the "Troika" (Russian term for group of 3). According to the Portuguese government, the average interest rate on the bailout loan (equally split between the 3 organizations but with different yields for each) was expected to be 5.1% (note the EU countries' long-term interest rates in Figure 15 – take into account that Germany's 10 year bonds in 2012 were trading at 1,45%). As part of the deal, the country agreed to cut its budget deficit from 9.8% of GDP in 2010 to 5.9% in 2011, 4.5% in 2012 and 3% in 2013. Figure 16 portrays Portugal's debt/GDP ratio compared to the Eurozone average.



* actual market trade values without cut-off yield for Cyprus government bond maturing 3 February 2020

FIGURE 15 – LONG TERM INTEREST RATES FOR EU COUNTRIES

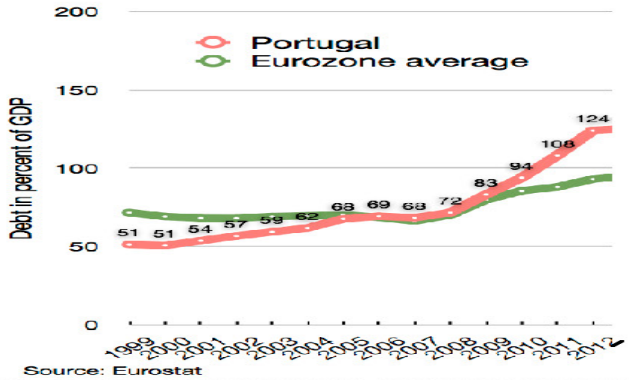


FIGURE 16 – PORTUGAL'S DEBT/GDP VALUES COMPARED TO EUROZONE AVERAGE

To avoid the legislative ratification procedures required for treaties under the international law, the programme was set up as an intergovernmental agreement consisting of:

- the *Memorandum of Economic and Financial Policies* (MEFP),
- the *Memorandum of Understanding on Specific Economic Policy Conditionality* (MoU),

- the *Technical Memorandum of Understanding* (TMU), the actual Loan Facility Agreement.

The agreements were signed in June 2011 by the Portuguese government and the European Commission. In order to accomplish the EU/IMF-led rescue plan for Portugal's sovereign debt crisis, in July and August 2011 the new government announced it was going to cut on state spending and increase austerity measures, including public servant wage cuts and additional tax increases.

On 6 July 2011, the ratings agency Moody's had cut Portugal's credit rating to junk status (Moody's ratings below Baa), Moody's also launched speculation that Portugal could follow Greece in requesting a second bailout. After the bailout was announced, the Portuguese government implemented measures to improve the State's financial situation, including tax hikes, a freeze of civil service-related lower-wages and cuts of higher-wages by 14.3%, on top of the government's spending cuts. In 2012, all public servants had already seen an average wage cut of 20% relative to their 2010 baseline, with cuts reaching 25% for those earning more than 1,500€/month. This led to a flood of specialized technicians and top officials leaving the public service, many looking for better positions in the private sector or in other European countries.

In December 2011, it was reported that Portugal's estimated budget deficit of 4.5% in 2011 would be substantially lower than expected, due to a one-off transfer of pension funds. In the following months the country started to be seen by European officials and analysts as moving on the right track, although things on the terrain still looking very gloomy. Despite that, Portugal's rate would be lowered to Ba3 by Moody's in 13/02/2012, which according to Damodaran (2016) yields a default spread of 3,25% for the calculation of the Portugal's risk premium. The Country's Risk Premium (CRP) can be calculated either by assuming equalling it to the default spread (simple method), or by multiplying the default spread by the relative equity market volatility for that market (standard deviation of the country's equity market divided by the standard deviation of the country's bond market).

$$CRP = Def.spread \times \frac{\sigma Equities}{\sigma Bonds}$$

According to Damodaran (2016), we have that the Portuguese standard deviation for the equity market (monthly for 2011-2012) is 20,46% and for the bond market is 29,69%, yielding a CRP=2,24% for Portugal in the beginning of 2012.

Troubled Times

Brisa lived troubled times since 2008, and was increasingly hard to obtain financing in order to continue investing in CapEx, and thus meet JMG's plans for the company. With all Portuguese companies being pushed down by the market, expenses were rising and the whole operation was becoming riskier, with constant demands from the creditors.

Financing Problems and Power Struggles

Brisa had several concessions and businesses with different risk rates, and, as a consequence, it was becoming increasingly hard to obtain financing at an acceptable level of interest. Since BCR was the safest operation (although also in great need of investment capital), a decision was made by Brisa's executive committee to change BCR's concession contract with the Portuguese Government in order to ring-fence BCR into a separate company, fully owned by Brisa. In fact, the risk that stemmed from the AEDL (Auto Estradas do Atlântico) and Brisal was great, but although Brisa explained to investors that these concessions were project financed (although with risky projections), investors still demanded high rates for any loans granted to the company.

Although the ring fencing of BCR seemed a logical operation, some warning signs began to spur when both Abertis and Arcus questioned the operation. This was seen by JMG (that basically controlled the whole of the executive committee) as a serious warning; in fact, Abertis and Arcus together could effectively surpass JMG's stake.

By then, it had been made clear that Abertis was unhappy with its situation; effectively it had plans to control Brisa and didn't like riding in the back seat. Under the circumstances, a joint takeover bid with Arcus, was a possibility that could not be written off straightaway, but the main fact was that Abertis wanted to maintain a good business relationship with JMG. Brisa's administration (and JMG in particular) felt this power struggle and knew that Abertis would soon make some kind of move; be it either in the direction of acquiring further shares or selling them – note that Arcus could become Brisa's main partner if they purchased all of Abertis' shares.

In regard to Arcus, ever since Babcock & Brown's stake in Brisa was transferred to this newly founded company in July 2009 (Arcus was a spinoff of Babcock & Brown's European infrastructure business), Brisa's top management's relationship with this shareholder became somewhat more complicated; Arcus was much smaller in scale than Babcock & Brown, meaning that its participation in Brisa now represented a much larger stake for their business, and thus required detailed justifications from Brisa's management team for every decision; the fact that Arcus had no one in the executive committee was stirring some distress. An approximation to Arcus was done by grooming Daniel Amaral as a member of the board of directors in 2010, and further promotion to an executive member position in 2011. The executive committee now had both representations of JMG (vast majority) and Arcus, but no one from Abertis.

The BCR ring-fencing operation went ahead, and in the general meeting of 2010 it was approved, with Abertis abstaining. The problem remained that JMG was under financial strain from the market situation, and was forced into making some budget cuts within its business operations in order to cope with increasingly higher expenses. The ring fencing of BCR had been a way of isolating Brisa's main concession from the other concessions, and due to this operation, BCR was able to obtain financing at acceptable rates. JMG was able to solve this problem, but the Portuguese situation posed a problem that could only be solved by restructuring a substantial part of the business.

Meeting between the main players[9]

On March 5th 2012, 16:00 (Monday), Vasco de Mello organized a meeting with the main players, namely the two other main significant shareholders of Brisa – Abertis and Arcus fund – and a representative of the Deutsche Bank (JMG's major creditor, who insisted in renegotiating the guarantees or transferring the debt to another institution). The meeting took place in Lisbon at José de Mello's office in the 24th July Avenue, street number 24, 5th floor. The avenue was one of the city's main arteries, being used by cars, buses, trams and trains, running alongside the river Tagus.

The sun was shining bright through the office's window (17ºC without a cloud in the sky (Weather, 2016), and a round table was neatly set with 5 places, each with a bottle of water, a pen and a dossier with blank A4 pages. Vasco de Mello was worried; JMG had given their Brisa stock as collateral to the group's debt in Deutsche bank (and other Portuguese banks, but Deutsche bank was the main lender and was also the bank raising most concerns), but Brisa's bad stock performance lowered the value of the guarantees to less than half their original book value (from 6€ to around 2,5€/share), and thus further collateral was needed. JMG wanted to avoid adding further guarantees, and a solution to the problem had to be negotiated.

JMG was investing significantly in Brisa (it owned 30,5% of the company's capital) alongside the other two major owners (Arcus fund owned 19,1% and Abertis owned 15% of the company's capital respectively), and was pretty sure that Brisa was undervalued by the market. The investments that were being made would only reflect on the company's performance in a couple of years, but the Portuguese market, alongside the international instances, was pessimistic in regard to Portugal's economic future. The situation was worsened by Portugal's below investment-grade (aka "garbage") rating. It was dragging down the group's companies rating (companies with headquarters in Portugal couldn't excess the sovereign rating by over one grade), and consequently was having a great impact on the charged premium on all credits (now nearing 4%, adding to a low reference 6 months euribor of 1,6% with tendency to be even lower, since the European Central Bank had a reference rate of 1% and the American Federal Reserve kept its reference rate at a mere 0,25%). JMG was positive however, and knew that after every storm there would be a period of growth; in fact, it's in the critical periods that most yield to mass hysteria and that wise managers take advantage of the situation to improve and profit. Petrol prices were nearing their peak and would have to come down, alongside the reference interest rates in order to stimulate the struggling worldwide economy.

The meeting would serve as a brainstorm session between the various representatives, though the German bank's position seemed inflexible; demanding either an increase of the collateral, a full payment of the debt, or a dramatic increase in the overall interest rate (more than doubling it from 5,6% to 12%). JMG was going to try to get an extension and to show Deutsche bank that the matter was being handled with the utmost urgency.

Vasco de Mello was with Pedro Rocha e Melo (Brisa's executive member and vice-chairman) preparing for the meeting. Pedro Rocha e Melo had assured Vasco de Mello that the Portuguese banks (BES, CGD, BCP) would still accept their current Brisa stock as guarantee (since they recognized the effort done by JMG and their partners, as well as the potential of the whole business), but wouldn't approve the transfer of guarantees and debt from the German bank without raising significantly the premium interest rate (the Portuguese banks were charging an interest rate of 6% and would be happy with 8%).

[9] This meeting was fictional and totally romanticized for case purposes.

Michael Johansen and Francisco-José Navarro from the Arcus fund and Abertis respectively were the representatives of the remaining two main partners of Brisa. Previous talks of a possible solution involving buying out the market and making Brisa a privately held company were about to be clarified, since it was unclear who was going to finance this operation, and what strategy and power-shifts could occur.

Heinz Acker, from Deutsche Bank arrived right on schedule, and walked into the office alongside the secretary announcing him – "let's get started so that I can still enjoy this warm sun", said Heinz Acker. Since not everyone was there, Vasco de Mello invited Heinz Acker to sit closest to the window, to watch the trams and the cacilheiro (boat performing the river Tejo crossing), as he was served a "Pastel de Belém". Heinz Acker asked for a beer to drink alongside the Portuguese delicacy, but was advised to accompany it with one fine Port wine – "We're going to find a solution for this, let's just wait for the other members", said Vasco de Mello, before giving Heinz Acker advice on various places to visit, such as Sintra, Óbidos and the Expo area.

As soon as Michael Johansen and Francisco-José Navarro arrived, the meeting had officially commenced, although the first minutes were used to distribute further pasteis and Port wine. "Now that we are all here and taken care of", said Vasco de Mello, "let's get down to business". The situation was restated for all, and the option of having Brisa become a private company was boarded. Heinz Acker was quick to refer that, although he recognized Brisa's potential in the upcoming years, his bank would not take risks, and required a solution in less than a month's time before raising the premium interest rate. Francisco-José Navarro from Abertis said that Abertis was looking into new investments and wouldn't mind selling "for the right price". Abertis felt that they didn't have enough control on the company, and thus would either acquire further shares and raise their leverage in Brisa (a value of 3€/share was suggested as an example, to be bought directly from JMG), or abandon the company altogether alongside their seat at the board (though they would still participate in joint ventures, given their close ties to JMG - especially Vasco de Mello). This decision could undermine the entire plan, since further funding would be needed to buy Abertis' shares, if there was going to be a market exit strategy.

