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Hybrid Ownership Structure and Sustainability: A Study of The Norwegian Saving Banks

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Abstract

Until 29 years ago, all Norwegian banks were either commercial or saving banks. Since that time, we have witnessed changes in the institutional context of the banking industry which resulted in the emergence of a new hybrid ownership model – a PCC bank. The consolidation and deregulation of the banking sector in Norway at the beginning of 21st century enabled a new channel of becoming a PCC – through a merger. This paper explores the motivation behind these corporate restructuring decisions and their implications based on the results from a hand-made data sample. We conclude that the size of the bank determines the employed strategy. Larger banks are more oriented towards inorganic growth, i.e. issuing equity or getting involved in a merger activity. Smaller banks, on the other hand, exploit the competitive advantage of their local identity.

1. Introduction and Motivation

Traditionally, the Norwegian banking sector consists of two types of banks: saving and commercial banks. Saving banks are ownerless banks, which means that there are no stakeholders having rights to residual claims. Commercial banks are controlled by stockholders with full cash flow rights. In 1988, following a deregulation of the banking industry, a new ownership form was introduced - the PCC bank, a hybrid between a commercial and a saving bank. The saving banks have been allowed to increase their equity capital through the issue of Primary Capital Certificates (PCCs), known now as equity certificates.¹ A hybrid bank has two layers of capital: an ownerless part and that of the external equity holders. Yet, although equity certificates allow saving banks to be publicly listed, the stakeholders remain in control of the bank through the board.²

As sustainable management of capital becomes the focus of corporate strategies aimed at optimization, we need to make a difference between operating and operating in a sustainable way. Economically sustainable companies guarantee at any time cash flows sufficient to ensure liquidity while producing a persistent return to their shareholders.³ Pure saving banks have no owners and in the case of PCC banks there are only minority shareholders. Therefore, the focus cannot be solely on maximizing shareholders' value. Unlike commercial banks, both other types of banks serve specific functions in the local communities and have multiple objectives.

For the above reason, we define sustainability from stakeholders' perspective as a comprehensive summary measure, in light of three dimensions: profitability, growth and level of riskiness. In the presence of misalignment of stakeholders' interests, the firm's profits might be the priority while long-term growth or/and reasonable level of risk are neglected. This means that firms (and banks) can become unsustainable long before bankruptcy.

¹ In this paper, terms equity certificates and primary capital certificates are used interchangeably.

² Equity certificate confers to its holders, equity from 14% to 97% of the ownership. However, voting rights it can delegate to their holder are not more than 40% (Norwegian savings bank association).

³ Dyllick and Hockerts (2002)

Becoming a PCC bank has been a growing trend along with a more general consolidation in the industry in the 1980s and 1990s as represented by the number of mergers and acquisitions. Thirty-six of the saving banks⁴ have subsequently switched to a PCC status over the years. However, of the roughly 134 saving banks in 2000, there are 104 at the end of 2017 which means that only within this decade and a half we have just as many mergers and acquisitions (M&A).⁵ While scale and efficiency have traditionally been stressed as the leading reasons for switching, we also observe saving banks which become PCC banks upon merging. There might be various determinants dictating these decisions.

This paper investigates the motivation behind some of the most important corporate restructuring decisions for the saving banks in Norway – namely to change their ownership structure or to get involved in a merger or acquisition. We focus on the saving banks because of the importance this type of banks have for the Norwegian economy. They constitute a very large fraction of the banking activity and are key players on both the national and regional level. Saving banks have been the traditional banks in Norway and it was interesting to see how recent developments in the industry have affected this model. In the period 2001 – 2015, we observe 31 mergers, 22 of which are related to the ownership structure change, becoming a PCC bank. While PCC and mergers separately have enjoyed some attention in the research literature, the mixed strategy has not been explored. Additionally, the studies on hybrid ownership have focused exclusively on the effects of issuing equity for the saving banks (ex-post). The determinants of this corporate restructuring decision have not been explored. This leaves room for endogeneity issues related to self-selection bias.

Our research has several important contributions. Firstly, it is an ex-ante focused research that explores the determinants for the change in the ownership structure (PCC) and M&A activities among the saving banks. To our knowledge this is the first study that compares PCC and mergers on the Norwegian market and the factors that affect the decisions to transition to one of these or eventually both. Thus, our paper takes a step further in filling the gap in understanding the dynamics of these

⁴ Table 1 presents the list of all PCC banks in 2016.

⁵ Table 2 shows the mergers and acquisitions among saving banks between 2000 and 2015.

processes. Secondly, our research covers a more recent period compared to other studies. We obtain robust and consistent results on all our samples, which allows us to draw conclusion about the possible determinants. Thirdly, the presented results contribute to solve the possible endogeneity⁶ issue in the corporate governance literature regarding hybrid ownership structure.

The results we obtain are clear evidence that both merging and issuing equity are strategies aiming inorganic growth and the trend is towards size. The saving banks that convert to a hybrid form are not the poor performing banks, doing so to survive. Growth is the main driver both for the saving banks that switch to the PCC form and for the saving banks that decide to acquire another bank while weak banks are more likely to become targets of acquisition. Concerning sustainability in its three dimensions, as defined above, we find that riskiness as a bank characteristic does not affect the likelihood of both issuing equity or getting involved in merging activity.

Mergers and acquisitions are not a small topic to include additionally and there is abundant research on M&As, but we feel that exploring PCCs solely might be one-sided and the discussion might lose its dimension. We employ a probit model on manually built panel data to explore what factors affects the likelihood to merge and to become PCC. We use recent data, based on accounting reports as well as data from various other official sources.

The plan of the paper is as follows: Section Two provides the background information about banking industry in Norway and its specifics; Section Three presents the relevant literature which is divided into three strands: shareholder/stakeholder model as a framework, the theoretical approach of sustainability, review on the existing literature on PCC and review on the M&A literature. This section contains our research questions. Section Four discusses the employed methodology, Section Five – the sample and Section Six - the descriptive statistics. Section Seven analyzes the results, possible implications and draws conclusions.

⁶ Bøhren and Jsefsen (2013) finds that ownerless banks perform as well as PCC banks. Yet, it can be the case that the banks that converted were the weak banks ex-ante.

2. Background Information

In this section, we will provide further information on the banking context in Norway. We will then compare the model of the Norwegian saving banks to the German and expand it to international perspective by looking at other European saving banks. In the end, we look more closely at the features of the equity certificates.

The Norwegian Context and Types of Banks in Norway

The saving banks have traditionally been a business model with high social responsibility and low risk. It is often said that knowing your costumers well reduces the risk of loss. Norway, where most of the loans are financed by the local banks than the bigger market,⁷ is a good example of this. In recent years, a few saving banks were organized as limited companies, where at least 10 percent of the shares are controlled by a saving bank foundation. In this paper, however, we will focus on the pure ownerless banks and the hybrid PCC form.

Historically, the saving banks were the first financial institutions both in Germany and in Norway, remaining the most common bank form in both countries. The main objective of saving banks has been taking deposits and making retail mortgage loans, thereby supporting local communities. While there is in essence no significant difference between Norwegian and German saving banks, both operating as universal banks, what makes the Norwegian saving banks unique, is that they are self-owned entities - they have been organized as ownerless independent foundations.⁸

Unlike German saving banks, Norwegian banks are not legally obliged to pursue social and welfare goals.⁹ They are expected, however, to play a specific public role by supporting the sustainable development of local communities. Another difference from the savings banks in the Federal republic, is that the saving and the

⁷ sparebankforeningen.no

⁸ www.sparebank1.no

⁹ Savings Banks Act

commercial banks in Norway are set on an equal base. The saving banks are not restricted in the activities they can engage in and many banks have set up subsidiaries exercising a variety of bank-related activities. Yet, a merger needs to be approved by the committee of representatives for a new saving bank to be established. There is a specific residence requirement for members of the savings bank's bodies that has to be met.¹⁰ This condition reveals that savings banks are primarily local institutions tightly linked with the district they operate in.

The equity capital of the savings banks has been built up from their own retained earnings. In 1987, the Savings Banks Act enabled savings banks to raise additional capital from the market, by issuing primary capital certificates (PCC), now termed "Equity Certificates" (ECs). As of 1st of January 2017, 36 savings banks have such certificates, 19 of them are listed on Oslo Stock Exchange.¹¹ By law the holders of equity certificates obtain up to 40% of the votes, the rest is divided by the savings banks' own funds (35%), voted by the depositors and publicly elected representatives from the community where the bank operates, and 25% votes to the employees.¹² Hence, these banks are partially ownerless but also have minority shareholders. An important point, therefore, is that the threat of a hostile takeover cannot be used as a disciplining instrument, due to the limitation on votes of the external capital. By the same reason a decision cannot be taken solely by the external shareholder.

The trend of concentration and consolidation in Norwegian banking sector continued after the year of 2000. In the beginning of the period the trend towards the formation of financial conglomerates led to numerous mergers, among which those of Sparbanken NOR (Union Bank of Norway) with the mutual insurance company Gjensidige Insurance, the merger of The Sparebank 1 Group and the banking/insurance company VAR Gruppen and others.¹³ The international restructuring and consolidation in the financial service industry has its impact on the development of the sector in Norway. M&As are possibly driven by technological advances, deregulation, international consolidation and excess

¹⁰ Savings Banks Act, 2004

¹¹ Sparebankforening, 2017

¹² www.sparebank1.no

¹³ sparebankforeningen.no

capacity. The increased institutionalization of the savings made the professional fund managers more important. Thus, also maximizing shareholder value becomes central. This gives a strong incentive to improve efficiency. Weak banks will be driven out of the market. An ownership structure sensitive to market forces may therefore be important. The international trend in the banking sector is towards greater size. However, Norwegian banks are relatively small, even in a regional context, with the biggest Norwegian bank half the size of the average of the three major Nordic banks.¹⁴ In the same time, most major Norwegian companies have one foreign bank as one of their core banks which leads to a likely loss of market share for the Norwegian banks. On one hand, The Banking Law was changed in 1999 allowing mergers of mutual insurance companies and savings banks. Such legislative changes facilitate acquisitions and create scope for further integration of commercial banks and savings banks. On the other hand, the position of the Norwegian Competition Authority (NCA) has been strengthened by giving the right to prohibit mergers and acquisitions based on agency's analysis of the consequences for competition environment.¹⁵

More on Equity certificates

A "hybrid" bank has two layers of capital: an ownerless part and that of the external equity holders. The equity certificate (EC) funds have higher seniority than the other elements of the equity. Therefore, the risk distribution among the two layers is somewhat asymmetric. In bad years, losses are first absorbed by the primary capital and the equalization reserve, and the equity certificate capital is at risk only if the primary capital is exhausted. Hence, EC differs from the common shares by its holder's rights to the bank's assets. This feature makes EC less risky for their holders compared to traditional stocks. Other major difference between equity certificates and shares can be seen in the voting rights they provide. Although, in practice EC confers equity from 14% to 97% of the ownership, as outlined above the maximum voting rights it can delegate to their holder is 40%. Thus, the EC holder never obtains full control over the bank, but receives a place in the board among the other representatives.

