

Bad Corporate Governance: When Incentive-Based Compensation Identifies Dangerous CEOs*

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Current version: January 3, 2017

Key words: Large shareholders; voting and ownership ceilings; monitoring; incentive-based compensation; CEO characteristics

JEL Classification: G32; G34; M52

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* The authors wish to thank Jens Verner Andersen, Ettore Croci, Tom Engsted, Rüdiger Fahlenbrach, Laurent Fresard, Anders Grosen, Bruce D. Grundy, Jørn Astrup Hansen, Christian Koziol, Jing-Ming Kuo, Evren Ors, Jesper Rangvid, Carsten Tanggaard, and participants in the Workshop on Corporate Governance and Investment, the Meeting of the Danish Economic Society, the European Winter Finance Summit, the EFMA Conference, the AFFI Conference, and seminars at HEC Paris, ESSEC, Paris-Dauphine University, and the University of Aarhus for many useful comments.

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Abstract

Inherited corporate governance characteristics largely determine the ownership structure in Danish banks. Bad characteristics, including severe restrictions on shareholder rights, are associated with dispersed ownership. Banks with dispersed ownership take more risk and perform much worse than banks with a large independent shareholder. CEOs in banks with dispersed ownership are powerful, but only half of the CEOs in the sample studied decided to extract rents using incentive-based compensation – and only these banks took more risks and performed much worse than other banks. Given that these banks took more risk already before the introduction of incentive-based compensation, the use thereof is found to be an indicator of unfortunate traits of the CEO, which cannot be identified by other observable characteristics of the CEO.

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1 Introduction

How do individual CEO characteristics interact with the core aspects of corporate governance such as incentive-based compensation, the threat of replacement through the market for corporate control, and shareholder and board monitoring, to determine firm risk taking and performance? Unfortunately, this interaction is difficult to examine empirically since changes in risk taking and performance can often only be observed over long time periods and because individual CEO characteristics and corporate governance in firms are often difficult to quantify. Moreover the variation across firms and the number of firms for a given industry is often not sufficiently large. Nevertheless, the recent Danish Banking Crisis, where 48% of the 44 exchange-listed banks failed, makes it possible to conduct such a study.

In more detail, we study the effect of bad corporate governance and the characteristics of very powerful CEOs on risk taking and performance by examining Danish commercial banks before and during the financial crisis. Danish banks are relevant for this kind of study for three main reasons. First, their corporate governance turns out to vary greatly, not least in terms of the use of different restrictions on shareholder rights, the use of incentive-based compensation and in terms of ownership structure. In particular, corporate governance in many of the banks includes several severe restrictions on shareholder rights, including voting and ownership ceilings – restrictions that have not previously been investigated in the empirical literature. In addition to having a relatively large number of exchange-listed commercial banks allowing us to measure risk taking and performance, we can treat the competitive and legal environment as common to all firms in the sample.

Second, the traditional agency problem is potentially quite severe in Danish banks because a large subset of the banks (many of them previously non-listed savings banks with one depositor – one vote) historically has not focused on maximizing shareholder value and because many of the CEOs are entrenched and exceptionally powerful with weak and unprofessional boards of directors.¹ The restrictions on shareholder rights and the insulation of banks from the market for corporate control are consistent with this. In addition, the banks have always had a hierarchical culture and there has always been a great deal of prestige and power attached to being a bank CEO – not least in the local area or region where most of the banks still have their main focus.

¹ This follows, for example, from an interview with the former Danish FSA Director General Ulrik Nødgaard. Available at www.finanswatch.dk under “The FSA fears the small kings of the banks”, the interview addresses problems in the Danish banking sector. The FSA’s main argument is that a concentration of power with the CEO combined with too little resistance from an unprofessional board of directors has been a dangerous cocktail for the Danish banking sector.

Third, the financial crisis is an extreme, real-life stress test of the Danish banking sector, where basically all losses are related to standard commercial banking activities in Denmark and, hence, not related to, e.g. the U.S. subprime mortgage crisis. In fact, the financial crisis has been so hard on the Danish banking sector that international bank analysts from Moody's and UBS concluded at one point that the Danish Banking Crisis was the worst in Europe.² Since the beginning of the financial crisis, 21 of 44 exchange-listed Danish banks have failed and a small handful are still struggling to survive. Four of the failed banks were among the ten largest in Denmark.

Our findings show that just before the Danish Banking Crisis the Danish banks can be divided into three groups almost of equal size:

- A. Banks with a large independent shareholder
- B. Banks without a large independent shareholder and with no incentive-based compensation to the CEO
- C. Banks without a large independent shareholder and with incentive-based compensation to the CEO

Banks with a large independent shareholder (group A) are characterized by significantly fewer restrictions on shareholder rights and better corporate governance than the banks in the other two groups. Among banks in group A, only 19% failed during the Danish Banking Crisis which should be compared to 33% in group B and 88% in group C.

The risk taking in banks without a large independent shareholder and with incentive-based compensation (group C) was significantly higher than in the two other groups, and the high risk taking was generally present already three years before the introduction of incentive-based compensation. Hence, the high risk taking in these banks was not caused by the introduction of incentive-based compensation. In addition, this high risk taking was not in the interest of the shareholders. In the years before the Danish Banking Crises the performance, measured by stock return and return on book equity, of the three groups of banks was quite similar. During the Danish Banking Crisis the performance of the banks without a large independent shareholder and with incentive-based compensation was far worse than the performance of the banks in the other two groups.

In general the incentive-based compensation was not "given" to the CEO, but "taken" by the CEO. In principle, the powerful CEOs in banks without a large shareholder and without incentive-based

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

compensation (group B) could also have arrogated incentive-based compensation to themselves, but they didn't. The risk taking and performance in this group were almost similar to that of group A. Hence, despite bad corporate governance characteristics in the group of banks without a large shareholder and with no incentive-based compensation, we find that CEOs in this group were able to control themselves due to good personal characteristics such as self-discipline and integrity. In other words: Appropriate bank management may be achieved by monitoring by a large independent shareholder or by a CEO with good personal characteristics. In addition, incentive-based compensation in banks without a large shareholder turned out to be an almost perfect indicator of CEOs with bad personal characteristics.

Our study shows that the bad corporate governance in the banks is visible in the shape of severe restrictions on shareholder rights, including voting and ownership ceilings, etc. These severe restrictions are quite unique, especially from an Anglo-Saxon perspective. In the U.S., ownership ceilings are not allowed and in a sample of 4,399 U.S. firms, only 24 had voting ceilings (see Commission of the European Communities, 2007). Similarly, voting and ownership ceilings are not among the 24 corporate governance provisions carefully examined by Bebchuk, Cohen and Ferrell (2009), who show that restrictions on shareholder rights lead to significant reductions in firm value. Out of the six entrenchment provisions found to be value destroying, four of them set limits on shareholder voting power and the ability of a majority of shareholders to impose their will on the management.

Our study is, to the best of our knowledge, the first to show empirically the damaging effect of voting and ownership ceilings. This is especially important for discussions on the effect of deviations from 'one share – one vote', which led to a heated EU debate in 2007. Burkhart and Lee (2007) state that the conclusion from a theoretical perspective was ambiguous for many of the most common 'one share – one vote' deviations, 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). With this paper, the box is no longer empty.

In particular, our results document that bad corporate governance prevents the existence of large shareholders that monitor the CEOs. The free-rider problem, accentuated by the severe restrictions

on shareholder rights, makes it unlikely that any of the small shareholders will monitor the CEO, cf. Grossman and Hart (1980). It is also unlikely that the board of directors will fill out this role because the CEO, to a large extent, will be able to control the board of directors (see, for example, Berle and Means, 1932, p. 87; Hermalin and Weisbach, 1998). Finally, as already stressed by Manne (1965), such isolation of CEOs from shareholders may harm performance because the weakened disciplinary effect of the market for corporate control can increase shirking, empire-building, and the extraction of private benefits by the CEOs.

The lack of large shareholders in Danish banks is very likely to create problems because large shareholders in Denmark, as in other Scandinavian countries, are an established, rather well-functioning governance mechanism. Around 90% of the Danish listed firms outside the banking sector have at least one large shareholder with an ownership of more than 5%, whereas only around one-third of the listed banks have a single large shareholder of this nature. The reason is that the severe restrictions on shareholder rights only exist in the banking sector. The potential drawback of large shareholders, i.e. the expropriation of minority shareholders, is seldom an issue in Scandinavian countries; see Nenova (2003), and Dyck and Zingales (2004). Some of the main reasons generally mentioned are good law, a high degree of openness and trust, a low degree of corruption, and a strong press; see Gilson (2006),

We find that banks with a large shareholder perform similarly before the financial crisis and far better during the financial crisis and that they take less risk than banks without. These results document the positive role of large shareholders in monitoring the CEO and thereby improve performance; cf. discussions in Demsetz and Lehn (1985), Jensen (1986), and Shleifer and Vishny (1986). Empirical evidence of the positive role of large shareholders is also provided in, for example, Cronqvist and Fahlenbrach (2009) and Becker, Cronqvist and Fahlenbrach (2011).