Michael Johansen was an Englishman and sat quietly sipping a cup of tea (he had refused the Port wine, since he "was on business") alongside the "Pastel de Nata". Arcus had full faith in the JMG project for Brisa, and knew that JMG intended to continue investing heavily in the company, expecting high returns in the nearby future. Arcus made it clear that they could work closely together with JMG in order to get funding for the whole buy-out operation, if JMG would take the lead in negotiating funding (exploiting JMG's relationship with the Portuguese banks). If this was to go forward, Arcus would like to participate as an equal partner (thus the 33,33% of capital needed to launch an eventual TO - Tender Offer, were assured) and would use its own funding. Note that JMG and Arcus together held currently 53,8% of the overall voting rights.

Pedro Rocha e Melo reminded the whole group that it would be hard to convince the Portuguese banks to finance the whole deal – including the debt transfer from Deutsche Bank. Although very close ties existed between JMG and the Portuguese banks, they would not be able to justify to their shareholders further emission of debt based on the same conditions as before, unless the collateral's values were to be reviewed. If there was a (remote) chance of having the banks accept any loan based on a collateral consisting of Brisa's shares, Brisa would have to be taken off the market, so that its value would no longer be linked to the market price (although the banks' current value of Brisa share guarantees would certainly be revised to a lower value, "around" the 4€-5€ range). Francisco-José Navarro from Abertis proposed to back-up the deal, should it be done. If the buyout was unsuccessful, Abertis could purchase the shares from JMG and Arcus at market

price, becoming the main shareholder (using their own financial backup); if however it was successful, Abertis would sell its shares to both its partners. This would provide the Portuguese banks their necessary guarantee (and according to Pedro Rocha e Melo, the above mentioned 8% could probably remain the same for the excess capital required by JMG). The table was reminded by Pedro Rocha e Melo that for Brisa to be taken off the stock market, at least 90% of the voting rights had to be gathered. On a different note, Pedro Rocha e Melo also reminded the table that if Abertis was to exit Brisa, State approval would be required by some concession contracts (although that wasn't considered much of a concern).

Heinz Acker got up, saying that the sun was coming down, and told Vasco de Mello that he expected an answer by the end of the month; else the premium rate would have to be doubled – "I'm sure you'll come up with something", he said as he greeted everyone (with that stating that Deutsche Bank wouldn't bank any further operations related to Brisa). Heinz Acker excused himself saying that, as a sign of good faith, he would waive off the transfer fees of the Brisa-backed debt to the Portuguese banks, in whatever proportions the group would negotiate.

Vasco de Mello wasn't happy, the Abertis proposal could risk JMG giving up their project; something they didn't want to do from the start. It seemed somewhat of a gamble investing even further into Brisa, but difficult times could demand for difficult measures. He approached Francisco-José Navarro saying JMG would like to remain with Abertis on-board, and that the funding of the whole operation would be much harder if they had to buy their shares as well. Francisco-José Navarro smiled, and told Vasco de Mello that JMG shouldn't place so many eggs into the same basket; and that JMG should consider selling part of its position to Abertis and gain from their experience, reduce their overall debt and/or invest in areas with a more optimistic outlook, such as the JMG health sector. Francisco-José Navarro stated that for Abertis to participate in an eventual TO, it had to become at least an equal partner to JMG, and have someone from Abertis occupy the Executive Committee's position of Brisa's chairman, still leaving Vasco de Mello as CEO. This was taken as an offence by Vasco de Mello, and instead of pursuing the conversation, Vasco de Mello stood up taking a sip at his last drop of wine, while gazing at the window.

The meeting ended with Pedro Rocha e Melo promising to talk to the Portuguese banks about the Abertis backup proposal, to see if it was possible to buy-out the market and transfer the corresponding Brisa debt from Germany to Portugal – "he was going to make some calls right away", and excused himself after greeting the remaining 3 participants.

Vasco de Mello called his secretary and asked to arrange a dinner for 3 at Cais do Sodré (the nearby cacilheiro boat dock location with touristic restaurants and renowned night life) – "perhaps after a good "cozido à Portuguesa[10]" alongside a good "Barca Velha[11]", we can all arrange to be in the same boat!" said Vasco de Mello. Francisco-José Navarro smiled and replied that Abertis would also be content if they were able to buy "a bit more" than 50% of BCR from the Brisa holding. Vasco de Mello placed his hand on Francisco-José Navarro's shoulder and said "the BCR is the core of the holding; you know that…", as all left the office.

It was agreed that business would stay at the office, and all left happily towards the restaurant. Vasco de Mello still met Pedro Rocha e Melo at the corridor, and the latter told him not to worry.

[10] Typical Portuguese dish (Portuguese Stew, made with various types of meat and chorizo, alongside cabbage, rice, potatoes, beans, carrots and turnips)
[11] World renowned Portuguese red wine

Both knew that whatever the outcome, the answer would always have to pass through further funding, since liquidity was lacking.

References[12]

Abertis, 2016, <http://www.abertis.com>

BCG, 1998, "Perspectives on Strategy from the Boston Consulting Group", Carl W. Stern and George Stalk Jr, Wiley, February, ISBN-10: 0471248339.

Brisa, 2012, Brisa's financial research report of 2012.

Brisa, 2013, Brisa's 2013 ROC valuation report by "Amável Calhau, Ribeiro da Cunha e Associados" - Independent study ordered by Tagus to justify its offer after the TO.

Brisa, 2016, <http://www.brisa.pt>

Damodaran, 2016, <http://people.stern.nyu.edu/adamodar/pdfiles/cfovhds/Riskfree&spread.pdf>

Deutsche, 2016, <https://en.wikipedia.org/wiki/Deutsche_Bank>

EDC, 2016, <https://en.wikipedia.org/wiki/European_debt_crisis>

HBR, 2005, "Seven Transformations of Leadership", David Rooke and William R. Torbert, Harvard Business Review, April.

IMF, 2015, "Report for Selected Countries and Subjects - Portugal". International Monetary Fund.

INE, 2012, Instituto Nacional de Estatistica, www.ine.pt, Portuguese public expenditure.

MelloHistory, 2016, <http://www.josedemello.pt/gjm_gjm_00.asp?lang=pt&local=11#A17>

PEO, 2015, "Portugal Economic Outlook". *Focus Economics*. *Focus Economics*. *17 August*.

PFC, 2016, <https://en.wikipedia.org/wiki/2010%E2%80%9314_Portuguese_financial_crisis>

Silva&Pereira, 2016a, "Over-Valuation: Avoid Double Counting when Retaining Dividends in the FCFE Valuation", João Carlos Marques Silva and José Azevedo Pereira – to be submitted.

Silva&Pereira, 2016b, "Adjustments to Cash Build-up when Retaining Dividends in the FCFE Valuation", João Carlos Marques Silva and José Azevedo Pereira – to be submitted.

TAP AR, 2011, TAP Annual Report 2011

Weather 2016, <http://www.wunderground.com/>

Acknowledgements

This work wouldn't have been possible without the precious help from Dr. Joaquim Aguiar (José de Mello), Eng. Pedro Rocha e Melo (Brisa) and Eng. Manuel Melo Ramos (Brisa), Thanks for all the time and effort placed that was put into this work.

[12] All internet references were consulted during April 2016

The only annex that will be shown is the one with the case questions due to space restrictions:

Annex D: Proposed Teaching Questions

The proposed questions are separated by themes. The main themes of this case are strategy and finance, as the secondary themes are negotiation & leadership skills and business ethics.

Strategy

Q: Is Brisa's strategy the correct one? Is it prudent to keep on investing during a time of crisis, or should the company focus on consolidating its current operations?
Q: On what areas should JMG invest? Should JMG invest more in Brisa (disinvesting on its other ventures by doing so)?
Q: What type of international strategy does Brisa have? And what about JMG?
Q: What kind of risk factors are related to the funding of a company such as Brisa?

Company Valuation (Finance)

Q: What's the best way to value Brisa?
Q: How much is the company worth? What assumptions were made?
Q: Why is there a difference between market and estimated value?
Q: The credit rating is limited by Portugal's "garbage" rating, that in practice throws all of the Portuguese companies to garbage as well, regardless of their overall performance… how do you interpret this?
Q: Calculate Brisa's beta using the DAX market index. What value do you arrive at? Comment on it.
Q: Calculate Brisa's beta using the group of similar companies and the DAX market as reference. What value do you arrive at? Comment on it.
Q: Assuming that Brisa won't distribute any dividends until 2035, what is the estimated cash build-up from the retention of the FCFE (Free Cash Flow to Equity) at the end of 2035 (assume that all retained cash is invested in a market with a Country Risk Premium=0, yielding the standard market return)? (hint: adjust the formula for the Terminal Value Correction in Silva&Pereira (2016a))
Q: Following from the previous question, what would the difference in the cash build-up be if the investments obtained a return 1% above the expected standard market return? (hint: see Silva&Pereira (2016b))

Negotiation & Leadership skills

Q: How did Vasco de Mello deal with each person/company?
Q: Did Vasco de Mello assess the situation correctly?
Q: Is Vasco de Mello seen as a leader? To whom?
Q: What is the purpose of Brisa's Executive Committee?
Q: What kind of a leader is Vasco de Mello? (Base your answer from HBR (2005))
Q: Draw a "wheel of competency" for Vasco de Mello.

Business Ethics

Q: Is there a conflict of interest by JMG, Brisa, Abertis and/or BCP, by the participation of Vasco de Mello in all those companies at case time and before?
Q: Do you concur with the dividend lock-up policy that was instated?

Chapter 3 Excerpts from Teaching Note, Excel Files and Research Paper

This chapter will simply display some excerpts from the auxiliary files. The teaching note is a full analysis of the case and its answers, the excel files provide all necessary data to perform all calculations, and the research paper will provide insights for the students who want to learn how to use the FCFE valuation method, while avoiding some common mistakes and use the paper's reasoning to easily answer (and learn about) one of the case's questions.

Teaching Note

This section will highlight some parts of the teaching note, namely the flowchart of possible actions, suggested sequence of events and discussion walkthrough, the case's main interconnections and underlying strategy, the financial valuation (with several scenarios and considerations) and answers to the case's main questions. The reader is encouraged to read the full version that is contained in the CD.

