Do banks really monitor? Evidence from CEO succession decisions

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Abstract

We demonstrate that banks play an important monitoring role in CEO succession that is not observed for other types of lenders, particularly public bondholders. There is a stronger relation between cash flow performance and forced CEO turnover for firms issuing bank debt during the year of CEO turnover than for firms not issuing bank debt, and bank debt issuance increases the likelihood of external CEO succession. The stock price reaction to CEO succession is higher when bank monitoring is prevalent. Our results are consistent with theories of relationship banking that propose a valuable monitoring role for well informed, incentivized bank lenders.

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1. Introduction

The unique role that bank lending plays in corporate financing has been developed in a number of theoretical studies. Firms borrowing from banks are expected to benefit from close monitoring by bank lenders, whose relationship with the firm allows them to access non-public data unavailable to arms-length lenders (see Diamond, 1984; Rajan, 1992; Nakamura, 1993). This superior monitoring incentive and ability has led some to describe bank financing as special relative to borrowing in public debt markets.

Diamond (1984, 1991) and Rajan (1992) argue that bank lenders are comparatively superior monitors to public bondholders. Banks are also able to observe the repayment history of existing loans and monitor the firm's cash flow position through provision of transaction accounts (Nakamura, 1993). These arguments are predicated on the basis that one or a small number of private lenders are less likely to suffer the free-rider problems in monitoring loans that public bondholders, with dispersed financial claims, experience. These advantages provide banks with a unique ability to monitor existing loans and screen new lending decisions.

Evidence of the special nature of bank monitoring is derived from event studies of the market reaction to bank loan announcements relative to public bond issuance or by analyzing the role of banks in providing finance to firms screened out of public debt markets. However, Ahn and Choi (2009) note very few studies provide direct evidence that banks influence corporate decision making or the value effects of such decisions. This is despite frequent news coverage of bank involvement in corporate investment and restructuring decisions.

We examine the special monitoring role of banks by examining the relation between forced chief executive officer (CEO) turnover and firm performance, and the likelihood of external CEO succession across alternative sources of firm borrowing. In doing so we suggest that an

important function of monitoring is the appointment and replacement of top management and effective monitors will replace poorly performing top managers (see Denis and Denis, 1995; Parrino, 1997). Gilson (1990) argues that creditor monitoring can substitute for ineffective board governance in financially distressed firms. Franks et al. (2001) note that creditors have greater ability to monitor and replace incumbent management in exchange for new loans or the restructuring of existing loans. If banks are superior monitors relative to dispersed public bondholders we expect to observe a stronger relation between firm performance and the probability of forced CEO turnover and a greater likelihood of external CEO succession for firms that borrow from banks. We also expect that if banks are superior monitors then stockholders will benefit from higher quality bank initiated CEO turnover events, as measured by the stock price response to CEO departure announcements. CEO succession decisions provide a natural setting to study monitoring because such decisions have highly visible outcomes and are associated with significant changes in operating and financing policies (see Weisbach, 1988; Gilson, 1989).

Two firms in our sample highlight this potential. The CEO of MFI Furniture Group John Hancock left his firm in October 2005 at a time when the firm was reaching the limits of its borrowing facility and was close to breaching loan covenants. Similarly, Kevin Hyde lost his job as CEO of Jarvis reportedly at the behest of the firm's banks. In each case their replacements agreed to undertake major asset disposals as part of wider restructuring programmes, and were able to convince lending banks to renegotiate existing loans and raise new bank debt. Press coverage of these events suggests a prominent monitoring role for banks in CEO replacement decisions when borrowing firms need to renegotiate or extend loan facilities.

Our sample covers non-financial firms in the FTSE-350 index of the London Stock Exchange (LSE) from 2000 to 2008 and our hand-collected data on existing and new borrowing sources allows us to distinguish across different providers of debt finance. We focus on large firms who are more likely to have access to public debt markets and on cash flow measures of firm performance that are likely to be of greatest interest to lenders since they reflect the ability of firms to meet interest and principal repayment on debt (see Kang and Shivdasani, 1995).

Prior evidence of bank and private lender monitoring in top management replacement has primarily focused on financially distressed firms. Gilson (1989, 1990) finds that a significant fraction of top management changes in distressed firms are initiated by bank lenders. Following bank initiated top management changes incumbent management is more likely to be replaced by externally hired successors including turnaround specialists and in a small number of cases by direct representatives of lending banks. Finally, top management turnover is unrelated to public bondholder initiatives. Ofek (1993) finds that the probability of top management turnover following a large stock price decline is inversely related to the ratio of public to total debt and concludes that management change is an outcome of active monitoring by private lenders.

Our findings both compliment and extend this work. We show that bank monitoring can play a crucial role in managerial discipline outside of financial distress and this effect is driven by new debt issuance. We find a stronger relation between forced CEO turnover and cash flow performance for companies issuing bank debt during the year of CEO turnover than for firms not issuing bank debt. However, we find no difference in the relation between forced CEO turnover and firm performance based on existing bank debt or the presence of a bank affiliated director on the borrower firm's board. These findings contribute to literature on the special nature of bank monitoring by showing that banks are active monitors of poorly performing CEOs for a more

general sample of firms than studied by Gilson (1989, 1990) and Ofek (1993). Our findings also highlight that the strength of bank monitoring of poorly performing managers is conditional on firms raising bank debt, while CEO succession decisions are unrelated to existing banking relationships.

We also find that the likelihood of external CEO succession is increasing with bank debt issuance. External succession is unrelated to public debt issuance, bank affiliations on the firm's board of directors, or to source of existing borrowings. To the extent that external succession is correlated with a departure from existing strategy and a greater likelihood of value-added corporate restructuring (see Denis and Denis, 1995; Huson et al., 2001), our findings further highlight an important role for bank monitoring in CEO succession decisions when there is an increased need to restructure the firm's operations. Granting of new loans and renegotiation of existing bank facilities increases the likelihood of appointing a successor CEO who is more likely to significantly restructure operations.

Finally, we find that the stock price response to forced CEO turnover is significantly higher when firms borrow from banks during the year of turnover, but is again unrelated to public debt issuance, existing debt source, and the presence of a banking relationship on the firm's board of directors. Our findings contribute to research on the benefits of bank monitoring to show that one of the direct benefits of bank monitoring is an increase in the expected quality of CEO succession decisions. This extends prior research on the market reaction to CEO succession announcements to highlight the importance of external monitoring, in this case from lending banks, in the quality of managerial succession decisions.

