OPTIONAL MODELS FOR STRENGTHENING THE SPANISH CO-OPERATIVE BANKING SECTOR

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Abstract. The financial crisis that started in 2008 has had a major impact on the Spanish financial system, including the co-operative banking sector. Among the restructuring measures being considered for the industry, one option is to create larger co-operative banking groups, employing different formulas. Given this context, it is interesting to compare the success achieved by the main European cooperative banking groups, which must surely serve as role-models for the Spanish process. The present study makes this comparison both from the usual economic and financial perspective and by taking the traditional cooperative style of management into account. The methodology used is the Analytic Hierarchy Process (AHP), enabling the use of both quantitative and qualitative information, as well as the opinions of experts.

Keywords: Co-operative banking, financial crisis, financial restructuring, AHP.
JEL classification: G21, G34.

Introduction

The current crisis in the international financial system has been felt even more sharply in Spain due to a major slump in the property market, hitting its financial institutions hard. The impact of this crisis has been so great that the traditional savings banks' (*cajas de ahorros*) sector has almost completely disappeared, with these institutions being merged into newly-founded banks. Banks and co-operative banks have been much less affected, as they were much less prominent in providing finance to the property sector. Furthermore, the few mergers of co-operative banks that have taken place have not improved their efficiency and effectiveness ratios (Palomo y Sanchis, 2010).

Between 2008 and 2010, Spain's national central bank, the Banco de España, as the institution which oversees and regulates the financial sector, sought to put in place a model called *Sistema Institucional de Protección* (SIP, Institutional Protection System) for Spanish savings banks and co-operative banks (Royal Decree 216/2008, Circular 3/2008 of Banco de España and Royal Decree-Law 6/2010). This model has its legal basis in Directive 2006/48/EC, and it draws on the experience of the protection and shared guarantee systems in place in Germany and the Netherlands, where the whole co-operative banking group is led by a figurehead organisation (Valero, 2010).

These SIPs – de facto mergers which in Spain have received the nickname of *fusión fría* (cold fusion) – have existed since 2008 while traditional mergers between various organisations have also occurred. Yet even now, small Spanish credit institutions, especially the co-operative banks, are still wary of the supposed benefits of SIPs and even of the need for them to be set up around a single figurehead institution.

Given this background, the aim of this study is to compare the four biggest European co-operative banking groups, which function by means of a system of guarantees between the affiliated institutions making up the larger group: two are French (Crédit Agricole and Crédit Mutuel), one is Dutch (Rabobank) and one is German (Bundesverband der Deutschen Volksbanken und Raiffeisenbanken, BVR-DZ Bank). This comparison considers not only performance, strength, solvency and strong results, but also the capacity of the affiliated institutions to operate as a single group, maintaining their independence in a legal sense and in terms of their social activities while also complying with the financial and operational demands placed upon them, guaranteeing the deposits of their customers and the capital of their members.

The objective of this analysis is, therefore, to study the usefulness of the models used by the largest co-operative banking groups in Europe for the Spanish co-operative banks who have not yet chosen to form these integration and protection systems which represent a different option from traditional mergers. This issue is of great current interest and has been the subject of various studies from different perspectives (Palomo 2005 and 2008, Carbó 2010). In our study, the specific aim is to obtain a multi-criteria ranking, enabling the identification of the European co-operative banking group with

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the best results from the economic, financial and co-operative management points of view. This information will undoubtedly be of interest for the restructuring of the sector in Spain. Moreover, by including a group of those organisations which belong to the *Unión Nacional de Cooperativas de Crédito* (UNACC), a solely representative association of co-operative banking institutions in Spain, it is possible to compare the situation of the Spanish co-operative banking sector as a whole with the leading European institutions of the same type.

With this goal in mind, the analysis consists of three phases. Firstly, the European co-operative banking groups are compared on the basis of a series of quantitative variables which reflect their economic and financial strength. An artificially created group consisting of the UNACC-affiliated organisations is included in the analysis in order to determine the situation of the Spanish co-operative banking sector with the leading European institutions. In the second phase, the four European co-operative banking groups are compared on an overall basis, taking qualitative variables into consideration which reflect the quality of the co-operative management of credit institutions of this type and their model of integration. The third phase consists of a comparison based on all the variables used, i.e. both those related to economic and financial management and those of co-operative management.

The methodology employed to obtain the comparisons and analyse them is the Analytic Hierarchy Process (AHP) designed by Saaty (1980), which enables both quantitative and qualitative data to be used, incorporating expert knowledge into the solution to the problem – in our case, the ranking of different financial institutions.