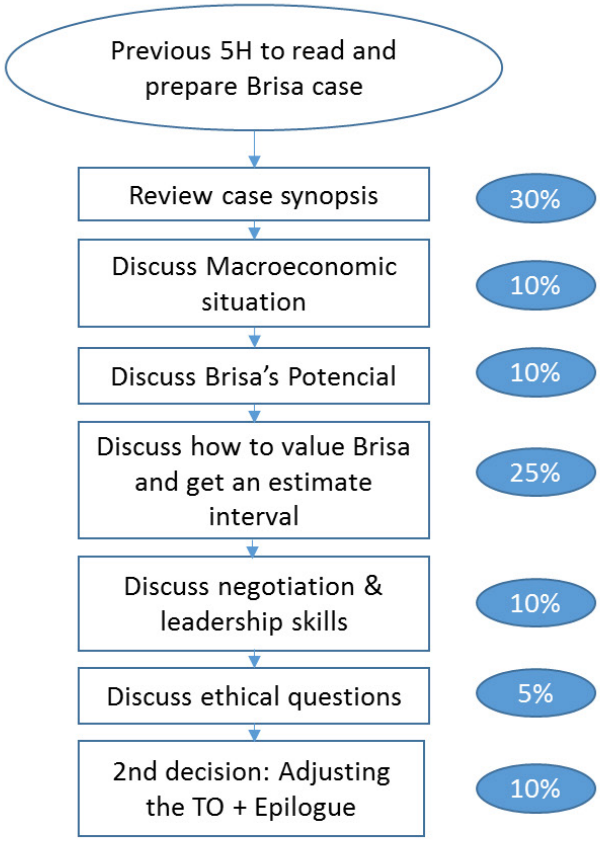


FIGURE 2 – SUGGESTED SEQUENCE OF EVENTS AND TIME DEDICATION

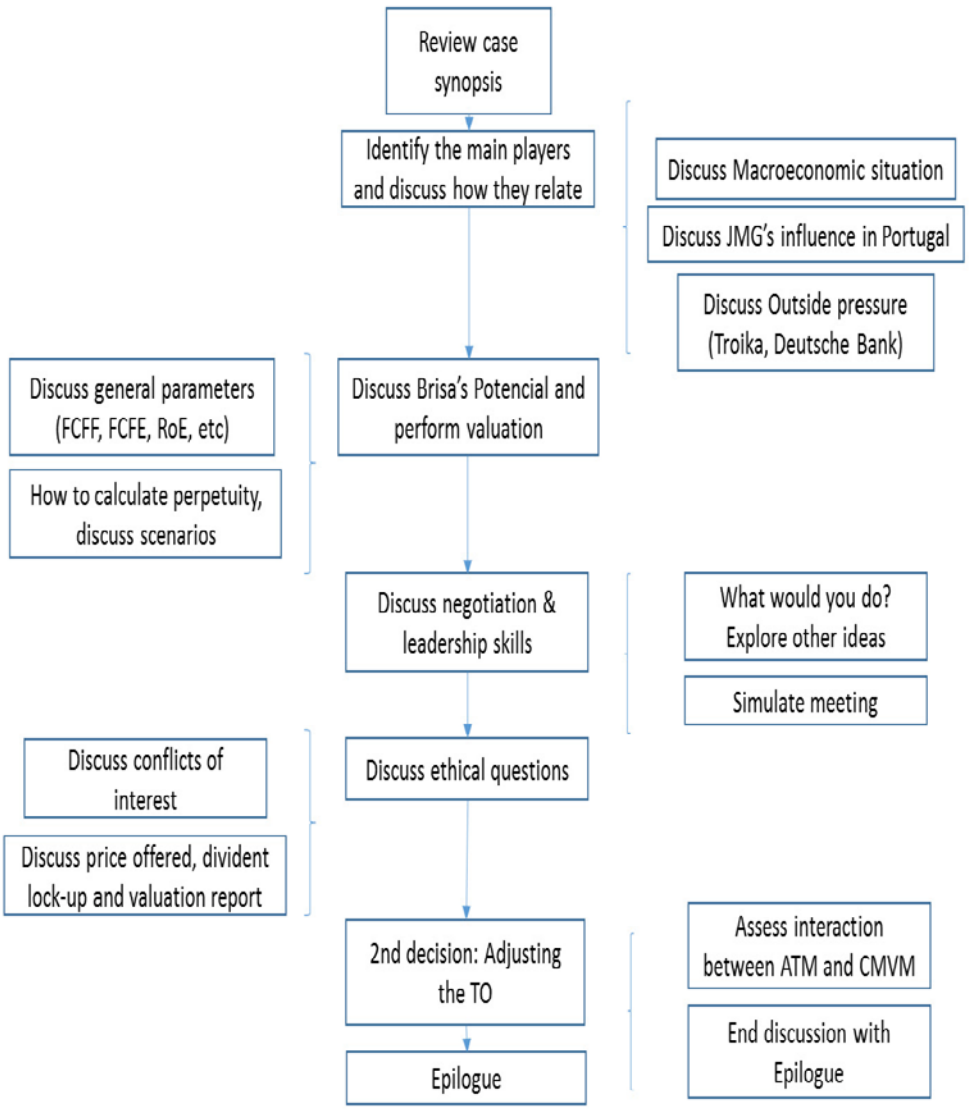


FIGURE 3 – SUGGESTED DISCUSSION WALKTHROUGH

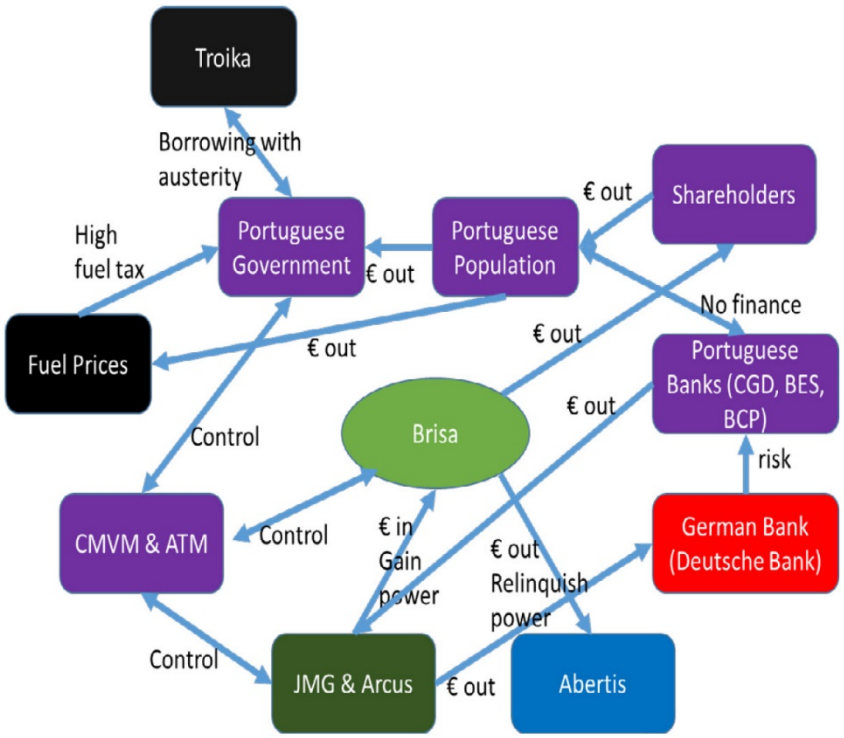


FIGURE 4 – INTERCONNECTIONS BETWEEN PLAYERS, CHALKBOARD DRAWING TO GUIDE DISCUSSION

Full analysis of the case

The problem Vasco de Mello faced had solely to do with Brisa's valuation – its value would determine his (and JMG's) actions. JMG had been investing heavily on its main 4 business segments (diversifying the market and its operational risk): infrastructures (where Brisa is positioned), healthcare, electro-mechanics and the chemicals business, with Brisa having a privileged place in the group, since JMG's president was also Brisa's president.

It's hard to value a company amidst a freefall market situation – it all depends on how (we think) the market is going to evolve. Looking at the figures with all share prices taking a plunge, it is easy to understand why investors were desperate… the end of the crisis wasn't visible, and most were "skimming" the market, short-selling their positions and driving prices lower than what should be reasonable from clear financial analysis.

Since JMG had this in mind, and knew that the markets would eventually recover from the 2008 US crash and from the recent Portuguese 2011 bailout's austerity conditions, they held to their position (so that they wouldn't lose power within the corporation) and contemplated buying further stock, though the question no one could answer was: "when will the market recover?".

Brisa's Valuation in early 2012

To calculate Brisa's value, we will use the discounted cash flow method. The cash flow is discounted against the expected interest rate (of investing in a similar project) in order to account for the time effect. The cash flow from operations is calculated as the EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) minus the tax paid.

$$CFO = EBITDA - Tax\ paid$$

Note that its best to use the actual tax paid than to calculate it. Due to tax-loss carry-forward, Brisa actually had deferred tax assets in excess of 170M€, and this greatly reduced Brisa's actual tax rate to a very low value (around 8%, instead of 31,5% of the actual tax rate).
The FCFF (Free Cash Flow to Firm) is calculated as the Operational Cash flow minus Capital Expenditures (CapEx) and other non-operational expenses.

$$FCFF = CFO - CapEx - \Delta NWC$$

From the discounted FCFFs we will be able to calculate the firm's enterprise value, and discounting the net debt (total debt – cash) from this value we obtain the firm's equity value. It is the equity value that, when divided by the total number of outstanding shares, yields the value per share.

Figure 5 shows Brisa's consolidated results – note that the BOOT contracts were restated from non-current tangible asset to non-current intangible asset in 2010 (results for 2009 were altered as a consequence in the 2010 Consolidated Report). The results are shown with calculated FCFF for each year (calculations done in the teacher's version of the Excel sheet), where we included the data up until 2014 (see the Epilogue, "What really happened"), in order to note the whopping FCFF figure of 2012 and high growth values thereafter.
Having calculated these figures, the following questions arise: How are these figures expected to evolve, and how should we discount them over time? The answer to the first

question involves a bit of guess-work, and generally several scenarios will have to be contemplated (which will be done later). The answer to the second question is simple; the cash-flow to equity needs to be discounted by the cost of equity (expected return to shareholders), whereas the firm's free cash flow needs to be discounted at the firm's cost of capital (both equity and loans), adjusted by the respective weights of each type of capital and the tax-shield effect. In order to find these variables, the cost of equity and the Weighed Average Cost of Capital (WACC), we first need to calculate the company's β. From Brisa (2012) we have an unlevered beta (obtained from Brisa's pool of similar companies) of 0,57. We can either accept this value or calculate or own (further ahead). The (levered) β is either calculated based on its correlation to the market, or from the unlevered β using the following formula:

$$\beta_l = \beta_u \times \left[1 + (1 - T_c) \times \left({}^{D}/_{E}\right)\right]$$

Year	2007	2008	2009	2010	2011	2012	2013	2014
Non-current assets	**5 084 659**	**5 341 669**	**5 065 764**	**4 618 336**	**5 398 039**	**3 953 794**	**3 779 029**	**3 532 754**
Non-current tangible assets	3 621 676	3 693 628	101 049	93 617	86 231	66 283	50 381	47 838
Non-current Intangible assets	866 692	1 220 925	4 410 197	4 248 794	5 013 289	3 583 348	3 196 065	3 120 667
Deferred tax assets	194 411	183 790	175 612	178 433	192 731	179 300	166 331	170 180
Current Assets	**274 388**	**252 657**	**247 628**	**1 467 255**	**1 085 212**	**968 658**	**375 099**	**564 372**
Inventories	6 055	5 646	4 034	4 964	7 928	5 400	5 028	3 003
Trade and other receivables	147 964	48 375	52 344	64 745	64 038	57 187	110 144	123 198
Other current assets	7 250	58 375	20 754	27 437	30 206	27 919	10 278	28 150
Cash and cash equivalent	113 119	140 261	170 496	1 355 939	969 197	844 152	284 875	410 021
Total Assets	**5 359 047**	**5 594 326**	**5 313 392**	**6 085 591**	**6 483 251**	**4 922 452**	**4 154 128**	**4 097 126**
Equity	**1 691 336**	**1 366 490**	**1 338 132**	**1 893 176**	**1 322 645**	**1 346 188**	**1 040 384**	**1 013 106**
Non-current liabilities	**3 189 132**	**3 600 026**	**3 314 416**	**3 611 472**	**4 374 155**	**2 862 376**	**2 611 432**	**2 628 301**
Non-current borrowings	3 059 102	3 339 580	2 986 397	3 155 744	3 809 524	2 306 700	2 030 225	2 275 406
Current Liabilities	**478 579**	**627 810**	**660 849**	**580 943**	**786 451**	**713 888**	**502 312**	**455 720**
Trade payables	20 922	18 859	17 969	26 744	18 537	15 846	11 794	12 895
Current borrowings	261 634	474 539	528 286	399 010	676 920	609 400	373 574	188 530
Suppliers of tangible fixed assets	68 368	24 300	27 443	26 375	19 292	10 779	16 390	13 253
Other current liabilities	127 655	110 112	87 151	128 814	71 702	55 975	58 475	86 978
Total Liabilities	**3 667 711**	**4 227 836**	**3 975 265**	**4 192 415**	**5 160 606**	**3 576 264**	**3 113 744**	**3 084 021**
Total Liabilities and Equity	**5 359 047**	**5 594 326**	**5 313 397**	**6 085 591**	**6 483 251**	**4 922 452**	**4 154 128**	**4 097 127**
Income Tax	26,50%	26,50%	26,50%	29,00%	31,50%	31,50%	31,50%	29%
Revenue from Operations	646 471	686 046	677 016	764 805	787 322	623 581	582 610	586 629
Depreciations, amortisations	177 910	205 099	221 725	294 107	211 857	207 973	166 987	164 381
Operational Cost (includes depreciations)	365 059	410 262	454 124	712 718	519 882	420 810	366 354	337 758
Interest expense	112 980	173 115	141 730	133 501	114 585	124 529	121 614	116 564
Working Capital	- 55 676	- 40 875	- 55 431	- 84 787	- 7 359	7 906	38 791	41 225
Tax paid	- 31 727	47 532	39 619	22 744	20 645	28 138	20 209	62 577
Net Income	**254 731**	**135 835**	**139 974**	**740 919**	**- 78 170**	**46 022**	**57 500**	**60 089**
EBIT/ Operating Profit	**281 412**	**275 784**	**222 892**	**52 087**	**267 440**	**202 771**	**216 256**	**248 871**
EBITDA	**459 322**	**480 883**	**444 617**	**346 194**	**479 297**	**410 744**	**383 243**	**413 252**
Cash-Flow from Operations	**491 049**	**433 351**	**404 998**	**323 450**	**458 652**	**382 606**	**363 034**	**350 675**
CAPEX	**4 666 278**	**631 284**	**- 181 582**	**125 272**	**968 966**	**- 1 241 916**	**- 236 198**	**86 440**
Increase in Working Capital	**- 55 676**	**14 801**	**- 14 556**	**- 29 356**	**77 428**	**15 265**	**30 885**	**2 434**
RoE	**na**	**8,03%**	**10,24%**	**55,37%**	**-4,13%**	**3,48%**	**4,27%**	**5,78%**
Free Cash-flow to Firm	**- 4 119 553**	**- 212 734**	**601 136**	**227 534**	**- 587 742**	**1 609 257**	**568 347**	**261 801**