Finally, our conclusions are not consistent with incentive-based compensation being a substitute for, for example, monitoring by the board or large shareholders, in banks with bad corporate governance. Instead, our findings are consistent with compensation contracts being used by some CEOs to extract rents, as argued by Bebchuk, Fried and Walker (2002) and Bebchuk and Fried (2004). Similarly, our findings are related to Brick, Palmon and Wald (2006), Agrawal and Nasser (2010), and Morse, Nanda and Seru (2011) who all find that excessive compensation is related to bad corporate governance and that excessive compensation for the CEO implies underperformance of the firm.

The remainder of this paper is organized as follows: Section 2 provides relevant background information with a short overview of corporate governance in Danish firms and of the Danish

banking sector. Section 3 describes the dataset and provides descriptive statistics focusing on incentive-based compensation and restrictions on shareholder rights in banks. The main empirical results are presented in section 4, while section 5 concludes.

2 Institutional background

2.1 The Danish corporate governance system

The Danish corporate governance system is different from the U.S. system in at least two important aspects that will be explained in the following.³ Furthermore, corporate governance in Danish banks turns out to be quite different from corporate governance in most other Danish firms. Therefore, this section will primarily focus on general corporate governance of Danish firms, whereas corporate governance specific to Danish banks are described in detail in section 3.2.

The first important characteristic of the Danish corporate governance system is the two-tier board system, which means that the management is divided into a board of directors and a board of executives (or managing directors). The board of directors is elected by and represents the shareholders and is not allowed to be dominated by executives. Similarly, the CEO is not allowed to be chairman of the board of directors. An important reason for this relatively strict separation between executives and the board of directors is that one of the board's major tasks is to hire and monitor the executives.

The second important characteristic of corporate governance in Danish firms outside the banking sector is concentrated ownership and, hence, the important role of large shareholders. Around two-thirds of all listed firms are controlled by a large shareholder with more than 20% of the votes. One implication of concentrated ownership is that the traditional principal-agent problem between strong executives and dispersed owners is less important in Danish firms outside the banking sector. Similarly, the board of directors is often elected by the large shareholders, and the board is generally quite strong and independent of the executives.

There is no or only very limited evidence of tunneling or more general expropriation of minority shareholders by large shareholders (Nenova, 2003; Dyck and Zingales, 2004). As mentioned earlier some of the main reasons generally mentioned are good law, a high degree of openness and trust, a low degree of corruption, and a strong press (see Gilson, 2006). All in all, large shareholders are a

³The following is mainly based on Sinani et al. (2008), which contains a description of the Danish corporate governance system from an international perspective.

common, and generally well-functioning corporate governance mechanism in Danish firms outside the banking sector.

2.2 The Danish banking sector

The Danish banking sector is characterized by a relatively large number of banks but only a few large ones.⁴ In the 1990s, a subset of the banks (around 25% of the banks that were publicly listed at the start of 2008) were organized as unlisted savings banks, typically local, owned collectively by the depositors with ‘one depositor – one vote’. Due to lack of capital and local growth opportunities, they became publicly listed and in the process chose to have voting and ownership ceilings in order to maintain a dispersed ownership. Other local Danish banks had a long history of voting ceilings, which had been in place well before 1980, whereas ownership ceilings were not allowed in publicly listed firms until 1994.

The Danish banking sector has traditionally been considered quite robust and conservative with relatively solid financing based on equity. However, this has changed. The average book equity to book assets has decreased quite considerably from 13.2% in 2004 to 10.1% in 2008 – and this occurred during a period when Danish bank earnings were remarkably high. Furthermore, one in every four banks (primarily the larger banks) had a ratio of book equity to book assets below 7%.

Similarly, Danish banks have traditionally had loans amounting to less than deposits. This 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, 6} The reason was a large increase in lending with average yearly growth rates of more than 25% in the period 2004-2007 (see Table 6 and the Danish Central Bank, 2009). These growth rates were exceptionally high compared to the historical standards and compared to growth rates seen in other countries.⁷

The increase in lending was financed primarily by short-term deposits from foreign banks, a new and risky strategy for Danish banks. In particular, it follows from Stiglitz and Weiss (1981) that such

⁴ The following is based on reports from the Danish Central Bank including Danish Central Bank (2009) and several articles by the authors analyzing the Danish banking sector. A list of further references is available upon request.

⁵ The current exchange rate (November 2016) is DKK 100 = US\$14.78.

⁶ The ratio of bank loans over deposits (the loan deposit ratio) has received increased attention as a risk measure in recent years. One example is in the country risk analysis performed by Credit Suisse, where the loan deposit ratio is used to assess the safety of the banking system. Interestingly, Denmark scores quite “high”. For example, in February 2009, Denmark had the fourth highest loan deposit ratio among 36 different countries. The three countries with higher ratios were Latvia, Iceland, and Estonia (see Credit Suisse, 2009).

⁷ Foos, Norden, and Weber (2010) find 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, from 1997-2007. For comparison, note that the average (median) growth rate in loans for our sample of Danish banks from 1997-2007 was 16.7% (13.7%).

deposits may dry out. When the first losses occurred for these foreign banks in July 2008, most Danish banks found it increasingly difficult to refinance these loans.⁸ This caused the Danish Parliament to pass the so-called first bank rescue package on October 5, 2008. At that time, seven listed banks (out of 44) and several minor savings banks had already failed.

The first bank rescue package was an offer to the banks, but it had rather important consequences for the banks that opted for it. First, the state would give a complete two-year guarantee to all depositors (including foreign banks) in the banks. Second, the banks would jointly pay up to DKK 35 billion to the state to cover its costs if depositors had to be saved. Finally, the banks were restricted from paying out dividends, making share repurchases or granting new executive stock options during the two-year guarantee period. All listed banks opted yes to the package even though several banks complained that the payment to the state was high and unfair in their view, because it implied that solid, well-run banks should pay for excessive risk taking by other banks.

Three months later, the troubled banks received further help through the second bank rescue package, passed by the Danish Parliament on January 18, 2009. The second bank rescue package offered state hybrid core capital injections and guarantees to solvent banks. In order to receive a hybrid core capital injection or guarantee, further restrictions were set on executive pay, implying that the value of all incentive-based executive compensation (cash and equity-based programs) was restricted to maximum 20% of fixed compensation.

3 Dataset and descriptive statistics

3.1 Dataset

The dataset consists of all Danish commercial 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 entire Danish banking sector measured by assets and employees.⁹ Considering that Denmark is a relatively small country, this is a large number of exchange-listed commercial banks from a single country. For example, the number of banks examined for the U.S. is, in many cases, quite similar (see, e.g. Saunders, Strock and Travlos, 1990, who examine 38 bank holding companies; Chen, Steiner and Whyte, 2006, who examine 68 commercial banks; Adams, 2012, who examines 93 banks; and Fahlenbrach and Stulz, 2011, who examine 98 banks). Similarly, the number is quite high compared

⁸ On the other hand, old fashioned deposits from domestic depositors were remarkably stable. These deposits were to a large extent insured by the state.

⁹ This is adjusted for the fact that Nordea, which is headquartered in Sweden, is omitted from the sample.

to the number of commercial banks listed in European and other countries. For example, it follows from Laeven and Levine (2009) that out of 48 countries only seven have more than ten listed banks.

In order to have the longest time series possible, we examined the banks in the period 1995-2015, starting well before some of the Danish banking sector traditions changed, as described in section 2.2. We began with 1995 when stock exchange announcements became available electronically. Not all of the banks exist throughout the period; a few banks became listed quite late in the period and, as mentioned, several banks failed during the financial crisis.

For the sample of banks, a variety of information was collected manually. First, all available details on compensation for the board of directors and the CEO were collected from the annual reports. The data on compensation for the board of directors and the CEO is described further in section 3.2. The annual reports have also been used to collect information on CEO characteristics and 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 were highly stable in the period before the financial crisis. In the following, we define a large shareholder as a shareholder with more than a 5% ownership of shares.¹⁰ The 5% limit is also used to define a large shareholder in related studies, for example Anderson and Fraser (2000) and Cronqvist and Fahlenbrach (2009).

Third, information on the banks' voting and ownership ceilings and other aspects of the relationship between the bank and its shareholders was collected in April 2009 from the banks' most recent articles of association. Similar information was collected in September 2009 for all listed Danish firms outside the banking sector. Old articles of association (1978-1986) for the banks were obtained from the Danish Commerce and Companies Agency.

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

¹⁰ Thereby, the shareholder will, in principle (see later), also have more than 5% of the votes. This follows from the fact that Danish banks are not allowed to issue dual class shares.

3.2 Descriptive statistics

Table 1 presents the basic characteristics of the banks in the sample. Consistent with the diversity in Danish banks, Panel A of Table 1 shows a large cross-sectional variation in total assets, number of employees, loans divided by deposits (one simple common measure of risk, see subsection 2.2 and footnotes 6 and 8), and the amount of equity financing.

