The French Co-operative Banking Group Model: Too Good to be True?

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Summary

This paper analyzes how French cooperative banking groups adapted their organization, status and business model to develop and grow, up to the current financial crisis. It explores how they benefitted from evolutions in cooperative law that lowered financing constraints and increased the scope of their activities, thus becoming large banking groups, and identifies how these groups tried to develop a model of governance, characterized by internal control, which was partly dedicated to the members, but biased more and more towards the top of the organizational pyramid and to stockholders (the new stakeholders coming from the existence of listed vehicles). We also highlight how cooperative banks resisted potential threats in proposed new international regulatory and accounting rules, often through a lobbying network. While the developing business model for cooperative banks appeared to confer a comparative advantage and was synonymous with efficiency before the financial crisis, it seems now that the hybridization of the cooperative model has been a source of conflicts of interest, of a weakness in strategy and an incentive to increase risk. This paper aims to examine how and why these comparative advantages have become a burden, and whether all French cooperative banking groups have suffered from the crisis in a similar way, or whether different organizational and strategic features or choices may explain different levels of resilience to financial turmoil.

Key words:

financial crisis, cooperative banks, governance, strategic choices, efficiency

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Résumé

Ce papier analyse la manière dont les banques coopératives françaises ont modifié leur statut, leur structure organisationnelle et leur modèle, pour se developer, jusqu'à la crise financière récente. Il relate notamment comment elles ont tire partie des evolutions en droit cooperative pour diminuer leur contrainte de financement, et étendre et diversifier leur champ d'activité, devenant ainsi de de grands groupes bancaires à part entière. Il explique également comment ces groupes ont mis en place un mode de gouvernance spécifique, caractérisé par un contrôle interne théoriquement dévolu aux sociétaires, mais de plus en plus dépendant du sommet de la pyramide organisationnelle et des actionnaires, désormais présents au sein de ces groupes. Nous mettons également en évidence que les banques coopératives ont jusqu'alors su résister à des menaces potentielles provenant des nouvelles règles comptables et prudentielles internationals. Alors que ces évolutions et choix semblaient leur conférer un avantage comparatif et être synonyme d'efficacité et de performance, il semble aujourd'hui que l'hybridation du modèle coopératif est également à l'origine de conflits d'intérêt, de choix stratégiques discutables et d'incitation à la prise de risque. L'article tente donc également de montrer dans quelle mesure les groupes bancaires coopératifs ont été affectés par la crise financière, et si à des schémas organisationnels et des choix stratégiques différents répondent un degré de résistance différent.

Mots-clés :
Crise financière, banques coopératives, gouvernance, stratégie, performance

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INTRODUCTION

Can cooperative societies compete efficiently with public limited companies (plc) in the banking industry, and are they able to survive and to grow? These questions have been widely discussed, particularly in the American and English literature of the late 1990s. Most studies rely on the Agency Theory approach (JENSEN & MECKLING, 1976), and answer in the negative, based on two main arguments: inappropriate status, and lack of governance. According to them, cooperative banks are therefore doomed to disappear or to stagnate. In Europe, and particularly in France, the situation seems to be quite different: cooperative networks and groups have evolved differently and play an important role in the banking industry.

After a brief description of the mainstream arguments against the efficiency of cooperative banks, the second part of this paper aims to analyze how French cooperative groups have adapted their organization, status and business model in order to survive in a competitive environment. More precisely, how they've been able to benefit from changes in cooperative law, lowering their financing constraints and increasing the scope of their activity, thus becoming large banking groups. Simultaneously, these groups have tried to develop a model of governance typically characterized by internal control that is partly assigned to the members (but increasingly transferred to the top of the organizational pyramid), and partly assigned to the stockholders (the new stakeholders resulting from the creation of listed vehicles). They've also been able to adapt, and have resisted the threat of some proposed changes in international regulatory and accounting rules, often through a lobbying network.

Whereas this developing business model appeared to represent a comparative advantage before the financial crisis and was synonymous with efficiency, it seems now that the hybridization of the cooperative model has been a source of conflicts of interest, a weakness in strategy and an incentive to increase risk. Therefore, the third part of this paper aims to examine how and why these comparative advantages have become a burden, and whether all French cooperative banking groups have suffered in a similar way during the crisis, or whether different organizational and strategic features or choices may explain different levels of resilience to the financial turmoil.

1. THE THEORETICAL WEAKNESS OF THE COOPERATIVE MODEL IN THE BANKING INDUSTRY

Several studies have shown that organizations can be characterized by different ownership and control structures, and therefore by different governance mechanisms, which have an impact on their efficiency. According to Agency Theory and Neo-Institutional Theory, the efficiency of an organization depends on its ability to reduce transaction and agency costs (JENSEN & MECKLING, 1976; WILLIAMSON, 1983). Only the most efficient organizations are expected to survive in a competitive environment. In line with FAMA & JENSEN (1983), the classical, traditional Anglo-American model of governance relies on shareholder value, and considers that the most efficient organization is the one that grants control to the "residual claimant", that is to say, the shareholder. In such a firm, the shareholder has a direct interest in maximising the global value created by the firm, because it is the best way to maximise his or her own profit, *i.e,* the residual value of the firm, on which they have a property right. The shareholder's status of "owner" legitimates his or her control over the manager, and therefore the requirement to check that decisions taken by the latter are the best choices for the firm and for the shareholder. Consequently, the ability of corporate governance to solve the classic agency conflicts (managers/shareholders, shareholders/creditors…) depends on the existence of appropriate control mechanisms. For this type of efficient governance, internal mechanisms are helpful (reporting, board of directors with independent board members…), but external mechanisms are considered essential (CHARREAUX, 1997a and 1997b): the disciplinary role assigned to the financial market is particularly important, because it allows mechanisms of rewards and sanctions, and signals the efficiency or otherwise of the firm, as long as the financial markets are sufficiently deregulated.

This simplified version of the theoretical framework, although modified more recently (JENSEN 2001), has been the foundation for the work of several theoreticians. Several years ago, before the financial crisis, some of them even argued that this model of governance, thanks to its efficiency, would spread all over the world (HANSMMAN & KRAAKMAN, 2001), and would replace alternative models existing in Japan and particularly in Europe (O' SULLIVAN, 2002), where cooperative firms coexisted with joint stock companies. Most of these theoreticians thought that cooperative banks suffered from a lack of efficiency, and this explained their weak performance. Indeed, a commercial bank and a cooperative bank don't deliver the same property rights to their owners. In contrast to a shareholder in a plc, a

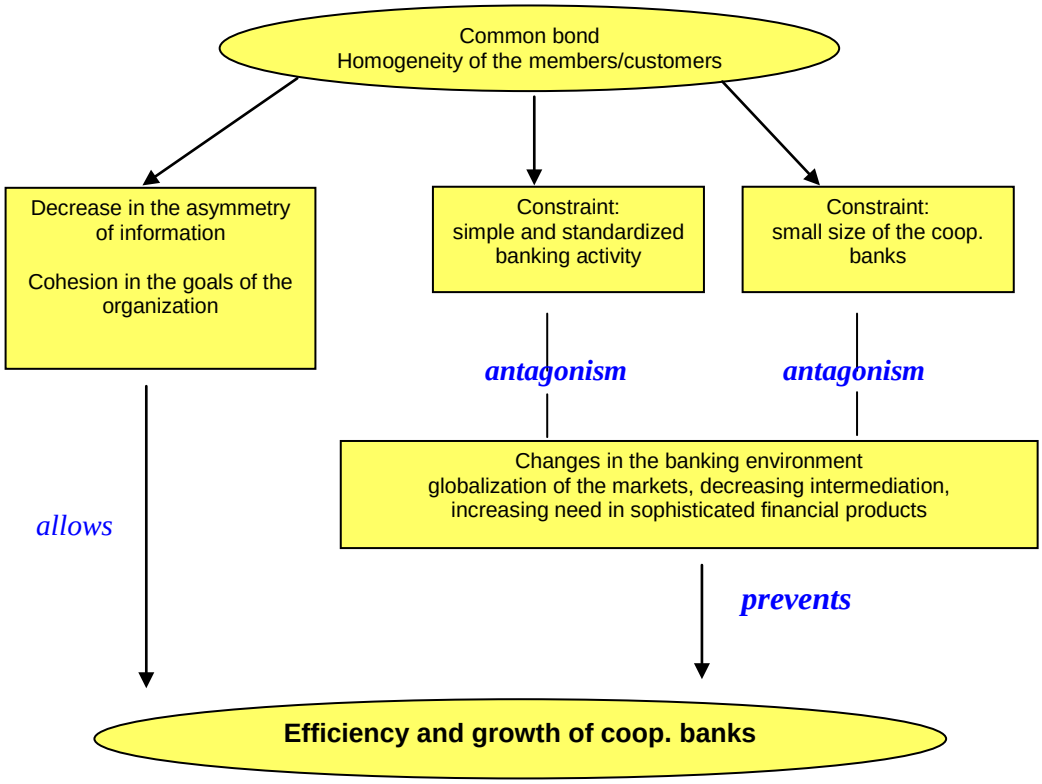
member of a traditional cooperative owns a share that is not listed, whose value is not related to the residual value of the firm, whose return is limited[5], and which is not easily traded. In many countries, and particularly in France, cooperative members have no individual rightful claim on the reserves, which belong to the cooperative itself. Generally, the rule "one person, one vote" prevails, instead of "one share, one vote"[6]. Moreover, a member of a cooperative has a twin identity, being simultaneously an owner of the cooperative and a consumer (thus, as a customer of the bank, the member is also a creditor). Therefore, motivation for members is not only maximisation of individual wealth as an owner of the capital, but also possibly to have a "return" as a consumer of the financial products and services[7]. The common bond shared with the other members is also assumed to be an incentive.