FIGURE 5 – BRISA'S CONSOLIDATED RESULTS W/ CALCULATED CASH-FLOWS (THOUSAND €)

In the beginning of 2012, all of Brisa's debt was projected to be fully paid by 2031 (although further debt emissions were being planned), with the debt percentage gradually declining throughout the years. According to Brisa's financial research, we can assume a mean level of Debt/Equity ratio of 2 (Figure 6).

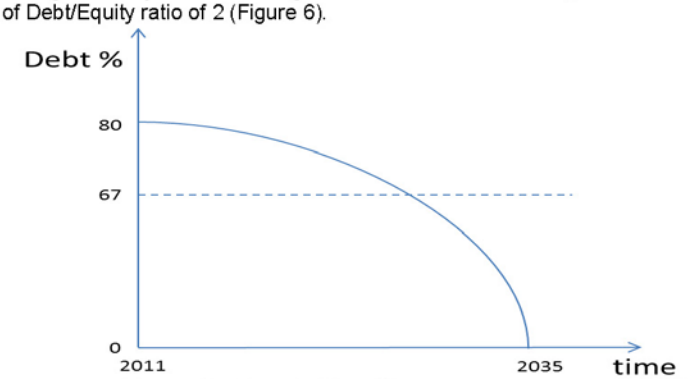


FIGURE 6 – BRISA'S DEBT % OVER TIME AND MEAN DEBT %

Since the Portuguese government corporate tax rate was T_c =31,5% in 2012 (here we must use the true tax rate, and not the previously mentioned effective tax rate obtained from tax-loss carry-forward adjustments), and considering Brisa's debt to equity profile to be $^{D}/_{E} = 2$, we obtain $\beta_l = 1{,}35$.

Next we will estimate the cost of equity, given by the Capital Asset Pricing Model (CAPM). The CAPM formula assumes that the return required by the investors is given by the return of investing in a risk-free r_f asset added to the market premium multiplied by the company's β (and since the company has debt, we use β_l).

$$r_e = r_f + \beta_l(CRP + r_m - r_f)$$

The risk-free return r_f can be given by the yield of German government 10y bonds in 2012, which have a return of 1,45% (the Portuguese bond market wasn't risk-free, since there was the possibility of default). Calculating the market premium is trickier. Note that the market premium must include the country's risk, which in this case is Portugal's (we will exclude the US Northway Concession in this reasoning, since it's less than 5% of Brisa's assets). Portugal's Ba3 rating yields a default spread of 3,25%, according to Damodaran (2016). The Country's Risk Premium (CRP) can be calculated either by assuming equalling it to the default spread (simple method), or by multiplying the default spread by the relative equity market volatility for that market (standard deviation of the country's equity market divided by the standard deviation of the country's bond market).

$$CRP = Def.spread \times \frac{\sigma Equities}{\sigma Bonds}$$

According to Damodaran (2016), we have that the Portuguese standard deviation for the equity market (monthly for 2011-2012) is 20,46% and for the bond market is 29,69%, yielding a CRP=2,24%. The CRP is added to the market's mean return (a market with practically inexistent CRP, such as S&P 500 or DAX), estimated at $r_m = 7{,}45\%$; Brisa (ROC), yielding

a total of $CRP + r_m = 9{,}69\%$. The CAPM finally yields an equity cost of $r_e = 12{,}59\%$. In order to obtain the cost of capital altogether, mixing equity and debt, we use the WACC formula.

$$WACC = r_e \times {}^{E}/_{(E+D)} + r_d \times {}^{D}/_{(E+D)} \times (1 - T_c)$$

The cost of debt r_d is given as 5,64% (Brisa, 2013), and thus the WACC=6.77%. With this data in hand, we now need to estimate how both cash-flows are going to evolve in the future. The projected cash flows will vary according to the market's evolution, and thus it is usual to use different scenarios. In this case, we will use 3 values for FCFF growth per year, namely 3%, 4,5% and 6%. All 3 growth figures are conservative, assuming a 2% inflation rate (thus an effective increase of 1%, 2,5% and 4%) – these low values are what is expected for a country embedded in a deep crisis. Another aspect to keep in mind is the lifetime of the concessions (Figure 7), with the main concession BCR ending in 2035. We can ask what will happen in 2035 (and at the end of the other concessions), though the most probable scenario is for Brisa to renew the concession (at market value), or simply for the concession to end (maybe Abertis or some other competitor may place a higher bid for it). Since BCR is the main business unit for Brisa holding, losing BCR would mean losing the economy of scale that sustained all of other Brisa's main units, and thus care must be taken on this aspect when valuing the company. All 3 growth scenarios will have this in mind, keeping 2035 as the end date, after which the firm's perpetuity is going to be calculated (for conservative reasons, no growth will be assumed for the perpetuity).

The three growth scenarios must be coupled with the firm's terminal value. In this case, we opted to calculate the perpetuity in 2036, and multiply this by a percentage symbolizing the extra expenses the firm will pay to renew its main concession(s), and/or profit losses due to loss of sustainable economic scale. Note that not all of Brisa's business rely on concessions, such as the case of Via Verde and the car-inspection garages, but the main part of Brisa's business is effectively linked to these concessions (BCR generates a FCFF of about 2/3 of the whole Brisa holding, so if the Brisa holding was to lose BCR after the lease expires, it would in theory be reduced to 33,3% of its (perpetuity) value, though the economic scale effect could reduce that to practically 0%). The considered percentages for the perpetuity were 0%, 10% and 20%; these values are conservative and represent the certainty that Brisa holding will either lose the BCR concession at its term, or renew it at market rate (not gaining any value directly from it), in order to support its other business units through economy of scale. The perpetuity percentages, coupled with the growth percentages (the growth is assumed only to take place until 2036), will yield 9 total values (Figure 8).

Business Units	Stake	Concession term
BCR	100%	2035
AEA Concession	50%	2028
Brisal Concession	70%	2034
NWP Concession	100%	2106
Other Businesses	93%	Na

FIGURE 7 – BRISA'S BUSINESS UNIT'S STAKE AND TERMS

	% Perpetuity 2036		
Growth per year	0%	10%	20%
2%			
5%			
8%			

FIGURE 8 – ANALYSED SCENARIOS FOR VALUATION

The firm value will thus be calculated according to the following formula, assuming a perpetuity from 2036 onwards (note that the perpetuity was calculated assuming no-growth, in order to keep our estimates conservative):

$$Firm\ Value = \sum_{t=1}^{24} \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{2036}}{(1+WACC)^{25} \times WACC}$$
$$= \sum_{t=1}^{24} \frac{FCFF_{2012} \times (1+g)^{t-1}}{(1+WACC)^t} + \frac{FCFF_{2012} \times (1+g)^{24} \times Perpetuity\%}{(1+WACC)^{25} \times WACC}$$

The sum from 2012 to 2035 of the current values of the FCFF discounted by the WACC can be portrayed in form of an annuity, which applied to this case yields an Annuity Value AV of:

$$AV = \frac{FCFF_{2012}}{WACC - g}\left[1 - \left(\frac{1+g}{(1+WACC)}\right)^{24}\right]$$

Finally, for the perpetuity (value of the company after the project ends, which in this case is taken as the BCR concession), the final $\frac{FCFF_{2036}}{(1+WACC)^{25} \times WACC}$ value is multiplied by the corresponding % of the perpetual value depending on the scenario we use.

For the initial 2012 FCFF value we chose a realistic value of 300 Million €. This value can be explained by the following reasoning: since there have been large investment and inconstant cash flows, the authors opted to calculate the mean of the cash-flow from operations from 2007-2011, yielding 422M€. From this value we subtracted 125M€ of CapEx, which was the value of 2010 (2011 had high impairment losses, and earlier years were tainted by extremely large oscillations, rendering making a mean calculation unfeasible). Using these values (change in working capital was ignored) we arrived at an expected FCFF of 300M€ for 2012, considering that Brisa wouldn't invest heavily on any new investment (which is another conservative aspect as well). These assumptions, together with the assumed fact that it is implicit that this investment will remain up until 2035 and beyond is a measure that contributes to drive Brisa's value downward – in the final 5 years of the project we could assume that no investment was going to be made, and drive the FCFF upwards, alongside the firm value (here we could also assume that the deferred taxes would come to zero, and the extra tax would compensate the higher revenues). With all this in mind, we arrive at the following values for the annuity and perpetuity (already multiplied by the perpetuity discount factor) depicted in Figure 9.

With the mentioned values, we can compute the enterprise value by adding the perpetuity and annuity depicted in Figure 10. The equity value is calculated by subtracting the net debt (total debt minus cash) from the enterprise value. The value per share is obtained by dividing the equity value by the total number of outstanding shares. Applying this reasoning (and

noting that the total shares in the market were not the total 600 million shares due to 38.563.955 treasury shares, thus having a total of 561.436.045 outstanding shares), we arrive at the final values of Figure 11.

	% Perpetuity 2036			
Growth per year	0%	10%	20%	Annuity
3,0%	0 €	175 173 563 €	350 347 125 €	4 599 682 926 €
4,5%	0 €	247 836 998 €	495 673 997 €	5 325 612 876 €
6,0%	0 €	348 912 024 €	697 824 048 €	6 212 999 473 €

FIGURE 9 – SCENARIOS AND VALUATION VALUES

	Enterprise Value		
Growth per year/ Perpetuity %	0%	10%	20%
3,0%	4 599 682 926 €	4 774 856 489 €	4 950 030 051 €
4,5%	5 325 612 876 €	5 573 449 875 €	5 821 286 873 €
6,0%	6 212 999 473 €	6 561 911 497 €	6 910 823 521 €

FIGURE 10 – ENTERPRISE VALUE OF THE COMPANY

	Equity Value			Value per Share		
Growth per year/ Perpetuity %	0%	10%	20%	0%	10%	20%
3,0%	1 082 435 926 €	1 257 609 489 €	1 432 783 051 €	1,93 €	2,24 €	2,55 €
4,5%	1 808 365 876 €	2 056 202 875 €	2 304 039 873 €	3,22 €	3,66 €	4,10 €
6,0%	2 695 752 473 €	3 044 664 497 €	3 393 576 521 €	4,80 €	5,42 €	6,04 €

FIGURE 11 – EQUITY VALUE OF THE COMPANY AND VALUE PER SHARE

Valuation is a prediction exercise and depends on the initial assumptions, yielding several million € differences with small discrepancies between growth values and/or perpetuity hypothesis. Note that the values per share range from 1,93€ to 6,04€, depending on the scenario. A conservative value is the middle value of 3,66€/share, which is significantly higher than the under 3€/share. Of course one could argue that expected growth could be negative and/or that the Public Private Partnership run the risk of being renegotiated by another Government with EU (European Union) support in order for the Portuguese Government to lower costs (though they are legally protected), and in that case Brisa's value would be lowered. It's all about trying to predict the future and issuing probabilistic value to each event in order to assess risk.
JMG's investment in Brisa expected much higher returns that were downsized due to the macroeconomic situation. Even so, assuming a growth of 2% inflation + 2,5% company growth, and a perpetuity of 10% of the FCFF in 2036 (very conservative values, alongside a considerably high $r_e = 12{,}59\%$), we have it that JMG made an excellent deal.