The remainder of this paper is structured as follows: Section 2 discusses prior literature on the special nature of bank monitoring and develops our hypotheses relating to its potential role in

CEO succession. Section 3 outlines our sample and data collection for CEO succession and sources of corporate borrowing. Section 4 presents our empirical findings and evaluates our results, and Section 5 concludes.

2. Bank monitoring and CEO succession

2.1. *Evidence on the special nature of bank monitoring*

Empirical evidence on the role of bank monitoring has generally sought to address one of three research issues. Firstly, event studies of the market response to announcements of bank loans find a positive reaction (see Mikkelson and Partch, 1986; James, 1987). This contrasts with the insignificant or negative market reaction to announcements of public bond issues and seasoned equity offers, and the difference is attributed to the superior monitoring ability of bank lenders (see Lummer and McConnell, 1989; Hadlock and James, 2002).

A second set of studies draws conclusions on monitoring efficiency by studying the type of firms that borrow from banks. Johnson (1997) and Hadlock and James (2002) find that banks are more likely to provide credit to small, high growth firms, with higher stock price volatility. They conclude that such firms are subject to higher information asymmetries and overinvestment concerns, and are more likely to benefit from bank monitoring. Denis and Mihov (2003) also find an important role for banks in provision of debt finance to firms with weaker credit ratings.

A third strand of research provides more direct evidence that banks monitor borrowing firms by analyzing the relationship between bank debt, corporate decision making, and the market reaction to such decisions. Hirschey et al. (1990) and Datta et al. (2003) find that the market reaction to asset sell-offs is increasing with bank and private debt respectively, relative to public debt. Low et al. (2001) find that the market reaction to dividend cuts is positively related

to bank debt, and significantly so for small firms who are likely to be subject to greater levels of information asymmetry. Datta et al. (1999) report a negative relation between the at-issue yield spread on a firm's first public bond offer and both the presence and strength of a firm's banking relationship.[1] Ang et al. (2000) show that the agency costs of private firms monitored by banks are lower and conclude that bank monitoring adds value. Finally, Ahn and Choi (2009) find that borrowing firm's earnings management activities are negatively correlated with the strength of bank monitoring.

2.2. *Firm performance, monitoring and CEO succession*

The finding of a negative relation between firm performance and the likelihood of forced CEO turnover is well documented, robust to a number of accounting, stock price and financial distress measures, and has been established for the US (see Weisbach, 1988), Italy (see Brunello et al., 2003), and the UK (see Conyon and Florou, 2002). Poor performance is also associated with a higher incidence of external CEO succession (see Huson et al., 2001; Dahya and McConnell, 2005).

In explaining the relation between CEO turnover and firm performance and the likelihood of external succession, important roles have been found for board structure (see Weisbach, 1988; Dahya et al., 2002; Dahya and McConnell, 2005) and large external stockholders (see Denis et al., 1997). Easterbrook (1984) proposes that external capital markets exert discipline on firms when they seek to raise equity capital. The need to raise equity puts firms in a weak bargaining position and allows buyers of new capital greater control over management. Franks et al. (2001) and Hillier et al. (2005) find that disciplinary turnover of the board and CEO is more frequent at

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[1] The at-issue yield spread is defined as the difference in basis points between the at-issue yield for the initial public debt offer and the yield of a Treasury bond with similar maturity and coupon on the same day.

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poorly performing firms who need to raise external equity capital. Hillier et al. (2005) also find that external CEO succession is increasing in likelihood when firms raise equity.

2.3.   Hypotheses development

Our prior discussion highlights that banks are expected to be superior monitors of borrower firms and influence both the likelihood and value of corporate decisions. Whether bank lenders specifically consider CEO succession for monitoring is the empirical question examined in this paper.

We formulate three tests that relate bank monitoring to CEO replacement decisions: the relation between forced CEO turnover and firm performance, the likelihood of an external CEO successor being appointed, and the stock price reaction to CEO succession announcements.

2.3.1. Relation between forced CEO turnover and cash flow performance

For UK firms, Franks et al. (2001) argue that pre-emption requirements for large equity offers provide significant power to existing equity investors who can cause the failure of a distressed rights offer.[2] We propose that bank lenders are able to fulfil a similar monitoring role. When poorly performing or financially distressed firms seek to renew existing loans or raise new debt, bank lenders have both the financial incentive and bargaining power to demand changes in investment and financing policies at borrower firms, including replacement of top management.

In his descriptive analysis of US firms experiencing a prolonged period of poor stock price performance, Gilson (1989) finds an abnormally high rate of top management turnover and that

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[2] Seasoned equity offers representing greater than 5% of existing share capital in a single year or 7.5% on a three year rolling basis are required to use rights-preserving methods unless such rights were waived at a general meeting. Waiving rights requires a super-majority vote with 75% of shareholders having to agree.

21% of all changes are initiated by bank lenders.[3]   Bank involvement in top management changes is inferred from news reports of explicit bank intervention, rumoured intervention, or the replacement of incumbent management with a bank appointee. Ofek (1993) finds that private leverage, rather than public leverage, increases the likelihood of top management replacement following a large stock price decline. Kang and Shivdasani (1995) find monitoring by main banks, which hold debt and equity positions in borrowing firms, increases the sensitivity of non-routine top management turnover to poor accounting performance. We expect this monitoring role to be especially pronounced in the UK given the relative importance of banks in providing debt capital (see Marchica, 2008). Franks et al. (2001) find that board turnover is increasing with leverage for poorly performing UK firms, but do not distinguish between lending sources.

For our sample firms, newspaper reports highlight refinancing of bank debt as a frequent concern in articles announcing forced CEO departures. Several stories hint at a relation, but not surprisingly do not explicitly link the two events given banks' desire to avoid adverse publicity from being direct associated with restructuring events. For example, the ousting of John Hancock from MFI Furniture Group in 2005 was attributed to the board of directors, but reports highlighted that the firm was also in talks with its main lending bank (The Guardian, 4 October 2005). At the time of the announcement MFI had reportedly used £150m of a £185m banking facility and was in talks with Royal Bank of Scotland to extend this. Within six months the new CEO, Matthew Ingle, had secured a new £150m loan facility and raised £92m from the sale of a major subsidiary (The Guardian, 1 March 2006). Such reporting suggests that banks monitor through placing pressure on the board of directors, as the main internal governance mechanism, to discipline poorly performing CEOs. In limited circumstances, such as the highlighted case of

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[3] He argues that this figure most likely understates the true impact of bank monitoring on top management changes given litigation risk under lender liability laws if banks have been found to act against the interests of stockholders.