According to Agency Theory, the common bond associated with the twin identity of the member should allow cooperative banks to benefit from a comparative advantage in reducing information asymmetry (Figure 1). Thanks to the homogeneity of the customers and the existence of a strong loan relationship, the individual credit risk in the creditor-debtor relationship can be reduced in comparison with plc banks (HANSMANN 1985; HART & MOORE, 1990; BERGER & MESTER, 1997). Nevertheless, it is impossible for a cooperative bank to diversify the entire credit risk because of its small size, and its inability to benefit from economies of scale or scope and the difficulty of raising capital would explain the problems involved in surviving in a changing environment (AKELLA & GREENBAUM, 1988; MESTER, 1993). Moreover, these comparative advantages are expected to disappear as a cooperative bank grows.

[5] The dividend of the share is quite similar to an interest rate, with a statutory or legal cap.
[6] This rule prevails at least at the local level of the cooperative bank, although sometimes partly modified at the regional or national level.
[7] If we consider the emergence of the cooperatives in Europe, especially in banking, one of the explanations has to be found in the need for some social groups or individuals to accede to financing. One of the original principles in such organizations for the member was to benefit from refunds, rebates, whose importance were linked to his use of the services offered by the cooperative.

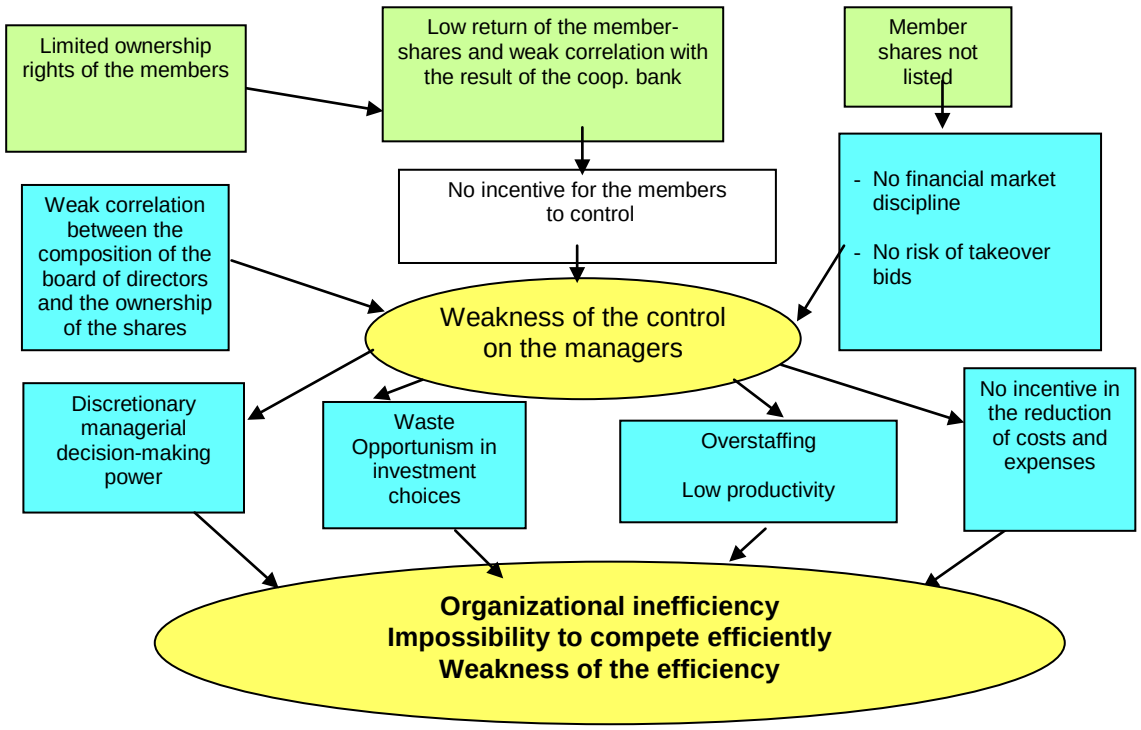
Figure 1

The common bond of the customers: advantages and constraints



The same American authors also argue that the internal and external mechanisms of governance are actually inefficient (Figure 2): members are not encouraged to control the managers because of diffuse ownership rights, and because of a weak correlation between the net profit of the cooperative and the return on member shares. These features could increase the managers' discretionary powers and the firm's inefficiency (MAYERS & SMITH, 1994). The twin identity also creates a confused situation, particularly in defining the goals of the firm. Financial market discipline is unlikely to play a role because the cooperative bank is not listed, hence no reward/sanction due to changes in share price, and no threat of takeover bids. Consequently, personnel costs are likely to stand at a high level and productivity is expected to be lower than in conventional plc banks (AKELLA & GREENBAUM, 1988); more generally, cost-cutting incentives and financial efficiency (return on equity) could be insufficient.

Figure 2: The inefficiency of governance mechanisms in cooperative banks (Agency Theory approach)



The situation of cooperatives in the banking industry in Europe, and particularly in France, goes against the arguments mentioned above. First, if we consider the size of the cooperative networks, we can see that these banks own important market shares in deposits and credit financing (FONTEYNE, 2007). Secondly, unlike credit unions in the USA, many of the European cooperative banks are structured in networks with different levels (local/national; local/regional/national), as is the situation in France. This structure enables these cooperative networks to combine the advantages of small banks with those of large networks.

2. THE HYBRIDIZATION OF THE COOPERATIVE MODEL AND THE EFFICIENCY OF FRENCH COOPERATIVE BANKING GROUPS

In this section, we try to explain how French cooperative banks developed and responded to the assumed constraints listed above. Having grown and evolved into large banking groups, the cooperative model has changed and has become hybrid. We end the section by showing that, before the 2007 crisis, the different French cooperative banking networks and groups had

comparable efficiency to the plc banks, even though there were differences in organizational schemes and levels of hybridization among the different cooperative groups.

2.1. A GROWING RANGE OF FINANCIAL INSTRUMENTS LOWERING DEVELOPMENT CONSTRAINTS

As mentioned, many of the theoretical Anglo-American studies that analysed cooperative status in banking pointed out that difficulties in raising capital limited the possibility of development. However, French cooperative banks have benefitted from changes in cooperative law that have lowered this constraint, without allowing internal and external control to change hands. A law enacted in 1992 allows non-members to own part of a cooperative's capital[8], and even to subscribe to specific shares with higher returns, if these partners relinquish their right to vote. It also gives a cooperative the opportunity to re-evaluate the face value of shares, to issue specific member shares with higher returns, or to distribute bonus shares to members by incorporation of reserves, in order to compensate for the weaker rights of members to the net assets, compared to shareholders in a plc company.

Several other legal changes have also made it possible for cooperative firms to issue hybrid financial instruments, such as participating securities (1983), member cooperative certificates (1992) and investment cooperative certificates (1987). These financial products are characterized by a return that is more correlated with the benefit, via a market value evolving on a secondary market, but do not bring any right to vote[9] to their holders.

In the French banking industry, only a few of the growing range of financial instruments available have been used significantly by cooperative banks. French cooperative banks appear to have been reluctant to expand the issue of specific shares, increasing returns or extending rights of members (HIEZ, 2005), especially on the reserves. Apart from some marginal experiments lead by some of the Banques Populaires, none of the French cooperatives have chosen to re-evaluate the face value of their shares, and where some cooperative networks offer specific shares to their members (Credit Mutuel, Credit Coopératif), these generally do not bring a higher return from incorporating reserves, but are cut off from the right to vote, or coexist with member shares that bring no return at all. Participating securities don't exist, and, except in the case of several regional Caisses de Credit Agricole, member or investment

[8] Normally, this part is caped to 35% of the rights to vote; the limit is possibly increased to 49% when the partners are also cooperative societies.
[9] The whole of these hybrid instruments, added to the specific shares, cannot exceed 50% of the capital of the cooperative.

cooperative certificates are not offered to the members/customers. In fact, it seems that French cooperative banks have been conscious of the strategic importance of reserves to their internal and external growth as firms and for compliance with Basel capital requirements; therefore, any instrument operating a cut-off on the reserves to the benefit of members or other stakeholders has been considered as a potential threat, rather than as a useful tool for development. Alongside this is their desire to maintain internal control of the cooperative firm, and avoid a spread of rights among members or other stakeholders.