The rest of this paper is structured as follows. The second section is concerned with the presentation of the AHP methodology. The third section describes the selection of the economic and financial variables and the co-operative management variables. The fourth section presents the results obtained: firstly, by using exclusively economic and financial quantitative variables and qualitative variables with regard to co-operative management on a separate basis, and then using both types of variables together. Finally, the fifth section contains the study's main conclusions, followed by the bibliography and appendices.

Use of the Analytic Hierarchy Process in Order to Obtain a Multi-criteria Ranking

The Analytic Hierarchy Process (AHP, Saaty, 1980) is well-known in the business world as a method to aid decision-making. It enables a set of possible alternatives to be ranked by means of a fundamental scale designed for this purpose (Table 1). The comparison can be made by using quantitative or qualitative criteria, with this being one of the particular advantages of the model, as it enables qualitative criteria to be introduced into the decision-making process.

Table 1: Fundamental scale for pairwise comparisons

Numerical scale	Verbal scale	Explanation
1	Equal importance	Both elements contribute equally to the property or criterion.
3	One element is moderately more important than the other	Judgement and prior experience favour one element over the other.
5	One element is significantly more important than the other	Judgement and prior experience strongly favour one element over the other.
7	One element is much more important than the other	One element is favoured very strongly over the other. Its dominance is demonstrated in practice.
9	Extreme importance of one element over the other.	One element is dominant over the other to the highest possible order of magnitude.

Note: values 2, 4, 6 and 8 may be used to express intermediate situations.

Source: Saaty, 1980By comparing the alternatives two by two in terms of a particular criterion and using the pairwise comparison scale, square matrices are obtained $A = [a_{ij}]$ which must fulfil the properties of reciprocity, homogeneity and consistency. The eigenvector of the proposed matrix indicates the importance or weight of each alternative in terms of this criterion.

An important advantage of the use of AHP is that it enables the level of consistency of the decision-maker to be evaluated. In order to measure this, what is known as the consistency ratio (CR) is calculated and only the opinions of those experts whose inconsistency is below 10% are accepted for the matrices of the range n ≥ 5 (5% for n=3 and 9% for n=4).

AHP possesses two important characteristics worth noting. The first is that it can be used with experts in an individual or collective fashion. When a variety of experts are consulted on an individual basis, a final solution can be reached by aggregating all of their opinions. This aggregation is undertaken by means of the geometric mean (Saaty and Peniwati, 2007). The second characteristic, as mentioned above, is that, by using the CR, the consistency of the information employed in the process can be determined and inconsistent information can be eliminated.

In this study, AHP enabled the co-operative banking institutions to be ranked in terms of a series of previously selected criteria related to the economic and financial management and the co-operative management of the institutions studied. Thereby, using the knowledge of a group of experts in co-operative banking and by analysing various management issues, the main European co-operative banking groups were compared quantitatively, verifying the most important management aspects, the groups that were better managed and in what ways, also identifying the differences or distance between the groups.

Selection of Representative Variables of Economic and Financial Management and Co-Operative Management of Co-Operative Banking Institutions

This section describes the selection of the variables used in order to obtain the relevant rankings with AHP. Those variables were of both quantitative and a qualitative

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nature. The first stage was to establish a comparison of the co-operative institutions with regard to their economic and financial management, by means of quantitative variables which reflect all the relevant indicators of performance, solvency and size. The second stage was a comparison involving only qualitative variables, reflecting the quality of the co-operative management and the way of integration of the affiliated institutions with the figurehead organisation. The third stage concerned an overall comparison, in which both the quantitative and the qualitative variables were employed.

The selection of variables is a key aspect of any type of ranking process, regardless of the methodology used, as the selection of particular variables determines the aspects or characteristics to be measured and weighted.

In order to select the variables, we proceeded from the general to the particular. As previously stated, the intention is to analyse the functioning of the European co-operative banking groups from two perspectives: economic and financial management (the first metavariable) and business management (the second metavariable). For each of those metavariables, the primary variables had to be identified, those being the dimensions to be analysed within the most global areas of the metavariables. Finally, in the case of the economic and financial dimensions, for some primary variables, it was necessary to select some secondary variables, which provided the most detailed view.