Panel B of Table 1 provides corporate governance related characteristics of the banks in the sample. More precisely, Panel B shows that 45% of the banks have incentive-based compensation for the CEO, where incentive-based compensation refers to all variable pay like cash bonuses and stock options. Furthermore, it is seen that 86% of the banks have voting ceilings and 43% have ownership ceilings. Other potential restrictions of shareholder rights are seen in a vast majority of the banks, including 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 important information in the annual report is released. We return to a discussion of these restrictions later. Finally, the severe restrictions on shareholder rights have as one consequence that CEOs in many of the banks are isolated from shareholder monitoring. More precisely, only 36% of the banks have a shareholder independent of the management who owns more than 5% of the shares and just 7% have an independent large shareholder who owns more than 20%.¹¹

Panel C of Table 1 provides more details on the use of incentive-based compensation for CEOs in Danish banks. The panel reveals that out of the 20 banks with incentive-based compensation, six used cash-based programs only, seven used equity-based programs only, and seven used both types of incentive-based compensation. Furthermore, Panel C shows that 14 banks used significant incentive-based compensation, with significant defined as incentive-based compensation where the value is more than 20% of the fixed compensation.¹²

Given that incentive-based compensation and the corporate governance characteristics of the banks play a major role for this paper, the following two subsections will describe these two aspects in further detail.

¹¹ 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 became publicly listed banks, as discussed in section 2.2. 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 board members in the fund are typically selected among the board members of the bank.

¹² 20% is chosen as the restriction on incentive-based compensation introduced in connection with the second bank rescue package, as described in section 2.2.

3.2.1 Incentive-based compensation

In their annual reports, all listed Danish firms, including banks, are required to provide information on total cash paid as compensation to the board of directors and to the board of executives, and on incentive-based compensation to these two groups.

We have not found any banks where the board of directors receives incentive-based compensation.¹³ Therefore, the average compensation for 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 for the CEO is more complicated for two main reasons. First, in some cases, there are several executives and compensation for the CEO is not listed separately. In these cases, we assume that the CEO is paid 50% more than the other executives, which is consistent with the rule-of-thumb used in the industry and is generally confirmed by cases where compensation for the CEO is specified separately. Second, compensation for the CEO can consist of fixed compensation including pension payments (denoted from here on as fixed compensation), cash-based programs, equity-based programs, and golden handshakes. The full details are not always provided for all items. 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. 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 the severe critique launched in cases where information has been missing.¹⁴ Based on information on the equity-based programs, we calculate the value of the programs at the time of the grant using Black-Scholes valuation models.

Panel C of Table 1 provided details on the use of cash- and equity-based programs for CEOs in Danish banks. Figure 1 shows the years when the two types of incentive-based compensation are introduced for the first time in the individual banks. If a given bank introduces a cash-based program in 2005 and an equity-based program in 2007, the bank will be included twice in Figure 1: The first time in 2005 under cash-based programs; the second time in 2007 under equity-based programs.

Figure 1 shows that the majority (67%) of all incentive-based programs were introduced for the first time from 2005-2007. A large number of equity-based programs were introduced in 2006 and many cash-based programs in 2007.

¹³ One reason may be that Danish recommendations on good corporate governance since 2001 have stated that the board of directors should not be granted option-based compensation because this would undermine the board's role in monitoring the executives, see Committee on Corporate Governance (2001, p. 21).

¹⁴ The critique was primarily raised by investors at the general meeting and in the press. This led in 2001 the stock exchange, OMX Copenhagen, to require listed firms to provide details on equity-based programs in the accounting report (see also Committee on Corporate Governance, 2001, p. 21).

As mentioned, banks that use cash-based as well as equity-based programs are represented twice in Figure 1. If we only consider the year in which the bank introduced one of the two types of incentive-based compensation for the first time, the picture remains the same. 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 or 2009. This is probably related to the ban on certain types of incentive-based compensation in the first bank rescue package but also a consequence of the critique of incentive-based compensation that arose from different parties.¹⁵

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

Table 2 shows that the average yearly percentage increases in compensation for boards of directors, and especially for CEOs, exceeded the increase in general wages throughout the period 1995-2008. However, the increase was especially high from 2004-2008, particularly in banks with incentive-based compensation where the average increase in compensation for the CEOs was more than four times the average increase in general wages and nearly two times the average increase for CEOs in banks without incentive-based compensation. A further look at the data shows that mainly banks with significant incentive-based compensation showed high increases in compensation to the board of directors and the CEO: The average yearly increase from 2004-2008 was 8.30% for the board of directors and 18.39% for the CEO.

In order to further describe the use of incentive-based compensation, we have considered the relative magnitude of incentive-based compensation, or more precisely the relative magnitude of cash- and equity-based programs, by looking at the ratio between the values of the programs relative to fixed compensation. Cash-based programs are, on average (median), 52% (25%) of fixed compensation. The large difference between the average and the median is consistent with the fact that some banks have paid out exceptionally large bonuses.

Equity-based programs are even larger and constitute, on average (median), 86% (76%) of fixed compensation in the years they are granted. This shows that most of the programs are quite large and valuable when granted. Quite interestingly, the relative size of the programs is greater than the size

¹⁵ In 2010 the ban on certain types of incentive-based compensation was lifted for most banks. However, only one of the surviving banks has reintroduced incentive-based compensation in the period 2010 to 2015.

of programs reported by Chen, Steiner and Whyte (2006), who look at stock options in a sample of 68 large U.S. banks.

Further analysis shows that many of the banks rarely grant new equity-based programs. Even banks that started early with stock options have in many cases only granted options this one time, which is against standard recommendations for the use of stock options, see, for example, Committee on Corporate Governance (2001, p. 21). One possible effect of such large single grants is that the CEO focuses too much on the stock price around the time of grant and especially around maturity of the stock options. Another possible effect is that the CEO has incentives to take too much risk or no risk at all depending on the moneyness of this single grant.

3.2.2 Corporate governance

As briefly mentioned in section 2.2 and shown in Table 1, many of the banks are characterized by dispersed ownership and restrictions on shareholder rights, meaning that CEOs in a large fraction of banks are isolated from shareholder monitoring. More precisely, in 64% of the banks there are no shareholders independent of the management with more than 5% of the shares and 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 more than two-thirds of these firms have a controlling shareholder with more than 20% of the shares.

As mentioned, a disadvantage of dispersed ownership is free-riding by 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 directly restricted by voting ceilings, ownership ceilings, and several other restrictions discussed below.

Voting and ownership ceilings are one important reason for the dispersed ownership in many of the banks. As Table 1 shows, these ceilings are a quite common phenomenon in listed Danish banks, where 86% of the banks have a voting ceiling and 43% have an ownership ceiling. Panels A and B of Table 3 provide additional details on the voting and ownership ceilings, including a comparison with other listed firms.

Table 3 shows that voting ceilings are unusually 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. Further analysis shows that in 92% of the banks with voting ceilings, a shareholder can vote for 1% of the share capital at most.

Ownership ceilings were not possible in publicly listed firms until 1994, when the first one was introduced; voting ceilings, in contrast, are much older and were in place well before 1980 and have almost not changed since that time. This observation is based on our analysis of the banks' articles of association from 1978-1986.

In other listed Danish firms, ownership ceilings do not exist and voting ceilings are extremely rare. Furthermore, in the three cases where voting ceilings exist outside the Danish banking sector, the voting ceilings are much higher. On the other hand it turns out that slightly more than one-third of the other listed Danish firms have dual class shares, which, as mentioned, are prohibited in the banking sector.¹⁶ 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 for shareholder monitoring of the CEO and the possible presence of a large shareholder are vastly different. In particular, dual class shares make it relatively easy for a large shareholder to exist even if the large shareholder does not have large amounts of money to invest. One clear advantage is that the management will then be monitored by a large shareholder who, because of the superior voting shares, will also have influence.

This is in stark contrast to voting and ownership ceilings that either make it impossible for a large shareholder to exist or prevent large shareholders from having any influence. Similarly, such ceilings can clearly weaken the disciplinary effect on the management of the threat of being replaced.

The use of voting and ownership ceilings in Danish banks is much more pronounced than in other countries (see, Shearman & Sterling, 2007). Spain and Italy are two exceptions but even there, voting and ownership ceilings are far less common than in the Danish banking sector.¹⁷ In the U.S., ownership ceilings are not allowed and voting ceilings are so rare that they are not even included in the list of 24 governance provisions monitored by the Investor Responsibility Research Center (IRRC) and examined in Bebchuk, Cohen and Ferrell (2009).

In Panel C of Table 3 we consider other restrictions of shareholder rights, which again are far more numerous in the banking sector than in other business sectors in Denmark. For example, a

¹⁶ The survey in Burkhart and Lee (2007) concludes that from a theoretical perspective, dual class shares have advantages and disadvantages and that the net effect on firm value is an empirical issue. In the empirical survey of dual class shares, Adams and Ferreira (2007) find that it is not possible to conclude that the net effect on firm value is different from zero.

¹⁷ Note that the Danish banking sector is not explicitly mentioned in the study because the study was carried out at country level.

shareholders' committee means indirect election of the board where the general meeting first elects the shareholders' committee (typically 20-100 members), which later elects the board members. According to the articles of association, board members are typically not responsible to the shareholders' committee. Similarly, the shareholders' committee typically does not possess much information about the bank and only meets infrequently, like once or twice a year. In such banks the CEO is quite powerful and has a big say on all matters.