The possibility for non-members to own part of the capital has been more widely used by French cooperative banks because it allows the capital funding constraint to be lightened, without sharing property rights. Furthermore, in line with plc banks, the central bodies of the different French cooperative banking networks have also chosen to issue specific subordinated debt instruments, whose characteristics allow them to be considered as regulatory equity capital (tier 2 or 3), without control having to be shared.

Three of the four main French banking cooperative networks[10] have also chosen to issue cooperative investment certificates. However, the logic behind the use of these hybrid instruments is different to what was anticipated by the laws enacted in 1987 and 1992: they have been issued by regional cooperative banks, and have not been subscribed to by the customers, but by the apex (CASA, in the case of Credit Agricole) or by a subsidiary holding (Natixis, in the case of Caisse d'Epargne and Banque Populaire). The objective is thus not to let members/customers participate in the results of the regional banks, but to allow part of the value created by the regional banks to be consolidated by the apex or holding subsidiary at an aggregated level, and to be distributed to other stakeholders (especially stockholders of the cooperative groups). Cooperative investment certificates have thus been used as a development tool embedded in a larger group development strategy.

2.2 THE BUILDING OF LARGE COOPERATIVE BANKING GROUPS

The changes in organisational charts and in strategic and business models are a key feature in explaining the increased efficiency of the French cooperative banks and their growing role in the banking industry. Although some of the characteristics mentioned below can be found in other European countries (OP group in Finland, or Raiffeisen in Austria), France is probably the only country in Europe where all the banking cooperative networks have experienced such

[10] This is the case for Caisse d'Epargne, Banque Populaire, Credit Agricole, but not for Credit Mutuel.

deep changes. These networks have been transformed into large cooperative banking groups[11], and we support the thesis that it is more and more difficult to distinguish the activity of the cooperative banks themselves from that of the group. Unfortunately for some of them, the financial crisis has revealed some possible problems associated with overlapping activities, as we will discuss in Section 3.

The first key feature of the evolution of cooperative banks in France was the change in legal form of the pyramidal cooperative network at the national level. For Credit Agricole, Caisse d'Epargne and Banque Populaire, the central institution (Caisse Nationale or Banque Fédérale) has become a conventional joint stock company, whereas the regional/local banks have kept their cooperative status. Despite an organizational chart for Credit Mutuel that is yet more diffuse, this is also the case for the Banque Fédérative du Credit Mutuel, which is controlled by the main regional cooperative bank of this group.

The joint stock company legal form is more appropriate for restructuring arrangements (such as buying other banks, via takeover bids or share exchanges, and putting these subsidiaries together under centralized control), but the cooperative banks still keep the majority interest in the central body, therefore avoiding the threat of takeover bids themselves. Furthermore, while the existence of a listed vehicle is a common point for all of the French cooperative banking groups, different strategic choices have been made. Whereas the central institution is listed in the case of the Credit Agricole group (CASA), it is the holding subsidiary in the Caisse d'Epargne/Banque Populaire group (Natixis, whose control is equally shared by the central institutions BFPB and CNCE[12]) that is listed, and CIC[13], the only listed vehicle in the Credit Mutuel Group, is held by a subsidiary of a regional bank, and not by the central institution. The choice of public listed vehicle has been another way to lower financing constraints, thanks to the possibility of stock issues; and possibly also thanks to providing better information signals to rating agencies (since a favourable rating can lower the cost of debt).

The large amount of reserves, more easily accumulated thanks to the cooperative legal form and the existence of a "solidarity principle" that enables the head of the group to raise capital through the regional banks if necessary, have facilitated the creation and, mainly, the acquisition of various subsidiaries at a time (in the 1990s) when conventional plc banks were

[11] The « network » refers to the perimeter of activity of the local/regional cooperative bank themselves, whereas the « group » includes the activity of the different subsidiaries whose ownership is directly or indirectly hold by the network.
[12] CNCE: Caisse Nationale des Caisses d'Epargne, central institution of the Caisse d'Epargne Group.
BFPB : Banque Fédérale des Banques Populaires, central institution of the Banque Populaire Group.
[13] CIC: Crédit Industriel et Commercial, a holding bank that owns different regional joint stock banks, and which is owned itself by the Banque Fédérative de Crédit Mutuel, subsidiary of the main Caisse Regionale de Crédit Mutuel.

experiencing financial problems. These subsidiaries can be divided into different sub-groups: those that provide direct technical support to the group (typically IT platforms) and whose objective is an increase in scale economies; “production subsidiaries”, which develop new financial products and manage them for the whole retail banking network; specialized subsidiaries, whose objective is to offer and manage sophisticated products and services (private banking, financial engineering etc); subsidiaries located abroad; and other financial institutions specializing in market finance and investment banking.

The presence of listed vehicles within the groups and the existence of subsidiaries whose objective is to add value have also changed the business model of the cooperative groups. While the local and regional bank administrators and members still defend the cooperative principles and values, the objectives of “return on equity” and “maximisation of financial profitability” have been introduced via a “management by objectives” policy and RAROC (risk adjusted return on capital) methodology. The role of the central institution has increased, and cost-cutting has been encouraged; this evolution also explains the level of efficiency, according to conventional ratios and excluding social economy criteria.

Finally, the co-existence of cooperative banks and conventional plc banks in the economy, of listed vehicles besides member-owned local banks, of retail and small and medium industry (SMI) banking besides international financing and engineering, has led to the development of a hybrid model and a “universal banking” strategy among large cooperative banking groups. This hybridization conferred a comparative advantage prior to the financial crisis, for it simultaneously allowed the cooperatives to benefit from both cooperative and plc bank characteristics, and proved their adaptability in a changing banking environment.

2.3 THE ABILITY TO ADAPT AND TO RESIST POTENTIAL THREATS FROM THE REGULATORY AND ACCOUNTING ENVIRONMENT

Despite hybridization, French cooperative banking groups have been able to resist potential threats and defend their specificity whenever necessary. In the face of a growing trend towards normalization affecting the regulatory and accounting environment in the banking industry, the cooperatives have organized themselves into a lobbying group at the national level, via the Groupement National de la Coopération (GNC), and even at the European level via the European Association of Cooperative Banks (EACB). As a consequence, they have

been able to influence the development of standardized rules and prevent such rules from lowering their competitiveness.

The first example is to be found in the original Basel Committee proposals, from the early 2000s. The new prudential rules, which relied on estimation of credit risk given by rating agencies, were weighted in favour of the "big banks" whose activity was dedicated to large corporate firms. The cooperative banks pushed the Basel Committee to consider an alternative definition of the weighting coefficients used to calculate the minimum regulatory capital requirement. More precisely, this new definition took into account the risk diversification principle within the customer portfolio (characterizing the small but numerous credits of the cooperative banks, whose activity is in retail or SMI banking); consequently, it allowed a lower prudential equity requirement.

The second example concerns the new international accounting rules. In June 2002, the International Accounting Standards Board (IASB)[14] published a new amendment dedicated to financial instruments (IAS 32). According to this amendment, "each financial product that enables the holder to be paid back at his request, has to be considered as a debt instrument" (DETILLEUX & NAETT, 2005). Consequently, the member shares issued by the cooperative banks could have been considered as debt and no longer as equity. Given the importance of the threat, the cooperative banks, relying on EACB lobbying action, pushed the IASB to modify the conditions defining equity capital in banking (DETILLEUX & NAETT, op. cit.; EACB, 2006). This question is still under discussion, since the IASB and the Financing Accounting Standards Board (FASB) wish the American and IFRS accounting rules to converge (EACB, 2007), and also because of a possible change in the Basle Committee definition of the equity-capital.

Thanks to their adaptability and their reactivity, French cooperative banks became able to stand comparison with conventional plc banks, and, before the crisis, were characterized by efficiency and a singular position in Europe.

2.4 THE COMPARATIVE EFFICIENCY OF THE COOPERATIVE NETWORKS AND GROUPS AND THE PLC BANKS

The goal of this section is double: first, to compare the efficiency of the French cooperative networks and groups between themselves and second, to compare them with the efficiency of

[14] Part of the International Standard Accounting Standard Committee, in charge of the definition and appliance of the new international accounting rules, also called IFRS (International Financing Reporting Statement)

plc banks, over the period 1994-2004. We have deliberately taken efficiency indicators into account that are commonly used to assess the performance of conventional banks (Bankscope database), and not social efficiency indicators. The indicators can be ordered into five categories: credit risk ratios, capital equity ratios, commercial performance ratios, operational ratios and financial ratios. The contents of these indicators are detailed in Appendix 2. For each of these ratios, Wilcoxon paired rank tests were conducted on each of the sub-samples under consideration (i.e cooperative networks/groups or plc banking groups). Then, the results were ordered by building a performance score (the larger the score, the greater the performance, as explained in Appendix 3).

