

**Bad Corporate Governance and Powerful CEOs in Banks:
Poor Performance, Excessive Risk-taking, and a Misuse of Incentive-based Compensation***

Ken L. Bechmann^a

Department of Finance, Copenhagen Business School

and

Johannes Raaballe^b

School of Economics and Management, University of Aarhus

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^a Solbjerg Plads 3, DK-2000 Frederiksberg, Denmark

e-mail: kb.fi@cbs.dk

^b Bartolins Allé 10, DK-8000 Aarhus C, Denmark

e-mail: jraaballe@econ.au.dk

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Abstract

A misuse of incentive-based compensation and poor corporate governance in the financial sector are mentioned as two of the main competing causes of the financial crisis. This paper examines these two causes looking at the Danish banking sector where nearly a fifth of all listed banks have disappeared during the financial crisis – several of these banks being relatively large. The results show that banks with incentive-based compensation to the CEO have taken significantly more value-destroying risk and therefore performed significantly worse than other banks. However, it is shown that this is not caused by the incentive-based compensation but is instead related to more fundamental corporate governance problems in a majority of the banks. The main problem is a lack of shareholder monitoring and a weak disciplinary effect of the market for corporate control, due to dispersed ownership and restrictions on shareholder rights in the form of voting and ownership ceilings etc. In banks without shareholder monitoring, the CEO becomes very powerful – a power that depending on the type of the CEO has been used in different ways. It turns out that banks where the CEO has used this power to increase his own compensation considerably by introducing incentive-based compensation are also the banks that have taken significantly more risk and performed significantly worse than other banks. Furthermore, the excessive risk-taking was already taking place before the introduction of incentive-based compensation. Thereby, politicians and other regulators should pay much more attention to solving the fundamental corporate governance problems in banks rather than just regulating executive compensation.

Key words: Incentive-based compensation; Excessive risk-taking; Voting and ownership ceilings; Corporate governance

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1 Introduction

The financial crisis has raised many questions on the possible causes of the crisis. Some observers argue that the main cause is a misuse of incentive-based compensation in the financial sector, whereas others argue that the cause is a broader problem relating to poor corporate governance and risk management in the financial sector. For example, a recent article in the *Wall Street Journal* discusses these issues and concludes that politicians, especially in Europe, have been too fast in concluding that "... banker paychecks were the financial weapons of mass destruction that blew up the markets last year".¹ The recent discussions among the *G20* countries for instance, seem to be consistent with the arguments in the *Wall Street Journal* as much emphasis will be put on initiatives related to executive compensation.

In this paper we examine if a misuse of incentive-based compensation to the CEO or poor corporate governance is the primary reason for the dramatic effect of the financial crisis on the Danish banking sector. In fact, the financial crisis has been so hard on the Danish banking sector that several international bank analysts from *Moody's* and *UBS* have concluded that the Danish banking crisis is the worst in Europe.² Since the beginning of the financial crisis, nearly a fifth of all listed Danish banks have disappeared and several are still struggling to survive. Many of these banks are relatively large banks seen by the fact that these banks include four out of the ten largest banks. To understand the causes of the financial crisis, it seems relevant to examine why the Danish banks have been hit so severely.

There are at least three other reasons why it is relevant and interesting to examine the causes of the financial crisis looking at Danish banks. First, our sample of banks is quite unique because it contains many manually collected details on corporate governance related aspects of the banks for the entire period 1995-2008. The details include information on executive compensation and incentive-based programs, board compensation, voting and ownership ceilings, and ownership structure. Furthermore, we have collected several different measures of profitability and risk-taking for the banks.

Second, the sample consists of relatively many banks with diversity in ownership structure, the use of incentive-based compensation, voting and ownership ceilings, and the banks have been hit quite differently by the crisis. This helps us disentangle the different causes of the crisis.

¹ See the article "Extraordinary Popular Delusions... and the madness of politicians pitching banker pay curbs", the *Wall Street Journal*, September 23, 2009, page A24.

² See, for example, the article, "Danish banking crisis the worst in Europe", available on www.creditwritedowns.com.

Third, many observers still consider it quite likely that a similar crisis can happen again for the Danish banks. In fact, seven out of ten bank CEOs consider it very likely that a new and similar crisis will happen again.³ This suggests that until now, the fundamental problems within the Danish banks have not been addressed.

The results in this paper suggest that many of the problems in the Danish banking sector to a large extent can be explained by poor corporate governance in the majority of the banks. The main reason for the poor corporate governance is that powerful CEOs have been isolated from shareholder monitoring and the market for corporate control, due to dispersed ownership and restrictions on shareholder rights in the form of voting and ownership ceilings etc. In Denmark, large shareholders are an established and rather well functioning governance mechanism. Around 90% of the listed firms outside the banking sector have at least one large shareholder whereas only around one third of the listed banks have a large shareholder. The absence of active large shareholders in the banking sector has led to a lack of independent directors with sufficient competences and motives to effectively monitor and control the powerful CEOs.

Thereby, poor corporate governance rather than incentive-based compensation is the main cause of the Danish banking crisis. Incentive-based compensation is instead found to be a way for some CEOs to increase their total compensation – in some cases quite considerably. However, not all the CEOs that were able to increase their total compensation did so. Therefore, the results also suggest that the damaging effect of poor corporate governance also depend on personal characteristics of the individual CEOs as the extent to which these, for example, are greedy, risk-blind or overconfident. In particular, the banks that are isolated from shareholder monitoring and where the CEOs have increased their compensation by introducing incentive-based compensation have taken significantly more risk, both before and after the introduction of incentive-based compensation, and performed significantly worse during the financial crisis compared to similar banks without incentive-based compensation to the CEO. Before the financial crisis the performances of the two groups of banks were almost the same showing that the excessive risk-taking has not been in the shareholders' interest.

These results and findings contribute to the existing literature in the following two main ways: First, the results suggest that the cause for the Danish banking crisis is not the incentive-based compensation itself but rather fundamental problems with a lack of qualified board oversight and monitoring of the CEOs. Hence, our results are relevant for the vast amount of literature discussing

³ This follows from a survey described in one of the major Danish financial newspapers, *Jyllands-Posten*, August 10, 2009.

the role of incentive-based compensation and corporate governance in influencing risk-taking by CEOs and the performance of the firms they are managing. Similarly, the results are clearly important for the discussions at e.g. *OECD* and *G20* levels regarding relevant changes in regulations and corporate governance principles following the financial crisis (see, for example, *OECD*, 2009).⁴

As the second main contribution, the results are, to the best of our knowledge, the first to show empirically the damaging effect of voting and ownership ceilings. This is especially important in relation to the discussions regarding the effect of deviations from ‘one share – one vote’ which for example lead to a heated debate at EU level in 2007. In association with this debate, two academic surveys were conducted. The conclusion from a theoretical perspective surveyed by Burkhardt and Lee (2007) was ambiguous for many of the most common deviations from ‘one share – one vote’ but also that “*The verdict in the case of depository certificates, voting and ownership ceilings is less ambiguous, since they insulate managers from both takeovers and effective shareholder monitoring*”. The conclusion based on the empirical survey in Adams and Ferreira (2007) was that “*...no research papers could be identified estimating the impact on firm value of priority shares, depository certificates, voting right ceilings ... Therefore, there is an empty box in relation to those mechanisms. It should also be noted that some of them are identified by the theoretical survey as the most dangerous ones*” (see, Commission of the European Communities, 2007). This paper at least makes sure that the box is no longer empty.

The remainder of this paper is organized as follows: Section 2 provides overview of the institutional background of the Danish banking sector, discusses related literature, and derives the main research questions. Section 3 describes the dataset and provides descriptive statistics focusing on incentive-based compensation and restrictions on shareholder rights in the banks. The main empirical results are presented in section 4 and the conclusions are stated in section 5.

2 Institutional background and research questions

2.1 Institutional background

The Danish banking sector is characterized by relatively many banks but only a few very large ones. Just a decade or two ago, a subset of the banks (around 25% of the banks that are now publicly listed) were organized as savings banks owned collectively by the depositors with ‘one

⁴ For a recent and detailed discussion of the role of executive compensation as a possible cause of the current financial crisis and the need for regulations hereof, see Bebchuk and Spamann (2009).

depositor – one vote’. These savings banks were typically local banks. Due to lack of capital and local growth opportunities they became publicly listed. In this process they chose to have voting and ownership ceilings in order to maintain a dispersed ownership. With respect to voting ceilings this was in line with other local Danish banks that had a long history of voting ceilings, with voting ceilings being in place well before 1980. However, ownership ceilings were not possible in publicly listed firms until 1994.

