

Hybrid Ownership Structure and Sustainability: a Study of the Norwegian PCC Banks

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Introduction

With the growth of public listed companies on the stock exchange, whereby shares are available for the public to buy, shareholder control of the company become more difficult to contain. The separation of ownership and control and the subsequent goal and interest conflict that might arise between owners of capital and managers is known as the agency problem. Then what governance structure is chosen and the shareholder's ability to take active steps to review the performance of the management is crucial.

The agency problem and the corporate governance, defined by Shleifer as “the ways in which the suppliers of finance to corporations assure themselves of getting enough return on their investment (Shleifer and Vishy, 1997, p. 737) remain one of the widely-debated topics, perhaps even more so given the rise of sustainability. There are two critical empirical questions to be answered pertaining to the organizational structure – that of the behavior and the performance connected to these structures as well as, more generally, to what extent these should depend on the stakeholders. Both questions reflect the search for an optimal governance structure.

As sustainable management of capital becomes the focus of corporate strategies, we need to make a difference between operating and operating in a sustainable way. Economically sustainable companies guarantee at any time cash flow sufficient to ensure liquidity while producing a persistent above average return to their shareholders (Dyllick and Hockerts, 2002, p. 133) This means firms can become unsustainable long before bankruptcy.

Banks present a special challenge when it comes to corporate governance due to their opaqueness, specificity and regulation (Polo, 2007, pp. 2-10) The banking sector in Norway has traditionally consisted of savings banks that date back to the beginning of the 19th century. While most banks are ownerless, it has been proven that ownerless banks perform just as good as the commercial banks (Bøhren, 2013). Since 1988 savings banks have been allowed to increase their equity capital through the issue of so-called Primary Capital Certificates (PCCs), known now as Equity certificates. This new organizational structure, has become a growing trend.

Motivation for our study

We would like to explore the trend of the emergence of banks with equity certificates and look more closely at what factors could prompt the decision to become PCC. The question is why this form emerges, and what role the market as a disciplining mechanism plays in this decision as well as if it is a good way to ensure growth opportunities. Could it be the case that the reason is not easily observable? Banks switch for a reason with a long horizon in mind and we would like to explore whether ownerless banks by taking this decision can actually obtain growth opportunities and to a sustainable outcome. We feel that presently this topic is not explored in depth and thus hope that our research will add some information or at least that it will eliminate some factors as explanatory, and potentially point to a direction for future research. Becoming a hybrid bank is a growing trend and thus we feel that we research on a meaningful topic and hope we will be beneficial with our insights. Furthermore, we are interested in finding out how this new hybrid structure performs against the ownerless banks and if what we are witnessing is weak banks switching to a new organizational structure.

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 inform our expectations and are also relevant for the two organizational structures that we will discuss later: shareholder and stakeholder.

Agency theory and the shareholder model

According to the narrowest meaning, corporate governance focuses on shareholder value. This has its roots in the agency theory applied for ownership and financing structures which treats the separation between ownership and control and the subsequent conflict resulting from misalignment of interests between the 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. (Berle & Means, 1932).

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 taken into account. 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." (Demsetz,1983, p. 10).

Demsetz and Villalonga found no significant relationship between ownership structure and corporate performance in their study on multidimensional ownership and performance (Demsetz and Villalonga, 2001). "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 shareholdings and firm performance" (Demsetz & Villalonga, 2001, p.215) Another result from that study that has to 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 view 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 pledgable 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 (Tirole, 2001, pp. 23-32) While he recognizes the negative effect multiple goals and interests can have on efficiency, a concern also raised by Hansmann (1996), he argues that it is possible to defend stakeholders contractually, emphasizing the importance of a governance structure alternative to the shareholder model. 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.

Stakeholder theory:

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

- Redistribute benefits to stakeholders, and
- Redistribute important decision-making power to stakeholders (Stieb, p. 405)

The idea of duty to the stakeholders in whose interest the firm should be managed is central and the firm is seen as a series of multilateral contracts among stakeholders (Freeman, 1990, p. 358) There is a normative implication based on ethical principles in his work that stresses trust and cooperation, but it has to be mentioned 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 in order to overcome serving many interests and giving a single objective. The recent financial crisis especially in the UK has spiked again this "dichotomy" between owner 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 view the corporation as an industrial partnership and where the interests of the long-term stakeholders are taken into account, with a salutary role of non-shareholder constituencies (Macey & O'Hara, 2003, p. 92) Corporate governance in both is based on explicit and implicit set of contracts and the agency 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.