¹⁴ OECD Economic Surveys: Norway 2000

¹⁵ OECD Economic Surveys: Norway 2014

The following table shows the different types of capital in on saving bank and the seniority among them.¹⁶

Order of seniority for a savings bank's equity capital

High Priority ↓ Low	Equity Certificate Capital	
	Premium Fund	Compensation Fund
	Equalisation Fund	Basic Fund + Gift Fund
		EC holders
		Ownerless capital

Source: Sparebankforeningen, Pareto

Table 1. Order of seniority for saving bank's equity capital

After the global financial crisis from 2008 increased capital requirements (Basel II) were introduced for the European banks, including the Norwegian saving banks. This has led to a trend of significant capital building.

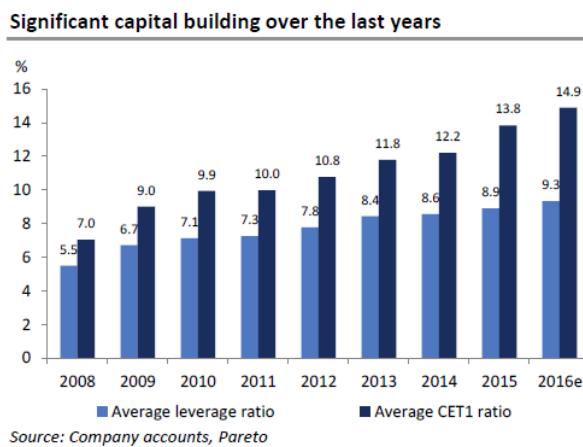


Table 2. Tendency of capital building after 2008.

Comparison of German and Norwegian corporate model and banking systems

There are many similarities between the Norwegian and the German corporate governance models when it comes to banking. Both are stakeholder oriented,

¹⁶ <http://www.paretosec.no/utvalgte-analyser/sparebanker-naer-kapitalmaalene>

resilient to change and dominated by the savings banks.¹⁷ The German banking system is built up on three pillars: commercial banks, owned by shareholders, co-operative banks, based on a member-structure where each member, independently from its capital share, has one vote in the public banks. It has been argued that this structure has weakened the corporate governance by reducing the power of the market for corporate control.¹⁸

Founded at the beginning of the 18th century today, German savings banks are universal banks, operating under the “public law” or so called “municipal trusteeship”. Their organizational form is close to those of foundations. Municipal trusteeship, along with the public mandate and the regional principle, is one of the main elements that shape “the Sparkassen role model as regional retail bank with an intrinsic orientation towards public welfare, financial inclusion and sustainable growth within their business area.”¹⁹ More interestingly, although Sparkassen is tightly connected with the district it operates in, the local authorities are not shareholders of Sparkassen. Savings banks are fully independent in their day-to-day business operations. Under the respective state legislation, however, several transactions considering a particularly high risk are either ruled out or subject to certain restrictions. The regional principle they operate on significantly mitigates risk and prevents information asymmetry and has a key role for the success of Sparkassen. In 1988 Spain abandoned the regional principle which increased competition in the banking sector and in turn led to excessive borrowing. In order, to perform better than their competitors, Spanish savings banks tended to underestimate the risks.²⁰ With the burst of real estate bubble, smaller banks suffered significant losses.

German savings banks are not non-profit organizations. Still their goal is to follow a sustainable business model. By law, in Germany savings banks have the so called “public mandate”. This means that while the commercial banks take decision to extend credit and to provide financial services based on purely economic rationale, savings banks are focused on “adequate provision of money and credit services to

¹⁷ Hackethal (2005)

¹⁸ Köhler, Matthias (2010)

¹⁹ European Savings and Retail Banking Group, The legal structure of savings and retail banks in Europe (2014)

²⁰ Choulet, Céline (2016)

all groups of customers from all parts of society”.²¹ However, Sparkassen are exposed fully to all market forces and hence their survival depends on the ability to successfully compete with all other types of banks, whereby not neglecting their prime public oriented goals.

Some authors have argued that recent changes resulting from internationalization have led to the adoption of new corporate governance mechanisms which although not challenging the German model, has brought it closer to the Anglo-Saxon model with increased investor protection.²² Among the factors are changes in the legal context, increased international competition, consolidation in the banking sector and new business strategies like increased investment banking in commercial banks.

3. Theory and Literature Review

Research in corporate governance has traditionally been centered on three general theoretical frameworks: agency theory, stakeholder theory and the new institutional theory which reflects the importance of the legal, fiscal and regulatory environments. We would explore agency theory and stakeholder theory as these are the theories behind our research question that form our expectations and are also relevant for the two organizational structures that we will discuss later: shareholder and stakeholder. Then, we will review the current research on PCC banks and mergers among saving banks. After we have discussed the current literature for each of these strategies we define our research questions.

3.1. Agency theory

Shareholder model

According to the narrowest meaning, corporate governance focuses on shareholder value. Shleifer defines corporate governance as “the ways in which the suppliers of finance to corporations assure themselves of getting enough return on their investments.”²³ Agency theory treats the separation between ownership and control and the subsequent conflict resulting from misalignment of interests between the

²¹ European Savings and Retail Banking Group, October 2014

²² Hackethal et al (2005)

²³ Shleifer and Vishy (1997)

management and the suppliers of capital. Much of the debate is structured around what is good monitoring and what the incentives should be to align manager's efforts with that of the owners as shareholder profit maximization is the overriding goal of the firm.

The first ones to explicitly formulate the theory were Berle and Means, but the problem between ownership and control has been explored indirectly by several other authors before that, including Adam Smith. Berle and Means in the 1930s looked at the separation of shareholder's ownership and management's control and how to overcome the problem of the management being able to govern the resources for their own advantage. Their central tenet is the adverse relationship between diffused ownership structure and firm performance and the importance of agency costs. The diffused ownership structure was seen as so diluted that the multitude could not be seen as being meaningfully represented in the corporate decision-making.²⁴

In the 1970s Demsetz argued against the view that diffuse ownership fails to yield maximum profit and saw the equilibrium organization as one where different costs including monitoring costs are considered. In his view the separation between ownership and control was not as big as taken and contracts were the means of control. Demsetz saw the structure of corporate ownership in terms of value maximization and the means of control in terms of the contract. He argued already in 1970s that "when the need arises, dispersed ownership will become sufficiently concentrated to give proper guidance to, perhaps to "boot" out, an ineffective management."²⁵

Demsetz and Villalonga found no significant relationship between ownership structure and corporate performance in their study on multidimensional ownership and performance.²⁶ "The central issue is whether professional management and diffuse ownership structure bring special advantages to firms that are sufficient to offset the special disadvantages they may also bring. If there are compensating advantages, there should be no systematic relation between managerial

²⁴ Berle & Means (1932)

²⁵ Demsetz (1983)

²⁶ Demsetz and Villalonga (2001)

shareholdings and firm performance.” Another result from that study that needs be mentioned is that ownership structure can be endogenous and plausibly determined, among other factors, by firm performance itself.

An important contribution for the agency paradigm comes from Jensen and Meckling (1976) who provide a view of the firm centered around finance viewing the agent relationship within the contract. They consider ownership as a central governance mechanism. Performance measures are created against the share as means of control thus making financial incentives central. It was not until Fama (1980), however, that competition and market forces as represented by capital market reactions are “officially” seen as a disciplining agent for firms. As we will see later a lot of the research on commercial and ownerless banks centered on profitability has also looked at the disciplining action of the market.

Tirole (2001) explored the paradigm of shareholder value within the incentive theory. The benefits of shareholder orientation are making up for the dearth of pledgeable income, speeding up the decision-making although at the expense of bias and some externalities. More importantly, he is asking the question if it is possible to implement stakeholder society with multiple goals.²⁷ He recognizes the negative effect multiple goals and interests can have on efficiency, a concern also raised by Hansmann (1996). In addition, he argues that it is possible to defend stakeholders contractually, while there is no such protection of shareholders’ residual claimants. This is the main argument supporting a governance structure where maximizing shareholder’s value is a priority. At the same time, Mayer (2013) points out that stakeholders may also have long-term specific investments that cannot be fully protected by the contracts (Mayer 2013). Furthermore, Grossman Hart Moore argues that “property rights should protect the stakeholders with the most important specific investment in the firm - that stakeholder is not necessarily the shareholder(s).” This leads us to the second strand of theory – the stakeholder theory which originated in the 1980s with Freeman and whose arguments are the main critiques of the shareholder approach.

²⁷ Tirole (2001)

Stakeholder model

Stakeholders rise to prominence came about as the externalities imposed by corporate decisions on the “natural” stakeholders like employees, suppliers, local communities, etc., were emphasized over time. The theory itself has interdisciplinary root and its father is Freeman. In his works in the 1980s, he defines stakeholder theory’s dimensions/scope as:

- Redistribute benefits to stakeholders, and
- Redistribute important decision-making power to stakeholders²⁸

The idea of duty to the stakeholders in whose interest the firm should be managed is central. Moreover, the firm is considered as a nexus of contracts²⁹ among stakeholders.³⁰ There is a normative implication based on ethical principles in his work that stresses trust and cooperation, but it is necessary to mention that it is primarily oriented towards the communities that affect the firms, and vice versa, and not those that cannot affect it. While this theory has become very popular, critiques like Kenneth Goodpaster’s have addressed the potential conflict caused by diverging interests of the different stakeholders. This is often called the stakeholder paradox and has also prompted Jensen’s value maximization as the main contender of stakeholder theory to overcome serving many interests and giving a single objective. The recent financial crisis especially in the UK has spiked again this “dichotomy” between owners and multiple goals.

Two organizational structures: shareholder model and the stakeholder model

We recognize two organizational structures which also extends to banks – the shareholder model where the objective is to maximize the residual cash which is the Anglo-Saxon tradition and the stakeholder model which is predominant on continental Europe, Japan and Scandinavia. The latter considers the corporation as an industrial partnership where the interests of the long-term stakeholders are considered, with a salutary role of non-shareholder constituencies.³¹ Corporate governance in both is based on explicit and implicit set of contracts and the agency

²⁸ Stieb, p. 405

²⁹ Michael Jensen, William Meckling, Frank Easterbrook contribute to this theory

³⁰ Freeman (1990)

³¹ Macey & O’Hara (2003)

problem in both stems from the incompleteness of these contracts. These two systems presuppose different influence and disciplining mechanisms – where market forces and shareholders will be more prevalent as in the first case and, in the second, as in the case of Germany, internal mechanisms where the role of active stakeholders is important.

What makes banks special?

Banks present a special challenge when it comes to corporate governance. Banks' opaqueness reflects the fact that their portfolio consists of loans with different quality, which is not easily observable by the clients. Banks operate in a specific highly regulated industry.³² However, the separation of ownership and control, the subsequent agency problems that might arise, for example between owners, managers and other stakeholders, as well as the search for optimal governance structure apply here just as equally.