Jarvis in the next section, banks may also explicitly request the removal of the incumbent CEO as a condition of renegotiation of existing funding and provision of new loans. These news reports highlight a role for bank monitoring in forced CEO replacement when firms are close to breaching covenants, need to refinance existing loans, or gain access to new loans to restructure operations. Accordingly, the first hypothesis is,

H1: The relation between forced CEO turnover and cash flow performance is stronger for firms borrowing from banks.

2.3.2. Likelihood of external CEO succession

Parrino (1997) argues that external CEO successors are more likely to be appointed when there is a need to restructure failing operations and poorly performing senior management, and to bring an alternative perspective to the firm. He proposes that the likelihood of external succession will increase following poor performance and forced CEO turnover. External succession announcements result in a positive stock price response relative to replacement by internally appointed successors (see Huson et al., 2001; Dahya and McConnell, 2005)

Gilson (1989) finds that bank initiated top management changes were also more likely to be associated with externally appointed replacements, including turnaround specialists. Similarly, Kang and Shivdasani (1995) find that external successors are more likely to be appointed following top management turnover in Japan when firms have ties to a main bank that is expected to actively monitor top management.

News coverage of the departure of CEO Kevin Hyde from maintenance group Jarvis suggests such a scenario. Jarvis received £25million in new funding from its banks and agreed

to launch a disposal programme to raise up to £150million. Shortly afterwards, Mr Hyde left his position as CEO, which was reportedly at the behest of bank lenders (The Telegraph, 29 September 2004). Moreover, the reporting of Mr Hyde's departure highlights comments from analysts that the required financial restructuring of the firm was beyond My Hyde's skill set. His successor, Alan Lovell, was appointed from outside the company with the support of the firm's banks and had prior experience of restructuring poorly performing businesses (The Telegraph, 14 November 2004).[4] Given the previous discussion we expect that bank monitors, having refinanced existing debt and/or provided new lending facilities to distressed firms can require replacement CEOs from outside the current board that have expertise in operational and financial restructuring. Accordingly, the second hypothesis is,

H2: The likelihood of an external successor being appointed following CEO turnover increases when firms borrow from bank lenders.

2.3.3. *Stock price response to CEO turnover announcements*

Gilson (1990) proposes two competing explanations of board resignations and externally appointed successors in his sample of financially distressed firms. Firstly, management replacement reflects disciplinary action against poorly performing managers and leads to the appointment of higher calibre replacements. Alternatively, top management departures may not be value maximizing. If good managers are incorrectly targeted by bank monitoring this represents a value loss from monitoring. Separately, Hilscher and Sisli-Ciamarra (2013) find

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[4] CEO succession at MFI Furniture Group resulted in the appointment of an internal CEO successor, which was initially a disappointment to large investors (The Guardian, 4 October 2005). However, the new CEO Mr Ingle displayed many of the traits associated with an externally hired CEO. He committed to restructuring the business by selling off assets to raise cash and was able to convince its banks to provide new lending facilities as a result.

that creditor-directors on the firm's board can influence investment and financing policies to their own benefit and at the expense of the firm's stockholders.

Gilson (1989, 1990) tracks managers' careers following resignations to differentiate between these competing hypotheses. He finds that departing managers at distressed firms are less likely to be employed in comparable roles as inside and outside board members at other firms in the three years following their departure. He concludes that dismissal following poor performance and financial distress has reduced the value of departing managers' human capital and that monitoring was targeted at low quality managers. Kang and Shivdasani (1995) provide complementary evidence in support of an improved management hypothesis. They find that forced top management replacement and external succession in Japanese firms is initiated by main bank lenders following poor performance and followed by subsequent improvement in operating performance. We examine the value of managerial replacement through an event study of the stock price response to CEO departure announcements. Accordingly, the third hypothesis is,

H3: The market reaction to disciplinary CEO turnover increases when firms borrow from bank lenders.

3. Data

3.1. *Sample construction and classification of CEO succession*

We construct our sample by studying CEO succession and borrowing source for firms in the FTSE-350 index of the LSE over the time period 2000 to 2008. The FTSE-350 index covers the largest 350 firms by market capitalization that maintain their primary listing on the LSE. We

exclude financial firms and utilities given the arguably stringent regulation that such firms are subject to and the frequency, and complexity, of security issuance by financial institutions. We focus on the largest firms on the LSE to ensure sufficient news coverage of CEO replacement and debt issuance announcements. Accounting and stock price data is collected from 2000 to 2007 and this is related to CEO turnover and debt issuance in the subsequent year.

To minimize concerns surrounding survivorship and new list bias we allow firms to enter the sample as they join the FTSE-350 list during the sample period and backdate our data collection to the beginning of the sample period for any years where the firm is quoted on the LSE but was not part of the FTSE-350. Firms remain in the sample even where they subsequently drop out of the FTSE-350 index but remain quoted on the LSE. Firms drop out of the sample only when they are delisted.[5] We require only that firms have at least two consecutive years of published annual reports such that we can relate CEO turnover in year t+1 to existing debt and firm characteristics in year t, and new debt issuance in year t+1. For each firm that meets our selection criteria we collect the firm's annual reports from 2000 to 2008. Annual reports are used to track CEO succession and to identify the source of existing borrowings from the footnotes to the financial statements. Our sample selection process produces a final sample of up to 2,110 firm-year observations across 310 individual firms.

Reports of CEO turnover and external succession are collected from annual reports and Nexis UK. Nexis UK provides coverage of national and regional newspapers, including the Financial Times, and regulatory news feeds of announcements to the LSE. We classify CEO turnover as occurring where the name of the top officer in the annual report changes from year t to t+1. Following Conyon and Florou (2002), if the firm reports a chief executive (officer) we

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[5] For example, if a firm is a constituent of the FTSE-350 in 2004 and 2005 we track the company back to 2000 or when it first listed and we track forward until the end of the sample period or delisting, whichever comes first.

classify this individual as the CEO. In the absence of a chief executive we examine the annual report; particularly the list of board directors, the compensation committee report, and the review of operations to determine the most significant executive, and classify this individual as the CEO.[6] Hereafter, we refer to the top officer as the CEO.