With regard to the selection of the metavariables, it is important to note that the majority of the vast number of studies analysing financial institutions focus exclusively on their economic and financial management, by ignoring other aspects of management. This is so for studies with an international focus (Ferrier and Lovell (1990), Grabowski *et al.* (1993), Berger *et al.* (1993), Kaparakis *et al.* (1994) and Berger (1995) are some of the most important and original studies), and also for those looking at the sector in Spain (Maudos and Pastor, 2000; Marco and Moya, 2000; Maudos *et al.*, 2002; Sanchis and Melián, 2009, Palomo and Sanchis, 2010). There are some exceptions that do include variables reflecting aspects such as corporate social responsibility (García-Cestona and Surroca, 2006; Belmonte and Plaza, 2008; Seguí *et al.* 2009; García *et al.* 2010b). We drew on those studies to guide us in the selection of the primary variables and, where necessary, the secondary ones, included within the metavariable of "economic and financial management". However, our study also includes a second metavariable: co-operative management. We believe that, with regard to selecting a model to follow for the restructuring of the Spanish co-operative banking sector, economic and financial strength should not be the only criterion to take into account. In our view, a number of factors are of great importance and, therefore, they all need to be considered. Otherwise, the consolidation process may fail or lead to undesirable results. It is for this reason that a second metavariable was included.

As we have seen, there are numerous studies that examine the economic and financial management of credit institutions and that can serve to guide the selection of the primary and secondary variables for this metavariable. Those studies have focused in particular on the performance of these institutions, by means of cost-benefit analysis or DEA in its various forms. Therefore, the selection of variables has been determined by the techniques used, focusing on the inputs and outputs of these credit institutions. It must be borne in mind that most of these studies were carried out at the time of economic

boom, when the solvency of these institutions was not in question and when comparing their efficiency and seeing the ones that were the best managed (as all of them were profitable and solvent) was of the most interest. Therefore, it is not surprising that, in the comparison that these studies make of the management of these credit institutions, such an important variable as credit risk – which has emerged as a fundamental factor for the restructuring of the sector – is not taken into account, with the main focus being on the profitability and efficiency. Nevertheless, as the international economic crisis has gathered pace, articles examining the credit risk dimension have been published (García *et al.*, 2010a). After reviewing all of these studies, our conclusion agrees with the viewpoint of García *et al.* (2010b), in that the primary variables to consider as part of the "economic and financial management" metavariable are efficiency, solvency and size. However, our approach differed somewhat to that of the above study. Firstly, efficiency was split into two primary variables: balance sheet structure and profitability. The aim here was to ease the task of the experts when making the pairwise comparisons, given the use of AHP. For the same reason, size was also split into two primary variables: size of the network and market share. In selecting these primary variables, the objective was to analyse the following aspects of economic and financial management:

- Structure of the balance sheet: the aim was to discover whether the balance sheet was structured in a balanced fashion. This is an issue of great importance at the current time because, after the period of economic growth until 2007 and the concomitant increase in lending, a consensus has emerged regarding the importance of having a well-balanced balance sheet that enables appropriate diversification, thereby guaranteeing institutional profitability and solvency. Three secondary variables were selected. The first was total assets, making reference to the size of the balance sheet, which is in turn a measurement of the size of the institution. This variable is constantly present in the studies referred above, as size has a significant impact on the scope for diversification and the reduction of certain types of administrative costs, without losing sight of the fact that, the bigger an institution company is, the greater its systemic importance, with the benefits that this entails. The second variable was total deposits/assets, reflecting the structures aimed at attracting resources, whereas the third was total loans/assets, reflecting the structures aimed at providing funds for investment. With these variables, it was possible to determine the management model before and during the economic crisis with regard to attracting deposits and providing loans.

- Profitability: profitability is, obviously, a variable of capital importance. If an institution is not able to make a profit, it will cease to operate. Alongside the usual variables of ROA (return on assets) and ROE (return on equity), the variable of revenue/costs was included, reflecting the capacity to take on non-financial overheads. This variable was calculated by dividing the financial margin (financial income less financial expenses) by the operating costs (overheads, staff costs and amortisation). This is known in Spain as the "efficiency ratio", although here it is used inversely.

- Solvency: this variable is of crucial importance, especially in times of crisis. There are various variables that measure solvency of financial institutions and they are required to publish them in their annual reports drafted by super-

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visory bodies. "Total Capital Ratio" could not be chosen as a measurement of solvency, as this variable was not available for all the institutions in 2010. Therefore, the variable TIER 1, which fulfils the same purpose, was the only one used. For the artificial aggregation of institutions members of UNACC in Spain, the weighted mean capital of the 5 co-operative banks with the greatest assets (Caja Laboral, Cajamar, Caja Rural del Mediterráneo, Caja Rural de Navarra and Caja Rural del Sur) was used as a proxy.