When registering shares by name is required the management of the firm knows the name, address, and shareholdings of all shareholders. In a proxy fight, this is a considerable advantage for the management, given that shareholdings in Denmark are not publicly known unless they are above 5%.

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

According to Danish law, shareholders may vote by proxy at the shareholders' meeting, and bank boards routinely ask for such proxy votes. This, combined with voting ceilings that do not apply to the board, gives the management great power and voting by proxy is hence another hindrance to shareholder influence. Unfortunately, no public data exists on the banks' use of voting by proxy.

In summary, the corporate governance culture differs remarkably between banks and other firms. Another difference in the corporate governance culture between banks and other firms concerns the replacement of CEOs. In Danish banks, CEOs are basically only replaced because of retirement or death, whereas the dismissal of CEOs happens far more frequently in other firms. To illustrate this, we have examined all changes in CEOs in our sample of 44 banks in the period from 2000 to July 2009 (i.e. just after the deadline for applications related to the second bank rescue package). Apart from CEO changes in failing banks taken over by the government, there were only 20 CEO changes in 16 banks of which just two CEOs left a bank because of a "disagreement concerning the future strategy of the bank". The remaining changes are caused by: 13 retirements, three deaths, and two CEOs that left to become CEO in a larger bank.

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 is the case.

4 Results

This section presents the main results in three parts. Section 4.1 shows that banks with incentive-based compensation for the CEO have taken more risk and performed no better than other banks before the financial crisis, but significantly worse during the crisis. Section 4.2 documents that this difference is not explained by the introduction of incentive-based compensation given that the risk was already higher in these banks before the introduction of incentive-based compensation. Section 4.3 shows that the excessive risk taking and poor performance are explained by bad corporate governance in the banks without a large independent shareholder and certain CEO characteristics revealed by whether the CEO receives incentive-based compensation or not.

4.1 Risk taking and performance in banks with incentive-based compensation for the CEO

As mentioned in section 2.2 and footnotes 6 and 8, funding long-term loans with short-term deposits from foreign banks was a new and risky strategy for Danish banks due to refinancing-risk. Hence, we use loans divided by deposits as one of our main risk measures. Another risk measure is the losses (write downs) on loans accounted for in the 2008 and 2009 annual reports divided by total loans, as these losses show the consequences of earlier risk taking (see, Gorton and Rosen, 1995 and Foos, Norden and Weber, 2010, who also use losses as a risk measure). Table 4 considers these two measures of risk taking in Danish banks.

Table 4 reveals that the ratio of loans divided by deposits is significantly higher in banks with than in banks without incentive-based compensation. Similarly, the losses accounted for in both the 2008 and 2009 annual reports are significantly higher for banks with incentive-based compensation. The results are even more pronounced if we only consider banks with significant incentive-based compensation, which shows that banks with incentive-based compensation have taken more risk than banks without.

The robustness of these conclusions has been examined in various ways. For example, we have considered the growth rate in loans before the financial crisis and several market-based risk measures like systematic risk (beta), unsystematic risk, and total risk (see section 4.2) as other measures of risk taking leading to the same conclusions. We also removed all banks without an annual report for 2008 or 2009 as well as all banks that failed.¹⁸ The main results are still the same.

¹⁸ Even though a bank failed due to bankruptcy and was taken over by the government, we still have access to the 2008 and 2009 annual reports in many cases because the government subsequently issued individual accounting reports for these banks.

Finally, as discussed in section 4.3.1, these conclusions still hold after controlling for size and amount of equity financing.

Given this difference in risk taking between banks with and banks without incentive-based compensation, we now examine the implications for performance. Measured using return on equity (ROE) and stock returns, performance is examined before and during the financial crisis. For the accounting-based measure of performance, we will use 2008 and 2009 as the financial crisis. For stock returns, we will consider the financial crisis as the period starting when the first Danish bank failed because of financial problems (January 2008) and ending just after the deadline for applications for the capital injections and guarantees offered by the second bank rescue package (July 2009). We also consider stock returns for 2008 alone. Table 5 presents the results.

Table 5 shows that there are no 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 returns are considered as performance measures. We have considered return on equity and stock returns for several other periods before the crisis without any changes in the conclusions.

During the financial crisis, banks with incentive-based compensation perform significantly worse than banks without incentive-based compensation. These observations hold independently of whether performance is measured using return on equity for 2008 or 2009 or stock returns. This means that the excessive risk taking in banks with incentive-based compensation has not been in the interest of the shareholders.¹⁹

The robustness of these conclusions has been examined in several different ways. We let the financial crisis start after January 2008 and assume that it ends before and after July 2009. Furthermore, we tried to remove all banks without annual reports for 2008 or 2009 and all banks that failed. The main results remain unchanged. Finally, as discussed in section 4.3.1, these conclusions still hold after controlling for size and the amount of equity financing.

All in all, the results show that banks whose CEO received incentive-based compensation performed worse than other banks. However, In the next subsection we demonstrate that the higher risk was already in place before the introduction of the incentive-based compensation.

¹⁹ The banks' performance from January 2000 to July 2009 also clearly demonstrates that this is the case. For example, the average (median) annual stock returns for banks without incentive-based compensation is 10.42% (10.92%), which should be compared to -10.75% (3.58%) for banks with significant incentive-based compensation. In both cases, the difference is significant at the 5% level.

4.2 The relation between risk taking and the introduction of incentive-based compensation

We now examine if incentive-based compensation alone can explain the higher risk taking among banks with this type of compensation. As a starting point, we analyze risk taking in the banks using a more long-term perspective compared to the results in section 4.1. More precisely, Table 6 considers the development over time in the two main risk taking measures, loans divided by deposits (L/D) and the yearly growth rate of loans (L).

Table 6 shows that banks with incentive-based compensation (IBC) consistently start to take significantly more risk than other banks around 2003-2004 when the upswing of the Danish economy started. For example, banks with significant incentive-based compensation have higher loans divided by deposits every year from 2003 to 2009 and the differences are significant at the 1%-5% levels. The same picture is seen from the yearly growth rate in loans, where banks with incentive-based compensation have significantly higher growth rates in loans compared to banks without incentive-based compensation from 2003 to 2007. For example, from 2004 to 2005 banks with significant incentive-based compensation had an average growth rate in loans of 40%, which exceeds the contemporaneous 24% average growth rate for banks without incentive-based compensation.²⁰

We note that risk taking is greater, starts earlier, and is more pronounced for banks with significant incentive-based compensation. Finally, we note that the picture with respect to growth rates in loans is the complete opposite in 2008 and 2009, when banks with incentive-based compensation on average have negative growth rates that are significantly lower than in banks without incentive-based compensation.

All in all, Table 6 demonstrates that banks with incentive-based compensation consistently started to take more risk than other banks around 2003-2004 and this occurred independently of when the incentive-based compensation was introduced in the bank. We have examined this further by focusing on only the 67% of the banks that introduced incentive-based compensation in 2005 and onwards (see section 3.2.1). The conclusion from these unreported results is consistent with the above. In particular, the banks that introduced incentive-based compensation quite late still start to take significantly more risk than banks without incentive-based compensation as early as 2003-2004.

²⁰ We have also examined the robustness of these results in several different ways. For example, we have considered medians instead of averages, accumulated growth rates instead of yearly growth rates, and changes in loans divided by deposits instead of levels. The conclusions remain unchanged in these cases. We, as well as some bank CEOs, are surprised that banks with high growth rates in loans did not perform significantly better than other banks in the good years. The immediate gross profits on new loans should be relatively high and there were almost no losses reported on these loans until the start of the financial crisis.

The results show that the increase in risk taking does not seem to be caused by the introduction of incentive-based compensation.

In order to examine this further, we studied the change in the risk measures more closely around the year the incentive-based compensation was introduced for the first time in the individual banks. Table 7 confirms the main observations from Table 6. In particular, risk taking in banks with significant incentive-based compensation is generally higher before as well as after the introduction of incentive-based compensation.²¹ However, some of the differences in growth rates in loans before the introduction of incentive-based compensation are not significant. This may be related to the fact that around a third of the introductions of incentive-based compensation happened before 2004, where we did not find evidence of a difference in growth rates in loans between banks with and without incentive-based compensation; see Table 6. If we only consider banks that introduced incentive-based compensation after 2005, then both abnormal risk measures are generally significant at the 5%-10% level before the introduction of incentive-based compensation.

The main purpose of these results was to show that the risk taking cannot be explained solely by the introduction of incentive-based compensation, and here the results are clear. Even though the measures of risk taking in some cases are higher at time 0 when the incentive-based compensation was introduced, the difference to the risk taking prior to its introduction is insignificant at the 10% level in all cases.²²

As another approach, we also performed several difference-in-differences estimations to examine if the introduction of incentive-based-compensation changed risk taking in these banks compared to other banks. As measures of risk taking we used the same as in Table 7. If we, consistent with Table 6, allow for a general time pattern in risk taking, the difference-in-differences estimator is generally insignificant at the 10% level. This again shows that it is not the introduction of incentive-based-compensation that explains the higher risk taking in banks with incentive-based-compensation to the CEO.

