

Diversification as risk strategy economics essay

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Diversification can be generally be definite as " production of goods or services belonging to a different sectors or segments, that is.... dispersal of production operations of firms in different business. There is diversification when a company embarks itself in the production of goods so much different from the previous ones to bring changes in schedules and distribution"[1].

The traditional economic theory teaches us that diversification is good and positive both in terms of efficiency and risk management. Thanks to the scope economies a joint production of a wide range of financial services should increase bank efficiency through the use of innovative facilities. The modern portfolio theory[2]invites us to diversify the investment, this means investing in assets with low returns' correlations. H. Markowitz proves, that in this way, it is possible get more returns with the same portfolio risk compared to use all investments with a high yield expected for a given level of risk. The basis of studies of Markowitz is because in order to obtain an efficient portfolio is necessary identify a combination of securities for minimize the risk and maximize the overall efficiency offsetting trends of single models asynchronous of the individual securities. To do that, portfolio securities may not be perfectly correlated, even better if they are completely unrelated. This allows the decrease of risk portfolio since this is lower than the weighted average risk that characterize the single activity of which is composed; the diversification benefits are highest under the perfectly negative correlation hypothesis (-1) and null if opposite (while the yield is equal to the weighted average of returns on assets in the strategic portfolio).

The diversification is besides considered one of the many strategies that a company has to hold his competitive advantage and to protect itself from risk of losses. In a study of 1962 by Gort diversification is described in terms <https://assignbuster.com/diversification-as-risk-strategy-economics-essay/>

of heterogeneity of the outputs: two products belong to two distinct markets when the cross-elasticity of demand is low and when in short term the resources, used in the manufacturing and distribution of a product, cannot be transferred to another. The diversification's idea is founded of two factors: i) behavior analysis; ii) transferability of resources in manufacturing different goods. Another important contribution was given by I. Ansoff[3], he consider diversification as the birth of a new product through four stages: market penetration, market development, product development and diversification. The Ansoff' matrix shows how diversification is aimed to new markets and new products. A firm that operate in several fields is also diversify. Ansoff identifies four steps for the diversification: Horizontal, new products to existing customers. Relative or concentric, new strategic activities. Conglomerate, extension of the activities in new areas. Vertical, emission of new products. Subsequently, according to the definition of M. E. Porter[4], the diversification is read as a model of intermediation between the company and the environment is occupies. Porter identifies in diversification the research by an undertaking the maintenance of competitive advantage in a specific field. He support the thesis that the diversify company compete as well as in their business. The diversification can be seen not only as business strategy but also as corporate strategy that is companies that work in several sectors dealing with sundry goods and making use of various technologies. It's a strategy that incorporates every goods and every activities subject of study. This strategy is split into many businesses because so many are the products' strategies and the company's activities. The corporate strategy defines the meaning of use resources in functional areas of marketing, production, finance, research and

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development, human resource with the aim to achieve organizational goals. A business strategy shapes not only the aim of the undertaking activities, but also the usage of its assets, its competitive advantages and the overall coordination of the functional areas. Moreover the corporate strategy is interested in define the range of the firm through market decisions and fields where to compete. This kind of decisions incorporates investments diversification, vertical integrations, acquisitions and new alliances, as well as transfers and resources allocation between different areas[5].

Consistently with the theory the firms diversifies responding to needs of overcapacity production of factors that may be subject to market failure. Probing heterogeneity of these factors C. A. Montgomery & B.

Wernerfelt[6]develop the corollary that the company that decide to diversify shuold expect lower average profits. Two are the points that support this theory: A broader diversification suggests the presence of factors that normally produce less specific competitive advantage; A given factor lose more value when it's transferred to market less similar respect where it originatedMostly a company will decide to diversify (moving away from its current scope) and mostly will be ceter paribus, the loss of efficiency, while less will be competitive advantage for that specific factor. Teece[7]testing the diversification in Petroleum sector forward the proposal that a cost function, which represents the economies of scope, has no direct implications on the context of the company's business. However, if the economies of scope are based on the common and recurrent use of know-how, of skilled and indivisible physical activity then the multiproduct undertaking has an efficient organization. After all, the firms are not predetermined shaped and not even the markets. He claims that