We define FORCED as a dummy variable set equal to one if the firm experiences forced CEO turnover, and zero otherwise. We follow Huson et al. (2001) and classify CEO turnover as forced where news reports suggest that the departing CEO was 'fired,' 'forced out,' 'removed,' 'ousted,' left following 'policy disagreements,' or similar. For all remaining turnover announcements, we classify CEO turnover as forced where the CEO is under 60 years of age and the turnover announcement (1) does not report the reason for departure as involving death, ill health, or the acceptance of another position (elsewhere or within the firm) or (2) reports that the CEO is retiring within six months of the departure announcement.[7]

We define OUTSIDE as a dummy variable set equal to one if a new CEO is appointed from outside the firm, and zero otherwise. We classify new CEOs as outsiders if the CEO joined the firm within the previous 12 months. It is unlikely that the performance of a newly appointed director whose tenure with the firm spanned such a short time period would warrant promotion to the position of CEO, suggesting that such a director was likely appointed to the board with the expectation of being elevated to the CEO position (Kang and Shivdasani, 1995).

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[6] Typically this will either be a group managing director working with a non-executive chairman of the board, or an executive chairman of the board. It is apparent when collecting our sample data that large UK firms have gradually moved towards universal adoption of the CEO title.

[7] We pay particular attention to future employment prospects for those CEO changes where the CEO is between 50 and 60 and states retirement as the reason for their departure. Since its adoption of the Higgs Review in 2003, the UK Corporate Governance Code suggests that CEOs should not succeed to become chairman of the same firm. Anecdotal evidence from our data collection suggest that one unintended consequence of this proposal has been to create a market in otherwise early retirements for CEOs at large UK firms to become executive chairman at another large firm.

3.2. Board and firm characteristics

We supplement our data collection with a range of firm, CEO and board characteristics that have been shown to be related to CEO succession. We control firm size using ASSETS, which is defined as book value of assets for the accounting year deflated at consumer price inflation to the year 2000. In our empirical specifications we use the natural logarithm of firm assets.

We include CEO status as a member of the firm's founding family as an explanatory variable in forced CEO turnover regressions. Huson et al. (2001) and Hillier and McColgan (2009) find that founders are less likely to be forced out than non-founder CEOs. We define FOUNDER as a dummy variable set equal to one if the CEO is associated with the founding of the company, and zero otherwise. Following Adams et al. (2009), we associate founding events with start-up CEOs and their descendants, and we also consider founders as CEOs who led major control changes through the acquisition of stock and buyout deals.

To capture the monitoring or entrenching role of bank relationships on the firm's board we define BANK AFFILIATED as a dummy variable set equal to one if the firm has a bank affiliated director on the board, and zero otherwise. Following Sisli-Ciamarra (2012) bank affiliations are inferred when a sample firm director is also a present serving director on the board of a bank, whether in an executive or non-executive capacity.

Prior studies on CEO succession have also shown that external hires are more likely when there are more independent directors on the board (see Huson et al., 2001; Dahya and McConnell, 2005). This can arise due to better monitoring by more independent boards, or is simply the result of a mechanical relation where boards with more non-executives provide fewer viable internal executive candidates to replace a departing CEO. FRACTION NED is the total number of non-executive directors on the board divided by the size of the board. Data on board

structure, bank affiliations of board members, and CEO characteristics is collected from annual reports and the Nexis UK database.[8]

3.3.   *Firm performance*

We use two core measures of cash flow performance in our regressions. ΔIROA is the change in industry-adjusted return on assets (IROA) over the firm's accounting year. IROA is defined as earnings before interest, tax, depreciation and amortization (EBITDA) divided by book value of total assets minus the same ratio for the median Datastream firm in the same FTSE level three industry group during the same calendar year.[9]

We also include interest coverage as a second measure of firm performance that is likely to be strongly correlated with the incentives of lenders to monitor and is defined as EBITDA divided by total interest expense. Interest coverage is a frequently used covenant in private lending agreements, providing a focus for lenders to become active monitors if the covenant is close to being breached. We define LOW IC as a dummy variable set equal to minus one where the firm has an interest coverage ratio of less than 0.80, and zero otherwise.[10] Asquith et al. (1994) find that firms with interest coverage between 0.8 and 1.0 in a single year are unlikely to be distressed. Such firms have sufficient liquid resources to meet that year's interest payments

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[8] We also re-estimate our analysis to include a number of corporate governance variables that have been found to be correlated with CEO turnover and outside succession decisions (see Weisbach, 1988; Denis et al., 1997). We find that measures of CEO tenure, board size and institutional ownership are unrelated to forced CEO turnover and external CEO succession for our sample. Non-executive director representation is unrelated to forced turnover. Director ownership reduces the likelihood of forced turnover, but is unrelated to outside succession decisions. In each case, inclusion of these variables has no impact on the statistical significance of our leverage and debt issuance variables.

[9] FTSE level three industry groups are broadly comparable to two digit SIC codes.

[10] We set the variable equal to negative one, rather than plus one, simply to maintain consistency in the presentation of empirical results whereby poor performance is associated with a negative value.

and were unlikely to undertake restructuring actions that suggest a need to resolve financial distress.[11] Firms that have no debt outstanding are coded as zero for this variable.

Accounting profit and interest coverage ratios are constructed from EBITDA, which proxies for underlying cash flows, and are expected to be of greater interest to lending institutions. Kang and Shivdasani (1995) find that the relation between top management turnover and firm performance in Japanese firms is stronger for firms with a main bank relationship only when firm performance is measured using accounting profit.[12] To aid presentation in our results we report a single variable PERFORM corresponding to the appropriate firm performance measure specified in the regression title.

3.4. Classification of debt sources and new issuance data

Annual reports are also used to collect data on several debt variables for sample firms. We hand collect data on outstanding debt from public bonds, banks, and non-bank private lenders from the footnotes to each firm's financial statements. Following Johnson (1997) we require that debt is explicitly defined as bank debt in the financial statements, otherwise we classify private debt as non-bank private debt.[13]

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[11] These authors define financial distress as interest coverage of less than 0.8 in a single year or less than 1.0 for two consecutive years. Since we relate CEO turnover and external succession to a single year of firm performance we focus on the one year distress measure defined in their study.

[12] In further testing, we also include RETURN as a measure of firm performance. This is defined as the daily buy-and-hold return on the stock over the firm's accounting year minus the return on the FTSE-All Share Index over the corresponding period. Daily stock returns are calculated from Datastream return index values, which capture the change in stock price and income from dividend payments. We find that borrowing source has no impact on the strength of the relation between stock price performance and forced CEO turnover. We attribute this insignificant result, in comparison to our later significant findings for cash flow profitability, to the importance of cash flows in determining a firm's ability to service interest and principal repayments on debt, and therefore for lenders to monitor.

[13] Given the ambiguity in classifying balance sheet debt that reflects the amalgamation of several previously announced debt offers and lines of credit we carry out robustness testing using private leverage and private debt issuance as alternative explanatory variables in Section 4.5.