Banks' capital structure is unique as they have very little equity compared to other firms, and receive most of their funding from debt. This accounts for a very high leverage ratio. Their liquidity function, a term originally introduced by Fama in 1980s, is special due to the maturity mismatch of bank's assets and liabilities. Hence, banks' assets are less liquid than banks' liabilities. This makes banks susceptible for collective action problem and the problem of moral hazards can be exacerbated in case of near insolvency which can enhance excessive risk-taking.³³ The decline of some UK banks and the financial crisis in the UK has spiked debates on the merits of the shareholder/stakeholder approach with some authors claiming that it is not that the banks deploy shareholder approach, but how they deploy it.³⁴

3.2. Sustainability

“Corporate sustainability can accordingly be defined as meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc.), without compromising its ability to meet the

³² Polo (2007)

³³ Macey & O'Hara (2003)

³⁴ Tse (2011)

needs of future stakeholders as well.”³⁵ We recognize the importance of the general understanding that the term sustainability encompasses not only the economic, but also social and environment criteria (ESG). Yet, we will focus in our paper on economic sustainability, in the light of three dimensions: profitability, growth and level of risk, for the pursuit of our research question.

Additionally, we want to briefly mention here the importance of non-performing loans for sustainability. According to the European Bank’s report from September 2016, currently there are many banks in Europe which experience high levels of non-performing loans³⁶ and there is a debate about the sustainable reduction of these loans as they impact not only the banks, but the economy. Furthermore, the NLP strategy is likely to reflect a strong focus on qualitative targets for the short-term horizon meaning that banks employing this strategy will employ a short term unsustainable approach.

Bellow, we will review first the current literature regarding PCC form. Based on it, we will outline the research question about ownership structure of Norwegian banks. Then, the recent literature about M&A is reviewed and a research question is defined.

3.3. Current Research on Ownerless Banks in Norway

The study that captured our interest about the Norwegian ownerless companies was the paper *Stakeholder rights and economic performance: The profitability of nonprofits* written by Bøhren and Jeseffen (2013). The paper explores to what extent the ownership structure matters for the performance of a given firm. The researchers compare the relative performance of Norwegian saving banks where no stakeholder has residual cash flow rights with the Norwegian commercial banks that are stockholder-owned. A third type of banks is also included in the research – the PCC banks where stockholders are a minority. The comparison can be consistently made since all three types of firms are subject to similar regulation and have similar market opportunities, i.e. they operate in similar business environment. The study analyzes the Norwegian banking market in the late 1980s - early 1990s.

³⁵ Dyllick, Thomas; Hockerts, Kai (2002)

³⁶ www.bankingsupervision.eu

Major result is that the stockholder-owned firms do not outperform nonprofit firms. Hence, the conclusion that the market competition can effectively substitute the monitoring role of the shareholder is drawn. Furthermore, the study shows that stockholder-controlled firms are larger and more inclined to undertake risk. The results are consistent with the findings of earlier study made by the same researchers – *Are owners redundant*, Bøhren and Jesefsen (2007), as well as with those of Schmidt (1997) Giroud-Mueller (2007).

All the above-mentioned papers conclude that strong competition makes corporate governance less important for the organization. In their study, Giroud and Mueller explore the relationship between the intensity of the competition in the industry a firm operates in, and the benefits for the company from good corporate governance. Their findings reveal that weak corporate governance worsens firm's performance only in noncompetitive industries, while there is no significant effect in highly competitive industries.

First off, the agency framework would provide us with the expectation that most likely banks to switch to PCC are those that are not very profitable. They might use the marketing mechanism and a shareholder focus as disciplining devices. However, as Bøhren has shown in his study (2013) the savings banks just as profitable as commercial banks and do not take a lot of risk. That means that the average ownerless bank which is as profitable can choose a hybrid model in-between stakeholder and shareholder for other reasons than survival. We expect that taking additional risk to be connected to growth opportunities provided by new capital which they will raise in the process. Switching to a hybrid governance structure will indicate the rationale behind it to be a quest for economic growth and value creation. We do not state our hypothesis here since, we aim to measure correctly the effects of becoming a PCC, taking into account the self-selection. The self-selection implies that private information stands behind the decision of the bank to change its organizational structure.

In the current thesis, we want to explore why although studies suggest that ownerless firms perform as well as firms that are fully or partially controlled by stockholders so many saving banks in recent years decided to change their

organizational structure, which banks characteristics make them more likely to undertake this transition.

After we outlined the shareholder and stakeholder models, we expect that moving from an ownerless structure to such where shareholders are presented (although as a minority) will move the focus away from stakeholders' interests. Therefore, profitability might be among the factors affecting saving banks' decision to become PCC banks. At the same time, issuing equity certificates is a way to raise capital. With the increased capital requirements, it could be the case that banks that need additional capital decide to switch to a hybrid form.

Research Question on PCC banks:

Which saving banks' characteristics affect the decision of switching to a hybrid ownership structure?

3.4. Literature Review on M&A Activity

The restructuring process in the banking industry started in the 1980s with a consolidation and conglomeration trend both in Europe and in the USA. Factors that have facilitated mergers have been technological advances in the banking sector, deregulations, product diversification, the spillover effect of the established mergers and the desire for growth. A very interesting effect is the spillover effect created by mergers which is a type of learning by observing.³⁷ This can stimulate riding on the M&A wave as merging becomes more and more established and the process more refined. At the same time, we need to acknowledge the tough competition which increased due to deregulation and new laws from EU and the Monetary Union as well as new capital requirements after the finance crisis which will continue to shape the industry where margins are tight, and will stimulate consolidation.

³⁷ Delong and DeYoung, 2007

The most widespread theories about mergers and acquisitions (M&As) identify three main reasons behind takeovers. First, M&As are motivated by the creation of synergies, i.e. the value of a the new combined entity should be greater than the sum of the two separated values.³⁸ The second motivation why firms would get involved in these activities are the agency issues between managers and shareholders.³⁹ Jensen (1986) suggests that managers may rationally pursue their own objectives at the expense of shareholder's interests.⁴⁰ Finally, the third motivation for takeovers is managerial hubris⁴¹ and behavioral bias. Hubris hypothesis suggests that managers of acquiring firms make valuation errors irrationally (vs. the rational theory of Empire building) because they are overoptimistic about the potential synergies in a takeover or overconfident in their own abilities to spot a good deal. Literature from the US like Rosen (2004) focuses a lot on the agency problem and status as well on the managerial compensation. Due to the latter, we witness increased risky behavior and can have a case of too big to discipline banking organization. On the same note, Gupta and Misra (2007) show that when the manager has the firm's value in mind, the M&A has a positive effect on the stakeholders.

A succinct and good review of the existing literature is provided by De young and Evanoff in their "Mergers and Acquisitions of Financial Institutions: A Review of the Post-2000 Literature" where they also make a distinction between the European and the American context. While in the 1980s and 1990s the results performed on basic accounting ratios showed positive but insignificant results, after 2000 mergers prove to be efficiency enhancing in both places. In addition, those in Europe are proven by studies to be stockholder value enhancing.⁴²

Some studies, however, tell a different story. While overall showing a positive effect the latest years, some authors like Carbo et al (2003) found no significant effect on efficiency of the Spanish banks in his study.⁴³ A study done on Norwegian

³⁸ Bradley et al., 1988; Dyer et al., 2004; Tease, 1986, Altunbas and Ibáñez 2004

³⁹ Eisenhardt, 1989

⁴⁰ Look: Free cash flow theory and Empire building theory

⁴¹ Roll, 1986

⁴² DeYoung and Evanoff

⁴³ Carbo et al (2003)

bank mergers in the period 1987 to 1998 by Humphrey and Vale (2004) reveals that there are positive gains, but somewhat smaller ones compared to switching to an electronic system. The majority of the studies show that the primary motivation behind mergers, both in US and Europe, is the increased size and the benefits related to it. There are differences, however, whether there is value-creation at all. Furthermore, we also have the so-called merger paradox - there is no documented effect from the mergers, but they continue. Some have even registered adverse effect.⁴⁴ Andreas Behr and Frank Heid argue that merging banks differ in some important respects from other banks and it is important to take these aspects into account in any performance study of bank mergers. Merging banks often represent an underperforming sample and authors advise on matching principle with the non-merging banks for better and more consistent results as using propensity score matching. Their study employing this methodology based on a German sample produced positive results in terms of profitability, but not in terms of cost efficiency.

Hernando (2008) discusses the determinants of the domestic and cross-border bank acquisitions in the European Union. The most important finding is that poorly managed banks are the target of acquisition which means that cost minimization, efficiency and business cycle are important criteria. In addition, his results show that the larger banks are more likely to be targets. The literature on the mergers in EU and the factors that lead to mergers in the banking sector is relatively small compared to the literature in the US where many researchers have focused exclusively on shareholders' value as well as on the agency conflict between managers and shareholders as discussed before. Typical variables that have traditionally been used in the M&A research as exemplified by Hernando (2008), and Hannan and Pilloff (2007), one of the classic works in the field. They are target operating performance as cost to income ratio and the capitalization ratio (equity to TA). According to Hannah and Pilloff (2007) highly leveraged means more attractive for acquisition as this enables the maximization of the magnitude of post-merger performance. Other factors include size, prospects for future growth, industry concentration and management incentives.⁴⁵ Size has consistently been found to be of significance. Moore (1996;97) argues that those that have slow

⁴⁴ Pilloff and Santomero (1998)

⁴⁵ Hernando (2008)

growth are more attractive targets. He also finds that market power makes acquisitions attractive for the sake of exploiting the position.

One of the classical works within the field is Hannah and Piloff's work "Acquisition Targets and Motives in the Banking Industry". In this study, the authors investigate the likely reasons for being acquired among the banking organizations in the period 1996 to 2003. The main finding of this study is that acquisitions transfer resources from the less efficient to the more efficient management. Overall, what emerges from the literature is almost universally negative relationship between profitability and the likelihood of acquisitions, as well as a positive relationship regarding size. Market power, however, seems to be positively connected. A possible explanation is that an appealing market position could further be exploited in terms of acquisition. However, availability of data has been a major restriction in all studies that have been reviewed here and is a common shortcoming.

Some studies explore how big the percentage of the loans and the deposits of the banks that are local is, i.e. how aligned they are with local customers, as well as factors such as social capital and trust.⁴⁶ These play a role in the development of the banks as customers can lend or withdraw their support because of the change in ownership.

Research Question on Mergers:

Apart from enhanced growth opportunities, are there other considerations for the mergers of saving banks?

We would like to explore which characteristics make a saving bank more likely to either acquire another bank, or to become a target of acquisition. Specifically, we are interested whether riskiness is an important feature.

⁴⁶ Ostergaard, C., Schindele, I. and Vale, B., 2009. Social capital and the viability of stakeholder-oriented firms: Evidence from Norwegian savings banks.