The Danish banking sector has traditionally been considered quite robust and conservative with a relatively solid financing based on equity. However, this has changed. Measured in the old fashioned way, the average book equity to book assets has decreased quite much from 13.2% in 2004 to 10.1% in 2008 – and this during a period where earnings of Danish banks were remarkably high. Furthermore, one in every four of the banks (primarily the larger banks) now has a ratio of book equity to book assets below 7%. These banks now rely on hybrid core capital and other forms of long term deposits as a supplement to “real” equity. In summary, the amount and quality of “equity capital” in the Danish banking sector have diminished during the recent good banking years.

Similarly, Danish banks have traditionally had loans less than total deposits. This, however, began to change around 2004 and in 2008 the banking sector as a whole had a deposit deficit of more than DKK 500 billion corresponding to nearly 20% of total assets in the banking sector.⁵ The reason for this was a large increase in the lending with average yearly growth rates of more than 25% in the period 2004-2007 (see the appendix and the Danish Central Bank, 2009). These growth rates were very high compared to the historical standards and compared to growth rates seen in other countries.⁶

The increase in lending was financed primarily by short-term deposits from foreign banks which was a new and risky strategy for Danish banks. In particular, we know from Stiglitz and Weiss (1981) that such deposits may dry out. When the first losses occurred to these foreign banks in July 2008, most Danish banks started to find it quite difficult to get these loans refinanced. This leads the Danish Parliament on October 5, 2008 to agree on the so-called first bank package. At that time, seven listed banks (out of 44 listed banks) and several minor savings banks had already disappeared and this without the recession having reached Denmark and with only modest losses reported in third quarter accounting reports.

⁵ The current exchange rate (November 2009) is DKK 100 = €13.44.

⁶ Foos, Norden and Weber (2009) find that an average (median) loan growth of 11.3% (7.4%) based on a sample of more than 12,000 banks in 16 major countries including Denmark during the period 1997-2007.

The first bank package made it clear that from then on banks that could not meet the stated capital requirements would be sold or liquidated by the state. In addition, the bank package was an offer to the banks, but it had quite important consequences for the banks that opted yes to the package. First, the state would give a complete two-year guarantee to all depositors in the banks including the above-mentioned short-term loans from foreign banks. Second, the banks would together pay at least DKK 15 billion and up to DKK 35 billion to the state in order to cover the costs that the state may have saving the depositors. Finally, the banks were not allowed to pay out dividends, make share repurchases or grant new stock options during the two year guarantee period.⁷ Except for a few very small non-listed savings banks, all banks opted yes to the package even though several banks complained that the payment to the state was very high and unfair in their view, because it implied that solid and well-run banks should pay for the excessive risk-taking in other banks.⁸

The ink from the first bank package was barely dry before several business organizations started complaining that the banks had suddenly become very defensive in lending and that the government had to do something in order to avoid a credit crunch. The lending figures, however, did not show any evidence of a credit crunch. Nevertheless, the second bank package (also called the credit package) was passed in the Danish Parliament on January 18, 2009. The second bank package offered state capital injections into solvent banks. The capital is given as hybrid core capital with a total value of up to DKK 75 billion and may constitute up to 50% of tier 1 capital in the individual banks. In our view, the real purpose of the capital injection is to maintain the far majority of Danish banks as going concerns by helping them to live up to capital requirements.

In order to receive the capital injection, further restrictions were set on executive pay. The restrictions mean that new stock option programs cannot be introduced as long as state money is used by the individual bank. Furthermore, the value of all incentive-based compensation (cash and equity-based programs) is restricted to a maximum of 20% of fixed compensation including pensions and the banks can only deduct 50% of executive compensation when calculating taxes.⁹ As a final but maybe the most important point, the second bank package also extended the state

⁷ There were a few other somewhat interesting consequences of the first banking package. The Financial Supervisory Authority received more funding and the banks must not conduct risky banking activity and should report if they observed that others banks are doing so! In particular, the banks were not allowed to increase lending by more than 8% a year.

⁸ For example, the CEO in one bank stated: "Normally it is said that good behavior is rewarded, but with the first bank package, it is just the opposite. It annoys us that we must pay a quarter of our profits just because some banks have been greedy and careless. We conducted a cautious lending policy over the years, where banks much more risk-willing than us earned huge profits. They have so to say enjoyed dinner and now let us pay the bill".

⁹ Following the second bank package, changes in regulations imply that all financial institutions (not just banks) are not allowed to use incentive-based compensation with a value of more than 50% of fixed compensation. Similarly, the annual general meeting or a shareholders' committee has to take a stand on the executive compensation.

guarantee to all depositors until the end of 2013. The banks pay a fee for these guarantees – up to 0.9% on a yearly basis. This was cheap compared to prevailing market prices. Especially for the group of Danish banks that are not credit worthy.

We estimate that around 50% of the hybrid core capital will be distributed to a relatively small subset of Danish banks. The interest rate on the capital is 9-11% depending on the quality of the bank. The solid banks do not need the capital or raise capital on the stock market instead. The troubled banks find the hybrid core capital cheap and/or do not have other opportunities.

Until now, only one application among the troubled banks has been rejected by the state. However, some applications are pending and we expect that additional 1-3 applications will be rejected.

The second bank package was very expensive to Danish tax payers due to subsidies and again the package was a big advantage to the troubled banks. The lesson is that banks in trouble generally will be saved by the state unless the troubles are really severe (and the bank is not too big).

2.2 Related literature and research questions

This study investigates whether incentive-based compensation or more fundamental corporate governance problems in the Danish banks can explain why the Danish banks have been hit so severely by the financial crisis. A large amount of literature is clearly relevant for these aspects of banks.

First, it follows from the literature that the relationship between CEO stock ownership including incentive-based compensation and risk-taking in banks is somewhat complicated. One main reason is that it is not always clear what is exactly meant by risk-taking. The risk-taking can be in the interest of shareholders because of the call option related to the equity and because of deposit insurance systems (see, for example, Esty, 1998 and Merton, 1977). If we consider this type of risk-taking, then on one hand, stock ownership and equity-based compensation can help to align the interest of the CEO with that of shareholders, which should induce more risk-taking. On the other hand, stock ownership and equity-based compensation will make the CEO even less diversified, and hence, should lead to less risk-taking. The literature also provides mixed results regarding the effect of CEO ownership on risk-taking in banks (see, for example, Saunders, Strock and Travlos, 1990, Chen, Steiner, and Whyte, 1998, and Anderson and Fraser, 2000). Examining 68 US banks, Chen, Steiner, and Whyte (2006) provide evidence that risk-taking is increased following the introduction of option-based compensation to the CEO.

However, risk-taking can also be in conflict with the interest of shareholders. This will be the case if it is related to empire-building where, for example, the CEO is increasing lending excessively in order to increase the size of the bank. Excessive growth in lending is quite likely to imply that negative NPV-projects are accepted (see, for example, Gorton and Rosen, 1995 and Foos, Norden, and Weber, 2009). In particular, Gorton and Rosen (1995) analyze a theoretical model showing that CEOs in solvent banks isolated from effective shareholder monitoring will find it optimal to take on excessive risk against the interest of shareholders, when there are relatively few good (positive NPV) lending opportunities. Furthermore, Gorton and Rosen (1995) also provide empirical evidence for these results.

Many corporate governance related aspects are also relevant when discussing firms' risk-taking and performance. As already stressed by Manne (1965), isolation of CEOs from shareholders can harm performance because the weakened disciplinary effect of the market for corporate control can increase shirking, empire-building, and extraction of private benefits by the CEOs. Several other papers have highlighted problems with corporate governance in diversely held firms. In particular, the well-known free-rider problem will make it unlikely that any of the small shareholders will monitor the CEO (see, for example, Grossman and Hart, 1980). Similarly, it is unlikely that the board of directors will fill out this role. As argued by Berle and Means (1932, p. 87), the separation of ownership and control in diversely held firms implies that the board of directors will be controlled by the management. Along the same lines, Hermalin and Weisbach (1998) provide a theoretical model illustrating how independence of the board of directors decline after good firm performance and during the course of the CEOs tenure.

Many studies have found empirical evidence for the relation between corporate governance and firm performance. In an extensive analysis of 24 different corporate governance provisions, Bebchuk, Cohen, and Ferrell (2009) show that restrictions in shareholder rights lead to significant reductions in firm value. Out of the six entrenchment provisions found to be important, the four set limits on shareholder voting power and the ability of a majority of shareholders to impose their will on the management.