In addition to the two measures of risk taking in Table 7, we have examined traditional risk measures, e.g., market-based risk measures like systematic risk (beta), unsystematic risk, and total risk, as also considered in, for example, Saunders, Strock and Travlos (1990) and Akhigbe and Martin (2008). Consistent with the findings and discussions above, these results – available upon

²¹ As mentioned in Table 7, one bank with extremely low loans divided by deposits (around 0.3) has been left out of the analysis. If this bank is included, the average abnormal loans divided by deposits, L/D, is no longer significant. The other results remain unchanged.

²² Based on these results, however, we cannot rule out (due to low statistical power in a small sample) that the introduction of incentive-based compensation led to an additional increase in risk taking.

request – reveal that banks with incentive-based compensation consistently started to take more risk than other banks around 2004, thus confirming the results in Table 6. Furthermore, banks that introduced incentive-based compensation late were already taking more risk in the years before the introduction. Finally, the results suggest an increase in these measures around the introduction of incentive-based compensation, but the increase is generally insignificant at the 10% level. The weak increase in the measures is consistent with the general increase in risk taking during 2004-2008, as discussed above and shown in Table 6. The results are quite robust to changes in the method and time periods used to calculate these market-based risk measures. For example, the risk measures have been estimated using daily as well as weekly stock returns, different market indices, and a Scholes-Williams correction to account for the illiquidity of some of the banks' shares.

To conclude, there may be some evidence that the introduction of incentive-based compensation increases risk taking consistent with Chen, Steiner and Whyte (2006). However, the results clearly show that most of the excessive risk taking in banks with incentive-based compensation cannot be attributed to the introduction of incentive-based compensation for the CEO. In particular, a large fraction of the banks showed greater risk taking several years before incentive-based compensation was introduced in the bank.

4.3 The role of bad corporate governance and CEO characteristics

The above results not only document that banks with incentive-based compensation take more risk, but also that the major part of the additional risk taking is not explained by the introduction of incentive-based compensation. We now examine if bad corporate governance, including insufficient monitoring by shareholders in particular, can explain these results. First, we compare banks that do not have shareholders who are both independent of management and hold more than 5% of the shares (banks isolated from monitoring by large shareholders) with banks that have at least one such large shareholder. Subsequently, we demonstrate that CEOs with incentive-based compensation in banks with dispersed ownership typically have arrogated this compensation for themselves.

Table 8 shows that banks without a large shareholder are much more likely to have incentive-based compensation and ownership ceilings, with the differences significant at the 5% and 1% levels, respectively. If we instead consider banks with significant incentive-based compensation as defined in Table 1, the difference is even more pronounced: 13 out of the 14 banks with significant incentive-based compensation do not have a large shareholder. 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 without a large shareholder, even though these differences are not significant. Furthermore, Panel B of Table 8 shows that banks without a large shareholder have taken significantly more risk and performed significantly worse during the financial crisis than banks not isolated from shareholder monitoring.

As was the case for Table 5, there are only small and generally insignificant differences in performance before the financial crisis implying that the excessive risk taking in banks without a large shareholder has not been in the interest of the shareholders. For example, the average annual stock returns from January 2000 to July 2009 for banks with a large shareholder is 10.03%, which should be compared to -0.77% for banks without a large shareholder, and the difference is significant at the 5% level.

More restrictions on shareholder rights in banks compared to other firms, and across banks, imply relatively fewer large shareholders and, hence, a lack of monitoring leading to more excessive risk taking and worse performance. However, we still need to relate this to our findings on incentive-based compensation and individual CEO characteristics in order to fully explain the findings in section 4.1.

To this end, we start by repeating the observation from above that 13 out of 14 banks with significant incentive-based compensation do not have a large shareholder. This suggests that the incentive-based compensation in these banks might be 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. First, if the incentive-based compensation was granted by shareholders, one should, from an optimal contracting perspective, expect fixed compensation for the CEO to decrease at the time when significant incentive-based compensation is introduced – especially given the size of many of these programs as described in section 3.2.1. We have examined if this is the case in the 14 banks with significant incentive-based compensation and it turns out that *fixed* compensation for the CEO instead *increases* by 10.7%, on average, measured from the year before to the year when the incentive-based compensation was introduced. Furthermore, the fixed compensation decreased in only one bank and that was actually in the one bank with a large shareholder.²³ Second, and consistent with the findings in Brick, Palmon and Wald (2006), the boards of directors appeared to receive extraordinary increases in compensation around the time when the incentive-based compensation was introduced for the CEO. The average annual increase in compensation is 10.9%,

²³ In addition, several of the board members in banks with significant incentive-based compensation but without a large shareholder have subsequently explained that it was the CEO who took the initiative to introduce incentive-based compensation.

measured from two years before to two years after the introduction of incentive-based compensation to avoid any problems caused by timing issues. These numbers are much higher than the numbers for the board of directors in Table 2.²⁴

However, this raises the question why some CEOs in banks with dispersed ownership have arrogated incentive-based compensation and others have not. Based on the results reported in Table 9, we will argue that this depends on the unobservable characteristics of the CEO. In particular, we will reason that primarily risk-loving (or risk-blind), greedy, overconfident or simply hubristic CEOs introduce incentive-based compensation for themselves. Thereby, the extent to which a CEO receives incentive-based compensation will be an important indicator of CEO type in the banks without a large shareholder.

Table 9 shows the results obtained by dividing banks with dispersed ownership into a group with and a group without incentive-based compensation for the CEO.

The results in Table 9 show that among banks with dispersed ownership, banks with incentive-based compensation for the CEO have taken significantly more risk and performed significantly worse than banks without incentive-based compensation for the CEO.²⁵ All these results are generally significant at the 1% to 5% levels for averages as well as medians. Thus, the table shows that excessive risk taking and poor performance is found in the group of banks with both dispersed ownership and a CEO who receives incentive-based compensation. In other words, for this group of banks, unfortunate characteristics of the CEO combined with bad corporate governance implying a lack of shareholder monitoring and board oversight have led to excessive risk taking and such poor performance that 88% of the banks in this group failed during the financial crisis. Among banks with dispersed ownership and no IBC 33% have failed, and among banks with a large shareholder 19% have failed.²⁶

²⁴ We have also examined changes in compensation for the board of directors in banks where the CEO was only granted incentive-based compensation on 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 2.

²⁵ As with Table 5 and Table 8, we have carefully examined performance before the financial crisis looking at ROE and stock returns. We find relatively small and generally insignificant differences implying that the excessive risk taking in banks with incentive-based compensation for the CEO has not been in the interest of the shareholders. For example, the average annual stock returns from January 2000 to July 2009 for banks without incentive-based compensation is 9.75%. This should be compared to -8.86% for banks with incentive-based compensation. The difference is significant at the 5% level.

²⁶ These findings are also interesting in the light of results showing that banks where the CEOs' incentives were better aligned with their shareholders performed worse than other large U.S. banks but also that there is no evidence that stock options implied worse performance; see Fahlenbrach and Stulz (2011). However, Adams (2012) finds that the governance in large U.S. banks is similar to that in nonfinancial firms, which as explained earlier is not the case for Danish banks.

We also note that banks with dispersed ownership and with a CEO who does not receive incentive-based compensation take risks and perform almost similar to banks with a large shareholder; see Panel B of Table 8 and Table 9.

The robustness of these findings has been examined in several different ways. In particular, we designated the start of the financial crisis as after January 2008 and assumed that it ended before and after July 2009. The main results are unchanged as long as the period for the financial crisis includes most of 2008. Furthermore, we tried to remove the banks without annual reports for 2008 or 2009 as well as the banks that failed. The main results are still the same. Finally, section 4.3.1 shows that the results still hold after controlling for size and amount of equity financing.

Such a strong negative finding concerning incentive-based compensation for CEOs in Danish banks with dispersed ownership naturally raises one main question: Do CEOs with incentive-based compensation have observable characteristics in common that can be identified directly? We have examined this by manually collecting all publicly accessible information on the CEOs in the banks in our sample. In particular, we collected information on CEO seniority in the bank, CEO age, education, experience, background, and whether the CEO was the only member of the board of executives. In results available upon request, we show that there are no systematic differences in these characteristics between CEOs with and CEOs without incentive-based compensation.²⁷ These findings are related to Brick, Palmon and Wald (2006), showing that excessive compensation is associated with poor performance and is actually an indicator on its own of bad corporate governance. However, our results also contribute to these findings by arguing and providing evidence that incentive-based compensation in the case of Danish banks is an indicator of unfortunate CEO characteristics that could not be identified based on other observable characteristics.

4.3.1 Cross-sectional regressions

The following section shows that the main conclusions still holds when looking at results from a cross-sectional regression. The regression examines the relation between measures of risk taking and performance and whether the bank (a) has incentive-based compensation for the CEO and (b) is

²⁷ Many CEOs lost fortunes on stock options during the financial crisis either because they waited too long with the exercise, or because they held on to the shares received upon exercise. One example is a CEO that had an option program with a record value of more than 140 million DKK. However, he waited with the exercise until maturity of the options where the exercise led to a gain of 30 million DKK. In addition, he kept the shares that became valueless when the bank failed in 2008. Given that he had to pay income tax based on the value at the time of exercise, he now has a tax debt of 14 million DKK. Such behavior is more consistent with risk-loving, greedy, overconfident or hubristic behavior than with rational behavior.

isolated from shareholder monitoring (banks with dispersed ownership). The regressions control for bank size and the ratio of equity financing to total assets.