4. Data and sample

In our paper, we use panel data as it allows to follow the progression of individual entities over time as opposed to cross sectional data. Drawbacks of working with panel data are that it can be time consuming to set up and many issues can arise in the process. In addition, there are risks related to the degree of correlation when working with variables based on accounting.

One advantage of our paper compared to previous studies that address similar issues related to M&A or PCC likelihood, is that the period analyzed is quite recent and characterized by substantial consolidation but in the same time no bank failures.

The time frame is 2001 – 2015. Although the period is impacted by the global financial crisis from 2008, due to financial discipline in the prior years and adequate political steps the effects of the crisis particularly in Norway were not that severe and no banks failures were observed. Thus, we treat the whole period in the same way without dividing it into pre- and post-crisis sub periods.

However, in 2000 there are 134 saving banks. This number is decreased to 104 by 2015, making obvious an ongoing trend of consolidation of banking industry. Today, there are 36 saving banks that have issued equity certificates, 22 of them were registered on the stock exchange prior to 2000. We observe 31 mergers in the period, two changes of name, and one bank closed. Of the 31 mergers two were within the two alliances: Eika and Sparebank 1 Alliansen and were not included in the merger sample. Out of the 31 mergers, 22 were connected to becoming PCC. However, in most cases these were connected to a bigger bank that had already become a PCC prior to 2001 thus the merged bank itself dates as PCC from the same year as the acquiring bank. In our research, we will assume that a saving bank issues equity on the same day on which it merges with a PCC bank. The lists of PCC banks and the banks involved in M&A activities can be found in tables 1 and 2 in appendix.

The accounting information used, includes balance sheets, income statements and data from accounting analysis. The samples are manually build based on the data from the annual reports of the savings banks in Norway published by the organization for the financial industry in Norway, called Finans Norge. Further

data, like the area code of the banks, date of mergers or issuing PCC are obtained from Brønnøysund register. The data about the employment growth in the different districts in Norway is gathered from Norwegian Statistical Agency (SSB). More detailed information regarding PCC issues and consolidation trends is provided by the Association of the Savings banks in Norway. The information about the role the bank has in the M&A activity (i.e. an acquirer or a target) is obtained from Brønnøysund register and each bank's website.

Each bank organization is observed yearly for the fifteen-year period. To reduce the potential effect of endogeneity on estimation results, explanatory variables are measured before the period over which acquisition behavior is observed, i.e. we used the lagged values of our explanatory variables.

We define mergers and acquisitions as occurring when two independent banks, not subsidiaries, change their status and one of them or both cease to exist as an independent entity after the merger activity. Timothy H. Hannan and Steven J. Pilloff (2006) define an acquisition as "occurring when there is a change in control, which happens when a bank or bank holding company that owns less than 50 percent of another banking organization's equity increases its ownership to more than 50 percent." Unlike Wheelock and Wilson (2000) we do not need to distinguish between the likelihood of a bank disappearing due to acquisition and due to failure because there are simply no bank failures after 2000. By using the change-in-control criteria, banks with different organizational forms can be included - independent banks and bank holding companies, but without the mergers of bank subsidiaries.

Whether observations will be included in the sample depends first and foremost on the data availability. In some cases, new banks were dropped because they did not have enough prior data. We require that a banking organization have been in operation and have data for at least two years prior to the start of the merger year being analyzed. This requirement reduces the likelihood of any confounding effect attributable to the fact that new banks are sometimes legally restricted from being acquired.

Substantial effort was made to track banking organizations through the period of consideration. During the analysis period, many independent banks formed new alliances. These corporate reorganizations pose a challenge, because one could

assume that one organization (the independent bank) was closed and a new one (the new alliance) started or that the new alliance acquired the independent bank. However, the banks continued to operate independently but within the banking alliance. We also account for other cases in which a bank's name would have changed, but the change was not due to an event that triggered a change in control or in ownership status.

Although most banks are observed for the first year of the study period, 2000, 3 banks enter the sample after 2000. Observations of these organizations are included for the years for which they operated.

We built two main samples each divided into two smaller sub-samples. The first main sample includes all banks that go through a merger, including 41 merging banks out of 119 saving banks. This sample is further divided regarding the bank's role in 2 samples: one with acquirers (20 banks) and one with targets (21 banks). The second main sample includes all banks that issue equity certificates. The All PCC sample includes 20 PCC banks resulting from mergers between pure ownerless bank and a PCC bank (one subsample), and 10 that are not related with any merger activity (the second subsample).

As outlined above there are no bank failures or a severe crisis in the banking sector during the observed period. Therefore, we treat all banks, even those that went through an M&A, as "survived". For this reason, we apply reverse engineering in order to obtain values for each bank for all years in the period (also after the bank has entered a merger). We use the proportion of total assets of the banks to the sum of the total assets of both banks before the merger (weights based approach). Then, we distribute the post-merger values to the two banks according to the estimated ratio. This can be a possible shortcoming when doing an ex-post analysis, since the possible synergy effects are not captured in the most accurate way. However, since the ex-post regression is only a complementary indicative and not a focus of our study, this procedure will not influence our main results.

Explanatory variables

The variables used in our study are presented in the table below.

Variable name	Description
Size	Natural log of bank's total assets
Profitability	Gross ROA, the sum of the net income plus the interest payments divided by total assets of the banking organization
Growth	Change in bank's total assets
Leverage ratio	Bank's total equity divided by bank's total liabilities
Non-performing loans (NPL)	Realized losses, as a percentage of total loans
Area control	Change in the employment of the district the bank operates in measured by the number of employed residents.
Capitalization ratio	An alternative proxy for leverage; measured by total equity/total assets
Capital adequacy ratio	An alternative of NPL as an indicator of bank's riskiness; The sum of core plus supplementary capital divided by the risk-weighted assets
Net ROA	Alternative measure of profitability; Net income divided by average assets of the banking organization

Table 3. List of explanatory variables

Considering the three-dimension definition outlined above, we operationalize sustainability through profitability, growth and risk.

As a measure of profitability, we use return on assets measured in the following way:

$$\text{ROA} = \frac{\text{Net income} + \text{Interest payments}}{\text{Average assets}}$$

Total assets

Although, often omitted by practitioners, interest payments need to be included in the measure. In this way, the values for both the equity- and debtholders are reflected.⁴⁷ Hence, gross ROA is a more accurate measure of profitability.

Risk is operationalized through the non-performing loans (NPL) and the leverage ratio of the banks. A non-performing loan is a default loan or close to a default loan and thus is a risky asset which also affects profitability as the bank cannot collect its principal and interest, and it induces capital constraints. A high percentage of NPL shows employment of unsustainable strategies.

Growth, as a factor of economic sustainability is measured by the change in total assets. As we mentioned in the beginning, we expect one of the reasons saving banks switch to PCC to be growth and we want to check if this is true ex-ante. As additional proxies for profitability we employ net ROA and for risk - capital adequacy ratio and capitalization ratio.

It is important to note that the area control variable is not a dummy variable, but reflects the growth of the employment rate per administrative region (fylke).

5. Descriptive statistics

Tables 4 and 5 in the appendix present the descriptive statistics for all variables used in the model (including the three alternative variables). Table 4 compares all saving banks with the acquirers and the targets.

Interestingly, the difference in size between acquiring banks and those that have been acquired is not as big as in a typical acquisition or in other countries or industries. Acquiring banks are slightly larger than those that have been acquired. Hence, we do not have the case of a very big firm, acquiring small ones. Rather we observe strategic mergers between relatively equal in terms of size banks.

⁴⁷ Berk and DeMazio, Corporate finance

Regarding risk, we see that on average targets have a slightly lower ratio of non-performing loans but with a higher within variation. Although we do not report the skewness and kurtosis it is important to mention that two of the variables (non-performing loans and capital adequacy) had kurtosis higher than 30. After we double checked the data, we found that the reason are a few existing outliers. Moreover, targets have higher means of capital adequacy ratio. In terms of leverage and profitability banks have similar values. On average, the regions where the acquirers operate develop slightly better than those of the targets.

6. Methodology

Research Design

To explore which characteristics of the saving banks determine the decision to change their ownership structure or to merge we use a quantitative research. We utilize a probit model and nearest neighborhood score matching model, together with a logistic regression as a robustness check.

Motivation for using a probit model

The difference between a probit and a logit model is that in the probit model we assume normal distribution of the residual ε_i in the specification of the latent variable z , but the outcome of both is similar.

Since we work with a non-random sample of ownerless banks, and based on the tail distribution of the data, we choose to use a binary panel probit model. Here, Y is a random binary variable and for each observed unit we have a binary outcome Y_{it} for each of T periods. The model is built on the assumption of a latent variable with the following specifications:

$$\begin{aligned} y_{it}^* &= x_{it}\theta_0 + e_{it} \\ y_{it} &= 1[y_{it}^* > 0] \\ e_{it} | x_{it} &\sim \text{Normal}(0,1) \end{aligned}$$

The model takes the value of 1 if a certain event has occurred, normally referred as success.⁴⁸ Our main interest lies in uncovering the response probability of this happening. The probit is essentially an index model, satisfying the condition of

$$P(y=1|x) = G(x\beta) \equiv p(x)^{49}$$

We performed a Hausman test on all five samples to uncover whether it is better for us to use fixed or random effects regression. While on three of the samples the outcome of the test was to use fixed effects, comparing the ρ coefficients of the two effects reveals that there is only a slight difference in the degree of how much of the variance can be explained by each effect and it is under 10%. For this reason we decided to stick with the probit model where we can run only random effects regression in Stata, but supply our results with a random and eventually fixed effect logistic regression as an additional robustness check. As we found out later, we had a model which did not convert during a random effects logistic regression, only with fixed effects logistic regression, which confirms our choice in terms of model.

Motivation for using a Treatment effects model

Self-selection models are of two general types: those that assume that self-selection is based on an observable criterion and those that assume that the decision might be determined by unobservable variable (private information). Here, we are going to utilize neighborhood matching, which is a model from the first type, to check the results from the probit model.

The treatment effect is the outcome for the treated firm (PCC/Merger in our case) minus the outcome for an untreated firm with equal treatment probability. In contrast to self-selection models matching models go directly to the treatment effects and assume no relevance of private information for outcomes. To be able to match neighborhood scores we must have one group that has received a treatment and one that has not – the control group. The treatment itself (PCC/Merger) is a single event. The treatment effect if significant means that $E(Y_{pcc,i} - Y_{no\ pcc,i}) \neq 0$.

⁴⁸ Wooldridge (2012)

⁴⁹ Wooldridge (2002)

We decided to use neighborhood matching on the observable characteristics, assuming that the unobservable characteristics are similar for the two groups. Moreover, our samples include more banks that did not go through restructuring than those that did.

One downside with neighborhood matching is that the model is built on the strong assumption of the irrelevance of private information and exclusive dependency on the exogenous variables X specified in our table above. This is referred to as the Conditional Independence Assumption.⁵⁰ However, given it is easy to violate and leads to biases if so, we choose to not utilize treatment effects matching alone, but only as a robustness check.