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multiproduct enterprise is a right choice when transaction costs, necessary to coordinate the independent firms, are high. Furthermore browsing the business diversification Teece discovers that the theoretical framework developed by Williamson[8] to explain vertical integration can be easily extended to multi product diversification. This because the main differences between vertical integration and diversification refer to the types of transactions subjects to internalization. Considering that vertical integration implies internalization of supply of the materials production' factors into unique manufacturing process (e. g. components and raw materials) , the interests integration implies internalization of know-how and other factors' supply common to two or more processes of production. Risulta che la diversificazione può rappresentare un meccanismo di economie di integrazione associati alla fornitura simultanea di ingressi comuni ad un numero di processi di produzione volte a distinti mercati del prodotto finale. Always according to Teece, the scope economies exist when for all the outputs y_1 and y_2 the cost of joint production is less than the cost of every single output production. This condition is valid for all outputs y_1 e y_2 , $c(y_1, y_2) < c(y_1) + c(y_2)$ and $RR < 70\%$ the diversification is correlated, while if $RS < 70\%$ and $RR < 70\%$ it is conglomerate. Actually this approach was much criticized because it has strict boundaries and his evaluation is considered subjective. Figura The relationship of diversified level and performance Montgomery gives an illuminating representation of this concept of correlated diversification processed by Zen, whom divided this kind of diversification into: Related constrained provides circular arrangement of the production lines around the core business Related linked provides that each activities is

not necessarily linked to all the other, in this way the interactions tend to decrease bringing the company far away from the core business

- Regarding the theories about explain diversification exist two approaches: the demand-side and the supply-side. The first look at the diversification as an answer to the variation in demand; the supply-side instead recognize the choice of diversify as something endogenous and so is independent from the changing conditions of the market demand. Indeed is rather impossible be able to recognize which of two approaches is used most, generally demand-side prefigures the minimum border of diversification that company should use to avoid losing market share, while supply-side represents the maximum level of diversification that the company might achieve. Between the two approaches is preferred the second, this because the firm's resources represent the key factor of diversification strategy, and the resources capacity unused (that is the disproportion in current and future needs) form the incentive that persuades the company to use such surplus in other areas. If the existing lines won't provide the possibility of expansion the diversification might be a good strategy. It is therefore fundamental recognize where the excess of capacity is from, it could come from a changing in the market that bring an underutilizing of resources, which could be used for new products. But the unused resources might be come from an over efficiency from the company. Teece[12] supports that "...unused resources exist not only because of indivisibilities, but also because of the learning process of operating a business. Thus, even with a constant managerial workforce, managerial services are released for expansions

without any reduction in the efficiency with existing operations are run. Not only is there a continuous learning, but also as each project becomes established so its running becomes more routine and less demanding on managerial resources.". But the existence of excess resources, even if represent a basic condition, is not enough to have diversification, it is in fact necessary that these resources will be used and/or redevelopment in a new product-market combo. If the point of the diversification strategy should be identified, for the supply-side approach, in the existence of fungible resources in excess of the demand, this surplus of resources may, in fact, be intended in alternative uses such as return to capital firm."...a profit seeking firm confronts three fundamental choices: It can seek to sell the services of its unused assets to other firms in other markets. It can diversify into other markets, either through acquisition or de novo entry. If the unused resource is cash, it can be returned to stockholders through higher dividends or stock repurchase. A theory of diversification...emerges when conditions are established under which the second options appears the more profitable." (Teece, 1998)A couple of years before Teece argued that when the joint production of multiple outputs is based on the same know-how the diversification is the most efficient way compared to the market to organize the surplus, and it is also advisable when the resource is specific and indivisible. Rumelt's studies lead to the conclusion that the appropriate level of diversification is that one that scale economies of scope with the organization diseconomies of scale. The purpose of diseconomies are more likely to occur through the loss of control that can be seen as the failure of the allocation and internal control system to perform better than the market. basically, the diversification should be realized and advance until the <https://assignbuster.com/diversification-as-risk-strategy-economics-essay/>

benefits of scale and scope economies are offset by diseconomies are undone from the organizational structure resulting from the bureaucratization of the structure by cultural or legislative problems or from the birth of conflicts of interest related to the expansion of product range[13]. Resuming the concept of diversification offered by Montgomery described above, we can show how the bank positions in the case of related diversification, in fact all the product lines and services are provided in all markets. The expansion of the product range of the bank result from the development each product line, families of new and different services compared to that ones more established. Figure 2 developed by Venturelli in 2009 testifies the expansion of the product range intermediary within each service line; there are shown the strategic business areas that can most commonly be found within the structure of the intermediary highly diversified bank. fig. 2 aree strategiche. jpgFigure Strategic business areas in diversified banksEach of these product lines has an own and different process technology, and it is the own technology to constitute the substantial element of diversification. This diversification is realized in the a new family of products and services offered to customers who maintain significant correlation factors with the existing products. The main services related to new business areas that make up the production of the intermediary highly diversified are:- Traditional banking activities;- Investment banking;- Bank - insurance- Finance- Brokerage and property management