More specific to corporate governance in banks, Akhigbe and Martin (2008) find that different corporate governance characteristics of banks influence how risk-taking change following the passage of Sarbanes-Oxley in the US. Andres and Vallelado (2008) analyze the effectiveness of the boards of directors in monitoring and advising the management in banks and documents a positive relationship between effectiveness and the performance of banks. Pathan (2009) provides evidence

that corporate governance, including restrictions in shareholder rights, influence bank risk-taking. In particular, powerful CEOs like for example CEOs in banks with restrictions in shareholder rights, affect risk-taking negatively. On the other hand, Adams, Almeida, and Ferreira (2005) find that stock returns are more variable for firms run by powerful CEOs.

The relative importance of CEO compensation and corporate governance in explaining performance and risk-taking in firms is only examined in very few papers. One such paper is Brick, Palmon, and Wald (2006) who find that excessive compensation to the board of directors and to the CEO are linked together and imply underperformance of the firm. Furthermore, they show that excessive compensation is associated with poor corporate governance including the lack of monitoring by large shareholders. However, the excessive compensation is actually an indicator of poor corporate governance providing information in addition to the corporate governance quality variables normally discussed in the existing literature.

Based on the discussion of related literature and the overall objective of this paper, we have formulated three main research questions described in the following.

Research question 1 (Q1): Is it the case that banks where the CEO received incentive-based compensation have performed worse during the financial crisis and generally have taken more risk than other banks?

As seen from the discussion of related literature, this question is clearly a relevant starting point for our analysis. In answering the question, it will also be examined if any excessive risk-taking in banks has been in the interest of shareholders. If it turns out that banks with incentive-based compensation did not perform worse than other banks, it would not be relevant to argue that incentive-based compensation is a major cause for the financial crisis.

Given that it is found that banks with incentive-based compensation have performed worse and taken more risk, it is natural to examine if this can be attributed to the use of incentive-based compensation. This issue is addressed in the second research question.

Research question 2 (Q2): Does the risk-taking in banks increase when incentive-based compensation is introduced to the CEO?

If the answer turns out to be yes, then it is fair to conclude that the use of incentive-based compensation plays a major role in explaining the excessive risk-taking in the banks with this type of compensation to the CEO. If, however, the answer turns out to be no, then we must conclude that incentive-based compensation is an indicator of some more fundamental problems in these banks.

As suggested by the literature discussed above, one such problem could be if powerful CEOs are neither disciplined by the market for corporate control nor monitored by the board of directors or by shareholders.¹⁰ In this case, the CEOs could have used their power to introduce incentive-based compensation to themselves. In particular, it will primarily be risk-loving (or risk-blind), greedy, overconfident, and/or hubristic CEOs that introduce incentive-based compensation to themselves. Other more risk-averse and less greedy CEOs will probably instead opt for more modest increases in the fixed compensation. Thereby, and consistent with the findings in for example, Brick, Palmon, and Wald (2006), the extent to which CEOs have introduced incentive-based compensation to themselves will be an important indicator of the type of the CEO in banks isolated from shareholder monitoring.

If the use of incentive-based compensation to the CEO turns out to be an indicator of such – for a bank – unfortunate CEO characteristics, this would also be consistent with the case where banks with incentive-based compensation perform worse than other banks (a yes to Q1) without us being able to blame this on the incentive-based compensation itself (a no to Q2). All in all, this leads to the third and final research question.

Research question 3 (Q3): Can poor performance and excessive risk-taking in some banks be explained by a lack of shareholder monitoring in combination with certain individual characteristics of the CEOs revealed by whether the CEOs receive incentive-based compensation or not?

3 Dataset and descriptive statistics

3.1 Dataset

The dataset consists of all Danish banks headquartered in Denmark and listed on the national stock exchange, OMX Copenhagen, at the end of 2007, i.e. before the financial crisis reached Denmark. This corresponds to a total of 44 banks basically representing the whole Danish banking sector measured by assets and employees.¹¹

The banks are examined during 1995-2009 in order to have time series as long as possible, starting well before some of the traditions in the Danish banking sector changed as described in section 2.1. We start in 1995 because that was when announcements to the stock exchange became available electronically. Not all banks exist throughout the whole period. A few banks were listed on the

¹⁰ The Danish corporate governance system is building on a two-tier board system, where management is divided into a board of directors and a board of executives (or managing directors). The board of directors is not allowed to be dominated by executives since one of its major tasks is to hire and monitor the executives.

¹¹ This is adjusted for the fact that Nordea is omitted from the sample since Nordea is headquartered in Sweden.

stock exchange quite late in the period and as mentioned, some banks have disappeared during the financial crisis.

For the sample of banks, a variety of information has been manually collected. First, all available details on compensation of the board of directors and the CEO have been collected from the annual reports for 1995-2008. The data on compensation of the board of directors and the CEO is described further in section 3.2. The annual reports have also been used to collect other accounting information.

Second, the ownership of listed shares is generally not public information in Denmark. However, the shareholder and the company have to make an announcement to the stock exchange whenever a shareholder's ownership crosses a 5% limit. Information on the ownership of shares in the banks has been collected from these announcements. We base our analysis on the information from the end of 2007 but the results are not sensitive to the exact year given that shareholdings of the large shareholders are very stable over time. In the following, we define a large shareholder as a shareholder with more than 5% ownership of the shares.¹² The 5% limit is also used to define a large shareholder in related studies as, for example, Anderson and Fraser (2000).

Third, information on the banks' voting and ownership ceilings and other aspects of the relationship between the bank and its shareholders is collected in April, 2009, from the banks' most recent articles of association. Similar information is collected for all listed Danish firms outside the banking sector in September, 2009.

Finally, information on stock performance, stock indices etc. is obtained from Datastream.

3.2 Descriptive statistics

Basic characteristics of the banks in the sample are provided in Table 1. Consistent with the diversity in Danish banks, Panel A in Table 1 shows a large cross-sectional variation in total assets, number of employees, loans divided by deposits (one common measure of risk-taking in Denmark), and the amount of equity financing.

Panel B in Table 1 provides some corporate governance related characteristics of the banks in the sample. More precisely it follows from Panel B that 45% of the banks have incentive-based compensation for the CEO and that 86% of the banks have voting ceilings whereas 43% have ownership ceilings. Furthermore, other potential hindrances of shareholder influence are seen in a

¹² Thereby, the shareholder will in principle (see later) also have more than 5% of the votes. This follows from the fact that it is not allowed that Danish banks issue dual class shares.

vast majority of the banks. These hindrances include the existence of a shareholders' committee, required registration of shares by name, and the fact that proposals for the general meeting should be handed in before the important information in the annual report is released. The shareholders' committee, for example, implies indirect election of the board of directors because the general meeting elects the shareholders' committee, that later elects the board members. Finally, it is seen that many of the banks this way have been successful in isolating them from shareholder monitoring. More precisely, 64% of the banks do not have shareholders independent of the management owning more than 5% of the shares. As will be seen later this is very atypical compared to other listed Danish firms. Given that incentive-based compensation and the other corporate governance related aspects of the banks play a major role for this paper, the following two subsections will describe these two aspects in further detail.

Panel A: Basic characteristics	Average	Median	Minimum	Maximum
Total assets, million DKK	93,376	6,628	426	3,349,530
Number of employees	907	203	14	23,632
Loans divided by deposits, L/D	1.24	1.19	0.72	2.14
Book equity divided by total assets	10.06%	9.80%	2.80%	18.30%

Panel B: Corporate governance characteristics	Number	In %
Total number of banks	44	100%
<i>Characteristics</i>		
Incentive-based compensation	20	45%
Voting ceiling	38	86%
Ownership ceiling	19	43%
Shareholders' committee	33	75%
Shares registered by name	43	98%
Early deadline for proposals to the general meeting	37	84%
Isolated from shareholder control	28	64%

Table 1: Descriptive statistics.

Panel A provides various basic characteristics of the banks in the sample based on information from the end of 2007. 'Total assets' and 'Number of employees' are considered as measures of size. 'Loans divided by deposits, L/D' is considered as a measure of risk-taking. 'Book equity divided by total assets' shows the use of equity financing. Panel B provides more corporate governance related characteristics of the banks like the number of banks with 'Incentive-based compensation', 'Voting ceiling', 'Ownership ceiling', and a 'Shareholders' committee'. 'Shares registered by name' refers to banks that require shares to be registered by name. 'Early deadline for proposals to the general meeting' refers to banks that require proposals to the general meeting to be handed in before the annual report is released. Finally, the number of banks that are 'Isolated from shareholder control' is given, where this is defined as banks where there are no shareholders independent of the management with more than 5% of the shares.

3.2.1 Incentive-based compensation

All listed firms including banks are required to provide information in the annual report on total cash paid as compensation to the board of directors and to the group of executives. Furthermore, information on incentive-based compensation to these two groups should also be provided. The information should be provided when incentive-based programs are granted and an overview of all incentive-based programs should be provided in the annual report.