The Model

The probit model consistent with the matching framework that will be used later is:

$$\Pr(E|Z) = \Pr(Z_i\gamma) > 0^{51}$$

which is the probability of becoming a PCC/merging bank given certain factors Z and comes from. Also with treatment effects it will have the following form:

$$\begin{aligned} C = E = PCC = W_i = Z_i\gamma > 0 & \quad PCC/M\&A \text{ treatment when } D_i = 1 \text{ if } Z_i\gamma > 0 \\ C = NE = \text{Not PCC} = W_i = Z_i\gamma \leq 0 & \quad \text{no PCC/M\&A treatment when } D_i = 0 \text{ if } Z_i\gamma \leq 0 \end{aligned}$$

D_i is introduced here as a PCC or M&A dummy that takes the value of 1 if the bank becomes PCC or merges and zero otherwise, with a post-selection outcome:

$$D_{e,i} = X_{e,i}\beta_e + \epsilon_{e,i}$$

In our model, C is dichotomous and signifies the two groups: PCC/Merging banks and Non-PCC/Non-merging banks.

⁵⁰ Li and Prabhala (2006)

⁵¹ Li and Prabhala (2006)

Thus, $C \in \{E \text{ (i. e. PCC/M\&A)}; NE \text{ (i. e. Not PCC/M\&A)}\}$ – either the presence or absence of treatment which in our case is PCC; γ is a vector of probit coefficients. W_i is the selection variable consisting of exogenous X variables.

In our probit model, PCC/M&A is chosen if the net benefit of doing so, i.e. the scalar W_i is positive. The latter is a function of the explanatory variable Z_i which denotes publicly known information influencing a bank's choice. It is represented by several independent variables (Xs) which are exogenous and specified in our Variable table above. In short, our model has the following form:

$$D_{it} = \beta_0 + \beta_1 \text{profitability}_{it-1} + \beta_2 \text{growth}_{it-1} + \beta_3 \text{Leverage ratio}_{it-1} + \beta_4 \text{Size}_{it-1} + \beta_5 \text{Area}_{it-1} + \beta_6 \text{NPL}_{it-1} + \epsilon_{it-1}$$

In addition to our study, we perform an ex-post regression on the growth two years after the mergers. The reason is that we wanted to investigate whether apart from the inorganic growth related to the M&A activity, the merger has also contributed to organic growth. It is important to stress that the result is indicative and not the focus on this paper. Further research on the topic is recommended.

$$G_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \epsilon_{it}, \text{ where } G_{it} \text{ is the growth of the banks.}$$

Goodness of fit and robustness of the results

The probit model is based on maximum likelihood estimation (MLE). There are three tests for MLE - the Wald statistics, the Likelihood ratio (LR) and the Lagrange multiplier test that produce asymptotically equivalent results.⁵² We utilize the LR ratio to test the robustness of our models, i.e. if the joint effect of our exogenous variables on Y is zero. The Likelihood Ratio (LR) tests that at least one of the predictors' regression coefficient is not equal to zero. The models from all our samples have $\text{Pr} > \text{Chi}^2 = 0.000$ with a slight variation of 0.003.

Another estimation of goodness of fit is the predicted probabilities which vary from 86% to 92,21%. However, this statistics is not always reliable. Pseudo R^2 is not used

⁵² Wooldridge (2012)

because probit is not a linear model and the measure does not quite correspond to R^2 in the linear function. Lastly, we have checked for multicollinearity through a correlation matrix on our samples. Our highest correlation is 38% in the merger sample and 27,38% in the PCC sample. Therefore, we can conclude that multicollinearity is not an issue. The last robustness check is with alternative proxies for profitability and risk. In addition, we also run logit regressions.

Interpretation of coefficients

The estimated probit coefficients do not reveal the magnitude and the actual effect the regressor has on the dependent variable, i.e. the effect of the regressors on the probability of a bank going through a merger or becoming a PCC. The statistical significance and the sign, however, can be interpreted. A positive (negative) coefficient indicates that an increase (decrease) in the corresponding explanatory variable is associated with an increase (decrease) in the M&A likelihood, given that the bank has not been involved in such activity before that point of time.

Apart from the sign and significance of the probit coefficients, we need to look at the marginal effects of the regressors instead, that is, how much the (conditional) probability of the outcome variable changes when you change the value of a regressor, holding all other regressors constant. This is different from the linear regression case where the regression coefficients are the marginal effects themselves. Marginal effect can be presented with the following formula:

$$\frac{\partial P(y_i = 1 | x_i)}{\partial x_i} = \frac{\partial E(y_i | x_i)}{\partial x_i} = \varphi(x_i' \beta) \beta$$

Marginal effects we estimate are fixed at the median. The reason is that unlike the mean the median is not sensitive to the outliers.

7. Results and Analysis

In this section, we present and analyze the results of our regressions. Additionally, we look at different implications the results might have in a broader perspective. The order in which these are presented is: results from the merger samples (all

merging banks, acquirers and targets), results from the PCC samples: all PCC, merger related PCC and not merger related hybrid banks.

The results from the random effects probit model with robust standard errors, marginal effects, propensity matching and from the probit with alternative proxies are presented in the appendix - in Table 12 for the mergers and in table 11 for the PCC.

M&A results

First, we look at the case where all banks involved in M&A activity are treated as equivalent, with no distinction made between acquirers and targets. The coefficient for ROA is negative and highly significant which means that the less profitable a bank is, the more likely it is to undergo a merger. The coefficient for size is also significant at 1% level but has a positive sign which means that bigger size increases the likelihood for the bank to go through a merger. The constant term is also significant at 1% significance level, but has no direct economic interpretation.

The marginal effects are presented in table 13 in the appendix. The coefficient of ROA is -0.90179 which means that a 1% decrease in return on assets is going to raise the Z score of the probability of becoming a merger by 0.9179. By the same token increase in size is going to increase the score of the probability of Y equal to one by 0.111. We see that the magnitude of the profitability coefficient is much bigger than the magnitude of the size coefficient, which means that its marginal effect is much bigger on the probability of $Y=1$.

As a check, we have carried out logistic regression with fixed effects. The logistic regression proves the significance of the return on assets at the 10% level and of size respectively at 1% significance level. The reason we report the fixed effects logistic model is that we do not have statistically valid model for logit with random effects we could draw a statistically significant conclusion from. Both the probit model and the logit with fixed effects give us a LR ratio equal to 0.000, while this ratio is 0,7715 for the logit with random effects.

When testing the robustness of the model with alternative proxies we obtain significant and positive sign for NetROA (net income/total asset) coefficient.

However, we work with ownerless banks, which is a stakeholder model, interest payments to depositors need to be included in the ROA measurement. Besides, considering the cash flows to debtholders when calculating the return on assets is a standard approach in the corporate finance. Therefore, we focus in our analysis on the gross ROA. The alternative testing, however, confirms the significance and the sign of size and reveals two other regressors: growth at 1% statistical significance with a negative sign and area control variable with low significance of the coefficient and positive sign.

We see that Size and ROA are important factors. However, before we start interpreting the results, we should distinguish between the acquiring and the acquired banks. The reason is that the banks from the different groups might have different characteristics impacting the likelihood of going through a merger or acquisition. We have carried out additional regressions on the subsamples – one with acquirers only and the second with targets only. The results show that acquirers are more likely to be saving banks that are growing slowly and are less profitable. Growth and ROA are the only two significant factors that seem to determine whether a saving bank will undertake an acquisition. The signs of the remaining coefficients, which are insignificant, may imply that bigger and less leveraged banks are more likely to become acquirers but we cannot infer it.

Results based both on the original probit regression and the one on the alternative proxies show that bigger and underperforming banks are more likely to become targets. The insignificant coefficient for growth is negative and positive for leverage. More importantly, in both sub-samples, non-performing loans is not a significant factor.

Analysis and Implications of the M&A results

In what follows we look at each variable separately and provide interpretation and relation to existing theory.

Size

Size, according to our study, is the most persistent determinant of mergers both for targets and acquirers. The most likely explanation for this is economies of scale and

market power. In addition, acquiring one larger bank is less costly than acquiring several smaller banks due to lower transaction costs. Another reason for the attractiveness of bigger targets is the post-merger integration process, which is simpler in that case than by several successive mergers.

Our results are supported by many researchers among whom Moore, (1996;1997), and Hannah and Pilloff, (2007). Hannah and Pilloff (2007) report in earlier findings that larger banks are more likely to be acquired.

Profitability

The profitability coefficient, significant in the sample, where targets and acquirers are not distinguished and in the one with the acquirers only, is persistent with a negative sign in all the three regressions. This means that we can draw a general conclusion that profitability is inversely related to the probability of going through a merger. Our results that less profitable banks are more likely to become a target are consistent with the efficiency hypothesis.⁵³ The latter states that in a merger resources are transferred from the less efficient to the more efficient firms where there is room for improvement. The improvement comes either due to better managerial skills in the acquiring company or due to achieved synergy effects. Moore even looks at low profitability as a signal for potential acquisition (Moore, 1996;1997).

Growth

The primary determinant of a merger is the increased firm's size as a channel of inorganic growth. Such fast growth can be linked to several benefits apart from firm size. These include different externalities such as network, debt capacity, efficiency gains, reputation gains, economies of scale etc. These can be value-adding.

Moore (1996) and Pasiouras (2007) obtain negative coefficients of growth in their studies on European banks and argue that slowly growing banks are more attractive for the acquirers aiming to increase their growth rate. This is a plausible argument in our case too.

⁵³ Wheelock and Wilson (2000)

Leverage ratio and Non-performing loans

Although leverage is not significant for both targets and acquirers, we see a difference in the estimations between the two samples. The probability of becoming a target is positively related to the leverage ratio while inversely related for the acquirers. A possible explanation is proposed by Hannan and Pilloff (2007), who state that acquirers prefer highly leveraged targets because of the optimal trade-off between the post-merger performance gains and related costs.

Non-performing loans (NPL), even though insignificant, might be seen as an indicator of management quality especially when it comes to risk estimation. Berger and DeYoung (1997) refer this link as “bad management hypothesis”. Banks in general suffer from managerial inefficiency as opposed to scope or scale inefficiency (Wheelock and Wilson, 2000). While ROA is focused on the efficient use of resources, NPL is in a way an indicator of how to handle the risk effectively. In the worst case the high percentage of NPL can threaten the survival of the bank. Therefore, this variable is central for sustainability, but not for the merger activity as we see here. Given the results we obtained for NPL and leverage we can conclude that the riskiness of the saving banks is not a characteristic determining the merger decision.

Area control

Our expectation was that the regional effect will be significant as most of the mergers happen in the same or in a neighboring region. Yet, we have only one regression where this variable is significant at the 5% level and with a positive sign. This an interesting result given that the propensity matching gives us a negative coefficient. In view of its magnitude (close to zero) we do not regard it as a determinant in this analysis.