- Size of the network: this comprised several absolute variables. The first of them is the number of employees; the second – the number of affiliated institutions that make up the co-operative bank (as in all cases, except that of Spain, the figurehead organisation leads and represents hundreds of co-operative banking institutions operating at local, regional or inter-regional level); the third is the number of branches, i.e. the network of offices open to the public; the fourth and final variable is the number of members of the affiliated co-operative banks, but not that of the total number of customers, as we believe that the real sise is better reflected by the number of members, who are much more loyal than regular customers in these times of customer volatility.
- Market share: This was represented by two variables, market share of deposits and loans.

The data used to undertake this study were obtained from the annual accounts of the institutions studied. However, it was necessary to homogenise the data, but this was straightforward, as the 2010 Annual Report of the European Association of Co-Operative Banks, concerning the Annual Accounts and other data from 2009, enabled us to do so, by collating the data for each variable in 2009 and 2010 from each report. The only problem was the incorporation of the data from the Spanish co-operative banks, due to the fact that they were not a single organisation but many. The only solution was to aggregate those data where possible, as they do not need to consolidate their data, because they are not part of the same group, in accordance with article 42 of the Commercial Code. Only those data where ratios were offered for non-visible elements were weighted, in proportion to the total assets.

Table 2 shows, as part of the metavariable "economic and financial management", the primary and secondary variables and what each of them measures, while Table 3 displays the descriptive statistics of the secondary variables.

Table 2: Criteria used within the metavariable of economic and financial management

Primary variables	Secondary variables	Objective of the variable
Structure of the Balance Sheet	Total Assets (TA)	Size of the balance sheet
	Total Deposits/Assets (TD/A)	Structures aimed at attracting deposits
	Total Loans/Assets (TL/A)	Structures aimed at providing funds for investments
Profitability	ROA	Return on assets
	ROE	Return on equity
	Revenue/Costs (R/C)	Capacity to meet non-financial overheads

Solvency	TIER 1	Solvency measured in the standard European manner
Size of the network	Nº employees (NE)	Human resources
	Nº of regional banks (NRB)	Number of affiliated co-operative banking institutions
	Branches (B)	Number of offices open to the public
	Nº of members (NM)	Size of the organisations (not referring to customers)
Market share	Market share of deposits (MSD)	Market share amongst the financial institutions, in terms of attracting funds
	Market share of loans (MSL)	Market share amongst the financial institutions, as a provider of funds

Resource: Authors.

Table 3: Descriptive statistics of the secondary variables belonging to the metavariable "economic and financial management"

Secondary variables	Mean	Standard Deviation	Maximum	Minimum
Total Assets (TA)	823 348	599 609	1 731 000	121 581
Total Deposits/Assets (TD/A)	0.64	0.21	0.97	0.46
Total Loans/Assets (TL/A)	0.62	0.12	0.81	0.51
ROA	0.46	0.22	0.80	0.21
ROE	8.30	3.86	14.20	4.60
Revenue/Costs (R/C)	1.66	0.14	1.89	1.55
TIER 1	11.61	2.54	15.70	8.90
Nº employees (NE)	100 318	70 273	186 719	20 352
Nº of regional banks (NRB)	1 191	1 108	2 533	78
Branches (B)	7 362	5 090	13 474	911
Nº of members (NM)	6 824 327	5 993 992	16 700 000	1 801 000
Market share of deposits (MSD)	0.21	0.13	0.40	0.06
Market share of loans (MSL)	0.18	0.09	0.29	0.05

Resource: Authors.

As already stated, we believed that the information relating to economic and financial management was of extremely great importance for this study, but also that, although it was necessary, it was not sufficient. Information on the purely co-operative element of management was also required, along with the way that the co-operative group was structured. It must be stressed once again that the objective of this study was to compare the main European co-operative banking groups in order to find the model that is the most appropriate for the interests of the Spanish co-operative institutions. This model will be even more appropriate if, in addition to displaying the most profitable, solvent and diversified situation, it also fulfils a series of conditions related to co-operative management.

There are few studies in the literature which examine that aspect of management, which is understandable when one considers that there are also far fewer studies on co-operative banking institutions in general. Except for studies by Belmonte and Plaza (2008) and García *et al.* (2010b), which include variables related to regional development and the funds set aside for the *Fondo de Educación, Formación y Promoción* (the fund for educational, training and cultural projects), although these variables are used for the calculation of the social performance of these institutions, making these studies very different from what concerns us here. Given the virtual absence of previous studies in this line, especially with regard to the specific objective pursued here, and also taking into account the availability and comparability of the data of the European and Spanish co-operative banking groups, we were forced to choose the variables which we considered useful for the assessment of quality of co-operative management. These variables are all of a qualitative nature and in this case there was no need to include secondary variables.