We have not found any banks where the board of directors has been given any incentive-based compensation.¹³ Therefore, the average compensation to directors can simply be calculated as the total cash paid as compensation to the board of directors divided by the number of board members.

Compensation to the CEO is more complicated for two main reasons. First, in some cases there are several executives and the compensation to the CEO is not listed separately. In these cases, we assume that the CEO is paid 50% more than the other executives.¹⁴ Second, the compensation of the CEO can consist of fixed compensation including pension payments (from here on just denoted fixed compensation), cash-based programs, equity-based programs, and golden handshakes. It happens quite often that banks are not providing full details of all these parts. Fixed compensation and payments related to cash-based programs and golden handshakes are included in the total cash paid as compensation to the group of executives. Here, any missing details are only problematic when looking at the relative magnitude of the various types of compensation. For equity-based programs, the information is generally quite detailed, probably because much attention has been paid to this type of compensation, and because of severe critique in cases where information has been missing. Based on information on the equity-based programs, we calculate the value of the programs at the time of grant, for example, using the Black-Scholes formula for stock options, which is by far the most frequent type of equity-based program.

Table 2 and Figure 1 provide more details on the use of incentive-based compensation to the CEOs in Danish banks. From Table 2 follows that out of the 20 banks with incentive-based compensation, six used only cash-based programs, seven used only equity-based programs, and seven used both types of incentive-based compensation. Furthermore, Table 2 shows that 14 banks used significant

¹³ This is, among other things, probably because Danish recommendations on good corporate governance quite early stated that the board of directors should not be granted option-based compensation because this would undermine the role of the board of directors in monitoring the executives.

¹⁴ This is consistent with the rule-of-thumb used in the industry and is generally verified by the cases where the compensation to the CEO is specified separately.

incentive-based compensation, where we have defined significant as cases where the value of the incentive-based compensation is more than 20% of the fixed compensation.¹⁵

Figure 1 shows the years where the two types of incentive-based compensations are introduced in the individual banks. If a given bank, for example, introduces a cash-based program in 2005 and an equity-based program in 2007, the bank will be entering Figure 1 two times. The first time in 2005 under cash-based programs and the second time in 2007 under equity-based programs.

Total number of banks	44
Number of banks with:	
- only cash-based programs	6
- only equity-based programs	7
- both cash- and equity-based programs	7
Total with cash- or equity-based programs	20
In procent	45%
Number of banks with:	
- significant cash- or equity-based programs	14
In procent	32%

Table 2: Incentive-based compensation to the CEO in the banks in the dataset.

The table only considers incentive-based programs active in the period after year 2000. Furthermore, the table also states the number of banks with significant incentive-based programs defined as programs where the value is more than 20% of the fixed compensation.

¹⁵ The 20% is chosen as the restriction on incentive-based compensation introduced in connection with the second bank package as described in section 2.1.

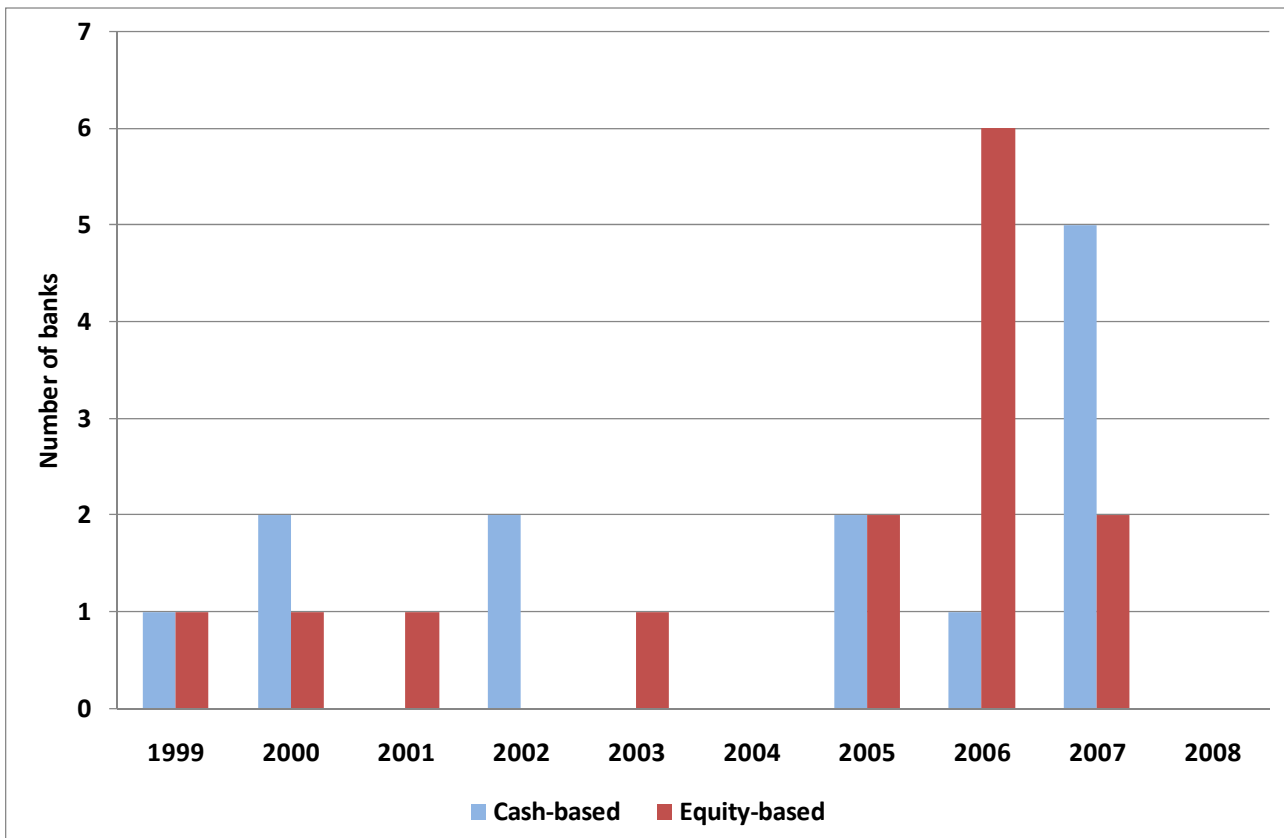


Figure 1: The timing of introductions of incentive-based compensation.

The year where the individual banks have introduced the two types of incentive-based compensation (cash-based programs and equity-based programs).

From Figure 1 follows that the majority (67%) of all incentive-based programs are introduced in 2005-2007. Especially many of the equity-based programs are introduced in 2006.

As mentioned, banks that use cash-based as well as equity-based programs will be represented twice in Figure 1. If we instead only consider the year, where the bank for the first time introduces one of the two types of incentive-based compensation, the picture is quite similar to the picture in Figure 1. In particular, it turns out that 13 of the 20 banks, corresponding to 64%, introduced incentive-based compensation for the first time in 2005-2007.

Finally, Figure 1 shows that no new incentive-based compensation was introduced in 2008. This is probably related to the ban on certain types of incentive-based compensation in the first bank package but also a consequence of critique of incentive-based compensation from different parties.

To get a better understanding of the compensation data, we briefly look at the development over time in the compensation of an average board member and in the total compensation of the CEO calculated as explained above.

	All banks		Banks with incentive-based compensation		General wages
	Board of directors	CEO	Board of directors	CEO	
1995-2008	5.30%	8.79%	6.00%	10.67%	3.87%
1995-2004	4.62%	7.62%	5.33%	8.88%	3.98%
2004-2008	6.83%	11.43%	7.53%	14.81%	3.63%

Table 3: Development of the compensation of board of directors, CEO, and general wages.

The average yearly increase in the compensation of the board of directors and the CEO in all banks and in banks with incentive-based compensation compared to the increase in general wages in the private sector. For the board of directors, the compensation is calculated as total cash paid as compensation to the boards of directors divided by the number of members of the board. For the CEO, the compensation is total compensation calculated as the sum of fixed compensation, the value of cash- and equity-based programs, and potential golden handshakes. The increase in general wages in the private sector is obtained from Statistics Denmark.

It follows from Table 3 that the average yearly increases in the compensation to the boards of directors and especially to the CEOs, have been higher than the increase in general wages throughout the whole period 1995-2008. However, the increases have been especially high in 2004-2008, where the average increase in compensation to the CEOs has been more than three times the average increase in general wages. A further look at the data shows that especially banks with incentive-based compensation have shown high increases in the compensation to the board of directors and the CEO. In particular, given that nearly half of the banks have incentive-based compensation, it can be derived from the table that the average increase of 14.81% for CEOs with incentive-based compensation in 2004-2008 is nearly two (more precisely 1.76) times the average increase for CEOs without incentive-based compensation.