Banks

One of the main reasons for the existence of banks is that they, better than other institutions, are able to assess and manage risks. With the recent crisis, however, it has seen the greatest level of losses ever seen since the Great Depression of 1929. The special role of banks as risk assessors makes the banking sector particularly opaque. This opacity has increased in recent years due to structural changes in the banking sector determined by the deregulation and financial innovation, in fact, the last decade has witnessed rapid movements of financial institutions around the world to a greater variety of products and services; these changes made the banking sector significantly more complex, larger, global and dependent on developments in the financial markets. Since the current financial crisis has brought an unprecedented wave of bank failures on global scale, the question of the optimal strategy of diversification has gained renewed attention among legislators, regulators, operators and academics. The guidelines of financial sector argue that diversification tends to reduce the bank's risk and improve performance. Conversely, the recent global crisis raises a number of concerns among legislators, regulators, operators and scholars that banking institutions have exceeded their optimal scope and among the fact that aggressive diversification strategies may have led some banks to be exposed to a much higher risk, rather than to a lower risk.

The Italian Banking System

Deregulation, technological development and process of securitization are the main exogenous factors that completed the emergence of a situation of surplus of production capacity. The Italian banking system is characterized

for being one of the most subject to retail regulation, and traditionally has been characterized by a mix of small local banks and statal institutions which worked on a regional basis and held the majority of retail deposits. The Italian Central Bank has discouraged branches in the private sector and has maintained a strict separation in short-term loans and long-term loans. These practices created a banking system where small institutions compete mainly at local or regional level. The banking sector subsequently was subject to major structural changes, since the early '90s, starting from the wide deregulation occurred as a result of the transposition by our country with Legislative Decree n. 481/1992, the second EU Directive access to and the exercise of lending by the banking intermediaries[14]with which it was began the procedures for creation of the Single Market (The Banking Act)[15]. The objective of the legislation was to ensure competition in the markets for banking and financial services and to promote the consolidation of a fragmented industry, facilitating the processes of privatization of banks. In addition, the banking system responded to the requirements related to financial innovation and development of new technologies, with the growth of trade and financial relations, with the globalization of markets through mergers and acquisitions boosted by a level of interest rates very low, with competition and provision of innovative products and services. The answers focused on the rationalization of processes and the increase in size, with a gradual change of the model. The privatization program caused substantial consolidations of savings, it caused an increase in competitive pressure, and favoured the formation of large commercial banks such as Intesa Sanpaolo and Unicredit. In response to both deregulation and high competitive pressure, the commercial banks expanded their business based

compensation. As a result of this process of diversification of the Italian banking system includes a variety of business models that ranging from conventional loans to capital market and other activities. Another effect of regulation was the progressive reduction in the number of banking groups, but this not necessarily implied benefits in terms of efficiency of operating units, nor a decrease in degree of competition, which can be evidenced by factors ranging from the distribution of branches territory to the development of alternative distribution channels, especially in the most innovative sectors such as asset management. The graphs below show the increase in the number of bank branches, while some trends into a series of indicators related to the efficiency of the banking system. FigureTo the increase of the number of branches corresponds, in the same period, a significant reduction in ratio of the number of employees and the number of branches and a reduction of cost staff (in real terms) in relation to the number of employees. The latter figure is reflected in gradual reduction in the cost income ratio, calculated as the ratio between total costs and net banking income. FigureNext to costs scaling and to the rationalization of credit quality, represented by the performance of the stock of bad debts in relation to loans granted to customers, which shows a marked slowdown in 1997. A decisive contribution to containment of suffering has been provided by the remarkable stability of financial situation of enterprises in a period cyclically not brilliant, but determinants were also the general progress in structures of risk governance and in methodologies for selection, evaluation and management of credit, all phenomena also induced by technological progress. It should be noted, however, that, especially in the 2001-2003 period, the contraction of suffering can be traced back to the widespread use

