

# Economic Growth and Added Value: Case Study of the Companies That Produce Portuguese Fortified Wine

David Ferreira Silva  
david.ferreira.silva@tecnico.ulisboa.pt

Instituto Superior Técnico, Universidade de Lisboa, Portugal

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## Abstract

Wine has been existing for many centuries, being considered an important good, not only in the society but also in the global economy as it is responsible for providing a considerable number of jobs and transactions of several billions of euros per year.

This investigation concerns a small percentage of the total amount of wine producers in the world, taking only into consideration the Portuguese ones whose production involves generous wines. The generous wines are a type of wine, whose fermentation process is different from the regular wine.

The methodology will consist of an extent description of the steps to follow in order to perform this study. The entities under analyses will be obtained from the SABI platform and these will be divided according to their dimension.

The goal of this investigation is to provide a financial economic study regarding companies that produce Portuguese generous wine, since it does not exist many investigations on this topic. We aim to analyse the financial health of these companies in the last 10 years and that this investigation can be used as a guide for future companies. The results dissertation has allowed us to conclude that the large companies under study, when we only consider the univariable indicators, have the best results regarding the sector evolution and have the highest capability of continuity. As expected, the smallest companies, due to highest competition, present the least positive results and therefore need extra attention.

Regarding the forecast model, it will be given more emphasis to Lizarraga's model, where we can conclude that, in general, there was an evolution through the years and the companies find themselves in a good situation. However, some companies need to be carefully studied, as they present themselves as non-healthy.

When considering EVA®, during the period in study there was value added to all the peer companies, since the positive values were significantly higher than the years where there was value destructed.

By comparison of the values obtained to the peer companies and the sectorial mediums, there are some differences when we consider companies of the different dimensions. On one hand, the large companies present value added similar to the sector. On the other hand, the medium and small companies can fall behind to the sector since they are not generating wealth, that they can use in the future, similar to the sector.

**Keywords:** Wine, Financial Economic Analysis, Indicators, EVA®

## 1. Introduction

The wine sector is a sector with a considerable importance both at social as economical level as it is responsible for the employment of a large number of people and is one that contributes the most to the trade balance. The portuguese fortified wines are one of the most known and admired wines as it proves the fact that Porto Wine is internationally praised.

They differ from the normal wine because their alcoholic fermentation is interrupted (in order to the

wort is not fully transformed into alcohol) by addition of wine brandy. Then they are stored in bottles or in barrels where they will perform a a stage to rest that can have different durations [1]. Its alcoholic strength varies between 19 and 22 percent.

This study aims to perform a financial economic analysis to the portuguese companies that produce this type of wines. This analysis will seek to assess their financial health their evolution through the years, whether during the economic crisis as well as their response to this situation.

It is important to refer that a numerous amount of studies exist related with the companies that produce fortified wine, however they are all focused on the Porto wine because, amongst other reasons, this is the most famous. This investigation was performed with the intention of producing a study that involved the portuguese companies that produce fortified wine as there are no investigations like this performed.

## 2. Background

### 2.1. Financial Analysis

The financial analysis is a result of the interpretation of Financial Statements by comparing financial indicators, usually called ratios, with the company itself through the years or with companied with similar activity [2].

#### 2.1.1 Univariable Financial Analysis

An univariable financial analysis is an analysis where the the variables are individually analysed, i.e., one after the other, without any effect between two or more variables [2].

Even though some authors, like Cook and Nelson (1998), as Peres[3] referred, say that that one variable is enough for prediction, others like Hughes[4] and Correia [5] say that there are problems in using this type of analysis. This derive from the fact that each ratio is examined separately, without any kind of link to the others. Specifically, the effect of the effective combination of the various ratios alone is completely dependent on the subjective analysis of the financial analyst[3].

#### 2.1.2 Multivariable Financial Analysis

According to Correia [5], the Multivariable Analysis is a statistical method that consists in the linear combination of various variables (multivariable) with the aim of statistically distinguish two groups previously defined.

According to Peres et al [2], Cook and Nelson in 1998, stated that Altman with the aim of overcoming the problems associated with the use of the Univariable Analysis, was the first investigator to utilize a regression method, creating a method that is known as Z-Score in order to have the combined effect of various ratios.

The multivariable analysis utilized because it is the most adequate to this sector is the Lizarraga's model. This is a method that derivates from the Altman's model. According to Lizarraga [6], the outcome can be wrongly affected, specially in sectors with high rotation of actives due to the high proportion for the criterion Sales/Actives on the Altman Model.