- Co-operative social responsibility: this variable not only measured the so-called obra social or social projects (which in the Spanish legislation on co-operative banking institutions is referred to as Formación, Educación y Promoción Cooperativa – literally "co-operative training, education and promotion"), but also the transparency of managerial performance with regard to their members, staff and customers, their social involvement, their focus on small and medium-sized businesses and towards other co-operative organisations, etc. (de Castro, 2005)
- Autonomy of the affiliated co-operative institutions: this variable concerned the perceived scope for decision-making by the affiliated institutions, the level of mutualisation of profits between the figurehead organisation and the affiliated institutions, and finally the democratic participation in the internal electoral processes of each group by the affiliated institutions.
- Risk management during the financial crisis: this variable concerned the perceived ability to successfully deal with the recent financial crisis, through the maintenance of their co-operative principles and especially from the point of view of prudence.
- Image or prestige: this highly subjective variable reflected the experts' perception of the level of prestige or public image amongst customers and other experts.

Numerical data was obtained from those qualitative variables by applying the AHP method, after the experts made their contributions.

Application of the AHP Method and Analysis of Results

The next stage concerned the application of the AHP method, in order to obtain the ranking and discover the co-operative banking institution that, in the opinion of the experts, is the best-managed one overall and, therefore, the one that can serve as the best model for re-ordering the Spanish sector.

As is well known, in order to apply the AHP method, one must ask one or more experts to undertake pairwise comparisons. In our case, we obtained the opinions of

5 experts (two university lecturers, two directors of co-operative banking institutions and a legal expert, all of whom were well acquainted with the situation in Spain and with the European co-operative banking groups), and their answers were aggregated. The AHP method was applied in several stages, some interesting results were obtained:

Stage 1. By means of pairwise comparisons, the experts determined the weighting of the metavariables, the primary variables and, where appropriate, the secondary variables.

Stage 2. Using the quantitative data, the institutions were ranked purely in terms of economic and financial management.

Stage 3. The experts compared the different co-operative banking groups in terms of the co-operative management variables, which were of a qualitative nature, and then ranked the institutions purely in terms of their co-operative management.

Stage 4. The overall ranking was calculated, taking into account both economic and financial management and co-operative management.

We will now consider each of those stages in more detail.

Stage 1. Weighting of the variables

Table 4 shows the weighting of the metavariables, the primary variables and, where appropriate, the secondary variables, obtained from the surveys of the experts.

Firstly, with regard to the metavariables, the experts placed much greater importance on economic and financial management (over 80% of the weighting) than on co-operative management (under 20% of the weighting), when considering the standard of management of a co-operative banking institution.

Within the "economic and financial management" metavariable, the primary variable with the greatest weight was solvency, with a weighting of 44%. The other variables were considered to be clearly less important, with weightings of around 15%, except the size of the network, whose weighting was less than 10%. It is interesting to see the importance that the experts placed on solvency, probably due to the current wider economic and financial situation, in which the level of solvency is the main concern of the whole European lending sector.

With regard to the secondary variables, for the structure of the balance sheet, the most important was the ratio of Total deposits/assets (66%), while ROA (61%) was the most important for profitability, the number of members (36%) for the size of the network, and the market share of deposits (80%) for market share. In general, the impact of the situation at the time the survey was carried out could be appreciated, with the need to maintain solvency and pass the banking supervisory bodies' stress tests.

Within the "co-operative management" metavariable, risk management during the financial crisis was the most important variable, with a weighting of 45%. This variable relates to the experts' perception of level of management prudence, both before and during the financial crisis, moving away from the search for quick profits, which are necessarily accompanied by greater risk and the need to operate in business areas outside the usual areas of operation of co-operative banking institutions. The other variables received very similar ratings of around 18%.

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The last column of the table shows the final weighting of each variable. The TIER 1 variable is clearly the most important, with a weighting of 35.81%. Very far behind comes the market share of deposits (11.55%), followed by risk management during the financial crisis (8.62 %), Total deposits/assets (8.35%) and ROA (6.62%). The other variables have a weighting ranging between 3.5% and 1.29%.