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of securitization[16]of non-performing loans, which have used mainly the larger banks, but in fact have been widely even among medium-sized groups. It is obviously considered that the securitization of the risk remains approx-load the budget, but there is no doubt that in the three years the burden of problem loans has been a significant downsizing. Through securitization, banks also achieved a three-fold objective: the net reduction in non-performing loans and non-performing loans; the reduction of the overall risk of the loan portfolio, where have succumbed performing loans; the recovery of free capital, which effectively returns operational capacity to the company. As you can read in the Annual Report 2004 of the Bank of Italy, in fact, "...between 1999 and 2003, banks sold in the market, securitization, loans for 71. 9 billion euros, 26. 4 of which are classified in suffering. " As a result of these changes banks made advance of an excess of production capacity which has promoted the diversification. The focus on banks has therefore shifted from income not interested interests, this has contributed to obtaining high profits, but there are doubts about the effects of the overall performance of banks. In fact, high profits are not necessarily indicative of good overall performance, indeed can sometimes be a means to hide a mismanagement. Field studies of control of bank management are many, but few are those dedicated to Italy, among them we mention V. Chiarozzo, C. Milan and F. Salvini[17]who are wondering if the change in banking structure during the early 90's has really positively impacted the profitability performance associated with the risk or if, instead, this strong increase in revenue from non-interest to be associated with an increase of instability of the profits. After making a study of Italian banks over the period 1993-2003 the empirical analysis shows that the change to non-interest activities was <https://assignbuster.com/diversification-as-risk-strategy-economics-essay/>

beneficial. Another important contribution was made by Acharya, Hasan & Saunders[18]who studied the effects of concentration against the effects of diversification in yields and banking risk, using a database of several Italian banks over the period 1993-1999. The results are consistent with the theory that predicts a deterioration both in quality of bank monitoring and a high level of risk that the expansion of loans for a new business or a competitive society. The most important finding is that the industrial loan diversification reduces the yields of banks while the endogenous production produce riskier loans for all banks (these effects should be amplified in cases of high risk banks) and diversification in loan areas generates an inefficient risk-return trade-off only at high levels of risk. What emerges from empirical evidence is that diversification in bank' assets does not guarantee superior performance and/or greater safety for banks. In support of this theory Crespi, Vallascas and Hagendorff[19]analyzed the relationship between income diversification and performance in a group of Italian banks and the presence of different types of organizational structures has allowed the assessment on the links on differences in performance. Their study shows that the diversified banks have suffered losses in terms of performance more than non-diversified. This result was confirmed with the majority of institutions in the sample. They have in addition decomposed diversification to be able to analyze more carefully the effects and in order to verify if results are the same or differ depending on the type of diversification used, they observed that both types of diversification are associated with the losses. In particular, small banks are less likely to have the skills and the structure to manage banks that are diversified across financial assets. Comparing this type of banks with traditional banking has highlighted the best combination of performance

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obtained during the same period. Overall, the analysis supports the regulations in order to reorganize a greater focus for banks in activity-based loans. Economic theory suggests that until the revenue streams coming from different financial assets are less than perfectly correlated, income diversification should offer opportunities to increase their profits. Alongside effects of portfolio diversification, diversified banks should in addition make an efficient revenue when the cross-selling of financial products is accompanied with traditional services loans-based. Diversification should therefore lead to improvements in performance which could be particularly pronounced in times of crisis, it is the case, for example, drops of interest can be offset by income from activities for a fee. Unlike what happens in the U. S., Europe, non-interest income led to more volatility and overall had a positive impact on bank profits, nevertheless, many studies show that diversification increased the risk. For example, more diversified banks show an higher systematic risk of default than banks concentrated in traditional loans. Another aspect that makes exogenous surplus production capacity is the technological development.. In fact, innovation has helped to reduce the costs associated with the collection, management, analysis and transmission of information by replacing paper-based procedures with automated with considerable savings in terms of both money and time. Technological development has enabled not only the creation of new products which are a necessary condition to have diversity, but it has also changed the way in which it interacts, just think of home banking, ATMs, internet and phone banking. On the demand side the possibilities, for customers to access easier to information on the product range making comparisons both price and range, have increased. Technological innovation has also reduced the

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strength of relationship lending, through innovation in payment systems has loosened the bond between the branch and the customer. On the supply side, thanks to reducing the cost of transport and communications, the demand becomes more elastic and entry barriers are reduced due to the fact that there are no longer need several branches throughout the country. Technological development has also influenced the securitization process by reducing transaction costs so as to make it less expensive financing through the capital market for non-financial firms.