We measure existing debt as the ratio of total debt from any single source divided by book value of total assets. PUBLIC LEVERAGE is the ratio of total publicly traded debt divided by the book value of total assets. BANK LEVERAGE is the ratio of total bank debt, including overdrafts, divided by the book value of total assets.[14] We focus on measures of debt source divided by total assets, rather than relative to total debt, in order to measure the relative contribution of a borrowing source to the capital structure of a firm. Gilson (1990) argues that creditor control over firm decision making increases with the importance of debt in the firm's overall capital structure. Focusing on debt source in proportion to total borrowing may overstate the importance of individual sources of debt for low leverage firms.

Debt issuance announcements are measured in year t+1 to capture the simultaneity between accessing new funds and disciplinary top management replacement. Where firms have multiple debt issuances during any given year, we combine this together as a single binary variable to indicate that a firm has borrowed from one of our listed sources. The empirical design is used to highlight the potential monitoring role that different lenders play when deciding to grant credit. When collecting data on debt issues we follow Hadlock and James (2002) in using a large range of keywords to search for articles on debt issues sourced from Nexis UK.[15] We define PUBLIC ISSUE as a dummy variable set equal to one if the firm announces an issue of publicly tradable bonds, and zero otherwise. BANK ISSUE is a dummy variable set equal to one if the firm announces an issue of bank debt, and zero otherwise. To better screen firms that are dependent on a single borrowing source, and theoretically subject to greater bank monitoring,

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[14] All of our empirical results are robust to using book value of debt divided by the sum of market value of equity, book value of debt and book value of preferred stock as an alternative explanatory variable.
[15] We search under the terms 'line of credit,' 'loan agreement,' 'bank loan,' 'credit agreement,' 'credit line,' 'credit facility,' 'credit extension,' 'new loan,' 'loan renewal,' 'loan revision,' 'loan extension,' 'term loan,' 'debt issue,' 'debt offer,' 'public debt issue,' and 'public debt offer.' Additionally, to augment the sample, the following keywords are also employed: 'bond,' 'bond issue,' 'debt notes,' 'loan facility,' 'working capital facility,' 'private placement,' and 'overdraft.'

we also replace each of our ISSUE variables with ONLY postscripts. These variables are set equal to one if the company borrows only from the specified single lending source during year t+1, and zero otherwise.

Table 1 provides a summary of the key variables used in this study, their definition, and the source of data.

[Insert Table 1 about here]

3.5. Descriptive statistics

Descriptive statistics for firm data, board and CEO characteristics, and debt issuance are presented in Table 2. Panel A presents data on borrowing source, board, and CEO characteristics. To aid comparison with US research, we report the proportion of total debt that is borrowed from our previously described public and bank sources. Despite our focus on large firms, bank debt makes up over 60% of total borrowing. Approximately 20% of balance sheet debt is from publicly traded bonds. This lies between the 26% found by Johnson (1997) and 14% found by Hadlock and James (2002) for more general samples of US firms where the typical firm is substantially smaller than for our sample. Given that the ability to borrow in public markets is predicted to be increasing with firm size and borrower reputation (Diamond, 1991), our descriptive statistics highlight that UK firms are heavily reliant on borrowing from banks. Marchica (2008) finds that UK firms place greater reliance on short-term debt than comparable US firms. Given that bank debt is generally issued over shorter maturities (see Denis and Mihov, 2003), these findings can be viewed as complementary and highlight the

potential for a strong bank monitoring role given banks' greater importance in the capital structure of UK firms.

The average board has 9 members, of whom, 55.87% are non-executives. Board size and non-executive representation is higher than found in earlier UK research (see Hillier et al., 2005), which reflects the larger firms used in our sample. The 24.64% of directors with a bank affiliation is close to the figure of 27.23% reported by Sisli-Ciamarra (2012) for S&P 500 firms in 2002.[16]

[Insert Table 2 about here]

We report data on CEO succession in Panel B. 17.68% of CEOs are classified as founders, which is comparable to the 15.58% in Adams et al. (2009) for Fortune 500 firms. The forced turnover rate of 4.28% is similar to the 3.98% in Conyon and Florou (2002). We find that externally hired CEOs comprise 40.07% of all successions. This rate is higher than the overall outside succession rate of 29.83% reported in Dahya and McConnell (2005), but is very similar to the rate of 39.16% they report in the final year of their sample, 1999. The rate of external CEO succession is generally higher than observed in US studies. For example, Huson et al. (2001) find that 19.00% of all successions involve outsiders.

We report descriptive statistics for new debt issuance in Panel C, where data is separated by whether the firm borrowed from public or bank debt sources and whether they borrowed only from that specific source. We report separate data for firms borrowing from single or multiple

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[16] Our subsequent results are unaffected if we experiment with alternative versions of this definition covering executive and non-executive directors and extending the definition of a banking relationship to include past as well as present directorships. These groups comprise 4.17%, 20.76% and 37.96% of the firm years where our sample firms are classified as having a bank affiliated director.

borrowing sources given the findings of Johnson (1997) and Hadlock and James (2002) that firms with access to public debt markets also choose to borrow from banks. To better understand the monitoring efficiency of banks it will be important to consider separately those firms who have not been able to borrow from a number of sources. Consistent with the balance sheet data in Panel A, UK firms have a strong reliance on bank debt when borrowing. We find 675 firm years with announcements of debt issuance, of which 453 involve the issuance of bank debt. Conditional on issuing debt, over half of the sample (342 firm years) announce only the issuance of bank debt. The frequency of public debt issuance is substantially lower than found in Hadlock and James (2002) and Denis and Mihov (2003) for US firms, further highlighting the reliance of UK firms on bank debt. Given the relatively larger size of firms listed on the FTSE-350 index, theoretical models of debt source predict that our sample should issue publicly tradable bonds at a higher frequency than found in US studies (see Diamond, 1984; Fama, 1985).

Collectively, these statistics point towards an important role for bank lenders in the monitoring of UK firms. Given the important role that banks play in providing debt we expect to observe an important monitoring role in the forced removal of the incumbent CEO and an increased likelihood of replacement by an externally hired CEO. We also expect that in light of their superior monitoring ability, bank initiated CEO succession decisions are value adding for firm stockholders. We investigate these arguments in the remainder of our paper.

