Investigation, Estimation and Evaluation of Creditworthiness of a Company's Clients. Case Study Barba Stathis S.A. Company

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Abstract
The environment, in which all financial decisions take place, has shown today, radical changes. Globalization, competition, economical crisis and uncertainty are essential issues that are linked directly, in a cohesive way, with the financial problems of the companies. It is, therefore, very common in our daily operation, that the managers of the companies as well as bank institutions ought to take vital decisions, as regards to credit granting, loans or mortgages, possibility of bankruptcy of partners or customers and generally, with the evaluation of credit risk of the companies. The last seven years, as an obvious result of the global economical crisis, as well as the recession in Greece, the percentage of the companies facing the possibility of bankruptcy, due to decrease of their turnover, has dramatically increased. The continuous as well as unceasing attempt of Barba Stathis S.A. for the reduction of all precarities and credit risks, in coordination with the B-2-B sales domestically and abroad, has resulted into the adoption and thus implementation of an up-to-date effective model of the evaluation of the creditworthiness of the company clients, which is a valuable tool in handling successfully the credit threats.

The implementation of this model will provide answers and solutions to issues and concerns which are directly involved with the expanded credit limits which have been placed on the "negotiations table" from the big retail market players, with the increased precarities of the clients due to lack of capitals, together with the credit policies of the competition, in the frozen vegetables sector.

Keywords
credit policy, creditworthiness, evaluation and control of the creditworthiness, credit risk, credit protypes

1. Introduction
The scope of this article is the investigation, evaluation and control of the credit worthiness of a company's clients, involved in the activity of frozen vegetables (Barba Stathis S.A.), through the studying of the theory as well as documents of this research project. In the same time, the most suitable model will be chosen, for the evaluation of the credit worthiness of Barba Stathis clients. Through this investigation an integrated client management model will be emerged, leading to the effective handling of credit risk. The questions that will be answered thoroughly are stated here below:
- Searching of the developments and modern approaches, in credit and credit control issues.
- Existence of well-organized departments of credit control within the companies.
- Development and adaptation of models controlling the credit risks.
- Measurement of the credibility of those models
- Control of the credit worthiness as a vital parameter of coping with the credit risks.

2. Main presentation
2.1. Faith – integrity (solvency) – credit and credit policy
Faith is defined as the trust that an individual has the willingness and capability to fulfill their obligations. It is the economical transaction based on the fact that the person who has a debt has the willingness as well as capability of fulfilling the obligations that has been emerged. It is also the credibility of providing the essential guarantee for the contentment of the economic obligations.

Integrity (Solvency) is defined as the capability of a person in debt to pay back their obligations when those are due. Moreover, synonym terms can possibly be "solvency" and "credit level". Integrity

is also referred to long-term adequacy of the income of the current assets of the borrower to cover their debt. Often solvency is mixed up with liquidity, although they differ significantly, as liquidity is directly referred to the short-term efficiency of the liquidity availability.

One of the most important sources of external financing is the usual time interval between acceptance of goods or services and their payment. For the seller of the goods or services, this involves the creation of a receivable account, whereas, regarding the buyer, the creation of a payable account. The buyers financing, through the seller is called credit [1]. More precisely, "credit" is defined as the trustworthiness reflecting the economical capability of the buyer for prompt payment.

The reasons why a company can provide credits to its clients are the following [2]. The existing conditions in the market, such as demand, competition, invoice policy, seasonal discrepancies regarding sales, as well as the attempt of developing and increasing the sales level. Each company obviously follows a certain policy as regards to the credits, which is called credit policy. Furthermore, the optimum sales policy as well as the optimum level of the receivable accounts, depend upon the particularities of the operation or function of each company. The average duration of the credit period strictly depends on the existing financial circumstances which can not possibly be controlled by the company, but on the other hand, only from the State and moreover, from the following parameters or variables of the credit policy, which can be controlled or even altered, to a great extent [3]. The credit terms emerged from the grouping of possible losses per risk category (credit standards), the duration of the credit period, the reductions for "cash" payments, the discounts, the collection policy and finally the specific seasonal dating.