2.4.1 The aggregated analysis: French cooperative networks/groups versus plc banks

Two subsamples of cooperative banks were built, the first representing aggregated performance ratios of all the French banking networks, i.e, excluding the activity of the subsidiaries, and the second including the activity of the subsidiaries within the group (investment banking etc). These subsets were compared to two plc bank subsamples: the first made up of French banks, and the second of the 30 most important European banks by total assets (see Appendix 1 and Appendix 4).

A better global efficiency for French cooperative banks than French plc banks…

Over the last decade, the tests lead to the conclusion that the management of credit risk has been at least as efficient in French cooperative banks as it has been in French plc banks, and even better: the ratio *loan loss reserve/impaired loans* is not statistically different between these two kinds of banks, but the *loan loss provision/net interest revenue* ratio is in favour of the cooperatives. This result is confirmed by the fact that the ratio *net interest revenues/average assets* is also significantly larger, which denotes that the cooperatives were able to set credit rates appropriate to an effective credit risk.

In view of the operational efficiency ratios, we can say that, despite a higher *personal expenses/total assets ratio*, which could confirm some of the arguments listed in Section 1, the cooperative banks generated higher *operating incomes* compared with the amount of *assets*. This explains how the *cost to income ratio* is not statistically different between the two categories of banks, thus, the argument of lower operational efficiency for cooperative banks can be refuted.

The equity capital ratios are clearly in favour of the cooperatives: the *equity/total assets* ratio appears statistically higher. It seems that they do not suffer from a lack of capital funds, as mentioned in the American analysis, and that cooperative status, thanks to the high level of reserves and the existence of member shares, has to be seen as a comparative advantage rather than a disadvantage in France.

Lastly, a more surprising conclusion is that, even if the *return on equity* ratio is in favour of the French plc banks (and also much more volatile), the *return on average assets* ratio appears larger for the cooperatives.

…The evolution towards universal cooperative banking groups does not improve efficiency, but still allows some comparative advantages.

In light of the *equity capital* ratios, the consequences of transforming cooperative banks into universal banking groups are clear: the cooperative groups benefit from a higher capital ratio *(equity/total assets)* than plc banks, thanks to the magnitude of this ratio in the cooperative network. However, credit risk management and commercial efficiency ratios are lower, when taking the perimeter activity of the groups into consideration, and can be considered as statistically equal to the French plc bank indicators. Considering operational efficiency, the tests show that *personnel expenses* are relatively lower in the cooperative groups than in the cooperative banks, but are still higher than in French plc banking groups. Nevertheless, the *cost to income* ratio is not significantly different.

If we focus on financial efficiency indicators, we notice that, by the end of the decade 1994-2004, the *return on equity* criterion was still in favour of the French plc banks, whereas the *return on assets* has decreased, comparing to that of the perimeter activity of the cooperative banks. By this stage, the growth strategy of cooperative banks and the move towards huge groups have not brought the same returns to the shareholders of these groups, compared with those of French plc banks. The reasons behind the evolution of cooperative banks towards universal banking groups therefore has to include factors other than financial efficiency alone (economies of scale or scope, position in the competitive environment…, see ORY, JAEGER & GURTNER, 2006b).

Are European plc banks more efficient than French banks?

The European sample of plc banks does not seem to be more efficient than the French cooperative banks if we consider credit risk management ratios: the tests point to equality

in the ratios observed. Commercial performance ratios tend to show that the effective risk is properly hedged by the rates applied to customers, in a better way than in the French plc banks or cooperative groups. Operational efficiency indicators show that pre-tax operating income is larger for the European plc banks than for French plc or cooperative banking groups. Only French cooperative banks equal this ratio. Even so, European plc banks are characterized by a lower *cost to income ratio* than French cooperative networks, groups or plc banks. While the tests show that French cooperative banks hold a comparative advantage in *equity capital ratio*, this is not the case for French plc banks. Finally, a high level of operational, commercial and risk-management efficiency explains the good financial performance of the European bank sample over this period.

2.4.2. Comparing French cooperative networks and groups

Conducting the same Wilcoxon tests on the different French cooperative networks and groups gives us more detailed results. First, we notice that the different French cooperative networks (excluding the activity of subsidiaries) do not exhibit the same characteristics (see Appendix 5). Whereas Caisse d'Epargne is characterized by the best credit risk ratio over the period (mainly explained by retail banking activity), the Banque Populaire and Credit Agricole networks are associated with the best operational, commercial and financial efficiency, and the highest equity capital ratio.

Taking into account the perimeter activities of the group (including subsidiaries) modifies the conclusions. The equity, commercial and operational efficiency ratios of Credit Mutuel improves significantly, although the *return on equity* remains low. Whereas commercial, operational and financial efficiency has substantially deteriorated for Credit Agricole, Caisse d'Epargne is still characterized by a low credit risk and low operational performance. Finally, regarding commercial, operational and financial criteria, Banque Populaire can be still considered as the best performing group, although credit risk management and equity capital ratios have fallen. These characteristics have changed dramatically during the recent financial turmoil.

3. IS THE HYBRIDIZATION OF THE COOPERATIVE MODEL SYNONYMOUS WITH A LOWER RESILIENCE IN FACE OF THE FINANCIAL CRISIS?

The first part of the 1990s was already synonymous with a crisis period, in the French banking industry, and especially for the plc banks. At that time, French cooperative banks were globally characterized by higher equity ratios, and above all, by a better risk-efficiency (Appendix 8). This resilience offered them the opportunity to build some of these plc banks and to include them into a larger perimeter of activity (thus to transform themselves into cooperative groups – ORY, GURTNER & JAEGER, 2006b). This is not the case anymore. Actually, while the French situation can be considered as quite singular in the European banking industry due to the importance of cooperative groups and their successful development model, it has not been immune from the recent financial turmoil. This third section aims to analyze how the crisis has affected the French cooperative groups, comparing them to each other and also to two other French plc groups. We then try to identify the lessons that can be drawn from the crisis regarding the hybridization of French cooperative banking groups.

3.1 THE FACTS: THE FRENCH COOPERATIVE BANKING GROUPS AND THE FINANCIAL CRISIS

Since the current financial turmoil only started in summer 2007, several of the relevant data are not yet available on the Bankscope database. In this case, we have usedthe indicators that published by the groups themselves in their annual reports. Moreover, the cost of risk is still evolving in the banking groups, for it is still difficult for them to assess the cost and the amount of the “toxic assets” : consequently, the reader should know that the confidence level of the data in 2007-08 is not as high as it is before the crisis . The available data include:banking net product (BNP), gross operational result (GOR), net result (NR), operational result (OR), cost of risk (CR), cost to income coefficient (CI), and return on equity (ROE) (see Appendix 7). In addition to these, we have taken into account different ratios in order to make comparison easier (see Appendix 8). We have considered not only the data for each of the banking groups, but also for their different activities, i.e. retail banking on one hand and corporate and investment banking (CIB) on the other. This enables us to check whether all activities have been equally affected by the crisis.

3.1.1 The financial crisis has affected all bank results in terms of value…

The first conclusion we can draw is that the results of all the French banking groups have been affected in value since 2007, whether cooperative or plc. The only one that has been relatively untouched is BNP-Paribas. Among the different activities in these groups, corporate and investment bank activity (CIB) is of course the most affected, even among cooperative groups. Considering CIB activity alone, two groups are characterized by negative results in 2007: one is a plc group, but the other is a cooperative group, being Societe Generale, net result (-2221 millions Euros[15]), and Credit Agricole[16], operational gross result (-756 million Euros), operational result (-1713 million Euros) and net result (-904 million Euros).

In 2008, the situation worsened, as all the French banking groups investigated suffered from negative CIB results, and there were even losses at the group level for some. Indeed, the operational (but not net) result for CIB for BNP-Paribas became negative for the first time (-1215 million Euros). The cooperative groups have not been immune. The gross, operational and net results for Credit Agricole were negative for CIB activity, and so were the same indicators for CIB activity in Credit Mutuel[17]. Due to the huge losses experienced by their common subsidiary Natixis, Caisse d'Epargne and Banque Populaire saw their own operational and net results, as well as their return on equity ratio, becoming negative at the group level, and not just CIB perimeter activity.

There is strong evidence that retail banking activity has contributed to the resilience of the cooperative and plc groups. Moreover, when the data are detailed, it is also obvious that retail banking activity operated by plc banks within a cooperative group (for example LCL in Credit Agricole or the regional banks held by CIC in Credit Mutuel) has provided similar resilience. Expressed in ratios (see below), this lesson is confirmed, but it is noticeable that even retail banking activity has been affected by the crisis.

3.1.2 The incidence of the crisis expressed in efficiency ratios

As we've seen, corporate and investment banking activity is the principle source of the fall in results for cooperative and plc groups. However, when we consider each growth rate indicator separately, and for each activity (whole group, retail and investment bank), all indicate a drop in results. But, expressed in value, these results are difficult to compare, so we have built efficiency ratios to provide more in-depth analysis.

[15] The losses coming from the Jerome Kerviel illegal activity are excluded from this result.
[16] The CIB activity of Credit Agricole group comes mainly from the subsidiary CALYON.
[17] A large part from Credit Mutuel corporate and banking activity comes from its *plc* subsidiary Credit Industriel et Commercial.