4. Empirical analysis

4.1. *Probit specification and correlation amongst explanatory variables*

In analyzing forced CEO turnover and external CEO succession we estimate the following probit models:

$$Pr(FORCED_i = 1) = \Phi(X_i\beta) \tag{1}$$

$$Pr(OUTSIDE_i = 1) = \Phi(X_i\beta) \tag{2}$$

where Φ is the standard cumulative normal distribution, X_i is the vector of explanatory variables and β is the population vector to be estimated by maximum likelihood. As previously discussed, forced CEO turnover and external succession occurs in year t+1 and is related to firm, lender and CEO characteristics in year t, and debt issuance in year t+1.

To aid interpretation of results, both coefficient estimates and marginal effects are presented. The marginal effect of a regressor is the derivative of the probability of turnover with respect to an individual regressor and is calculated at the mean value of all variables. For dummy variables, the marginal effect represents a discrete change in the dummy variable from zero to one. All probit models of forced CEO turnover and external succession include year and FTSE level two industry dummies, which are not reported for brevity.

Denis and Mihov (2003) document significant links between firm size, managerial control, and borrowing source that may cause difficulty in interpreting our future regressions. To preliminarily investigate such concerns, we present the results of pairwise correlations for our explanatory variables in Table 3. As expected, our two measures of cash flow performance are positively correlated. CEO founder status is negatively correlated with both firm size and non-executive representation on the board, which suggests that founder firms are smaller and have less independent boards (see Hillier and McColgan, 2009).

[Insert Table 3 about here]

The frequency of new loan issuance, whether through public or bank debt, is positively correlated with firm size. This most likely reflects smaller firms being screened out from credit markets altogether. Crucially the size of the correlation between firm size and public debt issuance is over twice the size of the correlation between firm size and bank loan announcements and this relationship is even more pronounced when studying firms borrowing only from bank or public debt sources in any given year. We also find that bank director affiliations are positively correlated with firm size and access to new debt, whether from publicly traded bonds or bank loans. This is consistent with the findings of Sisli-Ciamarra (2012) that bank-affiliated boards have higher leverage and easier access to new loan financing.

Existing public leverage is positively correlated with firm size while bank leverage is negatively correlated with size. We find a negative correlation between ΔIROA and existing bank leverage but otherwise existing leverage and access to new loans are uncorrelated with cash flow performance. Existing bank leverage and public leverage are negatively correlated, suggesting they are substitutes in corporate financing. However, public leverage is positively correlated with future borrowing frequency from both banks and public debt markets. This again is best explained by firm size and access to credit markets.

These initial findings conform to prior evidence on debt source and firm characteristics (see Johnson, 1997; Hadlock and James, 2002; Denis and Mihov, 2003). Large firms are more likely to access public debt markets and corporate governance characteristics are correlated with both firm size and potentially borrowing source. Crucially there is little evidence of correlation

between borrowing source and firm performance that may cause concerns relating to spurious correlation or multicolinearity in our later testing.[17]

4.2.   CEO succession and the source of debt financing

We begin our analysis by considering the determinants of forced CEO succession. We report separate regressions for firms borrowing from any source of debt and for those firms borrowing only from one source; our ISSUE and ONLY postscripts described in Section 3.4. We interact these issuance variables with firm performance to allow for differences in the relation between firm performance and forced turnover conditional on debt issuance. These results are presented in Table 4. For our control variables we find that forced CEO turnover is unrelated to ASSETS and is significant and negatively related to both FOUNDER and PERFORM across all our regression models.

In all specifications BANK LEVERAGE is significant and positively related to forced CEO turnover at the 5% level or better, while PUBLIC LEVERAGE is statistically insignificant. This finding highlights an important monitoring role for bank lenders relative to public lenders in forcing CEO turnover. We find no relation between BANK AFFILIATED and the likelihood of forced CEO turnover. Our finding provides mixed evidence in support of Ahn and Choi (2009), who show that bank monitoring directly influences corporate decision making in a manner that is not observed for public lenders.

[Insert Table 4 about here]

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[17] For all regressions we have estimated variance inflation factor scores for explanatory variables. The highest value is 3.50 and most values lie between 1 and 3, which suggests that multicolinearity has not biased our future regression results.

Our results for ΔIROA provide mixed support the superiority of bank monitoring. The interaction between both BANK ISSUE and BANK ONLY and ΔIROA is negative and significant at the 1% level. However, we also find that the interaction between PUBLIC ONLY and ΔIROA is significant and negative. Prior theory on the superiority of bank monitoring does not rule out a monitoring role for public bondholders, and our result can be interpreted as supporting Easterbrook's (1984) general view of capital markets as effective monitors when firms seek to raise finance. For our LOW IC variable the interaction between bank debt issuance and firm performance is significant for BANK ONLY but not for BANK ISSUE. Our results suggest that banks are able to force CEO turnover in financially distressed firms only when those firms have no alternative source of borrowing. We find no evidence that public lenders play a role in forced CEO turnover decisions based on poor interest coverage as a measure of financial distress.[18]

Our results suggest that the relation between firm cash flows and forced CEO turnover is stronger when firms borrow from banks. The strong and positive relation between FORCED and BANK LEVERAGE, and the significance of the interaction between firm performance using ΔIROA and LOW IC and bank debt issuance provides evidence that private lenders are active monitors of top management. This supports the superior monitoring incentives assigned to private lenders by Diamond (1984), Rajan (1992), and Nakamura (1993) and is largely supportive of H1 that the relation between forced CEO turnover and cash flow performance is

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[18] For brevity we do not consider the interaction between existing public or private leverage, bank director affiliation, and firm performance when studying forced CEO turnover in Table 4. In further testing we transform bank leverage to a series of dummy variables that can be interacted with firm performance to produce meaningful interpretation. We set dummy variables for bank and public leverage above the sample median. Following, Hadlock and James (2002) we also define a bank dependent dummy variable where bank debt to total debt is above the median ratio of 0.7944 and the firm has no public debt outstanding. We find no evidence that these variables interact significantly with firm performance to increase the sensitivity of forced CEO turnover to performance. Similarly, we find no evidence that bank director affiliation interacts with either firm performance or debt issuance to influence the probability of forced CEO turnover.

stronger when firms borrow from bank lenders. Our findings also highlight that such monitoring of poorly performing firms is conditional on provision of bank financing through renewals and issuance of new loans but is largely unaffected by existing banking relationships and leverage.

Our findings complement and extend the inferences drawn from event studies that report a positive stock price response to bank loan announcements and research on the role that banks and other private lenders play in provision of finance to firms who are unable to borrow in public bond markets. Our results also complement earlier studies showing a direct relation between bank monitoring and firm decision making (see Gilson, 1989; Kang and Shivdasani, 1995).