2.2. Credit analysis and credit risk

In order for a company to take a decision about issues related to its credit policy, it must base this decision on the following assumptions as well as on a cost- benefit analysis. More precisely, the credit analysis targets to the identification of the risk level, which ought to be taken from the company, so that the financing cost of the additional approved sales, with credit and the losses from the non-receiving accounts must be equal to the profit emerged from their sale [4]. Therefore, in order to create the ideal credit policy, the average efficiency of the credit additional sales, must be equal to the outcome of the additional investment to the clients' accounts. The credit analysis is oriented in two separate but interacted, at the same time, issues: The willingness of the borrower to pay back their loan and also their capability. The willingness analysis for pay back is proportional to the borrower's specific characteristics and it is known to be called "qualitative credit analysis". The estimation of the borrower's capability to pay back the loan is known to be called "Quantitative credit analysis".

The credit risk is created when the credibility of the financed company is low and therefore becomes rather feeble, even to minimal changes of the economic environment. Therefore, the possible changes of the macroeconomic and microeconomic environment can easily lead certain companies to inability of paying back their obligations [5]. The default of the obligations can easily lead to significant losses as well as to worsening of the company's or organization's economics and in some cases can also lead to the termination of its activity [6].

The consequences of a credit risk for the companies are too many. Starting from the liquidity issue as a main problem for a credit risk, we can eventually lead ourselves to bankruptcy. The reduction of a company's credit worthiness is also a result of a credit risk (incapability of paying back its obligations). In this case, if a company has a low credit worthiness then it has a high credit risk. Other consequences are the need for the hold of higher reserves or the searching for unscheduled financing, since the companies cannot pay back their obligations due to reduced cash flows. The postpone of investment plans often occurs, as reduced liquidity does not allow their implementation.

The main issues that are of vital importance for the company. Management are the liquidity improve, the reduction of risk, the increase of sales, explaining why the investment plans or activities have remained unaltered or even reduced. Despite of the fact that the results of this research have clearly shown that the financing needs have not been modified, nor the average time of credit and the average time of receive, we have, though, on the other hand, changes in the structuring of the credit policy, where the sector individuality as well as credit worthiness of the clients are seriously taken under consideration.

Essential issue affecting the credit policy, remain still, the delays or incapability of clients for prompt payments, with the majority of companies to continue dedicating plenty of time in the control of the credit worthiness and management of requests. In parallel, the need for the existence of a skilled department for the collection of the pending invoices, is today widely recognized, leading today to too many companies of using the Credit Insurance for their exports, although not all companies in this sector take advantage of that facility. The receive or collection therefore of the pending invoices, together with the cost reduction and delays in paying back their obligations have become the only source of financing, covering the possible needs of the company [7].

2.3. Verification and estimation methods of credit risks

Twenty years ago, most financial organizations were based on a subjective analysis for estimating a credit risk. The subjective analysis has been the traditional way of counting a credit risk, where each creditor has been judged by pre-existing quantitative and qualitative characteristics. In cases of small or homogeneous creditor teams, the application of Credit Scoring is advised to be utilized. Initially, certain economical- financing indexes are chosen which reflect or characterize the creditor's condition (situation). Then multi-variable indexes are utilized targeting to the exportation of the credit score or the estimation of the possibility of the incapability / bankruptcy [8].

In those models of measuring credit risks following one variable only, the financial analysts are required to take decisions based on the comparison of some economical indexes of the prospective clients, with the corresponding number indexes of other similar companies. On the other hand, those models utilizing multi variables, use the number indexes in such as way as to deduce a score result of a credit risk or a postponing possibility, directing them to take their final decisions [9]. The basic methods- evaluation techniques and measurement of credit risk are the following:

A. Discrete (distinct) analysis is the creditor collecting technique into two categories (reliable clients/non-reliable clients), depending on the unique characteristics of each category. Altman (1968) used the discrete analysis in order to construct a model for predicting bankruptcies [10].

B. Analysis of financial indexes (variables) assists in the determination of the general economic-financial situation of a company, enabling the analysts and investors to evaluate whether the company runs the risk of nor reliability and whether the company's activity remains at an acceptable level, in relation with the business sector that belongs to, or in comparison with its competitors.

C. The survival analysis could predict the economic-financial failure which is based on the assumption that if the companies that have failed as well as the ones that have succeeded constitute the same population; the ones that have failed belong to a different category. The risk of failure is measured in relation to the expected survival period for each company.