Table 10 shows results from these regressions. Consistent with our earlier findings in Table 5 and Table 8, Panel A of Table 10 reveals that the use of incentive-based compensation (IBC), and isolation from shareholder monitoring (ISOL) has a negative effect on ROE in 2008. However, the relation is somewhat weak with the level of significance varying from just significant at 5% to insignificant at the 10% level. In particular, these relations are weak compared to the effect of the dummy variable, IBC&ISOL, which is 1 for banks that have both incentive-based compensation for the CEO and are isolated from shareholder monitoring. Importantly, and consistent with Table 8 and Table 9, this variable is significant at the 1% to 5% level, and the R^2 is much higher when this variable is included. Furthermore, IBC&ISOL remains significant even when IBC and ISOL are also included in the regression. In particular, it follows from the last regression in Panel A that when IBC and ISOL are orthogonalized relative to IBC&ISOL, the two variables are insignificant, whereas IBC&ISOL is still significant at the 5% level in both types of regressions.

The same pattern for ROE 2008 in Panel A is generally found for all the other measures of risk taking and performance. In other words, for these other measures, IBC&ISOL leads to the highest R^2 and is generally (highly) significant even when IBC and ISOL (which are insignificant in these joint regressions) are included. Therefore, Panel B only provides results from regressions where IBC&ISOL is the sole dummy variable.

Panel B shows that the sign of the IBC&ISOL variable is consistent with the findings in Table 9 and that the variable is significant at the 1% to 5% level in all regressions except one. More precisely, this variable has a strong negative effect on performance measured both as ROE for 2009 and stock returns during the financial crisis. Similarly, there is a strong positive effect on risk taking measured both as loans divided by deposits and by losses in each of 2008 and 2009.

The cross-sectional regressions confirm the results from Table 8 and Table 9. Hence our main conclusions are robust to changes in methodology and still hold after controlling for differences in bank characteristics like size and the use of equity financing.

5 Conclusions, applications and suggestions

This paper has examined the role of corporate governance and unobservable individual CEO characteristics in explaining risk taking and the performance of Danish banks. Danish banks are

interesting in this regard because their corporate governance generally differs considerably from corporate governance in other types of firms in Denmark and from banks and non-banks in the U.S. Furthermore, powerful CEOs make Danish banks particularly prone to principal-agency problems and the Danish banks have suffered differently, but on average, quite severely during the financial crisis.

Corporate governance in Danish banks is especially interesting given the widespread use of different restrictions on shareholder rights. The most notable restriction is voting ceilings, which in the median bank implies that a shareholder can only vote with 0.03% of the share capital independent of that shareholder's ownership. A consequence of such bad corporate governance is a lack of monitoring by large shareholders and an insulation of banks from the market for corporate control.

The results in this paper show that banks with dispersed ownership and with incentive-based compensation for the CEO have taken more risk and have performed similarly to other banks before the financial crisis but much worse during the crisis and, hence, the excessive risk taking has not been in the interest of the shareholders.

Additional results show that most of the excessive risk taking cannot be explained by the introduction of incentive-based compensation. This is also consistent with the fact that many of the incentive-based compensation programs for CEOs were introduced so recently that imagining they are the main cause of the excessive risk taking that had started several years earlier is difficult.

In banks without monitoring by a large shareholder and without the disciplinary effect of the market for corporate control, the CEOs become exceptionally powerful. Depending on their personal characteristics, some CEOs used their power to increase their compensation considerably by basically adding incentive-based compensation on top of their fixed compensation. As a result, whether a CEO has incentive-based compensation or not becomes an indicator of the individual CEO's personality, i.e. the extent to which, for example, greed, risk blindness and overconfidence play a role. These traits combined with a lack of shareholder monitoring and an absence of a disciplinary effect from the market for corporate control are likely to create problems for the bank and its shareholders. This explains why banks with dispersed ownership and where the CEO receives incentive-based compensation have taken significantly more risks and have performed significantly worse than other banks. We were unable to find other observable commonalities between these CEOs, and hence the use of incentive-based compensation is the only indicator of unfortunate but also unobservable characteristics of the individual CEOs. On the other hand we found that banks

with dispersed ownership and no incentive-based compensation take risk and perform like banks with a large owner.

Applied to the Danish Banking Crisis, our interpretation of these results is that banning the use of incentive-based compensation in banks will not help much because it does not address the fundamental problem of bad corporate governance, including insufficient shareholder monitoring. The only way to address this deep-seated problem is by preventing the use of various restrictions on shareholder rights, especially the use of ownership and voting ceilings. In the same vein, the state should be reluctant to give banks equity capital (including hybrid core capital). Instead, banks should be forced to raise 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 its shareholders well, no one will invest in it. State money delayed the abolition of restrictions on shareholder rights and, hence, also delayed the improvement of corporate governance in the Danish banking sector.

However, things have improved considerably during and after the Danish Banking Crisis. Since it was especially banks with bad management that failed, the management of the banks has improved. The fraction of banks with a large shareholder has increased from 36% before the Danish Banking Crisis to 91% after the Danish Banking Crisis. Hence the owner structure in Danish banks measured on this dimension is now in line with the owner structure in other listed Danish firms. However, large owners in Danish banks are smaller than in other listed Danish firms. The change in the owner structure of the banks was due to two things. First, the banks that failed did typically not have a large owner. Second, most of the surviving banks got a large shareholder during the Danish Banking Crisis. The second effect was numerically a little bit more important than the first effect.

Other corporate governance characteristics in the Danish banks have also improved due to the Danish Banking Crisis. However, the quality of the corporate governance characteristics in the Danish banking sector is still not in line with the quality of the corporate governance characteristics of other listed Danish Firms. This poses a problem. For example, the second and third largest Danish banks do not have a strong large owner, have bad corporate governance characteristics, but have CEOs with self-discipline and integrity. But what happens if such a CEO is hit by a tile? Who ensures a good successor? Who can get rid of a bad successor? If the current CEOs cannot come up with a straight answer to these simple questions things may turn out bad again.

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Table 1: Descriptive statistics

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)	1.28	1.24	0.67	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 general meeting proposals	37	84%
Has a large shareholder ($\geq 20\%$ ownership)	3	7%
Has a large shareholder ($\geq 5\%$ ownership)	16	36%

Panel C: Types of incentive-based compensation	Number	In %
<i>Number of banks with:</i>		
- only cash-based programs	6	14%
- only equity-based programs	7	16%
- both cash- and equity-based programs	7	16%
Total with cash- or equity-based programs	20	45%
Total with significant cash- or equity-based programs	14	32%

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 measures of size. 'Loans divided by deposits (L/D)' is considered 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, including the number of banks with 'Incentive-based compensation', 'Voting ceiling', 'Ownership ceiling', and a 'Shareholders' committee'. 'Incentive-based compensation' refers to all variable pay like cash bonuses and stock options. 'Voting ceiling' ('Ownership ceiling') refers to banks with a maximum on the number of shares one shareholder is allowed to vote with (own). 'Shareholders' committee' means indirect election of the board of directors because the general meeting elects the shareholders' committee that later elects the board members. '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 for the general meeting to be handed in before the annual report is released. Finally, the number of banks that 'Has a large shareholder' is given and defined as banks with shareholders independent of the management with more than 20% or 5% of the shares. Panel C describes the incentive-based programs active after 2000 and states the number of banks with significant incentive-based programs defined as programs where the value is more than 20% of the fixed compensation.

Table 2: Evolution of the compensation for CEO, board of directors and general wages

	Banks without incentive-based compensation		Banks with incentive-based compensation		General wages
	CEO	Board of directors	CEO	Board of directors	
1995-2008	7.22%	4.72%	10.67%	6.00%	3.87%
1995-2004	6.57%	4.03%	8.88%	5.33%	3.98%
2004-2008	8.61%	6.25%	14.81%	7.53%	3.63%

The table shows the average yearly percentage increase in compensation for the CEO and the board of directors in banks without and in banks with incentive-based compensation compared to the increase in general wages in the private sector. 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. 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. With respect to the use of incentive-based compensation (IBC), the banks are classified into the three groups as explained in Table 1, i.e. the banks do not change between the three groups over time. Statistics on the increase in general wages in the private sector were obtained from Statistics Denmark.

Table 3: Voting and ownership ceilings and other restrictions of shareholder rights

<i>Panel A: Voting and ownership 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: Voting and ownership 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%	-	-	-	-

<i>Panel C: Other hindrances to shareholder influence</i>				
	Banks		Other listed firms	
	Number	In %	Number	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 general meeting proposals	37	84%	61	47%

Panel A considers voting and ownership ceilings in the 44 banks in the sample, while Panel B considers voting and ownership ceilings in the total population of 129 other firms listed on OMX Copenhagen. The information is based on articles of association from April 2009 for the banks and from September 2009 for the other listed firms. Panel C considers other potential restrictions of shareholder rights in the banks in the sample compared with the use of the same restrictions in the total population of other firms listed on the OMX Copenhagen.