On what makes banks special

While none of these traditions discussed above is superior to the other one, banks do differ from other firms in several respects. Their capital structure is unique as they have very little equity compared to other firms, and receive most of their funding from other debt. Their liquidity function, a term originally introduced by Fama in 1980s, is special because of the illiquid assets and liquid liabilities. This makes them 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 (Macey & O'Hara, 2003, pp. 96-98) Also, the same authors argue that banks will seldom be liquidity impaired because they will be able to obtain cash. The decline of some UK banks and the financial crisis in the UK has spiked debates on the merits of the stakeholder/stakeholder approach with some authors claiming that it is not that the banks deploy shareholder approach, but how they deploy it (Tse, 2011, p. 63)

The German and Norwegian corporate model and banking systems

When it comes to banking, the Norwegian corporate model is similar to the German corporate governance model which is stakeholder oriented, resilient to change and dominated by the savings banks (Hackethal,2005, p.1). The German banking system is build 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 and 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 (Köhler, Matthias 2010).

Founded at the beginning of the 18th century today, German savings banks are universal banks, operating under the “public law. The savings banks or Sparkassen operate under ‘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” (European Savings and Retail Banking Group, The legal structure of savings and retail banks in Europe, 2014). 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 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 (Choulet, Céline 2016). With the burst of real estate bubble, these 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 all groups of customers from all parts of society”. (European Savings and Retail Banking Group, October 2014). 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 has 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 (Hackethal et al, 2005, pp. 12-13). Among the factors are changes in the legal context, increased competition in the banking sector and new business strategies like increased investment banking in commercial banks. It will be interesting to explore if the same is true for similar contexts.

The Norwegian Context and Types of Banks in Norway

It is important to stress the tradition of corporatism in Norway in which wage bargaining and the right of the employees many of which minor shareholders in the commercial banks, is central. “In particular regulatory and legal restrictions in Norway keep significant control rights out of the hands of banks, and tend to favour the protection of minority shareholders.” (Ongena et al, 2001, p. 83) Furthermore, most of the businesses in Norway are financed by banks loan and many firms have a relationship exclusively with one bank.

In Norway there are three types of banks – commercial banks, which are shareholder controlled, purely ownerless savings banks and a third hybrid type - saving banks with equity capital certificates or PCC banks. In recent years, a few savings banks were organized as limited companies, where at least 10 percent of the shares are controlled by a savings bank foundation. In our thesis, 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 savings 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 savings banks, both operating as universal banks, what makes the Norwegian savings banks unique, is that it is a self-owned entity -they have been organized as ownerless independent foundations. (www.sparebank1.no)

Unlike German savings banks, Norwegian banks are not legally obliged to pursue social and welfare goals (Savings Banks Act), but are expected to play a specific public role by supporting sustainable development of local communities. Another difference from the savings banks in the Federal republic, is that savings and commercial banks in Norway are set on an equal base. The savings banks are not restricted to the activities they can engage in and many banks have set up subsidiaries exercising a variety of bank-related activities. However, a merger has to be approved by the committee of representatives and in order a new savings bank to be established, specific requirements, including residence requirement for members of the savings bank's bodies, have to be met. (Savings Banks Act, 2004). 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, now termed "Equity Certificates" (ECs). As of 1st of January 2017, 35 savings banks have such certificates, 19 of them are listed on Oslo Stock Exchange (Sparebankforening, 2017). By law the holders of equity certificates obtain up to 40% of the votes (www.sparebank1.no), 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. Hence, these banks are partially ownerless but also has a minority shareholder. An important point, therefore, is that the threat of a hostile takeover cannot be used as a disciplining instrument, due to limitation on votes of the external capital. By the same reason a decision cannot be taken solely by the external shareholder. This implies that the interest of the stakeholders will be protected adequately.