D. The multi-criteria decision analysis which is a well developed environment of the company investigation, offers some very essential advantages in the development of the process of the decision taking. The multi-criteria approach emphasizes not only the optimal problem description but its resolution in a manner complying with the policy that has been followed by the decision taker [11].

E. The utility additives analysis that uses a procedure of a monotonous retrogression develops a sum of additive utility functionalities, aiming to develop alternatives based on the infrastructure created by the decision taker.

F. The UTADIS (UTilites Additives DIScriminantes) method develops an example of synthesis (construction) of verification criteria, so that the result of this synthesis is going to give high ranking as regards to the alternative activities of the first category and gradually, lower ranking to the activities that belong to the lower categories.

G. The FINEVA, system has been developed from the laboratory of Economic- Finance Administration System, of the Polytechnic of Crete and it is considered to be an intelligent multi-criteria system for supporting decisions, with basic concept the involvement of multi- criteria methodologies and techniques in the process of financing decisions [12]. It is focused basically in the verification of the credit risk of the companies.

H. The FINCLAS System does not include any experienced system in its structure. The infrastructure is based on the problem solving regarding the company's credit risks. Its basic advantage is the

flexibility that it shows which enables easily its adaptability and development of the system in solving also other ranking problems (choosing investment plans, choosing and managing the portfolio, judgment of a country risk, etc.).

I. The M.H.D.I.S. (Multi-group Hierarchical Discrimination), is a poly criteria method for classification, that resembles common characteristics with the UTADIS method [13]. Its target is the exploitation of the existing knowledge for the ranking problem solving, so that the development of an effective decision taking model is going to be established.

Barba Stathis Company is using today a Credit Scoring model for its 45 biggest customers in the retail market, as well as wholesale market. According the IHBS Credit Score, the clients are classified according to the risk level of their credit worthiness and credit capabilities in a ranking scale from "AAA" to "D" and also according to their company trading behaviour, in a similar scale from "AAA" to "N". The customer portfolio of Barba Stathis constitutes 500 companies of all legal structures. Main customers in this portfolio are "limited companies" (S.A.) with well-organized accounting departments and published financial data. This is the reason why it has been chosen to enable the verification of this published financial data, in order to evaluate the 150 companies that comprise the best customers of Barba Stathis S.A. For this investigation, the FINCLAS model has been chosen to be followed, which is an Intelligent System of Supporting Decisions, based on the poly-criterial methodologies and techniques in the process of taking financial- economical decisions.

3. Research Methodology

The scope of this research is to present thoroughly the steps that Barba Stathis has followed in the management, evaluation and control of the credit worthiness of its main customers. The scope has therefore been, to investigate whether the existing procedure that has been followed by the company has actually led the company to reliable conclusions as regards to the effective control of the client's credit risk and the control of the credit worthiness, as well as the comparison of the existing procedure, with one of the theoretical models that have been described, enabling the improvement of the existing practices / procedures that the company has been using.

For the collection of information from primary sources, a questionnaire has been designed for this purpose. The questions have been chosen according to the implementation of the secondary sources model of this investigation. The questionnaires have been forwarded with e-mails to the general and Economical Departments of the big companies and to the owners of the smaller companies, all being Barba Stathis clients. Questionnaires have been sent to general managers and owners of the smaller companies of the biggest 150 clients based on their turnover. 125 questionnaires out of the 150 that have been sent have been answered. This corresponds to 83%, which is sufficient for this investigation's reliability. The outcome of those questionnaires, as well as of the publications have been collected properly and then they have been analyzed further using the statistical model SPSS.

Barba Stathis S.A. has been founded in year 1970 and belongs to Vivartia group of companies, being the largest company of the production and commerce (trading) of food in Greece and one of the largest in Europe, with an annual turnover of one bil. €. The group contains many important companies of brand equity in the Greek market and with presence in the globe. Having acquired an essential trading channel with updated production sites and high level servicing, complies fully with the market requirement for a cohesive promotion of products and services which cover the farmers needs of producing and selling their production in the farm, according to the technical specifications which are required from the companies (industry), super markets and eventually the consumer.