The cooperative groups have suffered a lot …

Based on our efficiency ratios, Credit Mutuel exhibited very good results in 2006 and 2007, but not in 2008, whatever ratio is considered. Credit Mutuel's operational gross result/bank net product[18] fell over one year. These bad results are explained by the fact that they take CIB activity into account, which was strongly affected by various factors. First of all, the group holds a commercial bank subsidiary, CIC, which conducts CIB activity under the CM4-CIC name. This subsidiary was affected by the Madoff Ponzi scheme, losing 110 million Euros. Secondly, the majority of the loss, some 500 million Euros, is explained by the Lehmann Brothers bankruptcy, to which the group was highly exposed via CM4-CIC. Lastly, the fall of the Icelandic banks cost the group another 65 million Euros. Operational results/bank net product[19] also suffered in 2008 from losses associated with the rise in the cost of risk to the group, particularly around CIB activity.

Compared with Credit Mutuel, Credit Agricole did relatively well in 2008, despite the losses incurred by its subsidiary Calyon, and especially if we consider the operational gross result and the net result as a percentage of net product. But regarding operational result, which has fallen due to the cost of risk, this is no longer the case, meaning that the cost of risk was high, as confirmed in Appendix 8. The cost of risk for Credit Agricole grew dramatically mainly because of the losses it suffered through one of its Greek subsidiaries, Emporiki. It was also hurt directly by the subprime crisis via its CIB subsidiary, Calyon, which cost it 6 billion Euros, and losses due to the bankruptcy of Lehman Brothers and Madoff amounted to 200 million Euros.

As mentioned previously, the Banque Populaire and Caisse d'Epargne groups have in common the fact that they are both owners of Natixis, a corporate and investment bank. Banque Populaire and Caisse d'Epargne are not built on the same model, and it is interesting to see whether or not they have suffered in the same way from the crisis. As regards the two first ratios[20], Banque Populaire and Caisse d'Epargne exhibit the worst efficiency ratios, mainly because of the results from Natixis. Indeed, Natixis has clearly been exposed to the subprime crisis, and its monocline firm, CIFG, was also hurt directly. In 2008, its negative contribution to the Caisse d'Epargne result amounted to about 2 billion Euros. It also lost 1.2 billion due to financial portfolio value adjustments. Finally, a 3 billion Euro loss was recorded

[18] This ratio represents the bank net product minus the operational fees related to the bank net product
[19] The operational result is the operational gross result reduced of the cost of risk.
[20] Operational gross result/bank net product and operational result/bank net product.

in 2008 due to investment activity at the regional bank network level. Because of Natixis, Banque Populaire group lost 1.3 billion Euros in 2008.

… whereas the French plc banks have shown a relative better global resilience.

It seems that the plc bank groups, i.e. Societe Generale and BNP, have handled the crisis better. Indeed, in 2008 and using our three ratios, BNP Paribas is the best group, followed by Societe Generale. Despite the losses they recorded, they managed to maintain ratios because they did not have the same bank net product (BNP) as the cooperative groups. As they realized a greater BNP and as their total assets are bigger, even if they recorded a loss of the same amount as their cooperative counterparts, the relative impact would be less important. They also succeeded in improving all their solvency ratios and show the best International Basel 2 ratio (11.1% for BNP and 11.6% for Societe Generale in 2008).

3.2 LESSONS FROM THE CRISIS REGARDING THE HYBRIDIZATION OF THE COOPERATIVE MODEL

Besides the direct effects of the crisis on the results of cooperative groups, several lessons can be drawn regarding the hybridization of the cooperative model in the banking industry.

3.2.1 The cooperative legal form is not sufficient protection against the crisis

The first lesson is that the cooperative legal form is not a sufficient protection against the effects of the financial crisis in itself. It seems more appropriate to say that retail banking activity and traditional corporate financing (via credit) are characterized by a lower risk and a lower volatility compared to investment banking or to activity on the financial markets. Of course, since retail banking and traditional financing to SMI are the heart of the business for local/regional cooperative banks, these can be considered as being a significant stabilizing component in the face of a financial shock, and have clearly contributed to mitigating the consequences of the crisis on the results of cooperative groups. But the same activities have played a similar role within the conventional plc banking groups (BNP and Société Générale), even though the commercial activity of these networks does not rely on cooperative banks. So, the contribution of cooperative banks to improving the resilience of the banking and financial system also depends on their ability to be dominant, not only in the activity of the group to which they belong, but also in the strategic and organizational choices made by the group and in its governance model.

In France, greater resilience to the crisis seems to be found in the Credit Cooperatif group, the smallest (it has been part of the Banque Populaire Group since 2003, but is still distinct in some key features), whose activity is essentially dedicated to SMI and financing social economy partners, with no investment banking business. Next is the Credit Mutuel group, whose results have clearly been affected by the crisis, but mainly not because of direct risk exposure to the sub-primes and structured securitization products, but rather because of an insufficiently diversified exposure to other financial institutions that have collapsed. The choice made by the group of no listed apex and no centralized holding subsidiary has probably played a stabilizing role in this context. The three other groups (Credit Agricole on one hand, and Caisse d'Epargne and Banque Populaire on the other) have some key features in common that speak of a high degree of hybridization. All of them have experienced significant losses in their investment banking subsidiaries. Nevertheless, the more diversified model of Credit Agricole has given this group greater resilience to the crisis than the other two, and helped to compensate for losses at group level.

Above all, the crisis has raised questions about the control of subsidiaries by the cooperative network. Because of the complexity in how the groups are organized, the membership exerts less and less effective control on the strategic choices and on the business model of these subsidiaries, but the crisis has shown that this is likely to play a part in the risky behaviour of managers.

The second lesson that has to be drawn is that being organized as a cooperative group is not synonymous with being protected from sanctions by various external discipline mechanisms, for instance in the case of risk-taking. And these sanctions are likely to have consequences, not only on the listed vehicles of the group, but also on the cooperative bank network itself, as described below.

3.2.2 Financial market discipline[21]

As soon as there is a listed vehicle in the cooperative group, financial market discipline comes into play, being manifested in changes in stock price. The effects of market discipline depend on two variables: the way stockholders estimate the risk level, and the importance and the role ascribed to the listed company.

[21] Most of the information mentioned in this part of the study comes from financial press articles (Les Echos) and from the bank reference documents and annual reports.

As an example, the decrease in stock price of CIC, the listed vehicle of the Credit Mutuel group, was in line with the importance of the risk-taking and the losses. Although the sanction was effective[22], it did not threaten the whole group, because CIC is only a subsidiary of a holding owned by a regional cooperative, Caisse de Crédit Mutuel, and its position in the organizational chart is not as important as it is for Credit Agricole and Caisse d'Epargne/ Banque Populaire.

In contrast, in the case of Credit Agricole the apex itself is listed: CASA. The losses experienced by CALYON, its investment-banking subsidiary, pushed the stock price downwards strongly[23]. Capital requirements under Basel 2 regulations increased because the ratings of counterparties and the structured products and derivatives CALYON was involved in decreased, and the market value of losses had to be re-evaluated due to new accounting standard rules. Consequently, the central institution needed capital, and CASA had to issue new stocks on the financial market. Due to the "solidarity principle" within the group, and because the regional cooperative banks had to maintain a majority interest in CASA capital, they had to subscribe to this new share issue using some of their accumulated reserve.

The best illustration of the consequences of hybridization and the existence of a listed vehicle, however, is to be found in the case of Natixis. As mentioned previously, Natixis is a holding subsidiary owned equally by the central institutions of the Caisse d'Epargne (CNCE) and Banque Populaire (BFBP) groups, and is listed on the French financial market. Natixis, with a large part of its business in investment banking, suffered huge losses, not only because of excessive exposure to derivatives and securitization structured products, but also because it held a majority interest in the monocline CIFG (whose exposure to the sub-prime risk was enormous). In response to the sanctions inflicted on Natixis stocks by the market[24], and in order to avoid the subsidiary's bankruptcy and to protect stockholders' interests, the two central institutions CNCE and BFPB decided to extract CIFG from Natixis, and to recapitalize it directly. Despite this decision, they also had to recapitalize Natixis, and, because of the consolidated data, ultimately absorb the majority of the losses. The consequences for the regional cooperative banks of these two groups have not been neutral: first, they've had to use part of their own reserves to recapitalize CIFG and their central institution, and to preserve the activity of the holding subsidiary, even though the investment banking activity is clearly not of benefit to their own members. Second, they've faced a commercial and reputation risk

[22] The price decreased from 280 EUR in December 2006 to 101 EUR by the end of December 2008.
[23] The price decreased from 35 EUR in December 2006 to 5.9 EUR by the end of December 2008.
[24] The price decreased by 80%, between the day it was introduced at 19.5 EUR (beginning of December 2006) and December 2008.

because, although the majority of the losses were associated with Natixis activities, the commercial brands of Banque Populaire and Caisse d'Epargne have been damaged by their association with this collapse, especially in the case of customers or members who had been invited by the commercial teams within the cooperative network to become Natixis stockholders[25]. Third, the cooperative banks have had to accept the consequences of a lower credit rating, and restructurings in the two groups (see below).