The heterogeneity effect

The many studies on firms' performance have underlined the difficulties in discern between management skill in combining various factors of production and the impact of some environmental variables or specific business factor able to affect the performance achieved especially in those market where territoriality is pretty strong such as credit cooperatives case. In order to obtain a benchmark[20]is necessary to treat the problem of heterogeneity. Can be thought the differences induced by strategic choices made by single bank over the time: it comes to introducing firm-specific factors such as size reached, the market share gained or the level of capitalization chose by management. Also, it is possible to consider the differences resulting from the environmental context. This can be synthetically represented through the inclusion of categorical variables (dummy) indicative of the bank's localization. To distinguish effect of the different factors is preferable to create more environmental variables representing both social and demographic macroeconomic conditions and the local market' characteristics (e. g. development and degree of

competition). In literature, the term environmental variable is used to indicate all those factors on which the management is unable to make decisions, because they are variables outside the control of management in long or short term, as in the case of the specific business factors). In fact, in order to indicate all factors outside the management's control, but capable to affect its effectiveness, it would be more correct to use the term exogenous.

Endogenous factors

The banking system evolution due to the reform of '90s drew attention on the measurement of banks performance. If, in cases of industrial enterprise, the concept of efficiency is exhausted in the pursuit of one operational efficiency, bank, as a financial intermediary, requires many dimensions of efficiency. Operational efficiency[21](everything inherent the efficient use of production factors within the credit for the purpose of minimizing production costs and bid prices of products and services) is a concept based on an optimum relationship between input costs and output levels. It takes a behavior capable to optimize use of production factors and the scale services. The technical efficiency[22]is measured by reference to the concept of the production function: we can compare the actual output with the maximum obtainable with the same fittings input, and it is precisely the case of output efficiency, or you can compare the amount of input used with the minimum necessary to produce the same amount of output, and so is the case of input efficiency. To measure the technical efficiency, the assessment is based on the physical (non-monetary), it is necessary to know the production frontier, identified using parametric methods or using

nonparametric methods: Parametric statistical methods: these methods impose a function of production specification, which can lead to confuse the specification errors with the measure of the efficiency. The methods most used is the stochastic frontier one, with which determine a benchmark and then obtain a measurement of technical efficiency. This measure allows to classify the production units (based on the distance from isoquant) resulting in a ranking faced by banking groups than in the case of full efficiency, and to evaluate the performance efficiency over time, verifying the presence of technical progress and scale economies. Non-parametric methods also known as DEA (Data Envelopment Analysis): these methods apply linear programming techniques to build of a border of efficiency production. Since it does not require a prior definition of production function, and therefore cost, they are particularly suitable for efficiency analysis of non-profit institution which use many input to produce many output. However this methods does not allow to take into account random errors (e. g. measurement) with the risk of confusing them with deviations of the efficient frontier. This kind of methodology seems to be suitable in case of BBC since this type of banks are characterized by an objective function that cannot be attributed to the simple profit maximization. In addition, an important feature of DEA is the technological homogeneity of units, characteristic more likely in the case of BBC and large banking groups. Another feature of DEA is the relative independence of decision-making units, which is also satisfied with the institutional structure of the cooperative banks. This methodology identifies as efficient those units for which there are no other units or linear combination of decision-making units, that can produce a given output with the same or less input (or equal/greater output with a given input). The <https://assignbuster.com/diversification-as-risk-strategy-economics-essay/>

efficient frontier is built from a linear combination that connects the efficient units forming a convex set of production possibilities. According to Koopmans[23]definition, a decision-making unit is technically efficient if the unit produced increase (output) means necessary an another output unit decrease or the increment of at least one unit used (input) or if the reduction of a unit of input requires the increase of another input the (oppure se la riduzione di una unità di input richiede l'incremento di un altro input la riduzione di un output)The choice of input and output variables are crucial as they reflect the vision of the bank production process that we want to analyze. As input variables and output variables are taken into account flow variables and where it is not possible account stock variables that generate homogeneous flow.