4. Basic Research Results

The 94.4% of Barba Stathis clients activated in Greece or in Balkan area (included Cyprus), the 5.6% activated in other countries (Middle East and UAE). The result of this research is absolutely logical considering the fact that the company is the top leader in the local market, with its market shares being high in the Branded category (52.5% in Quantity and 63% in Values). That fact itself causes greater insecurity in the credit risk area due to the economic crisis that has caused great problems to the Greek economy. The 20% of Barba Stathis clients cooperation is within 1-10 years, 44% of Barba Stathis

clients cooperation is within 11-20 years, 28% of Barba Stathis clients cooperation is within 21-25 years and there is a 8% (10 companies) that having cooperation over 25 years. The clients' cooperation average is 16.5 years, and the fact that the 36% of the clients are in an over 20 years cooperation condition shows that the company supports and seeks long term relations with its clients. This long-term cooperation with its clients, gives greater security and trust relationship in dealing with the Barba Stathis S.A., while helping the company to have clear indications on the creditworthiness of its customers.

The 84% of Barba Stathis clients have organized credit control department, and only a 16% does not have credit control department at all. The fact that most of our customers have a credit control department is very positive; if not necessary as it assists guaranteeing credits in these volatile financial times. Most of the companies participating in the research are in the top 100 companies of the retail sector, and thus further increasing the value of the credit assurance policy followed by the company. The 94.4% of customers have Barba Stathis company as main supplier, the 3.2% as second and only 2.4% as a replacement one. The fact that the main number of its clients considers Barba Stathis Company as its main supplier assists greater value to the company and its products as well, and comes to ensure the interrelationship between the company and its clients. Being the leader in the frozen vegetables market with high shares makes Barba Stathis company very attractive supplier for large and smaller companies as well.

Out of a total of 125 companies, 12 (response rate 9.6%) consider that their position in the market is excellent, 106 (response rate 84.8%) consider that they are in a very good position, and the rest 7 companies (response rate 5.6%) consider their position in the market as a good one. What comes out of this survey is that the clients that took part in the research are the top ones in their market and the field that Barba Stathis operates as well. We can also see that Barba Stathis cooperates with strong companies in order to avoid credit defaults. Its leadership in the frozen vegetable category with shares 55%, gives Barba Stathis company the ability to choose its cooperation.

The 90.4% of the clients indicates that the trend towards bad debts has risen the last years, due to the recession and the decrease of consumption as result of the 8 year period of the global economic crisis that has strongly affected our country. This risen percent of bad debts shows that the ability of the market is extremely limited, and no growth signs can been seen in the immediate future.

The 10.4% of cooperative companies provides credit to clients up to 0-30 days, 36% provides credit 30-60 days, the 20% provides credit 90-120 days and there is a 7.2% that provide credit 120-180 days. None of Barba Stathis clients receives their debts no longer those 180 days. The relatively small credit periods significantly reduce the risk of bad debts. The retail market businesses that also cooperate with Barba Stathis maintain reasonable payment periods. The 72.8 % of Barba Stathis cooperative businesses receive their debts within 90 days at least.

Out of 125 businesses, 75 indicate that the competitive position of their client in the market can define the credit period that is given, 15 indicate that the technological position of a company is another reason to define the credit period, and there 8 businesses that take account of the organized structure and the staff of the client. The most defining factor, for the majority of the companies (95 out of 125), is the years of cooperation and the consistency in the payments throughout the years, that can define the credit period. Finally, more than 50% out of 70 companies consider that the experience of the management executives of the company is very significant factor, which comes to agree with the FINCLAS method applied, in which the experience of executives has the greatest weight among the quality criteria.

5. Conclusions and Proposals
5.1. Conclusions

It has been deduced from this investigation that Barba Stathis as well as the biggest clients (84%) operate a well-organized department of credit control. Therefore, the management, evaluation and control of credit worthiness of the clients are all controlled under the responsibility of the Credit control manager of the company, in collaboration with the Economic Management. At this point, it must be clarified that the method that the company applies, reflects to a great deal of subjective judgment. Especially when the total set of information as regards to prospective customers relies a

great deal on the Account manager personal opinion, or the salesperson and in correlation with the information emerged from the economical data that has been published for the S.A. or Ltd.

It has also been deduced from this investigation that the tendency of precarity of the company clients, is increasing in the years 2012-2015 with the corresponding percentage being small, compared to the actual operation's circle and thus, has no significant danger to the steady progress of the company itself. Moreover, 94.4% of the company clients operate either in the domestic market or the Balkan region and hence a 5.6% only, operate in other countries. This obviously has a bigger precarity, due to the recession that our country has been facing.