More on Equity certificates

A “hybrid” bank has two layers of capital: an ownerless part and that of the external equity holders. The ECC funds have higher seniority than the other elements of the equity, since 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, ECC differ from the common shares by its holder’s rights to the bank’s assets. Other major difference between equity certificates and shares constitutes in the voting rights. 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% (Norwegian savings bank association).

Current Research on Ownerless banks in Norway

The paper that captured our interest when deciding on a master thesis about the Norwegian ownerless companies was the paper *Stakeholder rights and economic performance: The profitability of nonprofits* written by Bøhren and Jeseffsen (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. Major result is that the stockholder-owned firms do not outperform nonprofit firms and 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 Jeseffsen (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.

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 savings banks in recent years decided to change their organizational structure.

On sustainability and business models:

“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 needs of future stakeholders as well” (Dyllick, Thomas; Hockerts, Kai, 2002, p. 131). While we recognize the importance of not only the economic, but also social and environment capital (ESG criteria) for the long-term sustainability, we will focus on economic sustainability for the pursuit of our research question and we will utilize the definition given before in the introduction.

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 loans (www.bankingsupervision.eu) 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.

Research Question

Given our motivation, our research question is divided in two parts:

- 1) What are the factors affecting the savings banks’ decision to switch to a PCC bank?
- 2) Is becoming a PCC value creating for the saving bank; does the PCC bank grows faster and is this model more sustainable?

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.

Methodology

Research Design

To explore what the possible reasons could be to switch to PCC and what makes for a more sustainable model, we can use both quantitative and qualitative research. We will utilize both empirical survey with a self-selection and propensity score matching model, and additionally we intend to make a few case studies of ownerless firms to be able to get more in-depth insights into the research problem. Thus our data collection involves two phases: working with our panel data set that covers ownerless banks which we will describe shortly, and phase two, gathering data by hand for the case studies. In short, this is our progression.

Both self-selection and propensity matching are popular methodological approaches in corporate finance as firms self-select into preferred choices, like becoming PCC banks, as in our case. The importance of self-selection in finance reflects the role of private information- a way of incorporating and controlling for unobservable information which can also be seen as an omitted variable problem. Propensity matching is also a very popular methodology as it allows for more direct inferences than self-selection. Our intention is to combine both self-selection and propensity matching and compare the outcomes as this will provide us with more robust results. In this endeavour we use Li and Prabhala study on self-selection models as our guideline (Li and Prabhala, 2006). The self-selection model is based

on Heckman's selection model. These two models, however, have different assumptions which we will discuss shortly.

Motivation for using self- selection

Since we work with a non-random sample of ownerless banks we choose to use self-selection. Our regression model will include explanatory variables, but there might be other factors like inside information which can be difficult to capture which, if omitted, can lead to biases. Thus we will include an extra variable for private information. That will also allow becoming a PCC bank to be an endogenous decision.

We intend to use switching regressions. The motivation for using switching regressions is that they will give us a chance to get more useful estimates as we can elaborate on both outcomes - with and without treatment. We observe two regimes in the population – PCC banks and non PCC banks. We have the outcomes of both firms that self-select and firms that choose to not self-select which makes using switching regressions possible.

Motivation for using propensity matching

Moreover, propensity score matching can be a more direct way of estimating the treatment effect of becoming a PCC bank which is our main motivation for using it.

Operationalization of sustainability and list of variables

Sustainability can be measured in different ways. We are primarily interested in economic sustainability and thus intend to measure this in terms of risk and growth. Risk will be operationalized through using ROA volatility which is a standard measure and which has been shown to be low with the ownerless banks (Böhren, 2013), and additionally, we intend to use non-performing loans (NPL) as these represent a specific vulnerability. 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.

Furthermore, we intend to measure growth as a factor of economic sustainability. As we mentioned in the beginning we expect one of the reasons savings banks switch to PCC to be growth and we want to check if this is true post-ante.

Explanatory Variables in Our Model

Here is a list of our variables and how they will be measured:

Variable	Description
profitability	Measured by the accounting profits. We will use ROA and not ROE which is affected by the capital-asset ratio.
growth	Change in revenues
Leverage ratio	Measured as debt to equity ratio.
Size	Number of employees - the variable exists in the CCGR database. Alternatively, log of the revenues can be used
Area code	Control variable for regional effects through using the area code. The area code will be used as a benchmark
Non-performing loans	Realized losses as a percent of total loans on the balance sheet.