Table 4: Weighting of the metavariables, primary variables and the secondary variables

Metavariables		Primary Variables		Secondary Variables		Final Weighting
Variable	Weighting	Variable	Weighting	Variable	Weighting	
Economic and financial variables	0.808	Structure of the balance sheet	0.155	Total assets	0.155	0.0196
				Total deposits/assets	0.662	0.0835
				Total loans/assets	0.182	0.0229
		Profitability	0.134	ROA	0.611	0.0662
				ROE	0.119	0.0129
				Revenue/Costs	0.269	0.0292
		Solvency	0.443	TIER 1	1.000	0.3581
		Size of the network	0.090	Nº of employees	0.195	0.0142
				Nº of regional banks	0.238	0.0174
				Branches	0.206	0.0151
				Nº of members	0.359	0.0261
		Market share	0.176	Market share of deposits	0.808	0.1155
				Market share of loans	0.191	0.0339
Co-operative management variables	0.191	Co-operative social responsibility			0.189	0.0363
		Autonomy of affiliated co-operative institutions			0.182	0.0350
		Risk management during the financial crisis			0.449	0.0862
		Image or prestige			0.178	0.0343

Resource: Authors.

Stage 2. Ranking of economic and financial management
Here, the four big European co-operative banking groups and the UNACC aggregation were ranked using those weightings obtained at the previous stage with regard to economic and financial management and the data taken from the annual reports published on the websites of the five groups in question. Although the main objective of this study was to compare the four main European co-operative banking groups, it was thought that it would also be of interest to compare these groups with a hypothetical large Spanish co-operative banking group, consisting of the aggregation of all the co-operative banks members of UNACC.
Table 5 shows the normalised score obtained by the different groups for each variable. Note that for each variable, the scores add up to 1.

Table 5: Normalised scores obtained by the different groups for the economic and financial management variables

GROUP	Normalized Economic and Financial Management Variables												
	TA	TD/A	TL/A	ROA	ROE	R/C	TIER1	NE	NRB	B	NM	MSD	MSL
Crédit Agricole	0.420	0.148	0.164	0.091	0.122	0.197	0.177	0.319	0.425	0.312	0.18	0.234	0.236
Crédit Mutuel	0.144	0.307	0.176	0.215	0.218	0.199	0.198	0.151	0.347	0.160	0.21	0.137	0.188
BVR/ DZBank	0.248	0.191	0.184	0.348	0.342	0.190	0.153	0.372	0.191	0.366	0.49	0.186	0.195
Rabobank Nederland	0.159	0.144	0.215	0.185	0.207	0.187	0.270	0.117	0.024	0.025	0.05	0.385	0.321
UNACC aggrega- tion	0.030	0.210	0.261	0.161	0.111	0.227	0.201	0.041	0.013	0.137	0.07	0.059	0.060

Resource: Authors.

With regard to total assets, Crédit Agricole constitutes the largest group, scoring 0.42 out of 1, a long way ahead of the others. There is a remarkable difference in size between the European groups and the UNACC aggregation, which comprises all of the Spanish co-operative banking institutions.

With regard to the rest of the variables, the following results stand out:
- The German group offers the best return on assets and return on investment.
- The Spanish co-operative banking institutions possess the best R/C ratio, demonstrating greater scope for taking on non-financial costs and for obtaining a superior financial margin, although by now this may have diminished.
- TIER1 is reasonably homogeneous, with the lowest being that of the German group.
- The networks in Germany and France are huge, with regard to all parameters.
- With regard to market share, the Dutch group stands out, being over 0.32 for both parameters, but the sum of the market share of Crédit Agricole and Crédit Mutuel in France is around 0.40. The German group is around 0.19 and the Spanish aggregation 0.06.

The results of the aggregated comparison are shown in Table 6. The group with the best overall score for economic and financial management is Rabobank Nederland, closely followed by BVR/DZBank, Crédit Mutuel and Crédit Agricole. The UNACC aggregation lags some way further behind. The balance, solvency and scope for action of Rabobank stands out in comparison with two much bigger groups, Crédit Agricole and the German group, whose results are similar. Crédit Mutuel, the smaller French group, obtained similar results, even better than Crédit Agricole, having some very balanced results. The position of the Spanish aggregation UNACC is a rather distant last.

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Table 6: Ranking of the groups in terms of the economic and financial management variables

Group	Weighting
Rabobank Nederand	0.241
BVR/DZBank	0.206
Crédit Mutuel	0.202
Crédit Agricole	0.193
UNACC aggregation	0.157

Resource: Authors.