3.2.3 Other external discipline mechanisms

Besides the market itself, the financial crisis has revealed the existence of other external discipline mechanisms that are likely to penalize cooperative banking groups for excessive risk-taking.

The first is the actions of the rating agencies. A fall in the rating of a cooperative banking group is likely to spread its effect over all components of the group, and especially the cooperative banks themselves, even though they have not been directly involved in any risk-taking activity. As soon as the central body is rated and issues bonds on the market on behalf of the cooperative banks, an increase in its estimated credit risk may have consequences on the rating of the group itself, and therefore, on the cost of financing the cooperative banks. Of course, one could point out that banks around the world have seen their ratings downgraded. Nevertheless, despite the high capital ratio (especially tier 1) of the French cooperative groups, and despite their internal solidarity mechanism, they could not avoid sanctions from the rating agencies (see Appendix 9). Moreover, whereas some plc banks have kept a AA or equivalent rating (*i.e*, BNP-Paribas), and have not been downgraded, Caisse d'Epargne and Banque Populaire Group have been severely sanctioned (from AA to A+) by Standard & Poor's and Fitch, mainly because of their investment banking results and Natixis losses. However, there is no strong evidence for a link between the degree of hybridization of the group and the rating, for Credit Agricole and Credit Mutuel have succeed in keeping a good rating, whereas their structures and organizations are quite different.

The facts also illustrate that, despite the protection conferred by the cooperative legal form, which prevents the apex or holding subsidiary being threatened by a takeover bid or being absorbed by another bank[26], another external discipline mechanism has played an important role, has induced restructurings, and has even driven change in internal governance

[25] A complaint was lodged against the two groups by minority shareholders.
[26] Cf. for example FORTIS, acquired by BNP-PARIBAS.

mechanisms. According to financial press analyses, this has been the case for two of the French cooperative banking groups: Caisse d'Epargne and Banque Populaire. These two groups were weakened by the collapse of Natixis, other internal conflicts and losses on the market[27], and had to ask for public financial support. The French government would almost certainly have placed conditions on any help offered, in order to accelerate significant restructuring in the groups[28], and including a change in direction. The consequences for the organization and for the independence of the cooperative banks within the "new group" are not yet known explicitly, but there is enough evidence to suggest that the importance given to French State interest has increased[29], and that, contrary to standard cooperative rules, the president of the group will not come from a previous circle of cooperative administrators or from the Banque Populaire or Caisse d'Epargne membership.

CONCLUSION

To conclude, let us come back to Agency Theory, the theoretical background used as a reference tool by the mainstream of Anglo-American authors to justify the relatively poor efficiency of cooperative banks. We have shown that, until the crisis, these arguments did not hold in the French context and that the cooperative banks have been able to adapt, to resist a threatening regulatory and accounting environment, and to withstand comparison with plc banks in terms of efficiency. Nevertheless, the recent financial crisis has highlighted the fact that the hybridization of the original cooperative model was not neutral, and the impact of the crisis has spread from investment banking activities and subsidiaries held by the cooperative networks to impact on all the stakeholders within the groups (shareholders, managers, customers and members). Therefore, as mentioned by the Anglo-American authors, the question of control within the group itself, and especially that of managers and leading administrators, has become an important issue. In light of the crisis, it seems one of the most important issues for the future is the control on the subsidiaries of the group, and the possible role of the members in the strategic choices of the group, and not only of the cooperative

[27] The French financial press articles (www.lesechos.fr) state internal debates among the regional banks concerning the burden of Natixis losses and the responsibilities that have to be assumed; they also mention trading loss of 700 millions of EUR, on the equity capital of the CNCE.

[28] The ongoing restructuring process is characterized by a merger of the two central bodies (CNCE and BFBP), has lead to a redefinition and a restriction of the scope of activity of Natixis, and a cut off in employment; the two cooperative networks and commercial brands (Banque Populaire and Caisse d'Epargne) still coexist, but some worries have come out in the regional banks, after a planned redundancy scheme was announced by the CNCE.

[29] At the moment, the French State has taken a 20% interest in the capital of the new body of the group (5 billions of EUR, either as preferred shares, either as super-subordinated debt).

network. Despite the fact that Agency Theory is not relevant in itself to explain the hybridization of the cooperative banks, and that some of the explanations have to be searched in neo-instutitionalism references and analyses (DE SERRES, JAEGER & ORY, 2010). Nevertheless, it allows to point out some of the potential interest conflicts that have to be solved in the future: to what extent is the original cooperative model able to survive in such hybrid groups? Is the stability and resilience to financial shocks that could be expected thanks to the natural activity of the cooperative banks, and by reference to the values affirmed by the ICA[30], threatened by an overexposure to risk and the introduction of the shareholder value logic?

[30] ICA: International Cooperative Alliance; cf. for instance to DRAPERI (2005) for the terms of these principles.

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Appendix 1

List of the French cooperative banking networks or groups:

Banque Populaire
Caisse d'Epargne (since 1999: cooperative status)
Credit Agricole
Credit Cooperatif
Credit Mutuel
Credit Maritime Mutuel

List of the 30 European *plc* banking groups (total of assets criterion):

Intesa Sanpaolo (Italy)
Bayerische Hypo-und Vereinsbank AG (Germany)
SANPAOLO IMI (Italy)
UniCredit Italiano SpA (Italy)
Commerzbank AG (Germany)
Société Générale (France)
BNP Paribas (France)
Banco Bilbao Vizcaya Argentaria SA (Spain)
Dresdner Bank AG (Germany)
Santander Central Hispano Group-Banco Santander Central Hispano (Spain)
KBC Bank NV (Belgium)
Deutsche Bank AG (Germany)
HSBC Bank plc (United Kingdom)
Deutsche Postbank AG (Germany)
ING Bank NV (Netherlands)
Royal Bank of Scotland Plc (The) (United Kingdom)
Barclays Bank Plc (United Kingdom)
Lloyds TSB Bank Plc (United Kingdom)
Dexia Bank-Dexia Bank Belgium (Belgium)
Danske Bank A/S (Denmark)
ABN Amro Holding NV (Netherlands)
Bank of Scotland (United Kingdom)
Skandinaviska Enskilda Banken AB (Slovenia)
Svenska Handelsbanken (Slovenia)
Dexia Crédit Local SA (France/Belgium)
Goldman Sachs International (United Kingdom)
UBS Limited (United Kingdom)
Fortis (Belgium)
HBOS Treasury Services Plc (United Kingdom)
Depfa Bank Plc (Ireland)

Appendix 2:
List of the efficiency ratios used in the Wilcoxon tests

↓*denotes the fact that a good performance is a low ratio*
↑*denotes the fact that a good performance is a high ratio*

Credit risk ratios:
- Loan loss provisions / net interest revenues: ↓
- Loan loss reserves / impaired loans: ↑

Commercial ratios:
- Net interest margin ↑
- Net interest revenues / average assets: ↑

Operational efficiency ratios :
- Personal expenses / average assets[31]: ↓
- Cost to income ratio: ↓
- Pre-tax operating income/average assets: ↑

Equity capital ratios:
- Equity / total assets : ↑

Financial efficiency ratios:
- Return on average equity (ROE) :↑
- Return on average assets (ROA) ↑

[31] Average between the assets at the end and at the beginning of the year.

Appendix 3: Methodology of the Wilcoxon test

Example of a Wilcoxon test performed on the ratio : Net interest margin/ average assets (NIM)

année	NIM FcopB %	NIM FplcBG %	$\Delta = NIM_{FcopB} - NIM_{FplcBG}$	Δ sign	Rank of $\lvert\Delta\rvert$
1995	2,08	1,61	0,47	+	4
1996	1,54	1,4	0,14	+	1
1997	1,56	1,34	0,22	+	2
1998	0,98	1,24	-0,26	-	3
1999	1,9	0,79	1,11	+	10
2000	1,75	0,82	0,93	+	7
2001	1,78	0,78	1	+	8
2002	1,75	0,96	0,79	+	5
2003	1,83	0,97	0,86	+	6
2004	1,87	0,85	1,02	+	9

$W^+ = 52$

The method is the following: Every year the difference (**Δ)** of the observed ratio for French Coop. Banks (FcopB) and French plc banking groups (FplcBG) is calculated. Thus, a sample of differences, positive or negative, is available.
A rank is associated too each difference (from 1 to 10, considering the period), and is ordered according to an increasing absolute value criterion. Under the null hypothesis H(0) of equal efficiency between FcopB and FplcBG, the sum of the positive ranks W^+ should approximately be the same as the sum of the negative ranks. By contrast, under the H(1) hypothesis of higher efficiency for the FcopB, W^+ is expected to be larger than W^- .
The test criterion is the sum of the positive ranked differences, W^+ , whose distribution is written in the Wilcoxon statistical table, under H(0). Thus, for ten elements (years), the H(0) hypothesis of equal efficiency can be rejected as soon as W^+ exceeds 45 (5% risk level). The critical p-value attached to this number (45) can be read in the Wilcoxon table: 4,2%.