Fig. 1 List of variables to be used in the model.

The sample data

The type of data that we use is called panel data since it contains both the same dimensions as cross-sections and time series. We will explore the pure ownerless savings banks (sparebank), where no stakeholder has any cash flow right and so called PCC bank (grunnfondsbank), that are partly a pure ownerless saving bank controlled by non-owner stakeholder, partly a pure stock company controlled by stockholders with full cash rights. In 2016 there are 105 savings banks and 19 savings bank foundations in Norway. 35 of the savings have issued equity certificates.

The data will be collected mainly from the annual reports of the savings banks for the period of 1995 to 2015 published by the organization for the financial industry in Norway, called Finans Norge. Further data, like the area code of the banks and the average value for the given region will be obtained from the CCGR database. However, it should be noted that CCGR database contains data regarding the ownership composition from 2000 on. Data about the PCC issues and trends in that field can be obtained by the Association of the Savings banks in Norway.

Our Model

The Self-Selection Model

As we are going to work with non-random samples, we chose to use a probit framework as the first step in our self-selection methodology. Both probit and logit models are binary outcome models that belong to the self-selection framework which treats private info as important factor in an outcome. The difference between

them is that in the probit model we assume normal distribution of the random variables, but the outcome of both is similar. In a probit model, Y, the dependent variable is not a continuous variable, but what we are modelling is the probability of Y =1 (binary outcome-0 or 1 for treatment)

Step One. The probit model consistent with the matching framework that will be used later on is : $\Pr (E|Z) = \Pr (Z_i\gamma + \eta_i) > 0$

which is the probability of becoming a PCC bank given certain factors Z and comes from

$$C = E = PCC = W_i = Z_i\gamma + \eta_i > 0 \quad PCC \text{ treatment when } D_i = 1 \text{ if } Z_i\gamma + \eta_i > 0$$

$$C = NE = \text{Not PCC} = W_i = Z_i\gamma + \eta_i \leq 0 \quad \text{no PCC treatment when } D_i = 0 \text{ if } Z_i\gamma + \eta_i \leq 0$$

D_i is introduced here as a PCC dummy that takes the value of 1 if the bank becomes PCC and zero otherwise, with a post-selection outcome for the switching regressions:

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

$$D_{ne,i} = X_{ne,i}\beta_{ne} + \epsilon_{ne,i}$$

$$\text{or } D_i = X_i\beta_{ci} + \epsilon_{ci}$$

In our model C is dichotomous and signifies the two groups: PCC banks and non PCC banks. Thus $C \in \{E (i. e. PCC); NE (i. e. Not PCC)\}$ – either the presence or absence of treatment which in our case is PCC; γ is a vector of probit coefficients and η_i is the private information bank i has which is normally distributed with mean 0 and variance w^2 . W_i is the selection variable consisting of exogenous X variables. We have to mention that this is our ex-ante model since we will look at the factors that will prompt the decision to become PCC.

In our probit model we choose PCC 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. These variables are the specified variables above in our table and they are:

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

Step Two. We will expand this base model with a correction. The reason for doing this is that if we do not correct for self-selection, we are going to get negative coefficients for β_7 . We expand the model by the Mills ratio to control for private information which affects the self-selection choice. This correction, called the inverse Mills ratio, $\Pi\lambda_C(Z_i\gamma)$, contains Π as the coefficient in the regression of ϵ_i on η_i and λ_C is the conditional expectation of η_i given C and η_i .

$$D_{it} = \beta_0 + \beta_1 \text{profitability}_{it} + \beta_2 \text{growth}_{it} + \beta_3 \text{Leverage ratio}_{it} + \beta_4 \text{Size}_{it} + \beta_5 \text{Area}_{it} + \epsilon_{it} + \Pi\lambda(Z_i\gamma)$$

Step Three: in Step three we will look at the results ex-post, that is after the bank has made the choice of becoming PCC which is the conditioning. We will run three regressions in order to explore the effects of the decision on the riskiness of the banks, their value and growth. This approach is consistent with the way we defined the economical sustainability.