In order to judge the possible incentive effects of incentive-based compensation and to compare with other studies of incentive-based compensation, we also briefly consider the relative magnitude of incentive-based compensation. More precisely, Table 4 considers the relative magnitude of cash- and equity-based programs by looking at the ratio between the value of the programs relative to fixed compensation both in the grant years (individual years) and the ratio of the total value of programs relative to total fixed compensation during the period where the bank has used the specific type of incentive-based compensation. Cash-based programs are on average (median) seen to be 52% (25%) of fixed compensation in the years where they are paid out. The large difference between the average and the median suggests that some banks have paid out some large bonuses. For cash-based programs, there is only a minor difference between results for the individual years

and for the period illustrating the fact that the cash-based programs have lead to cash payments basically every year.

Equity-based programs are larger and constitute on average (median) 86% (76%) of fixed compensation in the years where they are granted. This shows that most of the programs are quite large and valuable already when granted. For equity-based programs, there is a big difference between individual years and the period illustrating the fact that many of the banks rarely grant new programs. For example, even banks that started early with stock options have in many cases only granted new options once.¹⁶

The value of equity-based programs constitute on average 42% of the fixed compensation for the period where the bank is using equity-based compensation. This is clearly higher than the 20% limit set on all incentive-based compensation by the second bank package as described in section 2.1. Furthermore, quite interestingly it is also slightly higher than the magnitude reported by Chen, Steiner and Whyte (2006) looking at stock options in a sample of US banks.

	Mean		Median	
	Individual years	Period	Individual years	Period
Cash-based programs	52%	45%	25%	19%
Equity-based programs	86%	42%	76%	34%

Table 4: The magnitude of incentive-based programs used for the CEOs.

The relative magnitude of the incentive-based programs is measured as the value of the program relative to the fixed compensation. The value of option-based compensation is calculated using the Black-Scholes formula. ‘Individual years’ only considers the ratio for years where a cash payment is made respectively new equity-based programs granted. ‘Period’ considers the total ratio for the period where the bank has incentive-based compensation, i.e. the total value of incentive-based payments during this period divided by the total fixed salary in the same period. For the cash-based programs the information is only based on information from seven out the 13 banks with cash-based programs.

3.2.2 Corporate governance

As briefly mentioned in section 2.1 and shown in Table 1, many of the banks are characterized by dispersed ownership meaning that a large fraction of banks are isolated from shareholder monitoring. More precisely, in 64% of the banks there are no shareholders independent of the

¹⁶ It is worth to note that it is against standard recommendations for the use of stock options only to grant large portions of options rarely. This can, for example, lead to too much focus from the CEO on the stock price around the time of grant and especially around maturity of the stock options.

management with more than 5% of the shares. A closer look at the ownership in the banks shows that only 7% of the banks have a controlling shareholder with more than 20% of the shares. This is quite different from other firms listed on OMX Copenhagen, where a simple count shows that 90% of firms other than banks actually have a shareholder who owns more than 5% and in more than two thirds of these, there is actually a controlling shareholder with more than 20% of the shares.

As mentioned, a disadvantage of dispersed ownership is free-riding by the small shareholders and hence less monitoring of the CEO. As argued above, in a Danish setting this is only a general problem in the banking sector. However, in addition to the free-riding problem, shareholder influence in Danish banks is also hindered by voting ceilings, ownership ceilings, shareholders' committees, shares registered by names, and an early deadline for proposals to the general meeting. Table 5 describes voting and ownership ceilings while Table 6 considers other hindrances.

Voting and ownership ceilings are probably one important reason for the dispersed ownership in many of the banks. As seen in Table 1, these ceilings are a quite common phenomenon in listed Danish banks, where 43% of the banks have an ownership ceiling and 86% have a voting ceiling. Further detail on the ownership and voting ceilings are provided in Table 5 where a comparison with other listed firms is made.

<i>Panel A: Ownership and voting ceilings in banks</i>						
	Number of banks	In percent of all banks	Average ceiling	Median ceiling	Minimum ceiling	Maximum ceiling
Voting ceiling	38	86.36%	0.56%	0.03%	0.0001%	10.00%
Ownership ceiling	19	43.18%	9.47%	10.00%	5.00%	15.00%

<i>Panel B: Ownership and voting ceilings in other listed firms</i>						
	Number of firms	In percent of other firms	Average ceiling	Median ceiling	Minimum ceiling	Maximum ceiling
Voting ceiling	3	2.33%	12.50%	10.00%	7.50%	20.00%
Ownership ceiling	0	0.00%	-	-	-	-

Table 5: The magnitude of ownership and voting ceilings.

Panel A considers voting and ownership ceilings in the 44 banks in the sample whereas Panel B compares with ownership and voting ceilings in the total population of 129 other firms listed on OMX Copenhagen.

All banks having ownership ceilings also have an even more restrictive voting ceiling. Ownership ceilings were introduced quite recently in the banks, with the first being introduced in 1994, whereas voting ceilings are much older, with all voting ceilings being in place well before 1980. It is seen from the table that the voting ceilings are very restrictive. In banks with voting ceilings, a

shareholder can on average only vote for 0.56% of the share capital and the median is only 0.03% of the share capital. A further analysis shows that in 92% of the banks having voting ceilings a shareholder can vote for 1% of the share capital at most.

In other listed Danish firms ownership ceilings do not exist and voting ceilings are very rare. Furthermore, in the three cases where voting ceilings exist outside the Danish banking sector, the voting ceilings are much higher. Instead, it turns out that a little more than a third of other listed Danish firms have dual class shares, which as mentioned earlier are prohibited in the banking sector.¹⁷ Dual class shares mean *one share – many votes* for the owners of A-shares whereas voting ceilings mean *one share – almost no votes* for all shareholders. The consequences of the two systems with respect to shareholder monitoring of the CEO and the possibly presence of a large shareholder are very different.

In Table 6 we consider other hindrances to shareholder influence. These hindrances are again far more numerous in the banking sector than in other business sectors in Denmark.

	Banks		Other firms	
	Number	In %	Number	In %
In total	44	100%	129	100%
<i>Characteristics</i>				
Shareholders' committee	33	75%	0	0%
Shares registered by name	43	98%	41	32%
Early deadline for proposals to the general meeting	37	84%	61	47%

Table 6: Other hindrances to shareholder influence.

Other potential hindrances to shareholder influence in the 44 banks in the sample compared with the use of the same hindrances in the total population of 129 other firms listed on the OMX Copenhagen.

A shareholders' committee means indirect election of the board. The general meeting elects the shareholders' committee (typically 30-100 members) that later elects the board members. According to the articles of association, the board members are typically not responsible to the shareholders' committee. Similarly, the shareholders' committee typically does not possess much information about the bank and hence the CEO will have a big say on all matters.

¹⁷ From a theoretical perspective dual class shares have advantages and disadvantages. According to the survey in Burkhart and Lee (2007) the net effect is an empirical question. In the empirical survey of dual class shares, Adams and Ferreira (2007) find that it is not possible to conclude that the net effect should be different from zero.

If it is required that shares are registered by name then the management of the firm knows the name, address, and shareholdings of all shareholders. In a proxy fight this is a big advantage for the management, given that shareholdings in Denmark are not publicly known unless the shareholdings are above 5% as mentioned earlier.

The early deadline for proposals to the general meeting refers to firms that require proposals to the general meeting to be handed in before the annual report is released. The early deadline clearly gives an advantage to insiders because outside shareholders cannot base proposals on the new and important information in the annual report.¹⁸

In summary, the corporate governance culture differs remarkably between banks and other firms. This also holds true at higher organizational levels. In the Danish Bankers Association the entire board is composed of bank CEOs. Not a single seat has been assigned to a bank board member or another shareholder representative. This is in sharp contrast to other Danish business associations where the typical board member is a shareholder representative or a shareholder.¹⁹

The lack of shareholder influence and a weak disciplinary effect of the market for corporate control in banks may have consequences for risk-taking and performance. The next section examines if this turns out to be the case.

4 Results

The following addresses the three main research questions outlined in section 2.2. Section 4.1 addresses research question Q1, section 4.2 examines research question Q2, and, finally, research questions Q3 is addressed in section 4.3.

4.1 Are there differences between banks with and banks without incentive-based compensation?

We start by examining research question 1 (Q1) asking if banks with incentive-based compensation have performed worse during the financial crises and taken more risk compared to banks without incentive-based compensation.

¹⁸ The early deadline has its background in the firms' articles of association. It is now the opinion that the early deadline is overruled by the rules concerning general meetings in the Company Law. However, it is still the individual shareholders that have to argue that any proposals have been submitted in due time.