Factors affecting the likelihood of a saving bank to become an acquirer are similar to those of a saving bank to become a target. We can, therefore, conclude that regardless of the role the bank has in the merging process, the merger itself is considered as a growth opportunity. Even when we checked with the alternative proxies we obtained similar results. Hence, we can conclude that M&A are corporate restructuring strategy focused on growth and scale. Because of the magnitude of the ROA coefficient we conclude that mergers are focused on

increasing the profitability of the banks. We do not have further information from our research to conclude whether the aim is cost-efficiency or additional revenue. As banks that are more likely to merge are the bigger saving banks, these M&A activities are an outcome of a self-selection process and strategy, rather of pressure of market forces.

Mergers, however, can also be value-destroying. In case of cost-cutting, labor cost reductions might be involved which may affect the sustainability from stakeholders' perspective. In addition, information asymmetry between managers and other stakeholders, may lead to different valuations of the gains of the merger. A well-known problem is that an acquisition might not be a result of synergy considerations but of misalignment of interests. A manager might seek to increase scale pursuing own goals like status, compensation and perks.

As a complementary to our analysis we have run an ex-post regression with a dummy that takes value of 1 if the bank has gone through a merger two years ago. The aim is to explore if there is organic growth two years post-merger. We obtain a significant and negative coefficient for the dummy -0.0164, implying that merger has not led to organic growth but the aim of the merger was inorganic growth. However, this result should be supported by further investigation, which is our recommendation.

In the extreme case, a merger can lead to the emergence of a bank that is difficult to discipline – the too-big-to-fail effect. The other risk linked to the concentration in the banking industry is the structural change in the competitive environment. The merging trend is putting competitive pressure on the smaller saving banks but might function as a disciplining mechanism or induce them to merge themselves on later stage. We see from the graph that the size distribution among saving banks has changed substantially.

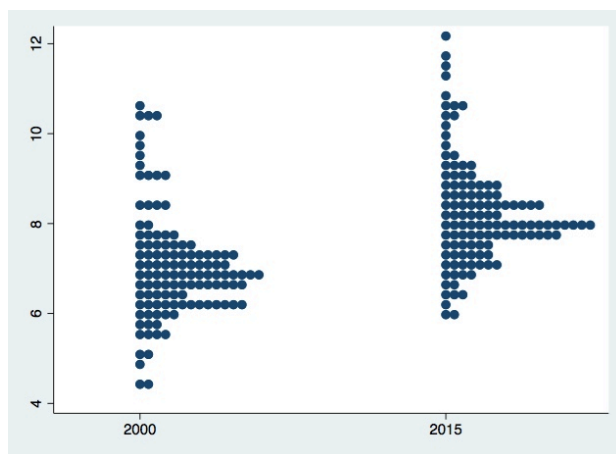


Figure 1. Size distribution – comparison between 2000 and 2015 based on the sample of all saving and PCC banks.

The proliferation of bank mergers since the 1980's shows that it was a very popular growth strategy, alternative to organic growth. It is easy to see why. The banking industry in Norway is very fragmented with many regional small saving banks with strong identity, where social capital plays an important role⁵⁴ The market is limited which makes organic growth very difficult. Other constraints are increasing competition from international banks and a general consolidation trend on Scandinavian market. The deregulation of the industry that started some decades ago stimulates growth tendencies. After the finance crisis of 2008, however, the capital requirements were increased. Mergers were one answer to this problem where banks gained markets, resources and could improve efficiency. As a growth strategy merging avoids introduction of ownership, dilution of stakeholder control and underpricing of the stock.

We see that apart from growth, the profitability is an important characteristic but not the overall level of riskiness. Since we have taken the stakeholder perspective and looked at the three dimensions of sustainability as comprehensive summary measure, we can conclude that riskiness of the bank does not affect merger's likelihood.

PCC results

Another channel of inorganic growth is issuing equity, which in the case of savings banks means becoming a PCC bank. In this sub-section, we look at all banks that

⁵⁴ Ostergaard, C., Schindele, I. and Vale, B., 2009. Social capital and the viability of stakeholder-oriented firms: Evidence from Norwegian savings banks

converted to a hybrid form. The results from the probit model show that growth and size are the only determinants of issuing equity. These results are consistent in all four regressions – probit with random effects, robustness check with alternative proxies, logistic regression with random effects and neighborhood matching. The coefficients on size and growth are both significant at 1% significance level. The growth coefficient has a negative sign which means that growth is inversely related to the likelihood of becoming a PCC. The size variable has a positive coefficient implying that the bigger the saving bank is, the more likely it is to become a PCC.

When we look at the marginal effects, a very interesting finding is observed: the magnitude of the coefficients is almost the same, approximately $|0,165|$, but with opposite signs. That means that both variables affect the Z-score of the probability equally.

Analysis and implications of the PCC results

In the same manner, as before we will look at each explanatory variable separately and provide possible explanations for the obtained results.

Size

Our results document that bigger banks are more likely to access capital markets. There are several impetuses for this. Firstly, banking sector in Norway has historically been attractively priced.⁵⁵ This means that the risk of underpricing of the banks' shares is not very high. Secondly, a bigger saving bank is probably better established on the market and can use its reputation, to limit the underpricing related to equity issuance. Another motivating factor for issuing equity certificates might be the regulatory pressure for capital requirements and leverage constraints. Liquidity requirements normally increase with size. Becoming a PCC bank has an advantage compared to conventional means of obtaining capital (debt-financing). It is not related to fixed payments which in bad times can threaten the bank's survival. Equity certificates make it possible for the bank to obtain substantial funds (from 14% to 97% of the ownership) while stakeholders remain in control of the banking organization, as has already been mentioned. Finally, by establishing a public

⁵⁵ Pareto.no

market the bank can achieve a better publicity, attract more customers and increase its valuation.

Profitability

Profitability does not seem to affect the likelihood that an ownerless bank will issue equity. The insignificance of the result is a very important finding. Moreover, it allows us to infer something about the nature of the pursued strategy - the aim of which is not cost-cutting or improving margins. Rather one would suspect that the aim of the strategy is growth. Despite the banks' opaqueness, regulations for reporting of accounting information ensure transparency. This means that a poor performer is usually unlikely to go for an issue equity as is not going to be an attractive target for an investor.

Growth

Our expectation that issuing equity is a growth strategy is confirmed by the inverse relationship between growth and the likelihood of entering the capital markets. Here, the same constraints which were enumerated above apply, most notably the discrepancy between the increased pressure for growth, consolidation and competition on one side, and the limited market on the other. However, as profitability is not significant and growth is, we can infer that what we are witnessing in the period is not weak banks trying to grow or to survive. Rather, we have larger saving banks, constrained in terms of growth, that are using PCC as a channel to grow.

Leverage ratio and Non-performing loans

Merton's insight that shareholders have a call option on the firm's assets⁵⁶ is crucial for understanding why shareholders-owned banks are expected to be riskier than ownerless. We explore whether the ownerless banks that change their ownership status were ex ante riskier with a higher percentage of non-performing loans and leverage ratio than the remaining saving banks. In that case, the first group would

⁵⁶ Merton's paper was published in the Journal of Finance in 1974, but a working paper was available in 1970 containing all the major results (see, respectively, Merton 1974, 1970; see also Merton 1992, ch. 11, pp. 357–87).

be less sustainable as defined by the stakeholder model. However, we find no evidence for that.

We would expect that ownerless banks that convert to PCC are banks that are not able to debt-finance their growth because of equity constraints. Our main results show that the level of leverage is not an important determinant of the decision. Banks change their ownership structure due to the advantages that PCC provides and not because of debt burden. Nearest neighborhood matching, however, reveals that there is a significant difference (with positive coefficient) between saving banks that convert and those that do not when it comes to leverage. This is aligned with the above argument.

The percentage of non-performing loans of the bank seem to be irrelevant for the likelihood of becoming a PCC bank. However, when we use treatment effects we obtain a statistically significant difference of -0,0891 between those that become PCC banks and those that do not. On one hand, a bank with a high level of NPL would not be appealing for investors as it could indicate either poor managerial skills in assessing risk or high risk-tolerance. On the other hand, a bank with higher ratio of NPL might issue equity to access capital in difficult times. We cannot conclude which of these is true.

Area control

Issuing equity certificates has become a trend among saving banks. The insignificance of the control variable, associated with the district the bank operates in, is an evidence that the success of the model is what attracts banks to convert. The local development does not play an important role when considering this decision.

Small PCC sample

The above stated PCC results are based on the sample that includes saving banks that have issued equity, regardless of the way they became PCC banks. In the period of 2001-2015 we have only 10 banks that chose to become a PCC bank that are not related to merging activities. This is our smallest sample but it includes the whole population of such banks for the period. We did not obtain significant results on the

first probit regression and the same applies for the alternative logistic model. Bootstrapping the standard errors produces a significant coefficient at the 5% level for size. Propensity matching testing confirms the importance of size with a positive coefficient (0.64) and adds ROA as a factor of difference (-0.0064). What we can infer from these results is that size is the main determinant. The bigger the bank the bigger the likelihood to issue equity certificates. The most likely explanations were already stated above. Another reason, which may not be immediately obvious is that large banks might be subject to different competitive pressures than smaller banks.

Results for PCC from mergers, Analysis and Implications

We have built a sample comprising only of PCC banks related to mergers. In most of the cases, we are talking about saving banks that became PCC banks by merging with a bank that already has issued equity. We wanted to compare the results from this sample to those of the other two, as this restructuring strategies are hybrid transformation, i.e. including both merger and ownership change. Interestingly, the results reveal that the same regressors we found significant with all PCC sample, are significant here. This means that a saving bank is more likely to engage in a merger for the sake of becoming PCC if it is a slowly growing big bank. In terms of magnitude the marginal effects show coefficients of 0,1433 for size and -0,214 for growth. We see that the effect of growth is slightly more important than those of size but the magnitude of both is not high. The regression with the alternative proxies points to the same determinants (size and growth). The alternative robustness check using logistic regression confirms our results.

A saving bank may prefer to merge with a PCC bank instead of directly accessing the capital market because the other one has already gone public. Thus, the saving bank can explore the competence and the established public market for the shares of the hybrid bank. The learning curve that is involved here means that a merger is a safe channel of issuing equities. Additionally, it has the added benefits of scale and growth.

There are banks that are not included in our sample because they converted to a hybrid form before the year of 2000. However, most of them appear in our merger sample because of the merging activities they undertake in the observed period. In light of that, an additional explanation why a bank would change its ownership

structure could be the increased publicity. By going public, entrepreneurs help facilitate the acquisition of their company for a higher value than what they would get from an outright sale. Zingales (1995) observed that it is much easier for a potential acquirer to spot a potential takeover target when it is public.

As we see, small saving banks are less likely to undergo strategic corporate restructuring processes like mergers and change of ownership structure. This has implication for the behavior of the saving banks. Smaller saving banks stick to the same organizational design. A possible field for further research is the relationship between size and the regional effect. Bigger banks find the PCC model attractive regardless of the area they are situated in. One possible explanation is the information asymmetry that might exist between smaller and larger banks. Saving banks are willing to exploit the advantage of their size when entering restructuring process.