To check whether the decision to become a PCC for the bank is value adding we will run the following regression where the dummy variable (D_i) is a treatment effect variable. If its coefficient β is positive, it means that becoming PCC is value adding and if negative it is the opposite.

$V_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \epsilon_{it}$, where V is defined as bank's value. Since most of the firms in our sample are not listed, we will use as a proxy for bank's value: book value of bank's assets – book value of bank's liabilities.

$R_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \epsilon_{it}$, where R_{it} is the riskiness of the bank measured by the volatility of ROA.

$G_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 D_{it} + \epsilon_{it}$, where G_{it} is the temp of growth of the banks. We expect that PCC banks will grow faster than non PCC banks. After correcting for self-selection this effect should be reduced.

In the above stated regressions we use the same variables as explanatory as in our probit model plus the percent of the Non-performing loans.

Step Four – Propensity Matching

Propensity matching was introduced by Rosenbaum and Rubin in 1983 as a conditional probability of selection into a particular treatment. (Rosenbaum and Rubin 1983). The probability of undergoing treatment is called propensity (Li et al, 2006, p. 22) and the treatment effect is the outcome for the treated firm (PCC 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. In order to be able to match propensity scores we must have one group that has received a treatment and one that has not – the control group. The treatment itself (PCC) is a single event. The treatment effect if significant means that $E(Y_{pcc,i} - Y_{no\ pcc,i}) \neq 0$. Propensity matching is a way to overcome selection bias.

The goal is to calculate the treatment effects by matching the PCC observations with those of the ownerless banks. The difficulty can be the matching itself of propensity scores as not necessarily all treatment effects can be established, but only those that have a match. One downside with propensity score 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 (Li & Prabhala, 2006). However, given it is easy to violate and leads to biases if so, we choose to not utilize propensity matching alone, but try to combine it with self-selection.

We plan to use the probit model to estimate the treatment probability which we will need to estimate the propensity scores and utilize neighborhood matching algorithm which entails finding the closest score among the control group based on the same treatment probability.

Remark on the Progression

As our research encompasses two parts, we will, based on the obtained results like to supply our research with a small-scale case study where we will try to go in depth on highlighted areas from our empirical research.

REFERENCES:

- Berle, A. A. & Means, G. C. (1932) *The Modern Corporation and Private Property*, Transaction Publishers
- Bøhren, Øyvind, and Morten G. Josefsen (2013) Stakeholder rights and economic performance: The profitability of nonprofits. *Journal of Banking and Finance*, Vol. 37(11), pp.4073-4086
- Bøhren, Øyvind, and Morten G. Josefsen (2008) Are Owners Redundant? Manuscript, Centre for Corporate Governance Studies, (https://www.researchgate.net/publication/268339496_Are_owners_redundan)
- Bøhren, Ø, and Josefsen, M. G. (2007) Do stakeholders matter for corporate governance? Behavior and performance of Norwegian banks 1985-2002. CCGR.
- Crane, A., Matten, D., Palazzo, G. and Spence, L. (2014). Contesting the Value of the Shared Value Concept, *California Management Review*, 56, 2.
- Demsetz, H. & Leh Kenneth: (1985) The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy*, Vol.93(6), pp.1155-1177
- Demsetz, H. (1983). The structure of ownership and the theory of the firm. *Journal of Law and Economics* 26, 375–390.
- Demsetz, Harold ; Villalonga, Belén (2001) Ownership structure and corporate performance. *Journal of Corporate Finance*, Vol.7(3), pp.209-233
- Donaldson, Thomas & Preston, Lee E. (1995) The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *The Academy of Management Review*, Vol.20(1), pp.65-91
- Dyllick, Thomas; Hockerts, Kai(2002) Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, Vol.11(2), pp.130-141
- Eisenhardt, K. M.(1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, 14 (7), pp. 57-74
- Fama, Eugene F. (1980). Agency Problems and the Theory of the Firm. *Journal of Political Economy*, 88 (2), pp. 288-307
- Freeman, R. Edward (1994). The Politics of Stakeholder Theory: Some Future Directions. *Business Ethics Quarterly*, Vol.4(4), pp.409-421