¹⁹ Another difference in the corporate governance culture between banks and other firms concerns replacements of CEOs. In Danish banks, CEOs are basically only replaced because of retirement or death whereas dismissals of CEOs happen more frequently in other firms.

4.1.1 Performance

We examine the first part of Q1 by comparing the performance of banks with and banks without incentive-based compensation. Performance is measured using return on equity (ROE) and stock return and is measured before and during the financial crisis. Of course, it is not completely clear what time period to use in defining the financial crisis. For the accounting based measure of performance, we will use 2008 as the financial crisis. For stock return, we will consider the financial crisis as the period from when the first Danish bank disappeared because of financial problems (January 2008) to just after the deadline for applications in connection with the capital injections offered by the second bank package (July 2009). However, we also consider stock return during 2008. The results are presented in Table 7.

From Table 7 follows that there is no evidence of significant differences between the performance of banks with incentive-based compensation and banks without incentive-based compensation before the financial crisis independently of whether return on equity or stock return is considered as performance measures. During the financial crisis, the performance of banks with incentive-based compensation is significantly worse than of banks without incentive-based compensation. These observations hold independently of whether performance is measured using return on equity or stock return.

The robustness of these conclusions has been examined in several different ways. In particular, we have considered return on equity for other periods than 2000-2007 without any changes in the conclusions. Similarly, we have let the financial crisis start before January 2008 and we have assumed that it ends before and after July 2009. The main results are unchanged as long as the period for the financial crisis includes most of 2008.

All in all, these results show banks where the CEO received incentive-based compensation have performed worse during the financial crisis than other banks. Thereby, the answer to the first part of research question Q1 is a yes.

Return on equity (ROE)	Average			Median		
	2000-2007	2008	2008 (-)	2000-2007	2008	2008 (-)
No incentive-based compensation	13.67%	1.91%	2.86%	13.38%	2.55%	2.81%
Has incentive-based compensation	14.21%	-14.14%	-12.19%	14.20%	-17.02%	-3.53%
<i>Difference to No incentive-based compensation</i>	0.54% IS	-16.04% ***	-15.04% ***	0.82% IS	-19.57% ***	-6.34% ***
Has significant incentive-based compensation	15.10%	-17.73%	-16.48%	14.66%	-20.00%	-16.93%
<i>Difference to No incentive-based compensation</i>	1.43% IS	-19.64% ***	-19.33% ***	1.28% IS	-22.55% ***	-19.74% **

Annual stock return	Average			Median		
	1:95-1:08	1:08-7:09	2008	1:95-1:08	1:08-7:09	2008
No incentive-based compensation	22.09%	-41.32%	-60.47%	22.07%	-39.73%	-61.32%
Has incentive-based compensation	21.68%	-56.84%	-69.61%	21.49%	-54.64%	-73.15%
<i>Difference to No incentive-based compensation</i>	-0.41% IS	-15.52% **	-9.15% *	-0.59% IS	-14.92% **	-11.83% *
Has significant incentive-based compensation	23.44%	-59.91%	-72.68%	22.70%	-52.82%	-73.41%
<i>Difference to No incentive-based compensation</i>	1.34% IS	-18.59% ***	-12.21% **	0.63% IS	-13.09% **	-12.09% *

Table 7: Performance of banks with and without incentive-based compensation.

*Performance measured as return on equity (ROE) and stock return for banks with and banks without incentive-based compensation. For stock return, 1:95-1:08 denotes the period from January 1995 to January 2008, whereas 1:08-7:09 denotes the period from January 2008 to July 2009. 2008 denotes stock return for year 2008. Returns for banks that have disappeared during the period are calculated based on the last observed stock price. In the column 2008, ROE is assumed to be -20% for banks that disappeared during 2008. In the column 2008(-), the banks that disappeared during 2008 are excluded from the sample. Significant incentive-based compensation is defined as in Table 2. The tests are a standard t-test for difference between the means and a Wilcoxon rank-sum test for difference between the medians. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively. IS means insignificant.*

4.1.2 Risk-taking

As mentioned in section 2, funding long-term loans by short-term deposits from foreign banks was a new and risky strategy for Danish banks. Hence, we use loans divided by deposits as one of our main risk measures. Another risk measure is the losses on loans accounted for in the 2008 annual report divided by total loans, as these losses show the (short-term) consequences of risks-taking (see, Gorton and Rosen, 1995 and Foos, Norden and Weber, 2009 who also use loan losses as a risk measure).

In order to examine the second part of research question Q1, Table 8 considers these two measures of risk-taking in Danish banks.

Loans divided by deposits, L/D	Average	Median
	2008	2008
No incentive-based compensation	1.12	1.10
Has incentive-based compensation	1.39	1.26
<i>Difference to No incentive-based compensation</i>	0.27 ***	0.16 ***
Has significant incentive-based compensation	1.44	1.34
<i>Difference to No incentive-based compensation</i>	0.32 ***	0.24 ***

Losses in percent of total loans, L	Average		Median	
	2008	2008 (-)	2008	2008 (-)
No incentive-based compensation	1.22%	1.10%	0.90%	0.88%
Has incentive-based compensation	2.89%	2.51%	3.04%	1.85%
<i>Difference to No incentive-based compensation</i>	1.66% ***	1.41% ***	2.14% ***	0.97% **
Has significant incentive-based compensation	3.35%	2.99%	4.00%	2.67%
<i>Difference to No incentive-based compensation</i>	2.13% ***	1.89% ***	3.10% ***	1.79% **

Table 8: Risk-taking in banks with and without incentive-based compensation.

Two measures of risk-taking are considered for the sample of banks. The first being ‘Loans divided by deposits, L/D’ measured at the end of 2008 (in cases where the 2008 annual report is not released because the bank has disappeared, information from the end of 2007 is used). The second being ‘Losses in percent of total loans, L’ calculated as the losses accounted for in the 2008 annual report divided by total loans. In the column 2008, the losses are assumed to be 4% for banks that disappeared during 2008. In the column 2008(-), the banks that disappeared during 2008 are excluded from the sample. For a description of the tests in the table, see Table 7.

From Table 8 follows that the ratio of loans divided by deposits are significantly higher in banks with incentive-based compensation compared to banks that have not introduced incentive-based compensation. Similarly, the losses accounted for in the 2008 annual report are significantly higher for banks with incentive-based compensation. Furthermore, these results are even more pronounced if we only consider banks with significant incentive-based compensation. This shows that banks with incentive-based compensation have taken more risk than banks without incentive-based compensation, and hence, the second part of research question Q1 has also been answered with a yes.

4.2 Does the introduction of incentive-based compensation increase risk-taking?

Having answered research question Q1, according to research question Q2 we now examine if the incentive-based compensation is the reason for the higher risk-taking among banks with this type of compensation. We examine this by comparing several risk-measures before and after the introduction of incentive-based compensation in the individual banks.

	Systematic risk (beta)		Unsystematic risk		Increase in L/D	
	Average	Median	Average	Median	Average	Median
Before	0.31	0.23	2.52%	2.38%	8.24%	5.33%
After	0.47	0.40	2.91%	3.08%	13.44%	12.88%
Increase	0.16 *	0.17 IS	0.39% IS	0.70% IS	5.20% IS	7.55% IS

Table 9: Risk-taking before and after the introduction of incentive-based compensation.

Risk-taking is measured as the ‘Systematic risk (beta)’, ‘Unsystematic risk’, and the ‘Increase in loans divided by deposits, L/D’. Beta is estimated based on daily stock returns with a Scholes-Williams correction to account for illiquidity of some of the banks’ shares. As market index is used the OMX – Copenhagen All Share Index. The unsystematic risk is measured as the standard deviation of the residuals in the regression estimating beta. The ‘Increase in L/D’ – before is calculated as the increase in L/D from the year before to the year of the introduction of incentive-based compensation. The ‘Increase in L/D’ – after is calculated as the increase in L/D from the year of the introduction of incentive-based compensation to the year after. For a description of the tests used in the table, see Table 7.

The results in Table 9 provide only weak evidence that the introduction of incentive-based compensation increases risk-taking. The risk-measures generally increase but the increases are insignificant or in one case, only significant at the 10% level. It is worth noticing that these results are quite robust to various changes in the method and the time periods used in Table 9. For example, we have used weekly stock returns, other market indices, and longer time periods. The conclusions remain unchanged.

One reason for the weak increase in risk-taking can be a general increase in risk-taking over time in banks with incentive-based compensation – an increase unrelated to the introduction of incentive-based compensation. Thereby, already before the introduction of incentive-based compensation, these banks were taking higher risk than banks without incentive-based compensation. This is also consistent with the fact that a large fraction of the incentive-based programs was not introduced until 2005-2007 and the measures of risk-taking increased before this period.