Stage 3. Ranking of co-operative management

Before the ranking for this stage can be calculated, it is necessary to compare the five groups with each other regarding the co-operative management variables. This step was required as these variables are qualitative in nature and they had to be transformed into numerical values, undertaken by means of expert interviews.

Table 7 shows the normalised score obtained by the groups for each of the variables.

Table 7: Normalised score obtained by the different groups with regard to the co-operative management variables

Group	Normalised Co-Operative Management Variables			
	Co-operative social responsibility	Autonomy of affiliated institutions	Risk management during the financial crisis	Image or prestige
Crédit Agricole	0.4000	0.1574	0.2937	0.2967
Crédit Mutuel	0.1236	0.1149	0.1850	0.0833
BVR/DZBank	0.1871	0.1343	0.2353	0.1831
Rabobank Nederland	0.2254	0.0959	0.2550	0.3987
UNACC aggregation	0.0640	0.4975	0.0310	0.0382

Resource: Authors.

With regard to the variable of co-operative social responsibility, Crédit Agricole is the group with best score, while the group with the worst score is the artificial UNACC aggregation. This is repeated for all the variables here, except for the variable of image and prestige, where Rabobank has the best score.

In fact, the management models in these countries are very similar, except in the case of the UNACC aggregation, where there is no overall management model, as UNACC is only a representative body for the co-operative institutions (Palomo, 2008), although some differences are worth noting:

- Only in the Netherlands is there a long tradition of consolidating the balance sheets and of functioning as a group.
- In France and Germany, they are more like *de facto* groupings, although they have a long tradition of collaboration. The affiliated co-operative institutions have enjoyed greater autonomy, although this is being reduced gradually.

Nevertheless, as stated in the Introduction, the concept of SIP derives from Directive 2006/48/EC, which closely follows the accounting consolidation requirements of these co-operative banking groups, where the possession of equity does not condition this consolidation, but rather the agreed discipline of the group does, under the management and supervision of the figurehead or parent organisation. All of the respondents shared this viewpoint.

Table 8 shows the ranking of the groups in terms of co-operative management, according to the results obtained.

Table 8: Ranking of the groups in terms of the co-operative management variables

Group	Weighting
Crédit Agricole	0.290
Rabobank Nederland	0.246
BVR/DZBank	0.198
Crédit Mutuel	0.142
UNACC aggregation	0.124

Resource: Authors.

By comparing the rankings obtained for economic and financial management and for co-operative management, it can be seen that in the latter case there are greater differences between the groups. The group with the best score is now Crédit Agricole, followed by Rabobank Nederland, some way behind. The UNACC aggregation lags a long way behind the leader.

Stage 4. Calculation of the overall ranking

Finally, the overall ranking was calculated using the information obtained from the previous stages. This ranking enables comparing the groups, taking into account two different aspects of their management: economic and financial management and co-operative management. Given that this comparison was made using quantitative information taken from annual reports and qualitative information obtained from interviews with experts, and through the application of the AHP method, this final comparison (Table 9) can serve as a guide to determining the management model that is of the most interest for the restructuring of the Spanish co-operative banking sector.

Table 9: Overall ranking

Group	Weighting
Rabobank Nederland	0.244
Crédit Agricole	0.213
BVR/DZBank	0.206
Crédit Mutuel	0.191
UNACC aggregation	0.152

Resource: Authors.

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Table 9 shows that Rabobank Nederland is the group with the best overall score. This is due to the fact that it led the economic and financial management ranking by some distance and, according to the experts, it was the ranking that should have greater weight. It was also in the second position for co-operative management.

Crédit Agricole, three points lower in second place is only slightly ahead of BVR/ DZBank, just half a point behind. This position is based on the fact that it topped the ranking for the qualitative variables and the fact that, although the quantitative variables were more favourable for the German group, the differences were small. Crédit Mutuel comes in fourth, a point and a half behind the German group, despite its good quantitative data. Unsurprisingly, UNACC comes in the last place, four points behind the smaller French group. The reasons for this are its smaller size and the fact that it does not exist as a group and this position lays bare the distance between the Spanish co-operative banking sector and the main European co-operative banking groups.