4.3. Lender monitoring and CEO succession

We test H2 in Table 5, which presents the results of a probit model where the dependent variable is OUTSIDE. We relate outside succession to our previously documented firm performance variables, ASSETS, and the previously described lender monitoring variables. In addition to these, we include FORCED as an explanatory variable that we expect to be positively related to the incidence of outside succession and FRACTION NED to capture the relationship between board monitoring and the increased probability of outside succession.

[Insert Table 5 about here]

Across all regressions we find that outside succession is positively related to FORCED and FRACTION NED but is unrelated to ASSETS. Outside succession is weakly negatively correlated with poor ΔIROA but is unrelated to LOW IC. That outside succession is more frequent following forced turnover and on boards with a higher fraction of non-executive

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directors supports Parrino (1997) and suggests an important role for outside hires in firms that require a change in management policy. It also hints at an important role of bank lenders in external CEO succession given our previous support for H1 that bank debt issuance strengthens the relation between forced CEO turnover and firm performance.

Consistent with our earlier work for forced CEO turnover to firm performance, we find that the likelihood of external CEO succession is unrelated to the source of existing loans or existing bank director affiliations. This supports the argument that banks are powerful monitors when providing capital to firms, but less so when monitoring existing loans. However, we find that BANK ISSUE and BANK ONLY are associated with an economic and statistically significant increase in the likelihood of external CEO succession. These results provide strong support for H2 that the likelihood of an external successor being appointed following CEO turnover increases when firms borrow from bank lenders. The marginal effect of changing the debt issuance dummy variables from zero to one range from 0.1830 and 0.2671 depending on the performance measure studied and whether firms are restricted to bank borrowing only or have borrowed from banks and other lenders in the same year.[19]

These results provide further evidence on the role of banks in monitoring borrower firms. Our findings suggest that well informed bank lenders with strong financial incentives to monitor client firms are able to monitor poorly performing CEOs and replace them with successors who are more likely to restructure operating and financing policies with a view to maximizing the value of the firm's assets.

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[19] Huson et al. (2001) note that CEO succession decisions are conditional on CEO turnover and estimate succession regressions as the second stage of a bivariate probit model with selection. In further testing we replicate this approach. Our first stage turnover regression describes the probability of CEO turnover as a function of firm size, CEO founder status, firm performance, and a CEO at retirement age dummy variable (RETIRE) that is set equal to one if the incumbent CEO is aged 60 or above, and zero otherwise. We find that TURNOVER is positively related to RETIRE and negatively related to PERFORM. All regression coefficients in our second stage regressions retain their sign and earlier statistical significance.

4.4.   *Does bank monitoring add value?*

To test H3 we carry out an event study of the stock price reaction to CEO succession announcements and report results separately for different classifications of succession and whether the firm borrowed from different debt sources during the year of CEO turnover. We locate the date of the first announcement of CEO succession for our 308 cases of turnover from the range of news sources described in section 3.1.

Our event study is estimated using the standard market model approach to calculate cumulative average abnormal returns (CAARs). The estimation period for the market model covers the 170 trading days from day -200 to day -31, where day 0 is the date of the first announcement of CEO succession. We use the FTSE-350 index as the market benchmark in estimating the market model parameters. Our sample size is reduced to 302 as a result of missing stock price data to estimate market model parameters for six announcements.

The event study results are presented in Table 6. CAARs are broken down by succession type, whether the firm borrowed from public bond markets or from a bank during the financial year of CEO turnover, and for the interaction between succession type and borrowing source. Our base results for CEO succession highlight a significant and negative stock price response to CEO turnover in general, and specifically for forced CEO turnover decisions. The market reaction to successor decisions is negative, irrespective of whether an inside or outside hire is appointed to replace the departing CEO. While inconsistent with much of the prior US literature in this area (see Huson et al., 2001), our finding is consistent with the significantly negative market reaction to CEO dismissal announcements at UK firms found by Dedman and Lin (2002).

Despite the generally negative reaction to CEO succession, our sub-sample of CEO succession during the same financial year of bank borrowing elicits a significantly positive market reaction of 1.26%. The market reaction to succession in years of public debt issuance is insignificantly negative. These results hold when we focus on succession for firms only borrowing from public markets or banks and provide initial support for H3.

To explore in more detail the link from disciplinary CEO turnover and bank monitoring we further separate our borrowing and CEO succession announcements for the sub-categories of FORCED and OUTSIDE. Our findings highlight a large positive response to forced CEO turnover where firms have borrowed from banks during the year of turnover. The CAAR of 5.78% for bank borrowing and forced turnover is economically large in absolute terms and more so in comparison to the large negative CAAR of -4.52% for the overall forced CEO turnover sample. Our findings for external CEO successions follow the same pattern of a significant and positive CAAR for succession during the same year as bank borrowings, but are economically smaller than those found for forced turnover. Our results for disciplinary CEO succession and public debt issuance are insignificant. These results provide strong support for H3 that the market reaction to disciplinary CEO turnover increases when firms borrow from banks. We attribute this finding to the monitoring role that banks can play in identifying and encouraging boards to remove low quality CEOs and their replacement with higher quality managers.

Prior research has shown that the stock price reaction to CEO succession is correlated with firm size and industry, which are also correlated with borrowing source (see Johnson, 1997; Parrino, 1997). To address such concerns, we extend our univariate analysis and regress three-

day event study cumulative abnormal returns (CARs) against these characteristics in addition CEO turnover and debt issuance variables. We control for existing borrowing source, bank director affiliations, debt issuance source, ASSETS as a measure of firm size, and industry and year dummies. The use of cross-sectional regressions reduces our sample size to 295 observations. We report the results of this testing in Table 7.[20]

[Insert Table 7 about here]

In all regression models firm size is unrelated to the market reaction to CEO succession announcements. We again find that the market reaction to forced turnover is negative and highly significant. Outside succession is not significantly related to announcement CARs after controlling for other factors, notably the relation between forced turnover and outside succession documented in Table 5. We find no evidence of a relation between bank director affiliations, the source of existing leverage and the market reaction to CEO succession announcements. This is consistent with our earlier results for forced turnover and outside succession and hints that lenders are effective monitors when firms need to renew existing loans or raise new debt financing.