Equation 1 is the formula that represents the Lizarraga's model

$$Z = -0.212 + 9.25X_3 + 0.38X_4 \quad (1)$$

- X3 - (Earnings before Interests + Financing Expenses)/Actives;
- X4 - Equity/Liabilities;

## 2.2. Performance and Economic Value

### 2.2.1 Economic Value Added - EVA®

The concept of EVA® (Economic Value Added) was developed by the consulting company Stern Stewart Company in the 80's [7].

According to Catelli [8], EVA® is an performance indicator that has into consideration all the operational costs, including the ones of opportunity.

Macedo [9] said that the concept of EVA® is based on the differential between the return on invested capitals and the cost of the different financing sources used or cost of capital. This way, it is considered a measure that evaluates the financial performance of the company and that seeks to quantify the value created by the management. It is generated valued when the business produces results higher than the cost of capital [10].

Da Silva [11] agrees with this vision because he states that the main utility of EVA® to the companies is like an internal performance measure of the annual performances, since it reflects the addition or subtraction of applied value to the company by the decisions of management.

Equation 2 is the formula used to describe EVA®

$$EVA = NOPAT_t - IC_t \times WACC \quad (2)$$

- NOPAT - Net Operating Profit After Tax;
- IC - Invested Capital
- WACC - Weighted Average Cost of Capital;

## 3. Methodology

The methodology adopted in this case study consists in a series of steps:

- Gather of the sample. Obtainment of the Financial Statements of the portuguese companies, of the wine sector (CAE 11021) that produce fortified wine that are subject to Legal Certification of Accounts, so that the results obtained are the most reliable possible between 2010 and 2019. This information is obtained from database SABI of Bureau Van Djik;
- Application of traditional methods of the financial economical analysis in Portugal to the data. Besided the traditional methods, there is an application of three methods of bankruptcy prediction and a model of value added (EVA®).

- After, we perform the comparison between results obtained and the values obtained to the companies that represent the sectoral medium whose origin is "Banco de Portugal";

### 3.1. Data collection

After application of segmentation criterion to SABI stated above, obtained a sample of 39. Gather of the financial statements between 2010 and 2019. Then, using the same database, application of the indicators and models for all the companies in study.

Division of the 39 companies accordingly to their dimensions by following "Directiva2013/34/eu" in three distinct groups: large, medium and small. Their division is stated in the table below:

**Table 1:** Type of companies

Type of company	Type of companies in 2019
Large	4
Medium	13
Small	22

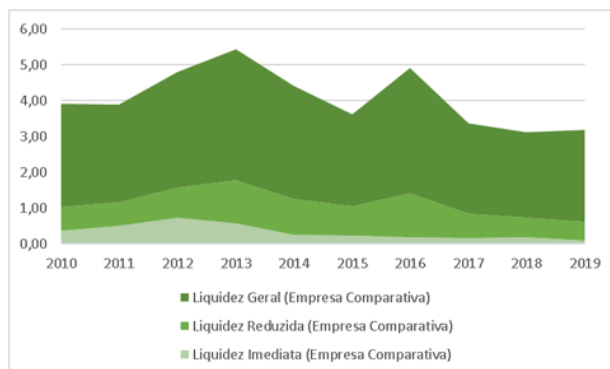
Then, according to their dimension, calculation of the values for the three fictitious companies (large, medium, small), that represent the average of the companies of that dimension.

## 4. Results

### 4.1. Univariable Analysis

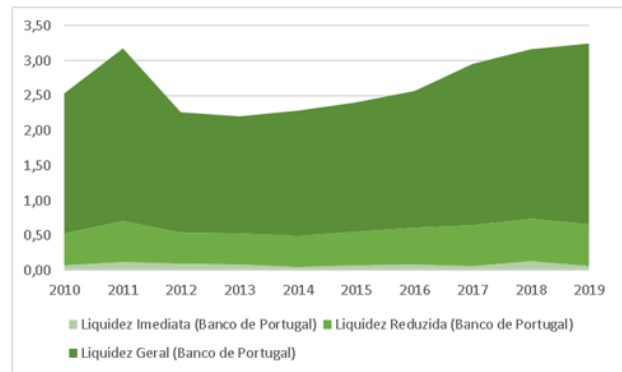
In graphic 1 we can see the average values of the Liquidez ratios and their evolution in the last 10 years for the companies considered as large. Also, in graphic 2 are present the same ratios but from Banco de Portugal that are of the sector.

There is a trend of approximation for the three ratios to the sectorial average with less difference than in the first years of this study.