Conclusion

The current international financial crisis has had a great impact on the Spanish financial institutions, including co-operative banks. Faced with this situation, the Banco de España has produced the model of the Institutional Protection System (SIP) in order to implement this in the co-operative banking sector. This model draws on the experience of the protection and shared guarantee systems which have been long used in various European countries, although it is also true that there are different options across Europe for the maintenance of independence of the affiliated institutions and the manner of co-operation. Given this background, the aim of this study was to shed some light on the issue of the European model that was the most appropriate for implementation in Spain. In order to do so, it was decided that the models should be analysed and compared from two perspectives. The first of them was the economic and financial perspective, providing an accurate picture of the economic structure, solvency and domestic market reach of the group. The second perspective concerned purely co-operative management, loyalty to co-operative principles, and the way in which the co-operative group was structured.

Given the nature of the information, with quantitative and qualitative variables, and the small number of co-operative banking groups included in the analysis, the AHP method was employed in this study. This approach uses the opinions of experts and their pairwise comparisons to calculate the weighting to be awarded to each criterion or variable, after verifying the consistency of the answers provided by the experts and aggregating them into a single value. It is plainly crucial to collate opinions from those who are truly expert in the subject matter and for the purposes of this study the opinions of five prestigious experts from different backgrounds were recorded. After the comparisons were carried out, a ranking was made in terms of the score obtained by each of the co-operative banking groups in question.

With regard to the weighting of the variables and the criteria employed, those related to economic and financial management were more important, with a weighting of around 80% in contrast with the 20% assigned to the variables representing co-operative

management. This demonstrates that the experts consulted placed high importance on economic and financial management, probably due to the difficult situation which many organisations in the sector are currently facing. Indeed, the variable with the greatest weighting, by some distance, is TIER 1, which measures the solvency of co-operative banking groups. Therefore, in order to assess the overall management of these groups at current time, verifying that they have been prudently managed in terms of the use of core capital is of fundamental importance. This is an interesting point, as during economic boom periods, few studies focused on this variable, perhaps because the solvency of financial institutions is taken for granted – something which has proven to be unwise.

By comparing the four European co-operative banking groups and an artificial UNACC aggregation, some interesting results have been achieved, with the fact of how underdeveloped the Spanish sector is being particularly revealing. This is obvious from the total assets, the size of the network and market share recorded here. In terms of economic and financial management, the UNACC aggregation achieved the worst score and was some way behind the others, with Rabobank Nederland achieving the best score and being little difference between the other three groups. With regard to co-operative management, the UNACC aggregation was also in the last position, although it achieved the highest score for the criterion of "autonomy of the affiliated institutions", which was due to the fact that this was an artificial aggregation, rather than a real group. However, it was a long way behind the other European groups with regard to the other criteria. There was, however, greater separation between the European groups for this perspective than for economic and financial management, with Crédit Agricole topping the ranking in this case, followed by Rabobank Nederland.

The definitive ranking, taking all the variables of economic and financial management and of co-operative management, saw Rabobank come on top. However, it is worth noting that the difference between this group and the other groups was not very large, except in the case of the UNACC aggregation, which lagged some way behind.

Therefore, with regard to the objective of this study, it can be said that the Dutch model offers the best overall results, based on its robust solvency and profitability, along with its stronger tradition of mutualisation and discipline amongst its affiliated institutions. In the second place, Crédit Agricole stands out due to its great size and the image and prestige of its co-operative management projects. The German group, BVR/DZBank, comes in a close third, displaying balanced results across the board, for financial and co-operative management.

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PASIRINKTINIAI MODELIAI STIPRINANT ISPANIJOS KOOPERATINĖS BANKININKYSTĖS SEKTORIŲ

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Santrauka. Finansinė krizė, prasidėjusi 2008 metais, turėjo didelę įtaką Ispanijos finansų sistemai, įskaitant ir kooperatinės bankininkystės sektorių. Kol svarstomos pramonės restruktūrizavimo priemonės, vienas iš variantų yra sukurti didesnes kooperatinių bankų grupes, taikant įvairias formules. Atsižvelgiant į šias aplinkybes, įdomu palyginti pasiektus pagrindinių Europos kooperatinių bankų grupių rezultatus, kurie tikrai galėtų būti pavyzdiniai modeliai Ispanijos proceso metu. Šiame straipsnyje palyginimas atliekamas iš įprastinės ekonomikos ir finansų perspektyvos bei atsižvelgia į tradicinį kooperatinį valdymo stilių. Taikoma analitinio hierarchijos proceso (AHP) metodologija, leidžianti naudoti tiek kiekybinę, tiek ir kokybinę informaciją, taip pat remtis ekspertų nuomonėmis.

Reikšminiai žodžiai: kooperatinė bankininkystė, finansinė krizė, finansinis restruktūrizavimas, analitinis hierarchijos procesas (AHP).