Conclusion

In the 80s and 90s, we observe a change in the institutional context with first deregulation and then tightening of the regulation after the banking crisis in the 90's. Both processes have resulted in an increased competition on scale and a tendency towards consolidation. They have led to the emergence of hybrid forms like PCC banks, and PCC banks born from mergers. The saving banks have been a traditional model which has proven its sustainability over time as the saving banks are known to be less risky and just as profitable as the commercial banks.⁵⁷ However, we see from our results that the changes in the institutional context have affected the saving banks differently.

Larger banks are more likely to pursue growth and capital building strategies through both mergers and PCC although mergers strategies are more focused towards margins. Larger saving banks try to exploit the advantages of their size when they convert to PCC but are also more likely to become targets of mergers if

⁵⁷ Bøhren and Josefsen (2013)

they are not profitable. One of the reasons why the larger saving banks adopt a growth strategy is the information transfer which is different than in the smaller banks. Bigger banks rely on more standardized information which is easier to be channeled among large organization.

Given that most mergers result in a PCC structure, a hybrid structure, we can conclude that these processes have brought the stakeholder saving banks model closer to the Anglo-Saxon model. This is a modernization process in the Norwegian saving banks industry. The PCC model has been around since the end of the 80's and has already proven its advantages. The increased cross-border competition, change in costumers' behavior, further development of electronic platforms would most likely increase this consolidation trend. The ongoing "hybridization" is the saving banks' response to these changes. Furthermore, our results show that the level of riskiness of the banks is not a determinant for these restructuring corporate decisions. Both switching to a hybrid form and merging add additional risks for the saving banks.

The external pressure towards size seems to be greater on larger banks than on the smaller banks. We have reasons to suspect that smaller banks have stronger local identities, where social capital and customer loyalty play a crucial role. Many of these operate in regions where there is less competition from both other Norwegian players and foreign subsidiaries. Those banks are an integral part of the local economy and their stakeholder model makes them aspire to strike a balance between margins and serving local needs. Consequently, smaller banks are more dependent on the safety of their bank alliance with within group cooperation.

The implications from our research is that scale determines the strategy. Another implication is that the governance structure can influence the sustainability, the success or failure of the model. However, before drawing a general conclusion we need to consider one important factor – the context where banks operate. As an attempt to externally validate our results we looked at the Cajas, the Spanish saving banks. They attempted an expansion strategy which allowed them to compete against commercial banks before the recent financial crisis. The model was not sustainable, however, because it was too risky for the small saving banks which

were badly hurt during the crisis.⁵⁸ At the same time, it has been shown that in periods of economic turmoil smaller saving banks in Norway have been more sustainable than the larger ones.⁵⁹ There might be several explanations for that. (REF). Firstly, social capital and trust play an important role for smaller regional banks in Norway that have deep roots in the local economy. They are community oriented, which makes them less willing to take risk. Their competitive advantage is the small spatial proximity to their customers and the use of soft information.⁶⁰ Soft information, however, can also confer disadvantages, most notably in terms of hindering growth. Additionally, the environment of transparency contributes to the stability of the model.

The increased competition gives strong incentives for saving banks to establish an ownership structure insensitive to market pressure. In addition, ownership itself is a valuable corporate governance mechanism. Owners have incentives and power to monitor and motivate the management.⁶¹ Thus, maximizing shareholder value becomes even more important under such circumstances and changes the role of risk as we can see from our results. The subsequent alteration affects both the behavior and the structure of the saving bank. The flexibility can be given by the PCC form and at the same time inorganic growth can be ensured through the merger. These are central arguments for why we witness so many hybrid banks emerging from mergers in the period. Overall, that points to a continuous transformation in the system of saving banks in Norway.

⁵⁸ Marti Sagarra , Cecilio Mar-Molinero & Miguel García-Cestona (2013)

⁵⁹ Bøhren (2013)

⁶⁰ Herpfery , Schmitz and Mjøs (2016)

⁶¹ Jensen-Meckling (1976)

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Appendices

Table 4. List of all PCC banks in Norway (2016)

Listed on the stock exchange	Not listed on the stock exchange
SpareBanken Møre	Aasen Sparebank
SpareBank 1 Ringerike Hadeland	Cultura Sparebank
Melhus Sparebank	Grong Sparebank
Sandnes Sparebank	Hjelmeland Sparebank
Sparebanken Øst	Klæbu Sparebank
Sparebank 1 SMN	Kvinesdal Sparebank
Totens Sparebank	Neset Sparebank
Aurskog Sparebank	Ofoten Sparebank
SpareBank 1 Østfold Akerhus	Sparebank 1 Hallingdal Valdres
Skue Sparebank	Sparebank 1 Nordvest
SpareBank 1 Nord-Norge	Sparebank 1 Telemark
Helgeland Sparebank	Sparebank Sogn og Fjordane
Indre Sogn Sparebank	Sparebanken Din
Høland og Setskog Sparebank	Sparebanken Hedmark
Jæren Sparebank	Sunndal Sparebank
Sparebanken Vest	Surnadal Sparebank
SpareBank 1 BV	Tysnes Sparebank
Sparebanken Sør	Åfjord Sparebank

Table 5. List of all banks involved in M&A activity (2000 - 2015)

Mergers and Acquisitions of Savings banks (2001-2015)			
New Savings bank		M&A	Date
1	Askim and Spydeberg Sparebank	Spydeberg Sparebank and Askim Sparebank	01.04.2015
2	Jæren sparebank	Klepp Sparebank and Time Sparebank	01.01.2015
3	Sparebanken Sør	Sparebanken Pluss and Sparebanken Sør	01.01.2014
4	Skue Sparebank	Nes Prestegjelds Sparebank and Hol Sparebank	15.10.2013
5	Sparebanken Din	Bø Sparebank and Seljord Sparebank	04.10.2013
6	SpareBank 1 Telemark	Sparebanken Grenland and SpareBank 1 Telemark	23.11.2013
7	SpareBank 1 Telemark	Holla og Lunde Sparebank and SpareBank 1 Telemark	23.11.2013
8	SpareBank 1 Hallingdal Valdres	SpareBank 1 Hallingdal and Øystre Slidre Sparebank	23.11.2013
9	Sparebanken Vest	Sparebanken Vest and SpareBank 1 Hardanger	01.11.2011
10	SpareBank 1 Østfold Akershus	Rygge-Vaaler Sparebank and Halden Sparebank	01.11.2011
11	SpareBank 1 SR-Bank	Kvinnherad Sparebank and SpareBank 1 SR-Bank	01.11.2010
12	Sparebanken Sogn og Fjordane	Fjaler Sparebank and Sparebanken Sogn and Fjordane	01.09.2010
13	Høland and Setskog Sparebank	Setskog Sparebank and Høland Sparebank	01.07.2010
14	SpareBank 1 Ringerike Hadeland	SpareBank 1 Gran, SpareBank 1 Jevnaker Lunner og SpareBank 1 Ringerike	01.07.2010
15	Sparebanken Møre avdeling Tingvoll	Tingvoll Sparebank and Sparebanken Møre	01.11.2009
16	Sparebanken Vest avd. Sauda	Sauda Sparebank and Sparebanken Vest	01.11.2009
17	SpareBank 1 Buskerud-Vestfold	Sandsvær Sparebank (with market name SpareBank 1 Kongsberg and Drammen) and Sparebanken Vestfold (with market name SpareBank 1 Vestfold)	01.11.2008
18	SpareBank 1 Telemark	Sparebanken Telemark and Sparebanken Grenland	01.06.2008
19	Sparebanken Narvik	Ankenes Sparebank and Narvik Sparebank	01.03.2007
20	Grong Sparebank	Grong Sparebank and Verran Sparebank	13.11.2006
21	Ofoten Sparebank	Ofoten Sparebank and Tjelsund Sparebank	13.11.2006
22	Sparebanken Hardanger became part of SpareBank-1 Alliansen.		14.09.2006

23	Hegra Sparebank became part of Terra-Gruppen		14.09.2006
24	Sparebanken Hedmark, Sparebanken Volda og Ørsta	together with Kvinnherad Sparebank became part of SpareBank 1-alliansen	Spring of 2006
25	Holla og Lunde Sparebank	Holla Sparebank and Lunde Sparebank	01.10.2004
26	Jernbanepersonalets sparebank became part of Terra-Gruppen		July 2004
27	Helgeland Sparebank	Helgeland Sparebank and Sparebanken Rana	01.04.2005
28	Sparebanken Sogn og Fjordane	Sparebanken Sogn and Fjordane og Sparebanken Flora-Bremanger	13.10.2003
29	Lillestrøm Sparebank	Enebakk Sparebank and Lillestrøm Sparebank	01.05.2003

Table 6. List of the explanatory variables

Variable name	Description
Size	Natural log of bank's total assets
Profitability	Gross ROA, the sum of the net income plus the interest payments divided by the total assets of the banking organization
Growth	Change in bank's total assets
Leverage ratio	Bank's total equity divided by bank's total liabilities
Non-performing loans (NPL)	Realized loses, as a percentage of total loans
Area control	Change in the employment of the district the bank operates in measured by the number of employed residents.
Capitalization ratio	An alternative proxy for leverage; measured by total equity/total assets
Capital adequacy ratio	An alternative of NPL as an indicator of bank's riskiness; The sum of core plus supplementary capital divided by the risk-weighted assets
Net ROA	Alternative measure of profitability; Net income divided by average assets of the banking organization

Table 7. Descriptive statistics of all saving banks compared to those of the acquirers and targets

