Premium Risk in Agro-food Sector

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Abstract

The valuation of companies and investments is an essential task for the optimization of resources in corporate management. The assessment process always involves the use of a discount rate, which unavoidably incorporates an associated risk. The aim of this study is the Premium Risk estimation in the Agro-food Sector. The net profits of 20.000 companies from 2009 to 2013 have been taken into account to calculate the Premium Risk. Results are classified according to their respective economic activity sub-sectors.

Keywords: volatility, standard deviation, agricultural, economic activity.

Introduction

The techniques of corporate management in companies are a key element for success in the market. The financial tools allow the companies to keep or expand their products in the markets and provide profits to the firms. The financial planning helps companies to achieve their objectives. It is therefore necessary to apply several techniques to forecast and assess the future financial variables.

In capital budgeting process and the methodology for the company’s assessment we can appreciate a robust and significant relationship with the discount rate. Both are based on the updated Cash Flow (CF). The value of an investment project depends on both its expected cash flows and its discount rate. The most used methodology of valuation of companies, recognized by the International Valuation Standards Council, is based on the discount of CF.

When valuating the companies, according to Fernández (2008a) the determination of the discount rate is one of the important issues. It is carried out taking into account the risk, the historical volatility and in the practice often the minimum discount rate which is marked by the shareholders (sellers and buyers, who are not willing to invest or sell below a certain return)

The discount rate to update the CF must take into account the free of risk rate in the economy, and a premium risk depending on the economic sector where the target-company operates. Fernandez (2008a) takes into consideration the different CF that can be generated by the companies. He groups the CF according to their origin for their valuation and suggests a discount rate for each group. When the CF is used, the use of Weighted Average Cost of Capital is recommended. But these is an risk-free discount rate. In order to value companies, we need to add a Premium Risk. The premium risk measures the sector volatility associated with the obtaining of CF (Damodaran, 2013).

Among several factors which affect the Premium Risk, one of the most important ones is the economic sector activity. Other factors that can be highlighted are those in relation with the economic situation of each company that is in the market.

The presented research is an applied study of the Premium Risk in Agro-food Complex, in Spain, all Agro production activities and those for the commercialization and transformation of primary products with Agro-food industry.
The study has been carried out in Spain, and we have used the CNAE (National Code of Economic Activities) that allows the classification and groupation of companies according to their economic activity. The selected codes CNAE are from 10.11 to 10.92, that means the companies whose economic sector is based on Agro-food. Economic data of companies in the Agro-food complex have been obtained from SABI database.

Results show that Agro-food Complex is formed by firms with low risk level, except for a small group of companies in CNAE code.

**Agro-food Sector in Spain**

With Agro-food Sector, we refer to an important Sector in Spain which include activities that added value to the primary products, as slaughterhouses, sawmills, fruit and vegetable plants manufacturing; food processing: meat processing industry with the egg products, food and vegetable processing industries, dairy industry, bakery industry, beverages (wine, beer, fruit juices, etc.); energy plants, as solar and eolic parks; agrochemical industry, and similar. The Agro-food industry are located mostly in rural areas (Segura et al., 2011)

In addition, Agro-food Sector includes food industry which represents a significant part of the turnover of manufacturing industry in Spain. The food industry includes all food processing: meat processing industry with the egg products, food and vegetable processing industries, dairy industry, bakery industry, beverages (wine, beer, fruit juices, etc.).

Most of the companies in Agro-food Sector in Spain are unquoted in the stock market, only 9 companies quoted in the stock market. Thus, to estimate the premium risk we study net profits of an individual firm compared with the net profits of the Agro-food Sector.

**Calculation Methodologies for the Premium Risk**

Economic activities are subject to volatility, both in inputs prices as in final product prices. This volatility may place companies and investors in a context of uncertainty, and some risk in generating cash flow (Gilbert and Morgan, 2010). So, many authors use as indicators of risk of obtain CF the volatility of market prices (Jin and Kim, 2012).

Academic literature (Fernández, 2008b) recommends a methodology based on estimation and comparison of the sales price volatility and the prices received by the related economic activity sector. Given the nature of many of the companies that are part of the Agro-food Sector (Von Braun and Tadesse, 2012), it is not possible to identify a single reference price. In these cases, the variability of the CF can be studied in a context of uncertainty over the net profits. Thus, the volatility is obtained by comparing the volatility of averages net profits in sub-sector with the Agro-food Sector in general. In this study we use this methodology.

**Premium Risk in Agro-food Sector**

The proposed study is based on the net profit of 20,000 companies. Data from companies was obtained from the SABI database (System Iberian Balance Analysis). Data are for five consecutive years from 2009 to 2013. Each group of companies is based on sections of the CNAE code. The risk premium is defined as the ratio of the volatility of the net profits of each section and the overall volatility of the sector:
When the risk premium takes values close to unity, this means that the volatility of the sector and subsector is similar, and therefore it is not considered an activity with additional risk to the sector itself, and the subsector has not an additional risk premium.

Table 1.1 shows the volatility of some subsectors. The subsector of Manufacture of cocoa, chocolate and sugar confectionery has a risk premium near the unit because the volatility of their net profits is very similar to that of the sector. When the ratio is greater than one, manufacture of oil olive, it means a greater volatility of net profit of the companies included in the relevant section, and therefore give greater variability and risk. The result is with more risk activity.

**Tabla 1.1. Premium Risk**

<table>
<thead>
<tr>
<th>CNAE code</th>
<th>Sub-Sector</th>
<th>Volatility</th>
<th>Premium Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1073</td>
<td>Manufacture of macaroni, noodles, couscous and similar farinaceous products</td>
<td>0.101964466</td>
<td>0.08</td>
</tr>
<tr>
<td>1082</td>
<td>Manufacture of cocoa, chocolate and sugar confectionery</td>
<td>1.227943476</td>
<td>1.01</td>
</tr>
<tr>
<td>1043</td>
<td>Manufacture of oil olive</td>
<td>2.49359287</td>
<td>2.05</td>
</tr>
<tr>
<td>1083</td>
<td>Processing of tea and coffee</td>
<td>7.51006144</td>
<td>6.16</td>
</tr>
<tr>
<td>1011-1092</td>
<td>Agro-food Sector</td>
<td>1.21927863</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors based on SABI (2009-2013)

**Conclusions and discussion**

The valuation of firms and investment involves the use of a discount rate. In the agricultural sector, the discount rate is also important in calculations for land expropriation. Traditionally, the discount rate is taken as a fixed datum. Variability in incomes and net profit of companies may affect the discount rate through the risk premium.

We have studied the net profit of 20,000 companies in the food industry to estimate volatility and the risk premium after. The results show that there is great variability in the risk premium according to subsectors.

**References**