In the appendix, we examine these issues in further detail. First, it is shown that there is actually a general increase in risk-taking in banks during the whole period from 2003/2004 to 2007. Second, this increase is more pronounced for banks with incentive-based compensation but the increase is unrelated to the introduction of the incentive-based compensation.

To conclude, there is no evidence that the excessive risk-taking in banks with incentive-based compensation can be explained by the introduction of this compensation to the CEO, and hence, the answer to research questions Q2 turns out to be a no.

4.3 Are the problems caused by a lack of shareholder monitoring and CEO characteristics?

The results above have documented that banks with incentive-based compensation take more risk (a yes to research question Q1) but also that the risk-taking does not seem to be caused by the introduction of incentive-based compensation (a no to research question Q2). Therefore, according to research question Q3 we now examine if the more fundamental problem of insufficient monitoring by shareholders can explain these results. This is examined by first comparing banks isolated from monitoring by shareholders (banks where there are no shareholders independent of the management with more than 5% of the shares) with banks that are not isolated from monitoring by shareholders (banks that have at least one large shareholder independent of the management with more than 5% of the shares).²⁰

Table 10 shows that banks isolated from monitoring by a large shareholder is much more likely to have incentive-based compensation and ownership ceilings with the differences being significant at the 5% and 1% levels respectively. If we instead consider banks with significant incentive-based compensation as defined in Table 2, the difference is even more pronounced. From unreported results follow that 13 out of 14 banks with significant incentive-based compensation are isolated from shareholder monitoring. Similarly, other initiatives that potentially hinder shareholder influence like a voting ceiling, a (management controlled) shareholders' committee, and required registration of shares by name are also more common in banks isolated from shareholder monitoring, even though these differences are not significant. Furthermore, Panel B in the table shows that banks isolated from shareholder monitoring have performed significantly worse and have taken significantly more risk than banks not isolated from shareholder monitoring.

²⁰ Large shareholders not independent of the management are typically funds where the board of directors in the bank has a controlling influence. These funds were established when savings banks were turned into publicly listed banks as discussed in section 2.1. According to bank regulations, the majority of the board members in such a fund have to come from the bank's board of directors. The funds indeed live up to this requirement because all the board members in the fund are typically selected as the board members from the bank.

Panel A: Characteristics	In total	Number of banks with:					
		Incentive-based compensation	Ownership ceiling	Voting ceiling	Shareholders' committee	Shares registered by name	Early deadline for proposals
Isolated	28	16	16	26	22	28	23
In %	100%	57%	57%	93%	79%	100%	82%
Not isolated	16	4	3	12	11	15	14
In %	100%	25%	19%	75%	69%	94%	88%
Difference		-32%	-38%	-18%	-10%	-6%	5%
Test for difference		**	***	IS	IS	IS	IS

Panel B: Performance	In total	Average			
		ROE 2008	Return 1:08-7:09	L/D	Losses
Isolated	28	-9.86%	-53.24%	1.35	2.43%
Not isolated	16	2.45%	-39.87%	1.06	0.85%
Difference		12.31%	13.36%	-0.29	-1.58%
Test for difference		***	**	***	***
	In total	Median			
		ROE 2008	Return 1:08-7:09	L/D	Losses
Isolated	28	-4.79%	-49.60%	1.26	1.92%
Not isolated	16	2.18%	-39.87%	1.01	0.83%
Difference		6.97%	9.73%	-0.26	-1.10%
Test for difference		**	**	***	***

Table 10: Characteristics and performance of banks isolated from shareholder monitoring and banks not isolated from shareholder monitoring.

A bank is isolated from shareholder monitoring if there are no shareholders independent of management with more than 5% of the shares. Panel A provides corporate governance related characteristics of banks isolated and banks not isolated from shareholder monitoring. The characteristics include the number of banks with 'Incentive-based compensation', 'Ownership ceiling', 'Voting ceiling', and a 'Shareholders' committee'. 'Shares registered by name' refers to banks that require shares to be registered by name. 'Early deadline for proposals' refers to banks that require proposals to the general meeting to be handed in before the annual report is released. Panel B considers performance. 'ROE 2008' is return on equity in 2008 determined as the 2008-column in Table 7, 'Return 1:08-7:09' is annual stock return from January 2008 to July 2009. 'L/D' is loans divided by deposits and 'Losses' is the losses accounted for in the 2008 annual report divided by total loans and determined as the 2008-column in Table 7. Test for difference is a standard binomial test in Panel A. For a description of the tests used in Panel B, see Table 7.

Thereby it is shown that the lack of shareholder monitoring is part of the problem and thereby part of the reason for the crisis in the Danish banking sector. However, we still need to relate this to the findings regarding incentive-based compensation and individual CEO characteristics in order to fully answer research question Q3.

Towards this end we start by repeating the observation from above that 13 out of 14 banks with significant incentive-based compensation are also isolated from shareholder monitoring. This suggests that the incentive-based compensation in these banks are initiated (taken) by the CEO rather than granted by the shareholders. There is actually further strong evidence in the data that this

is the case.²¹ First, if the incentive-based compensation was granted by shareholders one should from an optimal contracting perspective expect that fixed compensation to the CEO is decreased at the time when significant incentive-based compensation is introduced. We have examined if this is the case in the 14 banks with significant incentive-based compensation and it turns out that the fixed compensation to the CEO is instead *increased* by 10.7% on average measured from the year before to the year where the incentive-based compensation was introduced. Furthermore in only one bank did the fixed compensation decrease and that was actually in the one bank not isolated from shareholder monitoring. Second, and consistent with the findings in Brick, Palmon, and Wald (2006), it also seems as if the boards of directors were receiving extraordinary increases in compensation around the time where the incentive-based compensation was introduced to the CEO. Here the average yearly increase in compensation is 10.9% measured from two years before to two years after the time of introduction of incentive-based compensation in order to avoid any problems caused by timing issues. These numbers are seen to be much higher than the numbers for the board of directors in Table 3.²²

However, all this raises the question why some CEOs in banks isolated from shareholder monitoring have introduced incentive-based compensation to themselves whereas others have not. As discussed in section 2.2, our answer is that this depends on individual characteristics of the CEO like risk-aversion, greed, self-confidence etc. In particular, it will primarily be risk-loving (or risk-blind), greedy, overconfident or simply hubristic CEOs that introduce incentive-based compensation to themselves.²³ Thereby, and also in line with the results in Brick, Palmon, and Wald (2006), the extent to which a CEO receives incentive-based compensation will be an important indicator of CEO type in the banks isolated from shareholder monitoring.

The results obtained by dividing banks isolated from shareholder monitoring into a group with and a group without incentive-based compensation are seen in Table 11.

²¹ In addition, several of the board members in banks with significant incentive-based compensation have subsequently admitted that it was the CEO that took the initiative to introduce incentive-based compensation.

²² We have also examined changes in compensation to the board of directors in banks where the CEO was only granted incentive-based compensation at a smaller scale (less than 20% of fixed compensation). In these banks, the average increase was 5.71% which is actually a little less than the average given in Table 3.

²³ It is beyond the scope of this article to address the specific characteristics of the CEOs in more detail. However, we have analyzed CEOs with stock options in further detail. Many of these CEOs have lost fortunes on the stock options during the financial crisis either because they have waited much longer with the exercise than they had to, or because they held on to the shares received upon exercise. Such behavior is more consistent with some of the mentioned characteristics rather than rational exercise behavior.

Panel A: Average	Banks in total	ROE 2008	Return 1:08-7:09	L/D	Losses
Without incentive-based compensation	12	0.17%	-42.42%	1.18	1.60%
With incentive-based compensation	16	-17.39%	-61.34%	1.47	3.06%
Difference		-17.56% ***	-18.92% **	0.29 ***	1.45% **

Panel B: Median	Banks in total	ROE 2008	Return 1:08-7:09	L/D	Losses
Without incentive-based compensation	12	1.58%	-45.12%	1.15	1.00%
With incentive-based compensation	16	-20.00%	-57.79%	1.44	3.04%
Difference		-21.58% ***	-12.67% **	0.30 ***	2.04% **

Table 11: Performance of banks with and without incentive-based compensation for banks isolated from shareholder monitoring.

A bank is isolated from shareholder monitoring if there are no shareholders independent of the management with more than 5% of the shares. 'ROE 2008' is the return on equity in 2008 determined as the 2008-column in Table 7, 'Return 1:08-7:09' is annual stock return from January 2008 to July 2009. 'L/D' is loans divided by deposits and 'Losses' is the losses accounted for in the 2008 annual report divided by total loans and determined as the 2008-column in Table 7. For a description of the tests used in the table, see Table 7.