The result of the test, in this example is : ΣW^+ (Bco) = 54 ; 52 > 45 (critical value)

→ H(0) is rejected

conclusion : higher efficiency for the FcopB than the (FcopB > FplcBG)

Appendix 3

Score methodology applied to the cooperative networks (and groups):

Once the Wilcoxon test enables to know which cooperative network/group exhibits a better result than another one, a global classifying by indicator is operated, and a score is given to each of the networks/groups, as explained below:
if a network/group is performing better than all the three others on an indicator he gets a score equal to 4 (as they are four considered networks); the network that is performing better than two others gets the second place in the classifying with a score equal to 3…etc…

Example of Wilcoxon test applied to the four cooperative networks, according to the Net Interest Margin criterion:

	Available period	Wilcoxon Test Criterion : W+	Critical value (5%risk level)	Rejection of the H(0) equality efficiency	Résults
Net Interest Margin	1995-2004	55	45	Yes	CE<CA
	1995-2004	55	45	Yes	CE>CM
	1995-2004	55	45	Yes	CE<BP
	1995-2004	55	45	Yes	CM<CA
	1995-2004	55	45	Yes	CA<BP
	1995-2004	55	45	Yes	CM<BP

The sign < denotes the fact that for the considered indicator, the first network exhibits a statistically lower performance than the second one (and conversely for the > sign)

We can notice that the network that performs better than all the others is Banque Populaire (BP); it is followed by Credit Agricole (CA), then Caisse d'Epargne (CE) and at last Credit Mutuel (CM). According to this score methodology, Banque Populaire gets 4, Credit Agricole gets 3, Caisse d'Epargne gets 2 and Credit Mutuel gets 1.

Then, the same methodology is replicated for each of the indicators. As we have classified the indicators into five different categories (credit risk, commercial efficiency, financial efficiency, equity capital, operational efficiency), a simple score-mean is calculated for eachof these categories.
Finally, a global simple mean based upon all the different categories is calculated. This last one can be seen as a global efficiency score of a cooperative network/group, all of the efficiency categories taken into account with the same weight coefficient.

Appendix 4: Wilcoxon tests results and efficiency scores of the French cooperative networks and groups versus French and European *plc* groups (1995-2004)

FRENCH COOP. GROUPS AND NETWORKS
versus PLC BANKS

	FCOPB	EPLC	FPLC	FCOPBG
Credit risk ratio				
LLR/IL	3	3	3	1
Mean	3	3	3	1
Capital equity ratio				
EQ/TA	4	2,5	1	2,5
Mean	4	2,5	1	2,5
Commercial performance				
NIR/AA	3,5	3,5	1,5	1,5
NIM				
Mean	3,5	3,5	1,5	1,5
Operational performance				
COST/INC	2	4	2	2
PTOI/AA	3,5	3,5	1,5	1,5
PERS EXP/TA	1	2	4	3
Mean	2,17	3,17	2,50	2,17
Financial performance				
ROA	3,5	3,5	2	1
ROE	1,5	3,5	3,5	1,5
Mean	2,5	3,5	2,75	1,25
Total Mean	**3,03**	**3,13**	**2,15**	**1,68**

LEGEND :
FCOPB: French Cooperative Banks (network only, excluding subsidiaries)
FCOPBG: French Cooperative Banking Groups (including subsidiaries' activity)
FPLC: French plc banks
EPLC: European plc banks

Efficiency indicators :
LLR/IL: Loan Loss Reserve/ Impaired Loans
EQ/TA: Equity/Total Assets
NIR/ AA: Net Interest Revenues/ Average Assets
NIM: Net interest Margin
COST/INC: Cost to Income
PTOI/ Average Assets: Pre Tax Operating Income/ Average Assets
PERS EXP/TA: Personnel Expenses/ Total Assets

Appendix 5: Wilcoxon test results and efficiency scores of the French cooperative networks (1995-2004)

FRENCH COOPERATIVE BANKING NETWORKS

	CE	BP	CA	CM
Credit risk ratio				
LLR/GL	4	1.5	1.5	3
LLP/NIR	4	1.5	1.5	3
Mean	4	1.5	1.5	3
Capital equity ratio				
EQ/TA	1.5	3	4	1.5
Mean	1.5	3	4	1.5
Commercial performance				
NIR/AA	2	4	3	1
NIM	2	4	3	1
OOI/AA	2	3.5	3.5	1
Mean	2	3.8	3.2	1
Operational efficiency				
COST/INC	2	3	4	1
PTOI/AA	2	3,5	3,5	1
PERS EXP/TA	3	1	2	4
Mean	2,3	2,5	3,2	2,0
Financial performance				
ROAA	2	3,5	3,5	1
ROE	2	4	3	1
Mean	2	3,75	3,25	1
Total mean	**2,4**	**2.9**	**2,8**	**1,7**

LEGEND:
CE: Caisse d'Epargne
BP: Banque Populaire
CA: Credit Agricole
CM: Credit Mutuel

Efficiency indicators:
LLR/GL: Loan Loss Reserve/ Gross Loans
EQ/TA: Equity/Total Assets
NIR/ AA: Net Interest Revenues/ Average Assets
NIM: Net interest Margin
OOI/AA : Other Operating Income/ Average Assets
COST/INC: Cost to Income
PTOI/AA: Pre Tax Operating Income/ Average Assets
PERS EXP/TA: Personnel Expenses/ Total Assets

Appendix 6: Wilcoxon test results and efficiency scores of the French cooperative groups (1995-2004)

FRENCH COOPERATIVE BANKING GROUPS

	CE	BP	CA	CM
Credit risk ratio				
LLR/GL	4	2	2	2
Mean	4	2	2	2
Capital equity ratio				
EQ/TA	1,5	1,5	3	4
Mean	1,5	1,5	3	4
commercial performance				
NIR/AA	1,5	3,5	1,5	3,5
NIM	1,5	3,5	1,5	3,5
Mean	1,5	3,5	1,5	3,5
Operational performance				
COST/INC	1	3	3	3
PTOI/AA	2	4	2	1
PERS EXP/TA	3,5	1,5	1,5	3,5
Mean	2,17	2,83	2,17	2,50
Financial performance				
ROAA	1,5	3,5	1,5	3,5
ROE	3	4	2	1
Mean	2,25	3,75	1,75	2,25
Total mean	2,28	2,72	2,08	2,85

LEGEND :
CE: Caisse d'Epargne
BP: Banque Populaire
CA: Credit Agricole
CM: Credit Mutuel

Efficiency indicators:
LLR/GL: Loan Loss Reserve/ Gross Loans
EQ/TA: Equity/Total Assets
NIR/ AA: Net Interest Revenues/ Average Assets
NIM: Net interest Margin
OOI/AA: Other Operating Income/Average Assets
COST/INC: Cost to Income
PTOI/ Average Assets: Pre Tax Operating Income/ Average Assets
PERS EXP/TA: Personnel Expenses/ Total Assets

Appendix 7: efficiency indicators, and growth rates from 2006 to 2008

(source: annual reports – Millions EUR when not precised)

BNP-Paribas				**Societe Generale**				**Caisse Epargne**				**Banque Populaire**			
	2008	2007	2006		2008	2007	2006		2008	2007	2006		2008	2007	2006
BNP[32] group (M€)	27376	31037	27943	BNP group (M€)	21866	21923	22417	BNP group (M€)	8400	9800	11000	BNP group (M€)	7253	7445	8083
BNP Retail bank	5943	6000	5850	BNP Retail bank	7191	7058	6883	BNP Retail bank	5234	5563	5815	BNP Retail bank	5698	5839	5578
BNP CIB[33]	4973	8293	7859	BNP CIB	4017	4522	6998	BNP CIB	-213	635	1211	BNP CIB	1027	1923	2516
OGR[34] group	8976	12273	10878	OGR GROUP	6338	7618	8714	OGR GROUP	-200	1500	2400	OGR GROUP	968	1537	2750
OGR Retail bank	1960	2050	2039	OGR Retail bank	2513	2492	2383	OGR Retail bank	1137	1550	1776	OGR Retail bank	1895	2181	2047
OGR CIB	1262	3508	3462	OGR CIB	539	1097	3108	OGR CIB	-868	-56	481	OGR CIB	-764	92	799
COI[35] GROUP	67,20	60,50	61,10	COI GROUP	71	65	61,10	COI GROUP	102,38	84,00	74,9	COI GROUP	86,70	79,36	65,98
COI Retail bank	67,02	65,83	65,15	COI Retail bank	65	65	65	COI Retail bank	78,00	72,00	69,46	COI Retail bank	66,3	62,7	63,3
COI CIB	74,62	57,70	55,95	COI CIB	87	76	55,60	COI CIB	307,51	108,82	66,9	COI CIB	174,39	95,22	68,24

[32] BNP: Banking Net Product
[33] CIB: Corporate and Investment Bank
[34] OGR: Operational gross Result
[35] COI: Cost to Income ratio (%)