- Freeman, E. ; Evan, William M. (1990) Corporate governance: A stakeholder interpretation. *The Journal of Behavioral Economics*, Vol.19(4), pp.337-359
- Giroud, Xavier and Mueller, Holger M (2008) Does corporate governance matter in competitive industries? Article, *Journal of Financial Economics*, Vol.66(2), pp.563-600
- Goodpaster, Kenneth E. (1991) Business Ethics and Stakeholder Analysis. *Business Ethics Quarterly*, Vol.1(1), pp.53-73
- Hackethal, Andreas, Reinhardt Schimdt & Marcell Tyrell (2005) Banks and German Corporate Governance: on the way to a capital market-based system? *Corporate Governance: An International Review*, Vol.13(3), pp.397-407
- Hansmann, Henry B. (1996) *The Ownership of Enterprise* (Harvard University Press, Cambridge, Massachusetts).
- Klieštík, Tomáš & Katarína Kočišová (2015). Logit and Probit Model used for Prediction of Financial Health of the Company. *Procedia Economics and Finance*, 23, pp. 850 – 855.
- Köhler, Matthias (2010), *Corporate Governance and Current Regulation in the German Banking Sector: An Overview and Assessment*, ZEW Discussion Paper No. 10-002, Mannheim.
- Jensen, Michael C (2010). Value Maximization, Stakeholder Theory, and the Corporate Objective Function. *Journal of Applied Corporate Finance*, Vol.22(1), pp.32-42
- Jensen, M. and W. H. Meckling (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305-360.
- Kampa, Jose Manuel and Kedia, Simi (2000) Explaining the diversification discount, Research paper No 424, *Journal of Finance*, August 2002, Vol.57(4), pp.1731-1762
- Li, Kai ; Prabhala, Nagpurnanand R. (2007) Self-Selection Models in Corporate Finance-Chapter 2. *Handbook of Empirical Corporate Finance SET*, Chapter 2, pp.37-86
- Macey, J & Maureen O'Hara(2003) The corporate governance of banks. *Economic Policy Review - Federal Reserve Bank of New York*, Vol.9(1), pp.91-107
- Moe, Thorvald G., Jon A. Solheim, and Bent Vale (2006) *The Norwegian Banking Crisis, Norges Banks Skiftserie/Occasional Papers nr. 33*
- Ongena, Steven, David C Smith and Michalsen, Dag (2003) Firms and their distressed banks: lessons from the Norwegian banking crisis. *Journal of Financial Economics*, Vol.67(1), pp.81-112

Rosenbaum, Paul R. ; Rubin, Donald B. (1983) The Central Role of the Propensity Score in Observational Studies for Causal Effects. *Biometrika*, Vol.70(1), pp.41-55

Rue Marie-Therese (2014) The legal structure of savings and retail banks, *Report of European Savings and Retail Group*

Polo, Andrea (2007). Corporate Governance of Banks: The Current State of the Debate. IDEAS Working Paper Series from RePEc.

Porta, Rafael et al. (1997) Legal Determinants of External Finance. *Journal of Finance*, Vol.52(3), pp.1131-1150

Schleifer, A. & Vishny, R. W.(1997). A Survey of Corporate Governance, *Journal of Finance*, 52, pp.85-98

Schmidt, Reinhard H and Tyrell, Marcel (1997) Financial Systems, Corporate Finance and Corporate Governance, *European Financial Management*. 1997, Vol.3(3), p.333-361

Stieb, James A (2009) Assessing Freeman's Stakeholder Theory. *Journal of Business Ethics*, 1 July 2009, Vol.87(3), pp.401-414

Steigum, Erling (2011) The Norwegian banking crisis in the 1990s : effects and lessons. *Working paper series* (Handelshøyskolen BI. Senter for forskning i monetær økonomi : trykt utg.) 5/11, 2011

Tse, Terence (2011) Shareholder and Stakeholder Theory: After the Financial Crisis. *Qualitative Research in Financial Markets*, Vol.3(1), p.51-63

www.sparebankforeningen.no, accessed on the 27th of December, 2016

www.bankingsupervision.europa.eu, accessed on the 10th of January, 2017

www.finansnorge.no, accessed on 10th of December, 2016