Table 4: Risk taking in banks with and without incentive-based compensation

Loans divided by deposits (L/D)	Average		Median	
	2007	2007		
No incentive-based compensation	1.15	1.13		
Has incentive-based compensation	1.42	1.33		
<i>Difference to No incentive-based compensation</i>	0.27 ***	0.20 ***		
Has significant incentive-based compensation	1.45	1.39		
<i>Difference to No incentive-based compensation</i>	0.30 ***	0.26 ***		

Losses as a percent of total loans (L)	Average		Median	
	2008	2009	2008	2009
No incentive-based compensation	1.22%	2.67%	0.90%	2.36%
Has incentive-based compensation	4.96%	9.51%	2.45%	4.02%
<i>Difference to No incentive-based compensation</i>	3.74% **	6.85% **	1.55% ***	1.66% **
Has significant incentive-based compensation	6.31%	11.97%	3.70%	4.12%
<i>Difference to No incentive-based compensation</i>	5.09% **	9.30% **	2.80% ***	1.76% **

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 2007. The second being 'Losses as a percent of total loans (L)' calculated as the losses accounted for in the 2008 and 2009 annual report divided by total loans at the beginning of the year. The losses are assumed to be 4% for banks that did not issue a 2008 or 2009 annual report because they failed during the financial crisis, which is a conservative assumption given that the losses for the banks that failed but still issued an annual report were in the range 4.38% to 55.81% with a median of 7.46%. The tests are a standard *t*-test for difference between the means and a Wilcoxon rank-sum test for difference between the medians. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Performance of banks with and without incentive-based compensation

Return on equity (ROE)	Average			Median		
	2000-2007	2008	2009	2000-2007	2008	2009
No incentive-based compensation	13.67%	1.91%	0.00%	13.38%	2.55%	2.71%
Has incentive-based compensation	14.21%	-14.14%	-62.02%	14.20%	-17.02%	-14.51%
<i>Difference to No incentive-based compensation</i>	0.54%	-16.04% ***	-62.02% **	0.82%	-19.57% ***	-17.22% **
Has significant incentive-based compensation	15.10%	-17.73%	-82.22%	14.66%	-20.00%	-20.00%
<i>Difference to No incentive-based compensation</i>	1.43%	-19.64% ***	-82.22% **	1.28%	-22.55% ***	-22.71% **

Annualized stock returns	Average			Median		
	Jan 2000 - Dec 2007	Jan 2008 - Jul 2009	Jan 2008 - Dec 2008	Jan 2000 - Dec 2007	Jan 2008 - Jul 2009	Jan 2008 - Dec 2008
No incentive-based compensation	25.01%	-41.32%	-60.47%	23.86%	-39.73%	-61.32%
Has incentive-based compensation	25.31%	-56.84%	-69.61%	25.81%	-54.64%	-73.15%
<i>Difference to No incentive-based compensation</i>	0.30%	-15.52% **	-9.15% *	1.95%	-14.92% **	-11.83% *
Has significant incentive-based compensation	26.64%	-59.91%	-72.68%	25.81%	-52.82%	-73.41%
<i>Difference to No incentive-based compensation</i>	1.63%	-18.59% ***	-12.21% **	1.95%	-13.09% **	-12.09% *

Performance measured as return on equity (ROE) and annualized stock returns for banks with and banks without incentive-based compensation. Stock returns for banks that failed during the period are calculated based on the last observed stock price. ROE is assumed to be -20% for banks whose 2008 or 2009 annual report is not available because they failed during the financial crisis, which is a conservative assumption given that the ROE for the banks that failed but still issued an annual report were in the range -22.36% to -433.50% with a median of -65.67%). Significant incentive-based compensation is defined as in Table 1. For a description of the tests in the table, see Table 4.

Table 6: Time pattern in risk taking, 1995-2009

Loans divided by deposits (L/D)		<i>Average</i>													
Year	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No IBC	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	1.00
Has IBC	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	1.37	1.24
<i>Difference to No IBC</i>	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	0.24	0.24
<i>Test for difference to No IBC</i>										*	**	***	***	***	***
Has significant IBC	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	1.41	1.29
<i>Difference to No IBC</i>	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	0.29	0.28
<i>Test for difference to No IBC</i>	*	*		*					**	**	***	***	***	***	***

Growth rate in loans (L)		<i>Average</i>													
Year	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09
No IBC	-	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%	-1.2%
Has IBC	-	7.8%	11.2%	12.5%	11.0%	18.1%	6.7%	8.0%	9.8%	22.1%	35.4%	36.9%	28.9%	-4.4%	-9.0%
<i>Difference to No IBC</i>	-	1.2%	-3.2%	1.9%	-1.7%	5.1%	-6.7%	2.3%	5.5%	6.3%	11.2%	11.6%	9.4%	-12.0%	-7.8%
<i>Test for difference to No IBC</i>	-					*			**	**	**	***	***	***	**
Has significant IBC	-	6.4%	14.3%	15.6%	13.6%	18.8%	6.8%	7.8%	10.3%	22.9%	40.0%	34.3%	25.8%	-5.9%	-15.8%
<i>Difference to No IBC</i>	-	-0.2%	-0.1%	5.1%	0.9%	5.9%	-6.6%	2.1%	6.0%	7.1%	15.8%	9.0%	6.3%	-13.5%	-14.6%
<i>Test for difference to No IBC</i>	-			**		*			*	**	***	**	**	**	***

'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. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively. With respect to the use of incentive-based compensation (IBC), the bank is classified as a No IBC bank if it has never introduced incentive-based compensation. The bank is classified as an IBC bank if it has introduced incentive-based compensation in any of the years 1999-2009. The bank is classified as a significant IBC bank if it has introduced significant incentive-based compensation in any of the years 1999-2009. This means that the banks do not change between the three groups over time.

Table 7: Change in risk taking around the introduction of incentive-based compensation

	Year	-3	-2	-1	0	1
Abnormal loans divided by deposits (L/D)	Average	20.53% ***	20.83% ***	18.03% ***	27.80% **	29.10% ***
	Median	16.52% ***	15.60% ***	14.28% ***	22.60% ***	28.00% **
<i>Difference to year 0</i>	Average	-7.27%	-6.97%	-9.77%	-	1.30%
	Median	-6.08%	-7.00%	-8.32%	-	5.40%
	Year	-3	-2	-1	0	1
Abnormal growth rate in loans (L)	Average	7.34% **	1.81%	4.94%	10.21% *	4.87%
	Median	7.68% *	1.07%	3.61%	4.61% **	4.21%
<i>Difference to year 0</i>	Average	-2.87%	-8.41%	-5.27%	-	-5.34%
	Median	3.07%	-3.54%	-1.00%	-	-0.39%

The change in risk taking is examined by looking at the pattern in ‘Abnormal loans divided by deposits (L/D)’ and ‘Abnormal growth rate in loans (L)’ for banks with significant incentive-based compensation as defined in Table 1. One bank with an extremely low L/D (around 0.3) was left out of this analysis. ‘Year 0’ is the year in which incentive-based compensation is introduced for the first time. The abnormal risk measures are obtained by subtracting the average of the same measure for the sample of banks that have not used incentive-based compensation at all, i.e. the change in risk taking is measured relative to these banks. For the abnormal measures, a standard t-test is used to test if the mean is different from 0 and a sign-test is used to test if the median is different from 0. For the ‘Difference to year 0’, a standard t-test is used to test for a difference between the means and a Wilcoxon rank-sum test is used to test for a difference between the medians.

Table 8: Characteristics and performance of banks with and without a large shareholder

Panel A:		Number of banks with:					
Characteristics	Total	Incentive-based compensation	Ownership ceiling	Voting ceiling	Shareholders' committee	Shares registered by name	Early deadline for proposals
		With large shareholder	16	4	3	12	11
In %	100%	25%	19%	75%	69%	94%	88%
Without large shareholder	28	16	16	26	22	28	23
In %	100%	57%	57%	93%	79%	100%	82%
<i>Difference</i>		32%	38%	18%	10%	6%	-5%
<i>Test for difference</i>		**	***				

Panel B:		Average					
Performance	Total	ROE 2008	ROE 2009	Return Jan 2008-Jul 2009	L/D	Losses 2008	Losses 2009
		With large shareholder	16	2.44%	0.26%	-39.87%	1.06
Without large shareholder	28	-20.13%	-44.45%	-53.24%	1.35	4.10%	7.62%
<i>Difference</i>		-22.57%	-44.71%	-13.36%	0.29	3.25%	5.06%
<i>Test for difference</i>		***	**	**	***	***	**

		Median					
	Total	ROE 2008	ROE 2009	Return Jan 2008-Jul 2009	L/D	Losses 2008	Losses 2009
		With large shareholder	16	2.18%	1.53%	-38.71%	1.01
Without large shareholder	28	-4.79%	-3.27%	-49.60%	1.26	2.11%	4.00%
<i>Difference</i>		-6.97%	-4.80%	-10.89%	0.26	1.29%	1.74%
<i>Test for difference</i>		**	*	**	***	***	**

A bank does not have a large shareholder if there are no shareholders independent of management with more than 5% of the shares. Panel A provides corporate governance related characteristics of banks with and without a large shareholder. The characteristics include the number of banks with 'Incentive-based compensation', 'Ownership ceiling', 'Voting ceiling', and a 'Shareholders' committee'. 'Shareholders' committee' means indirect election of the board of directors because the general meeting elects the shareholders' committee that later elects the board members. 'Shares registered by name' refers to banks that require shares to be registered by name. 'Early deadline for proposals' refers to banks that require general meeting proposals to be handed in before the annual report is released. Panel B considers performance. 'ROE' is return on equity determined as in Table 5. Return Jan 2008-Jul 2009 is annual stock returns from January 2008 to July 2009. 'L/D' is loans divided by deposits and 'Losses' is the losses accounted for in the annual report divided by total loans and determined as in Table 5. Test for difference is a standard binomial test in Panel A. For a description of the tests used in Panel B, see Table 4.