BNP-Paribas				**Societe Generale**				**Caisse Epargne**				**Banque Populaire**			
OR[36] GROUP	3224	10548	10095	OR[37]	3683	6713	8035	OR GROUP	-1641	1262	2819	OR GROUP	-236	1052	2442
OR Retail bank	1757	1892	1886	OR Retail bank	2033	2163	2108	OR Retail bank	964	1432	1682	OR Retail bank	1366	1793	1767
OR CIB	-1215	3480	3715	OR CIB	485	1153	3201	OR CIB	-1405	-133	322	OR CIB	-1414	8	782
RC[38] GROUP	-5752	-1725	-783	RC GROUP	-2655	-905	-679	RC GROUP	-1441	-259	-23	RC GROUP	-1204	-485	-308
RC Retail bank	-203	-158	-153	RC Retail bank	-480	-329	-274	RC Retail bank	-173	-118	-94	RC Retail bank	-529	-388	-335
RC CIB	-2477	-28	-253	RC CIB	-1024	-56	-93	RC CIB	-537	-77	-4	RC CIB	-650	-85	-17
Net Result Group	3021	7822	7308	Net Result Group	2010	947	5221	Net Result Group	-2000	1400	3832	Net Result Group	-468	1055	1700
				Net Result Retail Bank	1296	1375	1344	Net Result Retail Bank	632	923	1136	Net Result Retail Bank	1026	1340	1199
				Net Result CIB	-235	-2221	2340	Net Result CIB	-1159	-61	326	Net Result CIB	-1375	316	635
GROUP Equity	47511	41686	38555	GROUP Equity	36100	27200	29100	GROUP Equity	16600	20600	20000	GROUP Equity	17700	20200	20400
ROE[39] GROUP (%)	6,36	18,76	18,95	ROE GROUP	7,39	3,25		ROE GROUP	-12,05	6,80	19,16	ROE GROUP	-2,64	5,22	8,33

[36] OR: Operational result
[37] Excluded the consequences of Jerome Kerviel illegal activity ; idem fot Net result CIB.
[38] RC:Cost of Risk
[39] ROE: Return On Equity (%). So as to give the same meaning to this ratio for each individual, it has been calculated this way: (group share net result at the end of the N-year/group share equity at the beginning of the N-year).

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Credit Mutuel				**Credit Agricole**			
	2008	**2007**	**2006**		**2008**	**2007**	**2006**
BNP GROUP (M€)	8424	10568	10838	BNP GROUP (M€)	15956	16768	16187
BNP Global Retail Bank[40]	7485	7561	7504	BNP Retail bank	11262	11960	12093
BNPcoop. Network Retail bank	4619	4664	4695	BNP CIB	1893	2781	5456
BNP of CIC[41]	2866	2897	2809	BNP of CALYON	2153	3359	5862
BNP CIB[42]	-64	1043	1252				
OGR[43] GROUP	1747	4057	4495	OGR GROUP	3321	4050	5832
OGR Global Retail Bank	2081	2293	2418	OGR Retail bank	4347	4955	5171
OGR Network Retail bank	1310	1475	1613	OGR CIB	-1687	-756	2135
OGR of CIC	771	818	805	CALYON	-1738	-470	2288
OGR CIB	-440	622	885,1				
COI[44] GROUP (%)	79,26	61,61	58,53	COI GROUP	79,186513	75,846851	63,9711
COI of Global Retail Bank	72,20	69,67	67,78	COI Retail bank	61,40	58,57	57,24
COI of Coop. Network Retail bank	71,64	68,37	65,64	COI of CIB	189,1	127,2	60,9
COI of CIC	73,10	71,76	71,34	COI of CALYON	79,2	39,4	40,3
COI of CIB	587,50	40,36	29,31				
OR[45] GROUP	342	3871	4256	OR GROUP	156	2153	5220
OR Global Retail Bank	1523	2118	2154,8	OR Retail bank	3010	3971	4330
OR of Coop. Network Retail bank	1050	1405	1455	OR of CIB	-2997	-1713	2145
0R of CIC	473	713	700	OR of CALYON	-3066	-1430	2297
OR of CIB	-1159	615	915,4				
RC[46] GROUP	-1405	-186	-239	RC GROUP	-3165	-1897	-612
RC Global Retail Bank	-558	-175	-263,2	RC Retail bank	-1337	-984	-841
RC of Coop. Network Retail bank	-260,00	-70,00	-158,20	RC of CIB	-1310	-957	-10
RC of *CIC*	-298,00	-105,00	-105	RC of *CALYON*	-1328	-960	9
RC CIB	-719	-7	30,3				
Net Result Group	440	2730	2946	Net Result Group	1024	4044	4860
Net result of Global Retail Bank	1017	1431	1431,3	Net Result RetailBanking	581	778	750
Net result of Coop Network Retail bank	619	857	894,3	Net Result of CIB	-1924	-904	1645
Net result of *CIC*	398	574	537	Net Result of CALYON	-1540	-714	1738
Net Result of CIB	-736	496	726,3				
GROUP Equity	26442	23983	20530	GROUP Equity	40691	34319	30047
ROE GROUP (%)	1,66	11,38	14,35	ROE GROUP	2,52	11,78	16,17

[40] "Global retail Bank" includes not only the results of the cooperative Network Retail Bank but also those of the *plc* banks which belong to the CIC subsidiary
[41] CIC is the main *plc* holding subsidiary of Credit Mutuel
[42] CIB : corporate and investment banking
[43] OGR : Operational Gross Result
44 COI : Cost to Income ratio (%)
[45] OR : Operational Result
[46] RC : Cost of Risk

Appendix 8: Efficiency ratios
(Bankscope data base, French Central Bank, Annual Reports)

	2008 (Group perimeter of activity)						**1992-1996 (Aggregated Data by legal status)**	
	SG	BNP	BP	CA	CE	CM	plc banks	cooperative banks (networks)
Efficiency Ratios								
Return on Equity (%)	7,69	6,83	-2,09	4,19	-9,81	1,7	-2,18	6,24
Return on Average Assets (%)	0,25	0,18	-0,11	0,18	-0,32	0,08	-0,07	0,32
Net Interest Margin (%)	0,83	0,81	1,16	1,28	0,83	0,75	1,61	3,29
Operational Gross Result/Banking Net Product (%)	28,98	32,78	13,34	20,81	-2,45	20.7	22	32
Operational Result/ Banking Net Product (%)	16,84	11,77	-3,25	0,97	-19,56	4,06	-0.2	22.6
Net result/ Banking Net Product (%)	9,19	11,03	-6,45	6,41	-23,96	5.22	-4	9,9
Cost to Income (%)	71,01	67,2	86,7	75,16	102,43	80,52	78,09	69,5
Equity Ratios								
Equity/Total Assets (%)	4,85	3,72	6,78	5,64	4,94	5,77	3,28	5,11
Equity/Debt	3,8	2,42	5,36	4,1	2,98	4,57	ND	ND
Solvency Ratio (Basle 2) (%)	11,2	11,1	9,4	9,9	9,6	9,5	ND	ND
Risk								
Cost of Risk /Banking Net Product (%)	12,14	21,01	20.46	19,84	17,14	16,68	22.2	9.4
Loan Loss Provision / Net Interest Revenues (%)	31,56	26,76	29,89	23,98	30,14	35,39	ND	ND
Impaired Loans/ Gross Loans (%)	3,74	4,49	3,7	2,87	1,65	2,97	ND	ND
General Loan Loss Reserve / Impaired Loans (%)	62,77	62,57	70,04	89,55	72,37	69,14	ND	ND

Appendix 9:

Evolution of the ratings of the French cooperative and *plc* banking groups (2006-2008)

	2006	2007	2008
Caisse Epargne	S&P: AA Fitch: AA Moodys': Aa2	S&P : AA Fitch: AA- Moodys': Aa2	S&P: A+ Fitch: A+ Moodys': Aa3
Banque Populaire	S&P: AA Fitch: AA Moodys': Aa2	S&P : AA- Fitch: n.a Moodys': Aa2	S&P: A+ Fitch: A+ Moodys': Aa3
Credit Agricole (CASA)	S&P: AA Fitch: AA Moodys': Aa2	S&P : AA- Fitch: AA Moodys': Aa1	S&P: AA- Fitch: AA- Moodys': Aa1, negative watch
Crédit Mutuel (BFCM)	S&P: AA Fitch: AA Moodys': Aa3, positive watch	S&P: AA- Fitch: AA- Moodys': Aa3, positive watch	S&P: n.a Fitch: AA- Moodys': Aa3, positive watch
BNP	S&P: AA, Positive watch Fitch: AA Moodys': Aa2	S&P: AA+ Fitch: AA Moodys': Aa2	S&P: AA, Negative watch Fitch: AA, Negative watch Moodys': Aa2, negative watch
Societe Generale	S&P: n.a Fitch: n.a Moodys': n.a	S&P: n.a Fitch: AA Moodys': n.a	S&P: AA, negative watch Fitch: AA- Moody's: n.a