JMG's Strategy

In terms of JMG's strategy depicted in the QFD matrix of the case (reproduced in Figure 20), we see that JMG can go ahead with its action of most importance (according to the QFD) which is to assume control of the company. Note that increasing further debt is something that JMG was trying to avoid, but it is necessary in this case in order to maximize JMG's profit (thought it goes against promoting organic growth and minimizing risk, since much capital is being injected into a single company). Every decision carries with it pros and cons, but in this case it is fair to say that the profit maximization, due to its weight in quantity and value, takes precedence over other development objectives.

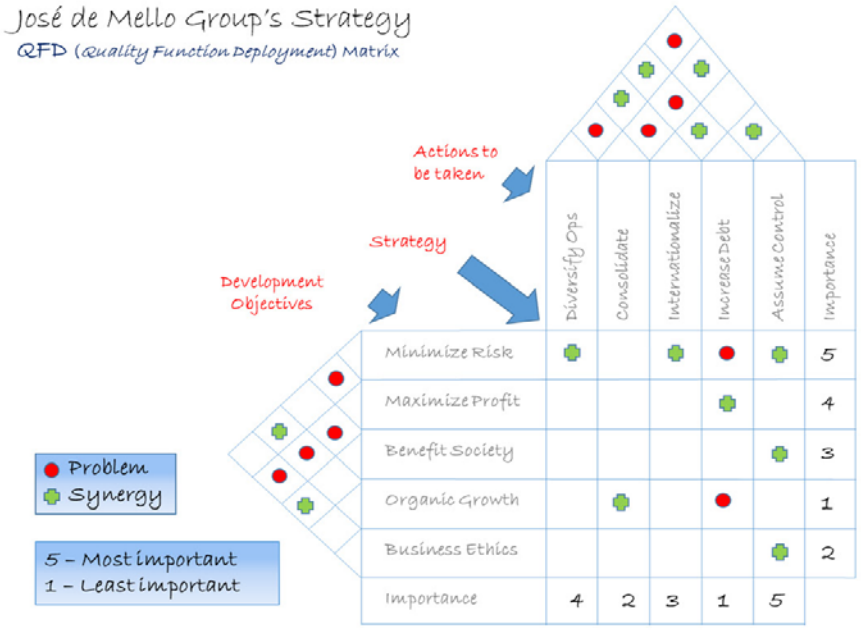


FIGURE 20 – JMG'S QFD MATRIX

From the previous reasoning, JMG should definitely assume control of Brisa, and get its hands on the most amount of Brisa's equity as possible. The main question is "how to achieve this?". The TO should be placed in motion, but before any deals were struck with Abertis (or anyone else) in case the TO was unsuccessful on reaching 90% of voting rights, all alternative funding sources should be pursued as long as the cost wasn't prohibitively high (notice that 8% interest fee is already on the upper limit). There would always be the option of selling part of BCR in the future, for a (much) higher price to recoup financial health if necessary. Note that the cost of equity was 12,59%, and that the current cost of debt was around 5,64%, and as such there was still major room to accommodate an interest increase.

Proposed teaching questions

Many teaching questions may be formulated from the case, and in this section we will enumerate the main questions for each of the 4 main themes. In this section we will use "Q" for Question, "A" for answer and "S" for teaching suggestion.

Strategy

Q: Is Brisa's strategy the correct one? Is it prudent to keep on investing during a time of crisis, or should the company focus on consolidating its current operations?
A: Investing in a time of crisis must be done very prudently. Projections must be realistic, and projects compared to assess which one yields higher profitability. Sometimes in a time of crisis, there are few or no projects with worthwhile returns, and companies should "wait things out", and focus more in internal procedures, identifying any potential efficiency-improving measure. With Brisa, this was not the case. Brisa invested both domestically (Portugal) and internationally (diversifying risk), and had protective clauses in its concession contracts, guaranteeing a traffic minimum to turn the project worthwhile. Transferring the risk to the public sector, made Brisa's investment worthwhile, even at a time of crisis.
S: Classroom vote

Q: On what areas should JMG invest? Should JMG invest more in Brisa (disinvesting on its other ventures by doing so)?
A: JMG seems to have followed the market's golden rule "don't put all your eggs in the same basket". Risk diversification is paramount, and JMG does this very well, investing in the health sector, housing market, transports, chemistry and electrical sector. Using this strategy, JMG must have reduced significantly its level of intrinsic risk.
S: Draw a table on the board with different business areas and see how they relate to each other alongside possible future synergies

Q: What type of international strategy does Brisa have? And what about JMG?
A: Both are global companies, since each are centralized in its home country, with (relatively low) overseas operations considered as delivery pipelines to tap into global market opportunities. There is tight control of strategic decisions, resources, and information by the global hub.
In case these companies start to expand their businesses abroad, it is likely that they may become International Companies. International companies have the ability to transfer knowledge and expertise to overseas environments that are less advanced. They are coordinated federations of local businesses, controlled by sophisticated management systems (ERP – Enterprise Resource Planning software is often used). The attitude of the parent company is parochial, fostered by the superior know-how at the centre of the organization.
S: Explain the difference between the different types of international strategies before asking the class into which category both companies fall into.

Q: What kind of intrinsic risk factors are related to the funding of a company such as Brisa?
A: The main risk is traffic volume risk. Other risks may come from alternative roads (competitive risk), construction risk (of new concessions), operational risk from maintenance, state risk due to clauses in the PPPs (not discussed in the case), but usually include the default on Brisa debt and a change of control of the entities constituting Brisa without State approval (mentioned in JMG's meeting). Ramp-up risks are present for new

concessions (time that takes users to start using the road), and last but not least (perhaps the main risk) is the financing risk, that increases proportionally to the raising premiums.
S: Class discussion and listing of risks in the blackboard

Company Valuation (Finance)

Q: What's the best way to value Brisa?
A: Follow the proposed teaching method, through the use of projected FCFF (and its equivalent of FCFE to value equity and consequently share value).
S: The student excel sheet points this out, but other methods should be introduced and discussed in this point.

Q: How much is the company worth? What assumptions were made?
A: Taking into account the moderate scenario, Brisa should be worth around 5,6B€ as a whole (Enterprise value - for all creditors and investors) and 2,1B€ solely for investors (Equity value).
S: Point out that it's very difficult to point to a single value, due to the volatility of the assumption's effect on the calculations

Q: Why is there a difference between market and estimated value?
A: The firm's equity market value for stocks at 3€/share would be around $Equity\ MV = {}^{3€}/_{share} \times 561436045 shares = 1{,}7B€$; this value is in line with a projected growth of 3%, but below projected growths of 4,5% and 6%. The implicit assessment of the market was obviously different. For some reason, either the market considered the average future free cash flow smaller, or the appropriate risk adjusted discount rates higher (or both). The differences might be due to occasional hoarding behaviour (or mass hysteria; a bad situation generally looks worse than it actually is). Mass hysteria and a falling economy (with people needing to sell in order to have liquidity) coupled with short-selling players in the market may lead to company undervaluation.
S: See what the growth rate should be for the estimated value to match the market value in the excel sheet.

Q: The credit rating is limited by Portugal's "garbage" rating, that in practice throws all of the Portuguese companies to garbage as well, regardless of their overall performance… how do you interpret this?
A: This rule assumes that a company operating in a failing market has no probability of success. While this may be true for most cases, conceptually there might be some exceptions. As might be the case of Brisa. Ideally, all companies should be rated independently and rated accordingly. The context under which a company operates is factored in its rating, and if in fact the context affects the company's performance significantly, then the rating should reflect the rating status of the corresponding sovereign.
S: Discuss possible relocation of Brisa holding to another country with much higher rating, such as USA or Germany, for instance (BCR is fully Portuguese). Then conclude that since Brisa holding isn't rated (only BCR is), and that investors prefer to lend money to BCR, since BCR holds the core business. In case of BCR's default, the debt holders will have priority over shareholders and Brisa's debt holders.

Q: Calculate Brisa's beta using the DAX market index. What value do you arrive at? Comment on it.
A: By calculating the volatility of Brisa against the DAX market, we arrived at a value of β_l=0,59 for the levered beta (excel sheet). This means that Brisa (and from the previous question, we can assume the whole transport infrastructure market as a whole) is less volatile than the German market that had bigger monthly (data is monthly data) shifts (both positive and negative). The beta varies according to the market it is compared to, and thus the value of β_l=1,35 that was used as Brisa's levered beta, by analogy to the unlevered beta of other similar companies is more trustworthy.
S: Explain the meaning of beta and how it is calculated against market data.

Q: Calculate Brisa's beta using the group of similar companies and the DAX market as reference. What value do you arrive at? Comment on it.
A: By calculating the volatility of Brisa against the group of similar companies (which includes Brisa itself), we arrive at a value of β_l=0,27. Please read the section "Valuation with different betas" for further explanations.
S: Explain the meaning of beta and how it is calculated against market data.

Q: Assuming that Brisa won't distribute any dividends until 2035, what is the estimated cash build-up from the retention of the FCFE (Free Cash Flow to Equity) at the end of 2035 (assume that all retained cash is invested in a market with a Country Risk Premium=0, yielding the standard market return)? (hint: adjust the formula for the Terminal Value Correction in Silva&Pereira (2016a))
A: Since it's a premise that no dividends are distributed, Brisa will accumulate cash. This accumulated cash can have various uses; and the shareholders should pressure managers into putting this money into good use. The cash build-up it may be misused if:

- it's used to pay prizes and raise wages for managers and employees
- managers use it to pay more for a project than its real worth
- it's simply shelved earning zero interest;

Since no dividends are distributed, one should assume that the company intends to use this cash into some project sooner or later (CapEx investment), in order to be able to grow. While it doesn't use this cash for such investment, the extra money could be invested in a diversified portfolio of the market, earning a standard market return r_m (equivalent to investing in a fund with the main market shares, thus having a beta of 1; note however that the market's risk is involved, and there is no guarantee of earning what we expect; for this case we will assume that the risk paid off and that in fact we earn the market's standard rate of return).

To calculate the cash build-up, we have to make some assumptions first. To start off, we can assume that the FCFE that is liberated every year is 33,33% of the FCFF (100 M€), due to the assumed Debt/Equity ratio of 2. We shall also assume that the liberated cash is invested in a market without any CRP (Country Risk Premium) such as Germany, thus yielding r_m (which we assumed to be 7,45% in the excel sheet). So being, and also assuming that the whole FCFE is being invested (earning interest) year after year in the German market, all we have to do is calculate the total FCFE that was withheld throughout the years alongside the interest it generated.
Starting off with the total withheld FCFE excluding interest, and taking into note that the sum of a geometric series that is given by:

$$A = \sum_{t=0}^{n-1} ar^t = a\left(\frac{1-r^n}{1-r}\right)$$

we can calculate it as being:

$$\sum_{i=1}^{n} retained\ FCFE = rr \times \mathrm{FCFE}_1 \times \left(\frac{-1+(1+g_{FCFE})^n}{g_{FCFE}}\right)$$

Where rr_{FCFE} is the FCFE retention ratio (henceforth assumed to be 1 – note that rr_{FCFE} is different from the "normal" retention ratio used in finances, that applies to net income; rr_{FCFE} is the retention after CAPEX, meaning that the company's future growth has already been taken care of by reinvesting part of the net income; here we are focusing solely on the FCFE), $FCFE_1$ is the expected FCFE in 2012 (100 M€), n is the number of years (24, from 2012 to 2035) and g_{FCFE} is the growth rate of the FCFE (equal to the growth rate of the FCFF). Note that if g_{FCFE} were to equal 0 (no growth), the formula would reduce to:

$$\sum_{i=1}^{n} retained\ FCFE = rr_{FCFE} \times \mathrm{FCFE}_1 \times n$$

The interest that the retained FCFE is supposed to yield (r_m=7,45%) is calculated by:

$$Interest = rr_{FCFE} \times \mathrm{FCFE}_1 \times \mathrm{r_m} \times \sum_{t=1}^{n-1}\left[(1+g_{FCFE})^{t-1} \times \frac{-1+(1+\mathrm{r_m})^{n-t}}{\mathrm{r_m}}\right]$$

Which is equal to

$$Interest = rr_{FCFE} \times \mathrm{FCFE}_1 \times \sum_{t=1}^{n-1}[(1+g_{FCFE})^{t-1} \times ((1+\mathrm{r_m})^{n-t}-1)]$$

Basically the reasoning behind this formula is simple; the interest of the previous' year FCFE is r_m, and will grow from reinvestment also at a rate r_m.