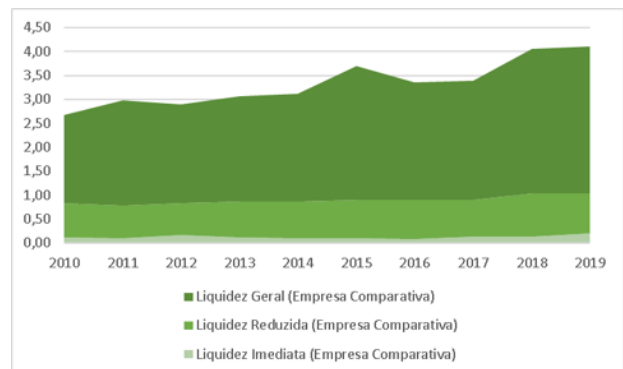


**Figure 1:** Liquidez ratios (Large Comparable Company)

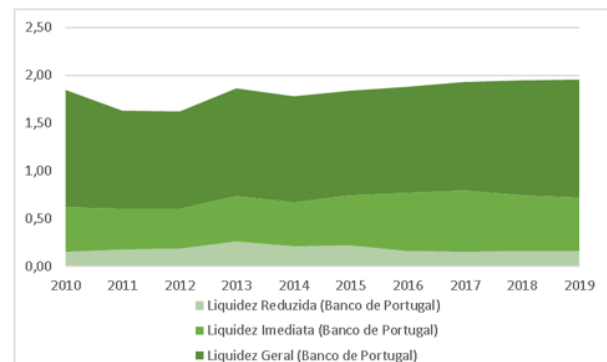
In the medium companies, for both the companies in study and the sectorial average, it is noticeable the stabilization of the values, mainly in the last three years. Nonetheless, the values are higher for the three ratios of the companies in study for the entire period in study.



**Figure 2:** Liquidez ratios (Large Company - Banco de Portugal)



**Figure 3:** Liquidez ratios (Medium Comparable Company)



**Figure 4:** Liquidez ratios (Medium Comparable Company)

Opposed to what happened in the large and medium companies, in graphic 5 and 6 we can see that there the three ratios of the small companies in study diverge from the sectorial average, because the average of the companies in study present a trend of growth whereas the average sectorial is constant.

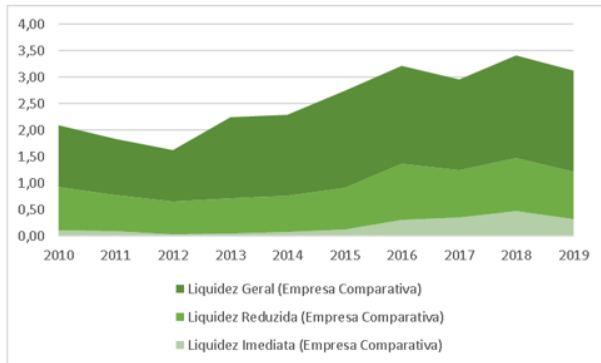


Figure 5: Liquidity ratios (Small Comparable Company)

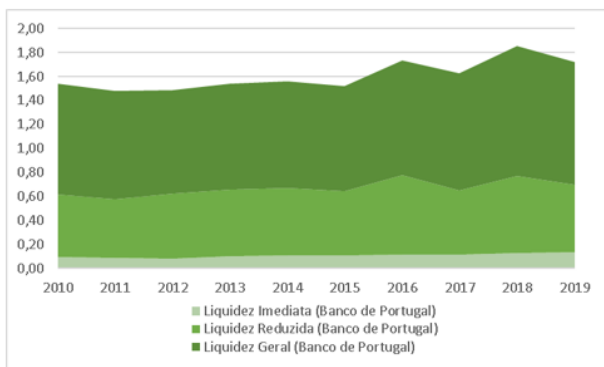


Figure 6: Liquidity ratios (Small Comparable Company)

#### 4.2. Lizarraga's Model

We will now observe the results for the Lizarraga's model of bankruptcy prediction. We will start by the large companies. As it can be seen in figure 7, all the companies are considered healthy for the entire period in study.

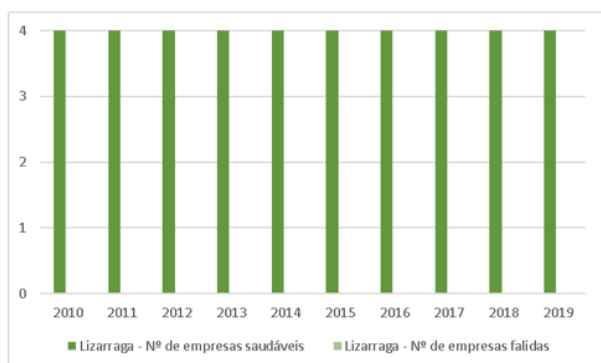


Figure 7: Lizarraga's Model (Large Comparable Company)

In figure 8, we have the same model but applied

to the medium companies. As it can be observed, these companies are, in general, healthy during the entire period. The exceptions occur in 2010 to Sociedade dos Vinhos Borges, S.A., to José Maria Da Fonseca - Vinhos, S.A. in 2011 and 2015 and to Global Wines, S.A. also 2015.