Cost function, profit function and revenues function

The costs border is the set of combinations of inputs and outputs that allows banks to produce a given amount of output minimizing costs. The construction of this border requires the solution of a problem of optimization. The distance of a bank from this frontier provides a measure of the X-efficiency, that is the difference between the cost of a given product and what would be its minimal cost. The costs frontier can be obtained through the estimation of a function that links the costs to quantities produced and prices observed, is possible to use the SFA proposed by Aigner, Lovell, Schmidt[24]. The stochastic frontier methodology is the most widespread used in the financial sector. Following this approach, the cost frontier, in the most general form can be defined: $\ln T_{cit} (o T_{pit}) = x_{it}\beta + \epsilon_{it}$ with $\epsilon_{it} = v_{it} + u_{it}$
 T_{cit} = total operating costs for the i–th firm at time t; x_{it} = output

quantities and input prices vector β = parameters to be estimated vector ϵ = error v = random error component u = inefficiency component
 I parametri della frontiera stocastica vengono stimati con il metodo della massima verosimiglianza, adottando la parametrizzazione proposta da Battese e che esprime la funzione di massima verosimiglianza in base a due parametri di varianza: The parameters of the stochastic frontier is estimated using the maximum likelihood method, using the parameterization proposed by Battese and Corra[25], which expresses the function of maximum likelihood according to two variance parameters: $\sigma^2_s = \sigma^2_v + \sigma^2_u$ $\gamma = \sigma^2_u / \sigma^2_s$ The parameter γ takes values between 0 (all deviations from the frontier are due to random error) and 1 (all deviations are due to inefficiency). In short: the presence of heteroscedasticity[26] in v_i (component of random error) does not distort parameters estimates of the production function, and distorts technical efficiency estimates; the presence of heteroskedasticity in u_i (component of inefficiency) is more problematic, since it distorts parameters estimates of the production function, both technical efficiency the presence of heteroskedasticity in both the error components due to distortions in the opposite direction, so it may happen that, on average, the noise is reduced. The border of the profits is used when bank's goal, given the production technology, is to maximize profits. The relative profit for the bank is compared with the maximum obtainable from bank more efficient using the same input-output mix and the possible gap between these two levels provide a measure of X-efficiency. The advantage of this procedure is to take into account costs that bank supports to produce a given product, that the prices at which it can later effectively sell the product. In this way, inefficiencies can be detected at any time they emerge both in the choice of

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levels or the mix of inputs, thus inefficiency in costs, both in the choice of the level or mix of final products, and inefficiency in revenue. We can also consider the alternative profit efficiency, which analyzes the profit as a function of the quantity of output rather than prices. As pointed out in Berger, Mester[27], this method provides a useful answer when they should occur one or more of the following conditions: Product market is not perfectly competitive, but some companies are able to exercise market power greater than others; The quality of products and services is not perfectly homogeneous; In statistics we talk about heteroskedasticity when variance of a random variable (in particular, the error term of a statistical model) varies between different sample observations; Scale, or mix of production cannot be easily changed in the short term; Prices of output cannot be accurately measured. It follows that functional form specified is the same adopted for estimation of cost efficiency, with the exception of the dependent variable, represented now by the total profits (TP). To obtain a score between 0 and 1, efficiency of individual firm is calculated as ratio between the profit obtained from the i -th firm, and the maximum profit realized by the best practices for which $u_{it} = 0$. For the deterministic part of the cost frontier, we adopt a translog type specification[28]: T_c = total cost incurred from the i -th firm; T_p = profit realized in the period considered; Y_i = output quantity; P_j = input prices; E = equity level. The inefficiency component is no more assumed distributed identically for all units observed, but it is assumed to follow a truncated normal distribution whose average is u_{it} . Some authors have observed how the two functional forms are substantially equivalent from the economic point of view and they provide a commercial ranking rather similar. Venet (2002) also confirmed that Fourier provides

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very similar results to translog type, which presents a simpler formulation from the computational varies for each company of the sample point of view (or group of companies), being a linear function of M environmental factors representatives its specific frame of reference: This model allows to consider heterogeneity of the sample and, at the same time, continue to use a common border as a benchmark. The optimization problem to which refers the revenues border construction is to maximize the revenue obtainable from the sale of a given amount of output. It expresses, on the one hand, relationship between income, and on the other, prices of inputs and outputs. Input and output prices are considered exogenous, and this is as much true as greater is the competition on the credit market. The level of X-efficiency associated with each bank measures the deviation of the individual units from the border. The use of revenues frontier rather than costs, is better when you want to highlight the benefits associated with the joint production or consumption of more joint services and the bank, because it is multi-product company, has considerable possibility for productive level diversification[29].