The total cash build-up is thus calculated as being:

$$Cash\ Build-up = rr_{FCFE} \times \mathrm{FCFE}_1 \times \left[\left(\frac{-1+(1+g_{FCFE})^n}{g_{FCFE}}\right) + \sum_{t=1}^{n-1}[(1+g_{FCFE})^{t-1} \times ((1+\mathrm{r_m})^{n-t}-1)]\right]$$

A function was implemented in the teacher's excel sheet in order to ease dealing with the summation. This function is explained in Annex A.

The results were as follows:

Growth per year	Interest	Retained Earnings	Cash Build-up
3,0%	4 595 762 887 €	3 442 647 022 €	8 038 409 909 €
4,5%	5 098 445 392 €	4 168 919 631 €	9 267 365 023 €
6,0%	5 683 627 606 €	5 081 557 735 €	10 765 185 341 €

FIGURE 21 – BRISA'S EVENTUAL CASH BUILD-UP UNDER A NO DIVIDEND POLICY

The final equity-available cash at the end of 2035 will be the one that was accumulated over the 24 years (calculated values in orange), added to the equity that the company had at the end of 2011 plus interest, discounted by debt payments. Note that the calculated values weren't pushed back to values of 2012.

The cash build-up and some valuation issues that might lead to double-counting were discussed in Silva&Pereira (2016a). The used formulation was adapted from this paper.

S: Class discussion on the procedure and meaning.

Q: Following from the previous question, what would the difference in the cash build-up be if the investments obtained a return 1% above the expected standard market return? (hint: see Silva&Pereira (2016b))
A: The shareholders expected a return of r_e=7,45% (see previous answer) and in fact obtained a return of r_i=8,45%, thus obtaining an unexpected gain. The answer could be obtained simply by calculating the previous answer with a rate r_i=8,45% and assess the cash build-up difference; however we can use the formula in Silva&Pereira (2016b) to correct the valuation when retaining dividends.

Assuming, as in the previous answer, that $FCFE_1$=100M€ and using the same growth values, we have from Silva&Pereira (2016b), that the Overall Rate Difference ORD is equal to (using n=24, variable g_{FCFE} and the previously mentioned r_e=7,45% and r_i=8,45%):

$$ORD(g_{FCFE}, n, \mathrm{r_e}, \mathrm{r_i}) = Interest(g_{FCFE}, n, \mathrm{r_i}) - Interest(g_{FCFE}, n, \mathrm{r_e})$$
$$= \sum_{t=1}^{n-1} [(1 + g_{FCFE})^{t-1} \times ((1 + \mathrm{r_i})^{n-t} - (1 + \mathrm{r_e})^{n-t})]$$

The difference is calculated as (rr_{FCFE}=1 and $FCFE_1$=100 M€)

$$CF = rr_{FCFE} \times \mathrm{FCFE}_1 \times ORD(g_{FCFE}, n, \mathrm{r_e}, \mathrm{r_i})$$

Yielding the following results (Figure 22):

Growth per year	Difference in Cash Build-up
3,0%	1 087 900 000 €
4,5%	1 189 900 000 €
6,0%	1 307 050 000 €

FIGURE 22 – BRISA'S DIFFERENCE IN CASH BUILD-UP BY USING A DIFFERENT RATE

S: Class discussion on the procedure.

Q: How did Vasco de Mello deal with each person/company?
A: Vasco de Mello had a very special relationship with his partners; he was once president of the Mello bank, and vice-president of BCP between the years 2000 and 2007 (one of the 3 Portuguese banks involved in the financial operation). Vasco de Mello was very well respected in the banking industry, especially in Portugal, which certainly helped in getting preferred financing conditions. However, the relationship with Deutsche Bank was strictly professional, and Vasco de Mello knew that it was much harder to deal with the Germans. Despite the traditional hospitality that was given to the Deutsche Bank's representative, Vasco de Mello got nothing more than a condition and a deadline.

The relationship with the other 2 main players (Abertis and Arcus) was also a good one, and it was clear that Arcus saw in Vasco de Mello a leader, and was willing to follow his advice. Abertis, on the other hand, had greater ambitions and knew that if JMG wouldn't relinquish control of Brisa, then they would better invest on other projects. Vasco de Mello was a member of Abertis from 2003 to 2007, and they knew each other well. Abertis leaving Brisa would not necessarily represent the end of business between both, and surely that some deals would compensate others, in future joint efforts.

Finally, JMG had a very big influence in the Portuguese government due to historical reasons, and thus the TO and bank financing was approved through CGD and CMVM (and even some dispute from ATM was hushed), in order to speed up the deal.
S: Roleplay, enhancing the main characteristics of each person. Extrapolate to different scenarios.

Q: Did Vasco de Mello assess the situation correctly?
A: According to Figure 23, Vasco de Mello did what the figures suggests; he knew what the problem was, explored (realistic) possibilities and took the necessary measures to allow for those possibilities to take place. The cooperation with Arcus was beyond win-win, and all cards were put on the table. The main issue was obviously Brisa's valuation and JMG's disagreement with the market price. In the end, they benefited greatly from the market's over-reaction.
S: Have the class describe the main points of "assessing the situation".

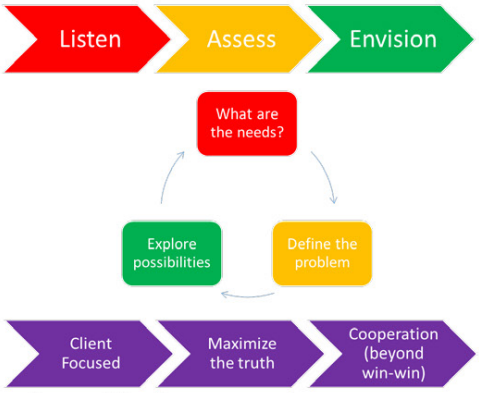


FIGURE 23 – NEGOTIATION TECHNIQUES

Q: Is Vasco de Mello seen as a leader? To whom?
A: Vasco de Mello is seen as the leader of one of the biggest Portuguese financial groups, and everyone in Portugal knows either his name or parts of JMG in the industry, since they are so diversified. In a sense, Vasco de Mello is seen as an intelligent, hard-working man that strives to carry on his family name, in a country where everyone knows the history of CUF and its founding principles. In Abertis and abroad, Vasco de Mello is seen as an ambitious leader that takes and makes solid decisions.
S: Begin by asking "what is a leader?"

Q: What is the purpose of Brisa's Executive Committee?
A: Executive committee are a subset of the board of directors that usually include the board's officers. When used appropriately, they enable the conduction of urgent business when a regular meeting isn't scheduled and the full board can't readily be convened, providing the CEO (Chief Executive Officer) with a sounding board for insights and advice from trusted leaders. At the same time, executive committees are intrinsically exclusionary, and run the risk of defining a big and unwanted power shift in the board of directors to its members.
S: Ask the class to enumerate advantages and disadvantages of having an Executive Committee.

Q: What kind of a leader is Vasco de Mello?
A: From the paper in HBR (2005) Vasco de Mello fits best as a Strategist, due to his focus in perceptions and constraints of the organization, his ability to deal with people, his conflict management skills and his will to create ethical principles and practices beyond the interests of herself or her organization. The Strategist is also adept at creating shared visions across different action logics—visions that encourage both personal and organizational transformations. According to the Strategist's action logic, organizational and social change is an iterative developmental process that requires awareness and close leadership attention.
S: Enumerate the different kinds of leaders

Q: Draw a "wheel of competency" for Vasco de Mello?
A: As a suggestion, we have the wheel portrayed in Figure 24. The wheel is always a bit subjective, but emphasis on excellent stress management skills and sense of responsibility.
S: Begin by having a class vote for 8 main competencies before drawing the wheel.

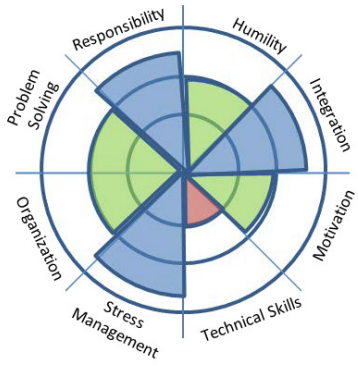


FIGURE 24 – SUGGESTED WHEEL OF COMPETENCY FOR VASCO DE MELLO

Q: Is there a conflict of interest by JMG, Brisa, Abertis and/or BCP, by the participation of Vasco de Mello in all those companies at case time and before?
A: Yes, there is a conflict of interests, but all companies are under constant scrutiny by the market and members of the board. Abertis and Brisa each have their own interests, and JMG as one the main shareholders certainly should have a big power of decision in Brisa, though not absolute. There could be some debatable conflict of interest between BCP and Brisa, but BCP would also need to justify their shareholders why it would finance JMG to buy Brisa – as long as the company's out-of-market valuation was realistic and worthwhile, BCP could have seen this as a safe move. Vasco de Mello was seen by everyone as an "insider partial" negotiator with a correct sense of fairness and justice. The best ways to act under these conditions is via the use of full discloser (Ethics, 2016), and that was done.
S: Class vote and posterior discussion

Q: Do you concur with the dividend lock-up policy that was instated?
A: The dividend lock-up was controversial and may have been perceived as a form of pressure and control, but the fact was that Brisa was undergoing tough times, having to pay higher interest rates for BCR's debts, and thus the excess cash due to the sale of CCR could serve as a cushion for this.
S: Class vote and posterior discussion

Q: According to the epilogue (what really happened) we can see that CMVM and Tagus negotiated an exit mechanism that would pay the remaining minority shareholders a value of "at least 2€/share" (value substantially below the TO), with Tagus offering 2,1€/share (later raising to 2,22€/share after public pressure). Was this reasonable?
A: The proposed value was negotiated with CMVM, although it was substantially lower than the TO. Although no one discusses the legality of the matter (it was legal and CMVM agreed it was a fair value), ethically it can be dubious. However, no one was forced to sell, and the shareholders that in fact didn't sell benefited from dividends distributions in the following years. Some shareholders may have opted not to sell in the TO in the hope that the 90% of voting rights wouldn't be achieved… in that case, Tagus could maybe improve in the offer and the gamble could pay off. Since the 90% were obtained, the presented options would be to sell for a lower price or keep the shares and wait to profit in the future. Luckily for the remaining shareholders, JMG did prove itself to be a trustworthy company.
S: Class vote and posterior discussion, after disclosure of epilogue

Conclusion

When leading a business, there are always a great amount of variables to take into account. Taking on specific projects usually means having to give up others. This was the case for JMG, a holding with business ventures in Transports & infrastructure, Chemistry, Health, Electro-mechanical, banking and energy sectors. JMG had a risk diversification through different industries, and the fact that Brisa would require further funding put JMG before a predicament – should it invest more in Brisa and offset its even investment distribution, altering its risk diversification profile? A safer/ simpler way could be to either pay a higher interest in order to compensate for the devaluation of its collaterals, or to sell part off its equity in Brisa, but that would cause JMG to relinquish its control in the company. A somewhat riskier move would be to take on the challenge of buying out the market, have total control on the company (alongside Arcus that made the investment feasible), and seize the opportunity of getting great returns from Brisa (selling part of it later for the right price, if need be, for financial and risk stabilization).