The client portfolio of the company indicates that the average timing of collaboration with the company is 17.9 years, which assists the company to acquire a safe indication concerning the economical reliability of its clients, provided that has a vigilance as well as updated data, enabling the company to be proactive as regards to complications in the financial situation (condition) of its customers.

The majority of its clients (84%) possesses a well-organized credit risk department, proving precisely the great importance that the company shows towards the credit risk. Moreover, the majority of the company's clients (94.4%) declares that Barba Stathis S.A. is their major supplier, giving extra value to the company as well as its products and services. It is also worth mentioning that the majority of the company's clients declares to be satisfied from their companies and believes that the trend of their market is stable and slightly ascending.

Despite of the economic recession and increased precarity of the clients it is encouraging that the company aiming to reduce those precarities and the invoicing timing, in the same time, Barba Stathis has managed to keep the 81 days as the average credit limitation, hence in a lower level compared to the credit limit of its customers.

An important conclusion for this investigation has been the fact that the companies take under serious consideration the experience of the managing Directors of the clients, in their attempt to define the level of their level and duration of their credit. This complies with the FINCLAS model that has been chooses from us, according to which, the Management's experience is of vital importance amongst other qualitative criteria. The companies, therefore, have responded positively, to the experience of the management, the sequential years of collaboration, the client's integrity and consistency, its competitive advantage in the market and its advantages as well. Furthermore, many companies relay on the salesperson's opinion, or get consultancy from big companies as regards to the credit worthiness.

The implementation of FINCLAS, it has been deduced that the majority of Barba Stathis clients belongs to low credit risk and medium credit risk, 74.4% and 12% respectively, summing to 86.4%, which is quite impressive for a company that has more than 500 customers in its portfolio. It is also impressive that amongst the companies that belong to the high credit risk category, three of them have credit between 120 to 150 days. This fact proves that subjective criteria have been utilized in the company's credit policy. At this point, it is important to state that for the verification of the credit worthiness of Barba Stathis clients, many of the qualitative characteristics of the FINCLAS model have been utilized.

5.2. Proposals

The FINCLAS model of evaluation of the credit risk, works successfully, leading to safe results, as regards to the creditors ranking. Based also onto the outcome of this research, we have proposed certain developments, in order to enable this model to become better utilized or applied, leading to construction of strategies for lowering the credit risk, that Barba Stathis might suffer. The most important proposals are stated here below:

1. The credit risk ranking system has shown some limitations, especially for those companies that are not obliged to publish their balance as well as economic data. Care ought to be taken for each client, new or old (existing) who has asked for credit or credit investigation, so that the company will be capable of collecting all necessary information of previous years as well as predictions, in order to evaluate them accordingly. Assistance from data base might also be required.
2. The FINCLAs model method must be applied, at least in the majority of the client portfolio and especially to customers with turnovers of more than 100,000€.

3. The existing information system must be utilized from the Credit Control Director and must receive essential information from companies data bases, in order to inform the management teams accordingly, as well as the Sales managers, so that appropriate decisions will be taken as well as actions will be also taken.

4. The credit risk management requires not only specific knowledge but this knowledge must be customized to the updated needs, it is therefore essential for all employees of the credit control departments to be properly trained so that their judgments and analysis capabilities must be effective and valid. Their training must be done from well-dedicated and specialized companies.

5. The reduction of the collection timing of the company's requirements from its clients must be done in fewer days, if it is allowed from the market conditions and the competition too. Especially in the high-risk cases, the credit to the clients must not exceed 30 days and, in some cases, it must be cash. Due to the recession and the financial condition of the companies, reduction percentages for the collection of the owned money must be established.

6. Extension of the payment "in Advance" as regards to all new customers from abroad.

7. Intensive observation of the due money through the Credit Control management of Barba Stathis must be followed on a monthly basis, focusing precisely on the overdue receivables and precarity. In the cases of seasonal clients (HO.RE.CA) where the collaboration terminates within six months, observation every 15 days is proposed.

8. Criteria for the commencement of a new collaboration should be the application of a "collaboration document" with precise conditions regarding the credit policy that is going to be applied.

9. Frequent meetings (on a monthly basis) between the Management of Credit Control and other managers for immediate information and preventive action application in adverse cases are proposed.

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