However, it is important to notice that these are exceptions and that can be individual exceptions in the first years in study. As a matter of fact, no company was considered non healthy since 2016, which is an important indicator of the financial health of these companies.

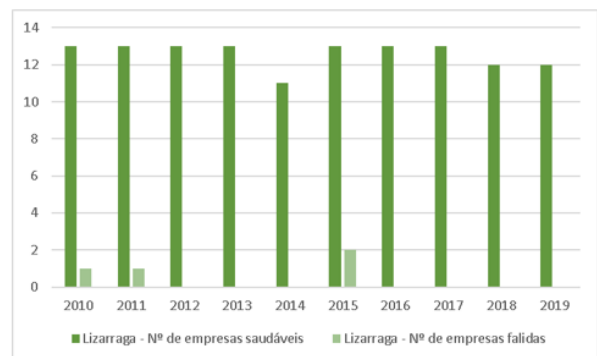


Figure 8: Lizarraga's Model (Small Comparable Company)

Applying the same model to the small companies, the results are shown in graphic 9.

Through observation, it is noticeable that there was a decrease in the number of companies that are in the of non healthy in the following years to 2012. 2013 and 2014 were the years that presented the least number of companies in this situation, probably due to the economic recovery verified after the economic crisis that happened between 2008 and 2012 (this is why 2010 and 2012 are the years that present the most number of companies in the situation of non healthy). Since 2015, the number of companies in this situation has maintained stabilized in 5 companies in the situation of non healthy in a 22 company universe (with exception of 2016 that present one more company).

#### 4.3. EVA®

We will now focus on the values obtained to EVA®, so that we can conclude about one of the main topics in this study, the value added of the companies that produce portuguese fortified wine

As in the previous models, we will start by presenting the large companies.

Even though the quantity of years in which there is value added (five years) is extremely similar to the quantity of years in which value is destroyed (four years), we can conclude that during the period in study, there was significant value added, since the positive values are significantly higher to the values in which there was value destroyed.

When comparing the application of EVA® to the large companies in study and to the sectorial average, it is noticeable that their behaviour is extremely similar throughout the entire period. The main difference is on the variation of the values of sectorial average not being so significant, i.e, when there is a growth, it does not in the same proportion as it happens to the companies studied. However, when the opposite occurs, it does not decrease as much as well. This is noticeable in the number of years that present negative values: the companies in study present four years where value is destructed whereas to the the sectorial average it only happens in two years.

Moreover, it is important to mention the approximation between the two fictitious companies in the last years, where the two lines overlap.

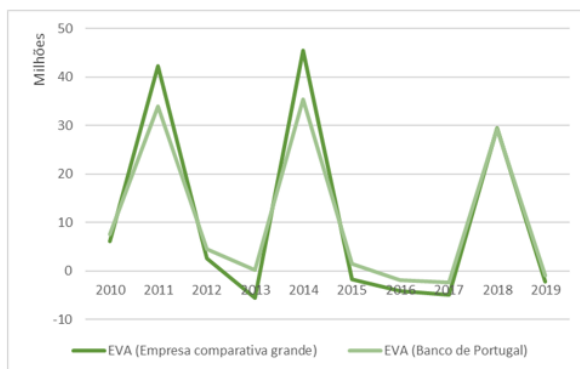


Figure 9: EVA® (Large Company)

Regarding the values presented by the medium peer company, we can see in graphic 11 that it is extremely similar to the one regarding the results of the large companies, presenting the exact same behaviour in all years. It is important to mention that the values are significantly lower.

When we compare the medium peer company and the average sectorial company of medium dimension, we notice that they present almost the same behaviour. However, opposite to what happens in the large companies, the variations are similar between the two companies. This way the values presented by the average sectorial company are higher in the entire period in study. However, even though it is not as similar as in the large companies, there is an approximation in the last years between the two fictitious companies.

Applying EVA® to the companies considered as small, we obtain graphic 12.