In order to go ahead with the Tender Offer, a good and realistic valuation of Brisa had to be made – Brisa's effective market value was low, and the outlook was pessimistic, but… the market could be wrong due to excessive pessimism (the Portuguese market isn't known to be fully sound due to its relatively small size and influence of big economic groups, and thus the market's valuation on Brisa could be wrong). It is always tough to bet against the market; it takes some courage and sound calculations with realistic assumptions; in this case, the risk paid off. Note that JMG later sold its participation in EDP, 30% of BCR (with a big profit compared to the TO) and cut costs in Efacec in order to recoup liquidity after the operation, while at the same time, cutting off part of the risk it took.

In regard to the shareholders, they were in fact confronted with the fact that, although Brisa was worth much more than what was offered, they would run the risk of absolute control from JMG and Arcus, without any liquidity assurance. In fact, this implicit scenario scared many into selling, since operations of exiting the market are always significantly risky for the minority shareholders.

Excel Files

The excel files (both student and teacher version) are provided in the CD alongside this report. In this section we will discuss part of some worksheets, so that the reader gets an understanding of what's in the excel sheets. All the sheets in this section were taken from the teacher's version – the student's version have some empty fields that need to be calculated/ inserted.

In Figure 1 we can see the first sheet that has a short description of all worksheets in the excel file. Figure 2 portrays the companies that were used to calculate the beta by comparison, alongside their currency units and comparison rates. In Figure 3, each company's unlevered beta is determined, in order to find the mean unlevered beta, to be applied to Brisa.

Strategic Actions in Challenging Times **Teacher's Sheet**

Jose de Mello's predicament on its stake in Brisa

Worksheet	Description
Similar Companies	Similar companies to Brisa. Used for beta calculation
Calculus Companies vs DAX	Worksheet for calculating Brisa's mean unlevered beta from given similar companies
DAX data	DAX market data for beta calculation
Brisa Stock	Brisa stock market data
Brisa Finance Sheet	Brisa's financial data
BCR Finance Sheet	BCR's financial data
WACC	WACC calculation page
Value per Share	Brisa's stock valuation calculation page
Cash Build-up	Estimated cash build-up (case question)
Price Targets	Mid 2012 price targets for Brisa

FIGURE 1 – EXCEL WORKSHEETS' DESCRIPTION

Abbrev	Variable Name	Unit
CEU	ConnectEast Group	AUD
RCM	RiverCity Motorways Group	AUD
JIE	Jiangsu Expressway Co. Ltd.	HKD
ZHE	Zhejiang Expressway Co. Ltd.	HKD
ARR	Autoroutes Paris Rhin Rhone	EUR
ATL	Atlantia S.p.A.	EUR
BAE	Brisa Auto-Estradas de Portugal SA	EUR
TRG	Transurban Group	AUD
MIG	MacQuarie Infrastructure Group	AUD

Source: Bloomberg

1 Euro: 1,25 AUD
10 HKD

Rough Average from 2012 values

FIGURE 2 – USED COMPANIES FOR COMPARISON

	CEU	RCM	JIE	ZHE	ARR	ATL	BAE	TRG	MIG	
Comments		Bankrupt								
Levered Betas against DAX	0,09	-0,18	0,20	0,56	0,18	0,24	0,59	0,15	0,11	
Mean D/E	2,25	10	3,2	1	20	2	2	2,24	0,95	
Mean Tax	30%	30%	25%	25%	33%	31,40%	31,50%	30%	30%	
Unlevered Beta	0,03	-0,02	0,06	0,32	0,01	0,10	0,25	0,06	0,06	$\beta_u = \frac{\beta_l}{1 + (1 - T_c) \times (D/E)}$
Mean Unlevered Beta (excluding RCM)									0,11	
Brisa's Levered Beta assuming unlevered beta to be equal to the group's mean									0,27	$\beta_l = \beta_u \times [1 + (1 - T_c) \times (D/E)]$

FIGURE 3 – CALCULATION OF UNLEVERED BETAS FROM USED COMPANIES FOR COMPARISON

The WACC (Weighed Average Cost of Capital) is calculated in Figure 4, in a way that students understand the importance of each of its components.

The estimated growth model, alongside Enterprise and Equity value forecast are performed in Figure 5, whose main result is the value per share. Finally, the cash build-up calculations (alongside functions that were programmed in Visual Basic and discussed in detail in the teaching note) are depicted in Figure 6.

Year	2011 values				Main Equations	Comments
Weighed Average Cost of Capital	CAPM	D/E	Equity	33,3%		Mean Percentage of Equity throughout 2035
			Debt	66,7%		Mean Percentage of Debt throughout 2035
		Betas	unlevered beta	0,57	$\beta_l = \beta_u \times [1 + (1 - T_c) \times (D/E)]$	From Brisa's Financial research 2012
			levered beta	1,35		Brisa's beta
		CRP	Portuguese default spread	3,25%		Portugal risk premium (Damodaran: Ba3)
			std equity	20,46%		standard deviation of Portugal's equity market
			std bonds	29,69%		standard deviation of Portugal's bond market
			CRP	2,24%	$CRP = Def.spread \times \frac{\sigma Equities}{\sigma Bonds}$	country risk premium
			Tax Rate	31,50%		until end of 2013 in Portugal (we assume that it would remain constant, though the change in 2014 would be lower, to 29%)
			rf	1,45%		German government 10y bonds 2012
			rm	7,45%		mean market return (assumes 6% premium on transport & infrastructure market)
			rm+CRP	9,69%		total market premium
			rd	5,64%		Brisa ROC report, cost of debt
			re	12,59%	$r_e = r_f + \beta_l(CRP + r_m - r_f)$	cost of equity
			WACC	6,77%	$WACC = r_e \times E/(E+D) + r_d \times D/(E+D) \times (1 - T_c)$	WACC

FIGURE 4 – CALCULATING THE WACC

Annuity value	24
Initial FCFF	300 000 000 €
Net Debt	3 517 247 000 €

Comments
Number of years of constant growth
Assume baseline FCFF for 2012
For finding equity value (total debt - cash)

	% Perpetuity 2036			
Growth per year	**0%**	**10%**	**20%**	**Annuity**
3,0%	0 €	175 173 563 €	350 347 125 €	4 599 682 926 €
4,5%	0 €	247 836 998 €	495 673 997 €	5 325 612 876 €
6,0%	0 €	348 912 024 €	697 824 048 €	6 212 999 473 €

$$Firm\ Value = \sum_{t=1}^{24} \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{2036}}{(1+WACC)^{25} \times WACC}$$
$$= \sum_{t=1}^{24} \frac{FCFF_{2012} \times (1+g)^{t-1}}{(1+WACC)^t} + \frac{FCFF_{2012} \times (1+g)^{24} \times Scenario\%}{(1+WACC)^{25} \times WACC}$$

$$AV = \frac{FCFF_{2012}}{WACC - g}\left[1 - \left(\frac{1+g}{(1+WACC)}\right)^{24}\right]$$

	Enterprise Value		
Growth per year/ Perpetuity %	**0%**	**10%**	**20%**
3,0%	4 599 682 926 €	4 774 856 489 €	4 950 030 051 €
4,5%	5 325 612 876 €	5 573 449 875 €	5 821 286 873 €
6,0%	6 212 999 473 €	6 561 911 497 €	6 910 823 521 €

	Equity Value			Value per Share		
Growth per year/ Perpetuity %	**0%**	**10%**	**20%**	**0%**	**10%**	**20%**
3,0%	1 082 435 926 €	1 257 609 489 €	1 432 783 051 €	1,93 €	2,24 €	2,55 €
4,5%	1 808 365 876 €	2 056 202 875 €	2 304 039 873 €	3,22 €	3,66 €	4,10 €
6,0%	2 695 752 473 €	3 044 664 497 €	3 393 576 521 €	4,80 €	5,42 €	6,04 €

FIGURE 5 – CALCULATING THE VALUE PER SHARE

Cash Build-up from retention (assuming no dividend policy)

function usage: Interest/CashBU(gfcfe, rr, rm, n, FCFE1)
Ret_earnings(gfcfe, rr, n, FCFE1)

Growth per year	Interest	Retained Earnings	Cash Build-up
3,0%	4 595 762 887 €	3 442 647 022 €	8 038 409 909 €
4,5%	5 098 445 392 €	4 168 919 631 €	9 267 365 023 €
6,0%	5 683 627 606 €	5 081 557 735 €	10 765 185 341 €

FIGURE 6 – CALCULATING THE CASH BUILD-UP

Research Papers

The research papers are important since they focus on different aspects of the discounted FCFE valuation model.

The first paper (Silva&Pereira, 2016a) points out some common mistakes that are made when valuing a company, and its impact on the overall valuation. It also contributes to point out that what the shareholders of a company expect from it when it withholds dividends, and the amount of the cash build-up it retains. The students reading the paper and solving the case's questions are made aware of this by answering the question pertaining to the forecasted cash build-up of Brisa, and by making the bridge of the paper's TVC (Terminal Value Correction) formula to the cash build-up formula in the teaching note.

The TVC is discounted to the initial day,

$$TVC = rr_{FCFE} \times \mathrm{FCFE}_1 \times \left(\frac{\left(\frac{-1 + (1 + g_{FCFE})^n}{g_{FCFE}} \right) + \sum_{t=1}^{n-1} [(1 + g_{FCFE})^{t-1} \times ((1 + \mathrm{r_i})^{n-t} - 1)]}{(1 + \mathrm{r_e})^n} \right)$$

but the Cash Build-up isn't discounted, as thus is given by:

$$Cash\ Build - up$$

$$= rr_{FCFE} \times \mathrm{FCFE}_1 \times \left[\left(\frac{-1 + (1 + g_{FCFE})^n}{g_{FCFE}} \right) + \sum_{t=1}^{n-1} [(1 + g_{FCFE})^{t-1} \times ((1 + \mathrm{r_m})^{n-t} - 1)] \right]$$

(note that the difference between the two formulas is that the TVC is pushed back in time, and that's what the students need to figure out essentially). The reader is encouraged to examine the paper on the CD, to fully understand its reasoning and view the applied examples.

The second paper, (Silva&Pereira, 2016b), deals with valuation adjustments that need to be performed to the cash build-up when the obtained rate from market investment is different than the shareholder's expected rate at the cost of equity. So being, this rate difference will alter the cash build-up and thus some adjustment need to be made. The paper describes the function Overall Rate Difference ORD, and then applies the ORD to the initial value to compute the Correction Factor CF in cash build-up that separates the expected and the real value.

The ORD is given by:

$$ORD(g_{FCFE}, n, \mathrm{r_e}, \mathrm{r_i}) = Interest(g_{FCFE}, n, \mathrm{r_i}) - Interest(g_{FCFE}, n, \mathrm{r_e})$$

$$= \sum_{t=1}^{n-1} [(1 + g_{FCFE})^{t-1} \times ((1 + \mathrm{r_i})^{n-t} - (1 + \mathrm{r_e})^{n-t})]$$

And the Correction Factor is:

$$CF = rr_{FCFE} \times \mathrm{FCFE_1} \times ORD(g_{FCFE}, n, \mathrm{r_e}, \mathrm{r_i})$$

Chapter 4 Concluding Remarks

This project aimed to consolidate into a business case the main aspects that were learnt during the ISEG MBA. The case focus on strategy and finance, although many other aspects such as leadership, negotiation and business ethics are discussed – this case is ideal for many class discussions relating to these aspects.

The business case is told in such a way that the student will be able to consolidate many of his/her doubts in finance in strategy. The excel sheet is also very oriented towards teaching, guiding the student through the intended calculation procedures with pre-filled worksheets and guiding formulas.