Table 9: Performance of banks with and without incentive-based compensation (IBC) for banks with dispersed ownership

Panel A: Average	Banks in total	ROE 2008	ROE 2009	Return Jan 2008-Jul 2009	L/D	Losses 2008	Losses 2009
Without IBC	12	0.19%	-1.39%	-42.42%	1.18	1.60%	2.80%
With IBC	16	-35.37%	-76.74%	-61.34%	1.47	5.97%	11.23%
Difference		-35.56% ***	-75.35% **	-18.92% **	0.29 ***	4.37% **	8.43% **

Panel B: Median	Banks in total	ROE 2008	ROE 2009	Return Jan 2008-Jul 2009	L/D	Losses 2008	Losses 2009
Without IBC	12	1.58%	3.68%	-45.12%	1.15	1.00%	2.67%
With IBC	16	-20.00%	-20.00%	-57.79%	1.44	3.70%	4.12%
Difference		-21.58% ***	-23.68% **	-12.67% **	0.30 ***	2.70% **	1.45% *

A bank has dispersed ownership if there are no shareholders independent of the management with more than 5% of the shares. 'ROE' is the return on equity determined as in Table 5. Return Jan 2008-Jul 2009 is annualized stock returns from January 2008 to July 2009. 'L/D' is loans divided by deposits and 'Losses' is the losses accounted for in the annual report divided by total loans and determined as in Table 5. For a description of the tests used in the table, see Table 4.

Table 10: Robustness check results

Panel A		Constant	ln(Size)	Equity	IBC	ISOL	IBC&ISOL	Adj. R ²
ROE	OLS	-0.307	0.012	1.166	-0.293	-	-	0.18
	significance				**	-	-	-
2008	Outlier robust	-0.451	0.025	0.774	-0.132	-	-	-
	significance				*	-	-	-
ROE	OLS	-0.125	0.000	1.240	-	-0.207	-	0.11
	significance				-	*	-	-
2008	Outlier robust	-0.360	0.019	0.815	-	-0.090	-	-
	significance				-	-	-	-
ROE	OLS	-0.232	0.006	1.313	-	-	-0.358	0.25
	significance				-	-	***	-
2008	Outlier robust	-0.390	0.020	0.837	-	-	-0.152	-
	significance				-	-	**	-
ROE	OLS	-0.230	0.006	1.307	0.000	-0.008	-0.362	0.25
	significance						**	-
2008	Outlier robust	-0.407	0.024	0.730	-0.066	-0.039	-0.177	-
	significance						**	-

Panel B		Constant	ln(Size)	Equity	IBC	ISOL	IBC&ISOL	Adj. R ²
ROE	OLS	-0.567	0.006	4.153	-	-	-0.722	0.22
	significance				-	-	***	-
2009	Outlier robust	-0.436	0.021	1.019	-	-	-0.093	-
	significance				-	-	-	-
Return	OLS	-1.091	0.029	2.017	-	-	-0.198	0.31
	significance	**		**	-	-	***	-
1:08-7:09	Outlier robust	-1.033	0.026	1.876	-	-	-0.162	-
	significance	**		**	-	-	***	-
L/D	OLS	1.183	0.019	-2.796	-	-	0.286	0.41
	significance	*		**	-	-	***	-
	Outlier robust	1.139	0.020	-2.677	-	-	0.267	-
	significance	*		*	-	-	***	-
Losses	OLS	0.014	0.001	-0.088	-	-	0.047	0.18
	significance				-	-	***	-
2008	Outlier robust	0.039	-0.001	-0.067	-	-	0.019	-
	significance				-	-	**	-
Losses	OLS	0.013	0.002	-0.223	-	-	0.082	0.19
	significance				-	-	**	-
2009	Outlier robust	0.041	-0.001	-0.001	-	-	0.009	-
	significance				-	-	-	-

Results from regressions with different measures of risk taking and performance as dependent variables: 'ROE' is the return on equity determined as in Table 5. 'Return 1:08-7:09' is annualized stock returns from January 2008 to July 2009. 'L/D' is loans divided by deposits and 'Losses' is the losses accounted for in the annual report divided by total loans and determined as in Table 5. The main independent variables are a dummy variable, IBC, which is 1 for banks with incentive-based compensation for the CEO; a dummy variable, ISOL, which is 1 for banks that are isolated from shareholder monitoring (has no large shareholder); and a dummy variable, IBC&ISOL, which is 1 for banks that have both introduced incentive-based compensation for the CEO and are 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. As controls are used, 'ln(Size)', where 'Size' is total assets in 1000 DKK, and 'Equity' is defined as the book value of equity divided by total assets. In Panel A, 'ROE' 2008 is examined using several different combinations of the explanatory variables. In Panel B, other measures are examined based on regressions only including the IBC&ISOL variable in addition to the control variables. The regressions are a standard OLS regression and an outlier-robust regression technique (Holland and Welsch, 1977).

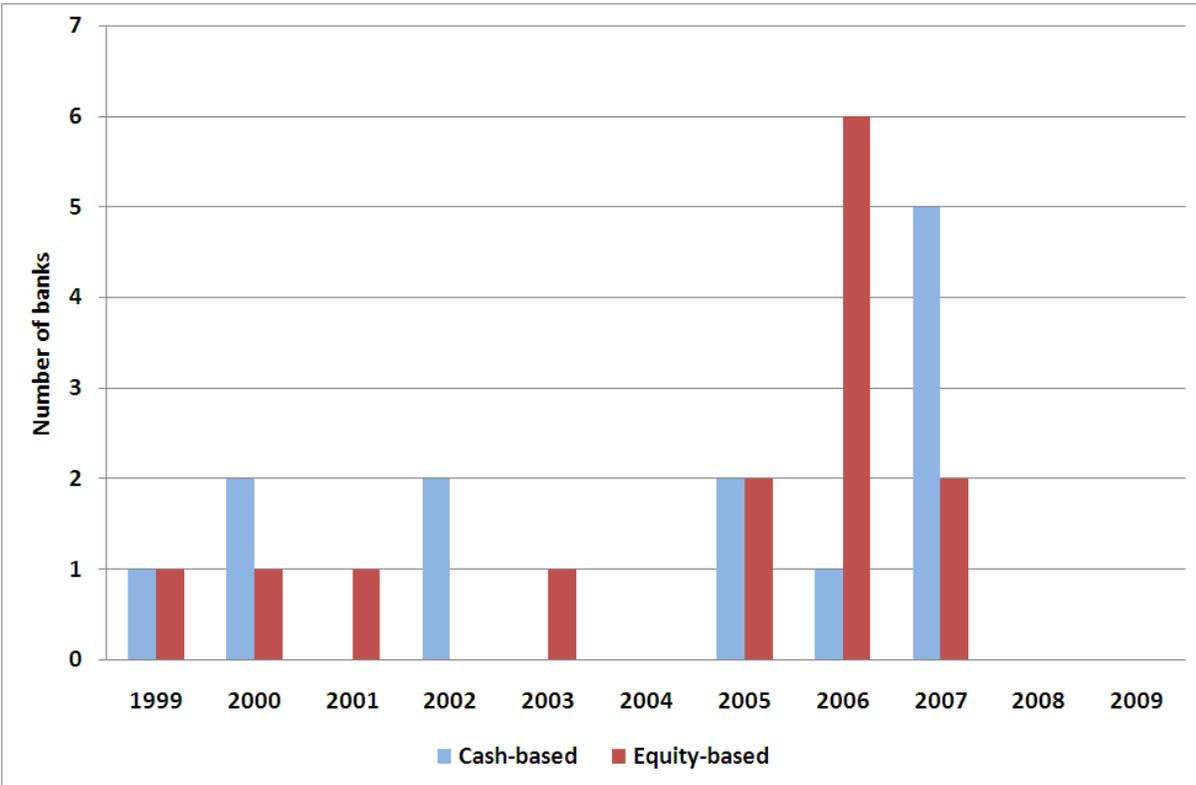


Figure 1: The timing of introductions of incentive-based compensation

The year in which individual banks introduced the two types of incentive-based compensation (cash-based programs and equity-based programs) for the first time. A bank that introduced both types of scheme will appear twice in the Figure.