Until 2015, the behaviour is extremely similar to large and medium peer companies. The difference is that, opposite to what happened to the other peer companies, in 2016, the small peer company presented positive values. This way, considering the entire period, there was value added. From 2016,

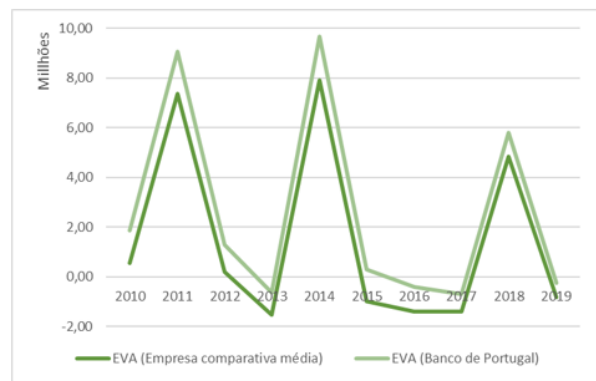


Figure 10: EVA® (Medium Company)

the behaviour returned to be similar to the other companies.

Once again, in average, the companies presented value added higher than value destructed, so there was value added if we take into consideration the entire period.

When we compare the small peer company with the sectorial average, it is noticeable that, with exception of 2016, the behaviour present similar trend, but the variation is quite different. The behaviour is also similar to the large and medium companies

Once again, there is an approximation between the values presented by both fictitious companies.

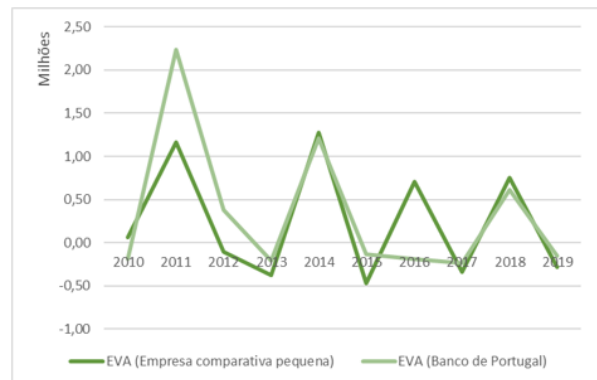


Figure 11: EVA® (Small Company)

## 5. Conclusions

From the univariable analysis we can conclude that for all the peer companies, they present good general liquidity (even higher than the sector) and therefore a positive operating fund, which allows to conclude that they present capability to fulfill their obligations in the short term. Additionally, they have in common that they present a reduced liquidity quite lower than the general liquidity. This happens and it was expectable because these type of companies present a high inventory and therefore we were expecting this variation.

In a general manner, we can consider that

there was an evolution regarding the results of the Lizarraga's model through the years and that the companies are in a good situation. However, some companies need to be studied with more detail, namely Vinhos Quinta da Pedra Alta, S.A. and José Maria da Fonseca Van Zeller, S.A because they present themselves as non healthy in all the years that this study considered. Additionally, it should be paid attention to Granacer – Administração de Bens, S.A and Ségur Estates - Redondo Winery, S.A because since 2016 they always presented as non healthy, so this might be a trend that need to be taken into consideration.

Either way, considering the companies as a whole, it can be considered that the majority presents good potential of continuity as they present themselves as healthy at least in the vast majority of the years in study.

Regarding EVA®, we will present the conclusions by the dimension of companies.

In the period in study there was significant value added by the companies of large dimension, since their values were significantly higher than the values where value was destructed.

This result allow us to conclude that the companies are on the right track since they are generating wealth and contributing for a sustainable future for themselves.

When comparing the application of EVA® to the companies in study and the sectorial average, we conclude that the value added by the companies in study is quite similar to the one that the sector generated.

Additionally, it is important to mention that there was an approximation between the companies in study and the sector since they present extremely similar values in the last years. This tells us that the companies generate the same wealth as the sector, keeping at the same level.

To the companies of medium dimension in study, we can take the same conclusions as the ones taken for the large companies, namely that there was value added.

When comparing the medium peer company with the medium sectorial average, the values presented by the last one are higher than the peer company for the entire period. However, even though, not on the same levels, there is an approximation in the last few years between the two fictitious companies.

We can therefore conclude that the value added by the sector is higher than the companies in study, so the companies might fall behind the rest of the sector because they are not generating as much wealth that they can use in the future.

For the small companies, as in the other ones, the companies in study, present, in average, value added higher than value destructed, so we can con-

sider that value was added when considering the entire period.

However, considering the entire period, the sector generated more wealth than the companies in study. As in the case of the medium companies, we can conclude that they can fall behind regarding the sector because they are not generating as much wealth.

It is important to mention that in the last few years, there is a trend of approximation between the values presented by both fictitious companies, so there might be a bigger chance of survival for these companies.

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