Another very important aspect that was carefully planned was the marketing of Portugal as a country that, although struggling with an economic crisis, still had strong-minded business leaders that were willing to take risks, alongside being a great place to visit (references to the weather and food were given in the final meeting). It is hoped that this business case is used in business schools throughout the world and that it serves its purpose in teaching some of the main aspects in a MBA alongside promoting Portugal as a prosperous European country that could be taken into account for future businessmen when expanding their business and/or for touristic purposes.

José de Mello group was the perfect business holding to analyse, due to its historical presence in the Portuguese history alongside its business sense, where it analyses what are the (people's) economy's needs and in many aspects replaces the

government in such areas (such as healthcare, retirement homes and transport infrastructure). It can be seen as a model in many aspects, with an unusually diversified business portfolio that minimizes the family group's risk. Personally, it was a good experience to meet some of the people in the group, and hopefully I will deal with the group again in the future.

To finalize, two research papers on finance were devised, with links to the case itself. The objective is to help the students understand the subtleties of the discounted FCFE valuation, via understanding some matters pertaining to the cash build-up that a company obtains from withholding dividends. The research papers can be given to students alongside the business case in order to help them solve the questions pertaining to cash build-up.

References

Baker, M. and J. Wurgler. (2004a). "*Appearing and disappearing dividends: The link to catering incentives*", Jornal of Financial Economics 73, pp271-288.

Baker, M. and J. Wurgler. (2004b). "*A catering theory of dividends*", Jornal of Finance 59, pp1125-1165.

Barth, M.E. (1994). "*Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks*", Accounting Review, v69, No. 1 (January): pp1–25.

Barth, M.E., W. R. Landsman, and J. M. Whalen. (1995). "*Fair value accounting: effects on banks' earnings volatility, regulatory capital, and value of contractual cash flows*", Journal of Banking and Finance v19, No.3-4 (June): pp577–605.

Barth, M.E., W.H. Beaver, and W.R. Landsman. (1996). "*Value relevance of banks fair value disclosures under SFAS 107*", The Accounting Review, v71, No.4 (October): pp513–37.

Barth, M., W. Beaver and W. Landsman. (2001). "*The relevance of the value-relevance literature for financial accounting standard setting: another view*". Journal of Accounting and Economics 31: pp77-104.

Barth, M.E. and G. Clinch. (1998). "*Revalued financial, tangible, and intangible assets: Associations with share prices and non-market-based value estimates*", Journal of Accounting Research, v36 (Supplement): 199–233.

Berger, P., E. Ofek and I. Swary. (1996). "*Investor Valuation of the Abandonment Option*", Journal of Financial Economics, v42, pp257-287.

Bernoulli, D. (1738) "*Exposition of a New Theory on the Measurement of Risk*" (Translated into English in Econometrica, January 1954).

Bernstein. (1967) Proprietary two-stage dividend discount model used by the investment firm Sanford Bernstein, founded in 1967.

Bohm-Bawerk, A.V. (1903). "*Recent Literature on Interest*", Macmillan.

Boulding, K.E. (1935). "*The Theory of a Single Investment*", Quarterly Journal od Economics, v49, pp479-494.

Chen, C., M. Kohlbeck and T. Warfield. (2004). "*Goodwill Valuation Effects of the Initial Adoption of SFAS 142*", Working Paper, University of Wisconsin- Madison.

Copeland, T.E., T. Koller and J. Murrin. (1990). "*Valuation: Measuring and Managing the Value of Companies*", John Wiley and Sons (first three editions).

Damodaran, A. (1994). *"Damodaran on Valuation*", John Wiley, New York.

Damodaran, A. (2006). "*Damodaran on Valuation*", Second Edition, John Wiley and Sons, New York.

Daniels, M.B. (1934). "*Principles of Asset Valuation*", The Accounting Review, v9, pp114-121.

DeAngelo, H., L. DeAngelo and D. Skinner. (2004) "*Are dividends disappearing? Dividend concentration and the consolidation of earnings*", Journal of Financial Economics, v72, pp425-456.

Dechow, P., A. Hutton, R. Sloan. (1999). "*An Empirical Assessment of the Residual Income Valuation Model*". Journal of Accounting and Economics 26 (1-3) pp1-34.

Durand D. (1957). "*Growth Stcks and the St. Petersburg Paradox*", Journal do Finance, v12, pp348-363.

Fabricant, S. (1938). "*Capital Consumption and Adjustment*", National Bureau of Economic Research.

Fama, E. and K. French. (1988). "*Dividend Yields and Expected Stock Returns*", Journal of Financial Economics 22, pp3-25.

Fama, E.F. and K.R. French. (1992). "*The Cross-Section of Expected Returns*", Journal of Finance, v47, pp427-466.

Fama, E.F. and K. R. French. (2001). "*Disappearing dividends: Changing firm characteristics or lower propensity to pay?*", Journal of Financial Economics v60, pp3-44.

Feltham, G. and J. Ohlson. (1995). "*Valuation and Clean Surplus Accounting of Operation and Financial Activities*", Contemporary Accounting Research, v11, pp689-731.

Fisher I. (1907). "*The Rate of Interest*", Macmillan, New York.

Fisher I. (1930). "*The Theory of Interest*", Macmillan, New York.

Foerster, S.R. and S.G, Sapp. (2005). "*Dividends and Stock Valuation: A study of the Nineteenth to the Twenty-first Century*", Working Paper, University of Western Ontario.

Frankel, R. and C.M.C. Lee. (1998). "*Accounting Valuation, Market Expectations, and Cross-sectional Stock Returns*". Journal of Accounting Economics, v25: pp283-319.

Fuller R.J., and C. Hsia. (1984). "*A Simplified Common Stock Valuation Model*", Financial Analysts Journal, v40, pp49-56.

Glassman, J. and K. Hassett (2000). "*Dow 36,000: The New Strategy for Profiting from the Coming Rise in the Stock Market*", Three Rivers Press.

Gordon, M.J. (1962). "*The Investment, Financing and Valuation of the Corporation*", Homewood, Illinois: Richard D. Irwin Inc.

Graham, B. (1949). "*The Intelligent Investor*", HarperCollins.

Gregory, D.D. (1978). "*Multiplicative Risk Premiums*", Journal of Financial and Quantitative Analysis, v13, pp947-963.

Hagstrom, R. (2004). "*The Warren Buffett Way*", John Wiley, New York.

Hand, J.R.M. and W.R. Landsman. (1999). "*Testing the Ohlson Model: v or not v, that is the Question*". Working Paper, University of North Carolina at Chapel Hill.

Hoberg, G. and N.R. Prabhala. (2005). "*Disappearing Dividends: The Importance of idiosyncratic risk and the irrelevance of catering*", working paper, University of Maryland.

Holland, M. (1990). "*When the Machine Stopped*", Harvard Business School Press, Cambridge, MA.

Holthausen, R. and R. Watts. (2001). "*The relevance of the value-relevance literature for financial accounting standard setting*". Journal of Accounting and Economics, v31, pp3-75.

Kaplan, S.N. (1989). "*Campeau's Acquisition of Federated: Value Destroyed or Value Added?*" Journal of Financial Economics, v25, pp191-212.

Keynes, J. M. (1936). "*The General Theory of Employment*", Macmillan, London.

Koller, T., M. Goedhart and D. Wessels. (2005). "*Valuation: Measuring and Managing the Value of Companies*", John Wiley and Sons (Fourth Edition).

Lang, L.H.P. (1989). R.M. Stulz and R.Walking. "*Managerial Performance, Tobin's Q, and The Gains from Successful Tender Offers*". Journal of Financial Economics, v29, pp137-154.

Lev, B. (1989). "*On the usefulness of earnings: Lessons and directions from two decades of empirical research*", Journal of Accounting Research, v 27 (Supplement): pp153-192.

Lie E., H.J. Lie. (2002). "*Multiples Used to Estimate Corporate Value*". Financial Analysts Journal, v58, pp44-54.

Liu, J., D. Nissim, and J. Thomas. (2002). "*Equity Valuation Using Multiples*". Journal of Accounting Research, V 40, pp135-172.

Lo, K. and Lys, T. (2005). "*The Ohlson Model: Contribution to Valuation Theory, Limitations and Empirical Applications*", Working Paper, Kellogg School of Management, Northwestern University.

, Lundholm, R., and T. O'Keefe. (2001). *"Reconciling value estimates from the discounted cash flow model and the residual income model*". Contemporary Accounting Research, v18, pp311-35.

Mao, J.C.T. (1974). "*The Valuation of Growth Stocks: The Investment Opportunities Approach*", Journal of Finance, v21, pp95-102.

Marshall A. (1907). "*Principles of Economics*", Macmilllan, London.

Michaud, R.O. and P.L. Davis. (1981). "*Valuation Model Bias and the Scale Structure of Dividend Discount Returns*", Journal of Finance, v37, pp565-573.

Miles, J. and J.R. Ezzell. (1980). "*The weighted average cost of capital, perfect capital markets and project life: A clarification*", Journal of Financial and Quantitative Analysis, v40, pp1485-1492.

Modigliani, F. and M. Miller. (1958). "*The Cost of Capital, Corporation Finance and the Theory of Investment*", American Economic Review, v48, pp261-297.

Modigliani, F. and M. Miller. (1963). "*Corporate Income Taxes and the Cost of Capital: A Correction*", American Economic Review, v53, pp433-443.

Myers, S. (1974). "*Interactions in Corporate Financing and Investment Decisions".*

Nelson, K.K. (1996). "*Fair Value Accounting for Commercial Banks: An Empirical Analysis of SFAS 107*", The Accounting Review, v71, pp161-182.

Ohlson J. (1995). "*Earnings, Book values and Dividends in Security Valuation*", Contemporary Accounting Research, v11, pp661-687.

Parker, R.H. (1968). *"Discounted Cash Flow in Historical Perspective*", Journal of Accounting Research, v6, pp58-71.

Penman, S. and T. Sougiannis. (1997). "*The Dividend Displacement Property and the Substitution of Anticipated Earnings for Dividends in Equity Valuation*", The Accounting Review, v72, pp1-21.

Pennell, W.O. (1914). "*Present Worth Calculations in Engineering Studies*", Journal of the Association of Engineering Societies.

Poterba, J. and L. Summers. (1988). "*Mean reversion in stock prices: evidences and implications*", Journal of Financial Economics, v22, pp27-59.

Robichek, A.A. and S. C. Myers. (1966). "*Conceptual Problems in the Use of Risk Adjusted Discount Rates*", Journal of Finance, v21, pp727-730.

Samuelson, P. (1937). "*Some Aspects of the Pure Theory of Capital*", Quarterly Journal of Economics, v51, pp. 469-496.

Shiller, R. (1981). "*Do Stock Prices Move too Much to be Justified by Subsequent Changes in Dividends?*", American Economic Review, v71, pp421-436.

Shleifer, A., and R. W. Vishny. (1992). "*Liquidation Values and Debt Capacity: A Market Equilibrium Approach"*, Journal of Finance, v47, pp143-166.

Silva, J. and Pereira, José. (2016a). "*Over-Valuation: Avoid Double Counting when Retaining Dividends in the FCFE Valuation*", João Carlos Marques Silva and José Azevedo Pereira – to be submitted.

Silva, J. and Pereira, José. (2016b). "*Adjustments to Cash Build-up when Retaining Dividends in the FCFE Valuation*", João Carlos Marques Silva and José Azevedo Pereira – to be submitted.

Sorensen, E.H. and D.A. Williamson. (1985). "*Some Evidence on the Value of the Dividend Discount Model*", Financial Analysts Journal, v41, pp60-69.

Stevin S. (1582). "*Tables of Interest*".

Walter, J.E. (1966). "*Dividend Policies and Common Stock Prices*", Journal of Finance, v11, pp29-41.

Wellington A.M. (1887). *"The Economic Theory if the Location of Railways*", Wiley, New York.

Williams, J.B. (1938). "*Theory of Investment Value*", Fraser Publishing.

Williamson, O.E. (1988). "*Corporate Finance and Corporate Governance*", Journal of Finance, v43, pp567-592.