Variables	All saving and PCC banks (Obs= 1,800)				Acquirers only (Obs= 309)				Targets only (Obs= 332)			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
overall	9.739682	2.972612	.8861566	40.73882	10.57657	3.016508	4.68	23.36	9.97762	2.808337	2.71	31
between	2.439318	4.481377	15.69513		2.361106	6.1225	15.31188		2.109469	4.37375	13.96875	
within	1.702837	3.038067	37.78424		1.901094	4.494695	18.62469		1.895885	5.674495	27.00887	
overall	.0349099	.0114428	-.0146842	.0861686	.0371511	.011581	.019	.0862	.0361172	.0108331	.0126	.0652
between	.0033946	.0125216	.0431667		.0022663	.0322364	.0417083		.0021238	.0307188	.0388937	
within	.0109345	-.0059232	.0846174		.0113944	.0200824	.0856824		.0106335	.0153922	.0626922	
overall	.2242546	.4084825	-.72	7.08	.227055	.2770181	-.33	3.03	.1975301	.3797454	-.34	5.24
between	.1450334	-.0846217	1.04913		.094071	.07625	.4308333		.1357152	.018125	.58875	
within	.3821483	-.8648752	6.255125		.2619759	-.26857	2.827055		.3555406	-.3412199	4.989405	
overall	7.792557	1.241303	4.454347	12.0852	8.792099	1.359738	6.0307	12.0852	7.342656	1.228528	4.3438	10.5685
between	1.191076	5.360192	11.48231		1.324953	6.853907	11.43031		1.192773	5.296681	10.03148	
within	3.594204	6.711998	8.666508		.4082089	7.685555	9.728255		.3710131	6.350275	8.252075	
overall	.0844799	.0711269	-.1951747	.3940847	.0865924	.0738411	-.0904	.3941	.0724543	.1056874	-.9875	.3145
between	.0194404	.0311303	.1539539		.0238701	.0421933	.1470133		.0278342	.021675	.1333	
within	.0684493	-.1892702	.3694067		.0701001	-.0872743	.3664457		.1020919	-.9367207	.3652793	
overall	.0072229	.0167522	-.044	.0533	.0065467	.0166592	-.044	.0533	.0056337	.0160354	-.044	.0533
between	.0049168	.0009933	-.0166533		.0048125	.0009933	.0156867		.0047175	.0009933	.0156867	
within	.0160202	-.0524638	.0517095		.0159829	-.05314	.0475267		.0153581	-.054053	.0466137	
overall	.1003575	.0293168	.0239573	.2693056	.0922997	.0245325	.041	.176	.0984434	.033747	.0313	.2693
between	.0259641	.0636364	.2009294		.0210076	.065575	.142675		.0286499	.0705938	.2050188	
within	.0136791	.0265943	.1801907		.0129779	.0590497	.1367122		.0186313	.0206246	.1627246	
overall	.0070569	.0043641	-.0339116	.0336759	.0077223	.0040056	-.0106	.0337	.0070271	.0051495	-.0282	.0257
between	.0019318	.0019853	.0138869		.001555	.0051375	.0118375		.002342	.0039	.0142562	
within	.0039155	-.0317297	.0328368		.0036969	-.0120839	.0332598		.0046086	-.0262479	.0240896	
overall	.1003575	.0293168	.0239573	.2693056	15.81447	3.076776	8.11	25.44	17.0994	4.814802	9.83	43.64
between	.0259641	.0636364	.2009294		2.201954	12.99125	19.86688		3.691571	13.32437	30.96562	
within	.0136791	.0265943	.1801907		2.164743	10.37009	22.39322		3.164591	3.283773	29.77377	

Table 8. Descriptive statistics of PCC banks

Variables	All PCC and saving banks included in the sample (Obs= 1,411)				PCC banks (Obs= 448)				PCC from mergers (Obs= 1276)			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
overall	9.139043	2.694237	.8861566	40.74	9.672539	2.808537	2.713253	40.74	9.41972	2.624058	2.713253	18.88401
between	2.227302	4.481377	14.18973		1.988412	4.373705	12.69467		2.22535	4.373705	12.3932	
within	1.533224	2.438327	37.18528		2.019565	5.37274	37.71787		1.476027	5.119921	17.02956	
overall	.0338692	.0129062	-.046888	.0861686	.0353689	.0122285	.0033	.0861686	.0366069	.0114373	.0073941	.0861686
between	.0057639	.0046888	.0401367		.0049836	.0124312	.0405163		.0020466	.0307124	.0405163	
within	.0115628	-.0182384	.0901469		.01112021	.0051343	.0838659		.0112619	.0063723	.0851039	
overall	2133389	3787267	-6	5.867008	.2346635	.4770003	-6	5.24	2.10673	.4072171	-.3372587	5.24
between	.1232999	.0028553	.5596371		.1287665	.0185738	.48125		.1213248	.0185738	.4498737	
within	3583168	-.8353277	5.52071		.4599587	-.8040031	5.02479		.3896598	-.280767	5.000799	
overall	7.551526	.9745049	4.454347	10.91255	7.754231	1.306491	4.343805	10.91255	8.009445	1.388507	4.343805	10.91255
between	.90976	5.360192	10.47485		1.26042	5.296668	10.43084		1.364932	5.296668	10.43084	
within	.3616543	6.468192	8.516742		.4102458	6.588606	8.708606		.396413	6.89391	8.936614	
overall	.0854504	.0686684	-.1952	.3585415	.0855698	.0828855	-.7312546	.3144796	.0805689	.0842259	-.7312546	.3144796
between	.0210934	.0311325	.1686206		.0274016	.0255175	.15394		.0275226	.0255175	.1484707	
within	.0653799	-.1881323	.3513462		.0783303	-.6712024	.3210564		.0797854	-.6762033	.3061082	
overall	.0072213	.0167392	-.044	.0533	.00745	.0166129	-.044	.0533	.0057923	.0159316	-.044	.0533
between	.0048589	.0009933	.0166533		.0053119	.0009933	.0166533		.00502	.0009933	.0156867	
within	.0160258	-.0524653	.051708		.0157707	-.0522367	.04843		.0151611	-.0538944	.0467723	
overall	.1054824	.0295723	.024	.2693056	.1001331	.0309494	.024	.2693056	.1036655	.0355847	.0503	.2693056
between	.0262291	.06718	.2009294		.0263228	.0768319	.2049998		.0311385	.0768319	.2049998	
within	.0139235	.0317193	.1862891		.0169772	.0222996	.164439		.0185651	.025832	.1679714	
overall	.007193	.0043053	-.0339	.0336759	.0070816	.0048959	-.0339	.0336759	.0078232	.0046571	-.0282	.0336759
between	.0019285	.002	.0138869		.0023639	.001875	.0142613		.0023072	.005075	.0142613	
within	.0038544	-.031587	.0329729		.0043092	-.0318934	.0325864		.0040778	-.0254518	.033328	
overall	18.22239	4.159274	2.1	43.64	16.7064	4.469524	2.1	43.64	16.77476	5.064377	8.11	43.64
between	3.40242	13.17133	30.4225		3.362618	13.05125	30.96547		4.069933	13.05125	30.96547	
within	2.417598	3.667054	31.43988		3.023996	7.377653	29.48892		3.146995	2.963442	29.44929	

Table 9. Correlation matrix for M&A sample

	Llever~o	LROA	LAreac~l	LNonpe~s	LSize	LGrowth
Lleverager~o	1.0000					
LROA	0.0333	1.0000				
LAreaccontrol	0.1212	-0.1478	1.0000			
LNonperform~s	0.1714	0.0501	-0.2308	1.0000		
LSize	0.3804	0.0203	0.1057	-0.0396	1.0000	
LGrowth	0.0806	0.1699	0.2900	-0.1361	-0.0826	1.0000

Table 10. Correlation matrix for PCC sample

	Llever~o	LROA	LAreac~l	LNonpe~s	LSize	LGrowth
Lleverager~o	1.0000					
LROA	0.0359	1.0000				
LAreaccontrol	0.0979	-0.1267	1.0000			
LNonperform~s	0.1952	0.0506	-0.2117	1.0000		
LSize	0.1957	-0.0672	0.0634	-0.0484	1.0000	
LGrowth	0.0595	0.2106	0.2738	-0.1161	-0.1478	1.0000

Table 11. Probit model for the PCC samples

	All PCC	PCC from mergers	PCC not related with M&A
LSize	8.151 *** (2.166)	8.380 *** (2.020)	6.7360 *** (2.5466)
LROA	-15.00 (31.18)	-17.15 (26.00)	-14.9172 (43.2144)
LGrowth	-8.069 ** (2.485)	-12.51 *** (3.218)	-4.8985 (3.1377)
LLeverage ratio	-0.0504 (0.114)	0.0395 (0.184)	-0.1183 (0.2893)
LNon-performing loans (NPL)	-0.131 (0.479)	-2.563 (1.469)	0.3683 (0.9516)
LArea control	11.87 (16.51)	-5.614 (17.85)	6.3787 (16.7656)
_cons	-70.42 *** (18.12)	-74.86 *** (17.33)	-62.7641 (22.4972)
/lnsig2u	4.629	4.794	0.7329
N	1217	1190	1063
Prob > chi2	0.0003	0.0003	0.1744

Robust standard errors in parentheses

***p<0.05, **p<0.01, ***p<0.001**

Table 12. Marginal and Treatment effects on the PCC sample

	All PCC probit	Marginal effect at median	Treatment effects
LSize	8.151 *** (2.166)	0.1651 *** (0.0211)	0,7873 *** (0,1431)
LROA	-15.00 (31.18)	-0.304 (0.6168)	-0,0041 *** (0,0008)
LGrowth	-8.069 ** (2.485)	-0.1635 *** (0.0447)	0,0283 ** (0,0123)
LLeverage ratio	-0.0504 (0.114)	-0.001 (0.0023)	1,2123 *** (0,2591)
LNon-performing loans	-0.131 (0.479)	-2.563 (1.469)	-0,0452 (0,0307)
LArea control	11.87 (16.51)	0.2405 (0.3034)	0,0006 (0,0017)
_cons	-70.42 *** (18.12)		
/lnsig2u	4.629		
N	1217	1217	1217
Prob > chi2	0.0003		

Robust standard errors in parentheses *p<0.05, **p<0.01, *p<0.001**

Percent correctly predicted = 91,21%

Table 13. Marginal and Treatment effects for M&A sample

	All M&A probit	Marginal effects at median	Treatment effects
LSize	7.249 *** (1.017)	0.111 *** (0.0157)	0.2464 * (0.1138)
LROA	-59.92 *** (15.39)	-0.9179 *** (0.2442)	-0.0015 * (0.0007)
LGrowth	-8.205 (9.117)	-0.1257 (0)	-0.1412 * (0.007)
LLeverage ratio	-0,0100 (0.371)	0,0002 (0.0057)	1.3215 *** (0.2176)
LNon-performing loans (NPL)	-0.817 (0.969)	-0.0125 (0.0149)	- 0.1262 *** (0.0183)
LArea control	2.177 (26.53)	0.0334 (0.4061)	-0.0057 *** (0.0013)
_cons	-66.29 *** (9.766)		
/lnsig2u	5.327		
N	1674	1674	1674
Prob > chi2	0.0000		

Robust standard errors in parentheses *p<0.05, **p<0.01, ***p<0.001
Percent correctly predicted = 84,11%

Table 14. Probit model for Acquirers and Targets

	All M&A	Acquirers	Targets
LSize	7.249 *** (1.017)	5.5727 (3.7599)	5.8824 *** (1.1970)
LROA	-59.92 *** (15.39)	-34.2964 * (16.8267)	-52.4156 *** (13.4108)
LGrowth	-8.205 (9.117)	-9.1305 ** (3.4768)	-7.2291 (10.4389)
LLeverage ratio	-0,0100 (0.371)	-0.2940 (0.3145)	0.0674 (0.4263)
LNon-performing loans (NPL)	-0.817 (0.969)	-1.4331 (0.8266)	-0.7929 (1.0470)
LArea control	2.177 (26.53)	-4.9385 (14.3782)	1.5168 (32.8254)
_cons	-66.29 *** (9.766)	-49.9559 *** (33.3906)	-57.7726 *** (11.4878)
/lnsig2u	5.327	4.1354	5.1520
N	1674	1,384	1,406
Prob > chi2	0.0000	0.0562	0.0000

Robust standard errors in parentheses *p<0.05, **p<0.01, ***p<0.001