The results in Table 11 show that among banks isolated from shareholder monitoring, banks with incentive-based compensation to the CEO have performed significantly worse and have taken significantly more risk than isolated banks without incentive-based compensation to the CEO, all results being significant at the 1%-5% levels for averages as well as medians. Thereby, the table shows that the poor performance and excessive risk-taking can basically be attributed to the group of banks isolated from shareholder monitoring and with a CEO that receives incentive-based compensation. Said in other words, for this group of banks, unfortunate characteristics of the CEO combined with a lack of shareholder monitoring and board oversight, have lead to excessive risk-taking and such a poor performance that nearly half of the banks in this group have disappeared during the financial crisis. Thereby, research questions Q3 has also been answered with a yes.

5 Conclusions

Many observers and numerous politicians have been arguing that the use (or more precisely misuse) of incentive-based compensation to a large extent is the cause of the financial crisis. The results in this paper show that this also seems to be the case at first sight. In particular, the first immediate results show that banks with incentive-based compensation to the CEO are the banks with excessive risk-taking and with the worst performance during the financial crisis. This result is exemplified by the fact that out of the eight Danish banks that have disappeared during the financial crisis, seven had incentive-based compensation to the CEO.

However, quite importantly, additional results show that it is difficult to find any statistically significant increase in risk-taking following the introduction of incentive-based compensation. Thereby, there is no evidence that incentive-based compensation to CEOs should be a main cause of the problems in the Danish banking sector. This is also consistent with the fact that many of the incentive-based compensation programs to the CEOs are introduced so recently, that it is simply difficult to imagine that these should be the main cause of the excessive risk-taking that was already seen in these banks several years earlier.

Instead, the results provide strong evidence that the use of incentive-based compensation to the CEO is an indicator of more fundamental corporate governance problems in these banks including a severe lack of monitoring by the shareholders. The lack of monitoring by shareholders is explained by dispersed ownership, among other things caused by the heavy use of several different restrictions on shareholder rights in the banking sector. The most notable one is voting ceilings that in the median bank imply that a shareholder can only vote with 0.03% of the share capital independent of the shareholder's ownership. In all these respects, the Danish banks are very different from other listed Danish firms.

Depending on characteristics among the individual CEOs, some use their power and the lack of shareholder monitoring to increase their compensation considerably by basically adding incentive-based compensation on top of their fixed compensation. Thereby, whether a CEO has incentive-based compensation or not becomes an indicator of some characteristics of the individual CEOs like the extent to which these, for example, are greedy, risk-blind or overconfident. These characteristics of the CEO combined with a lack of shareholder monitoring and an absence of the disciplinary effect from the market for corporate control, are likely to create problems for the bank and its shareholders. Consistent with this, the results also clearly show that banks isolated from shareholder monitoring and where the CEO receives incentive-based compensation have taken significantly more risk and have performed significantly worse than other banks.

Our interpretation of these results is that it will not help much if the use of incentive-based compensation is more or less banned in banks because this does not address the fundamental problem of poor corporate governance including insufficient shareholder monitoring. The only way to address this more fundamental problem is by preventing the use of various hindrances to shareholder influence, especially including the use of ownership and voting ceilings. In the same vein, the state should be reluctant to give the banks equity capital (including hybrid core capital). Instead, the banks should be forced to raise the equity capital on the stock market because this

would in Denmark generally require that at least one large shareholder is willing to invest in the bank. If the bank does not treat the shareholders well, it will not get the money. State money has delayed the abolition of restrictions on shareholder rights and hence also delayed the improvement of corporate governance in the banking sector.²⁴

Appendix

In this appendix, we provide a further analysis of risk-taking in the banks focusing more on the long-run picture compared to the results in section 4.1.2. More precisely, in Table 12 we consider the development over time in two main risk-taking measures, loans divided by deposits, L/D and the growth rate of loans, L.

Loans divided by deposits, L/D		Average												
Year	95	96	97	98	99	00	01	02	03	04	05	06	07	08
No incentive-based compensation	0.75	0.76	0.79	0.82	0.89	0.96	0.94	0.90	0.86	0.92	1.01	1.11	1.15	1.13
Has incentive-based compensation	0.82	0.83	0.83	0.86	0.89	1.01	0.96	0.93	0.94	1.02	1.17	1.36	1.42	1.38
Difference to No incentive-based compensation	0.07	0.07	0.05	0.05	0.01	0.05	0.02	0.03	0.07	0.10	0.16	0.24	0.27	0.26
Test for difference to No incentive-based compensation										*	**	***	***	***
Has significant incentive-based compensation	0.88	0.87	0.88	0.93	0.98	1.08	1.02	0.99	0.99	1.08	1.25	1.39	1.45	1.43
Difference to No incentive-based compensation	0.13	0.12	0.09	0.12	0.09	0.12	0.08	0.09	0.13	0.16	0.25	0.28	0.30	0.31
Test for difference to No incentive-based compensation	*	*		*					**	**	***	***	***	***

Growth rate in loans, L		Average												
Year	95	96	97	98	99	00	01	02	03	04	05	06	07	08
No incentive-based compensation	-	6.7%	14.4%	10.6%	12.7%	12.9%	13.4%	5.7%	4.4%	15.8%	24.2%	25.3%	19.5%	7.6%
Has incentive-based compensation	-	7.8%	11.2%	12.5%	11.0%	24.0%	6.7%	8.0%	9.8%	22.1%	35.4%	36.9%	28.9%	-0.2%
Difference to No incentive-based compensation	-	1.2%	-3.2%	1.9%	-1.7%	11.1%	-6.7%	2.3%	5.5%	6.3%	11.2%	11.6%	9.4%	-7.8%
Test for difference to No incentive-based compensation	-					**			**	**	**	***	***	**
Has significant incentive-based compensation	-	6.4%	14.3%	15.6%	13.6%	28.0%	6.8%	7.8%	10.3%	22.9%	40.0%	34.3%	25.8%	0.8%
Difference to No incentive-based compensation	-	-0.2%	-0.1%	5.1%	0.9%	15.1%	-6.6%	2.1%	6.0%	7.1%	15.8%	9.0%	6.3%	-6.8%
Test for difference to No incentive-based compensation	-			**		**			*	**	***	**	**	*

Table 12: Time pattern in risk-taking, 1995-2008.

'Loans divided by deposits, L/D' is the cross-sectional average of loans divided by deposits and 'Growth rate in loans, L' is the average of the yearly increase in loans. Test for difference is a standard t-test. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively. With respect to the use of incentive-based compensation, the banks are classified into the three groups as explained in Table 2, i.e. the banks do not change between the three groups over time.

From the table we observe that banks with incentive-based compensation consistently starts to take significantly more risk than other banks around 2003-2004. For example, banks with significant incentive-based compensation have higher loans divided by deposits in all years from 2003 to 2008

²⁴ This is especially evident from the behavior of the struggling banks. For example, the seventh largest bank in the dataset which is still struggling to survive, has managed to raise money by an equity issue. However, this was only after a new large shareholder offered to buy up to a third of the equity in the bank, and before accepting to do so, this shareholder required that the voting ceiling (0.1%) in the banks was removed and that he would have direct influence on the composition of the board of directors.

and the differences are significant at the 1%-5% levels. The same picture is seen from the growth rate in loans, where banks with incentive-based compensation had significantly higher growth rates in loans compared to banks without incentive-based compensation in all years from 2003 to 2007. For example, from 2004 to 2005 banks with significant incentive-based compensation had an astonishing average growth rate of 40% which should be compared to an average growth rate of 24% for banks without incentive-based compensation.²⁵

Somewhat interestingly, it is also seen that the picture is the completely opposite in 2008 where banks with incentive-based compensation suddenly on average have unchanged loans but banks without incentive-based compensation still show an increase in loans.

In relation to research question Q2 and the results in section 4.2, it is also relevant to examine if the observed differences between banks with and banks without incentive-based compensation somehow is related to the time when the incentive-based compensation was introduced. We have among other things examined this by making a table similar to Table 12 but where we only consider the banks that introduced incentive-based compensation in 2005 onwards corresponding to 67% of the banks with incentive-based compensation as shown in section 3.2.1. The conclusion from these unreported results is consistent with the above. In particular, these banks which introduced incentive-based compensation quite late still start to take significantly more risk than banks without incentive-based compensation already in 2003-2004. Thereby, these results also show that the increase in risk-taking cannot be attributed to the introduction of incentive-based compensation.

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²⁵ We have examined the robustness of these results in several different ways. For example, we have considered medians instead of averages, and we have considered changes in loans divided by deposits instead of levels. The conclusions remain unchanged in these cases.

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