In model 1 we examine the interaction between debt issuance source and forced CEO turnover. Consistent with our univariate analysis, conditional on borrowing from banks during the year of CEO turnover we find a positive and significant relation between forced turnover and CARs. The coefficient of 0.1255 is economically large and suggests a strong stockholder benefit to bank induced disciplinary CEO turnover, which again supports H3. We find no relationship

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[20] We also re-run regressions with additional controls for various measures of firm performance, CEO tenure, board size and independence, and director and institutional ownership, which are unrelated to the market response to CEO replacement announcements.

between public debt issuance and the market reaction to forced CEO turnover. In model 2 we repeat our test for the interaction between outside succession and new debt issuance. The results are weaker and suggest little effect between debt issuance source, external CEO succession, and the market reaction to CEO replacement after controlling for forced turnover. To examine this further, we jointly test the market reaction to forced turnover, outside succession, and debt issuance in models 3 and 4 of Table 7. Model 3 reports results for all public and bank debt issuance and model 4 reports results for those firms borrowing only from a single source. We find that the significance of our results for forced turnover at bank monitored firms remains, while the market response to external CEO succession is insignificant irrespective of borrowing source.

Overall, our results suggest that bank monitoring from debt issuance is associated with an increase in stockholder wealth at the time of disciplinary CEO turnover decisions. This supports H3 and is consistent with Gilson (1989) and Kang and Shivdasani (1995) who find bank monitoring is focused on low quality managers at financially distressed and poorly performing firms.

4.5.   Robustness testing on debt source, maturity, and contemporaneous changes in leverage

Our core finding that bank monitoring has a direct effect on CEO succession decisions is robust to a series of further analysis of debt characteristics and issuance, which we detail in this section.[21]

We have previously defined bank borrowing as only those loans explicitly described in the financial statements as bank debt. Classification of private debt between bank and other non-bank private sources is straight-forward from news reports when firms announce raising new

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[21] All results from this section are available on request from the authors.

finance. Such classification is inherently more subjective when dealing with previously issued loans. To investigate this issue in more detail we re-estimate our regression results substituting private leverage and issuance for bank leverage and issuance. In all regressions, the likelihood of forced CEO turnover increases with existing private leverage, the sensitivity of forced turnover to firm performance is stronger for firms issuing private debt, and external succession is more likely when firms borrow in private debt markets. We also find no relation between CEO succession decisions and non-bank private debt measures of leverage and new issuance.

Close parallels may also be drawn with research on borrowing source and studies on the maturity of leverage. Marchica (2008) finds that UK firms borrow for shorter maturities in comparison to US firms, which she attributes to their greater reliance on bank debt. Since bank debt is typically issued for shorter maturities and debt maturity may be correlated with credit risk our results may be driven by the maturity rather than source of leverage (see Barclay and Smith, 1995; Denis and Mihov, 2003). To address this concern, we run separate analysis of CEO succession decisions with short- and long-term leverage ratios as explanatory variables where debt with a maturity of less than one year is defined as short-term. Data on the maturity of leverage is also hand collected from annual reports. We find no evidence of a maturity effect in forced CEO turnover or external succession decisions after controlling for debt source. Moreover, the relation between bank debt and forced turnover is unaffected by additional controls for the maturity structure of corporate debt.

Finally, we re-estimate CEO succession regressions to control for changes in leverage and other firm characteristics during the year of CEO turnover. This test allows us to consider the robustness of our findings to simultaneous changes in borrowing firm characteristics in the year of CEO turnover that may be correlated with debt issuance. We examine changes in firm

characteristics, existing leverage from bank and public sources, bank director affiliations, and board characteristics previously examined in Tables 4, 5, and 7. We find that inclusion of these change variables is not consistently related to forced CEO turnover and external CEO succession decisions, but we do find limited evidence that increases in bank leverage and bank director affiliations during the year of CEO turnover are positively related to CARs on announcement of CEO turnover. Inclusion of these variables does not impact on the previously documented role of bank debt issuance in forced CEO turnover, external succession and the market reaction to forced CEO turnover announcements.

5. Conclusions

In this study we analyze the relationship between lender monitoring and CEO succession for a sample of large non-financial firms on the FTSE-350 index of the London Stock Exchange. Prior research in this area has suggested that banks are special, as relationship lenders who have both an informational advantage and the financial incentive to actively monitor borrower firms.

This study contributes to empirical research on bank monitoring by studying two highly visible outcomes of such monitoring; the decision to remove a poorly performing CEO and their replacement with an external successor. Bank involvement in such decisions is hinted at or explicitly reported in news coverage of CEO succession, but to the best of our knowledge a direct comparison of bank monitoring relative to monitoring by public bondholders has not previously been carried out.

Our findings show that the likelihood of forced CEO turnover is increasing with bank leverage on the firm's balance sheet, but is unrelated to public leverage. We find a stronger relation between cash flow performance and forced CEO turnover for firms issuing bank debt

during the year of CEO turnover than for firms not issuing bank debt. Sample firms are also more likely to appoint a new CEO from outside the firm when they have announced a bank debt issue. We find no relation between CEO succession and monitoring from public debtholders. Lastly, the stock price response to forced CEO succession announcements is higher when firms have borrowed from banks during the financial year of CEO turnover.

As such, our findings complement research that indirectly supports a monitoring role for bank debt by providing evidence on the relative efficiency of banks as monitors of borrower firms. Our study also contributes to corporate governance research on the importance and effectiveness of lender monitoring. Our finding that banks are more effective monitors than dispersed public bondholders suggests debt should not be treated as a single variable. In the same way that large stockholders and non-executive directors are frequently categorized by expected monitoring strength and independence from executive management, our findings suggest that bank debt should be separated from public bonds when studying the role of lenders in corporate governance.

Our findings also suggest some avenues for future research. We argue that banks play an important monitoring role in UK firms given the comparatively weaker reliance on public bond markets in the UK relative to US capital markets. Analyzing the importance of lender monitoring in US firms where public debt plays a stronger role in corporate financing, or international comparisons with bank based economies such as Germany and Japan may provide further evidence on the importance of lender monitoring based on a country's financial system.

Understanding why poorly performing CEOs choose to borrow from banks represents a fruitful area for further research. Consistent with Franks et al. (2001) for seasoned equity offers, our study implies that firms are forced to borrow from banks to restructure their finances, and

banks are able to remove a poorly performing CEO in exchange for new funding. Banks can hold power to force the firm into bankruptcy proceedings and/or can pressure the board of directors to dismiss poorly performing CEOs in exchange for renewed financing. Zwiebel's (1996) managerial entrenchment model of capital structure, where managers use debt to reduce external control threats, may offer some insight for future research in this area.

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Table 1
Description of variables

Variable	Description	Source
Panel A: Firm and performance characteristics		
ASSETS	Real book value of total assets expressed in 2000 £millions	Datastream
LEVERAGE	The ratio of book value of total debt divided by book value total assets	Datastream
ΔIROA	The annual change in the ratio of earnings before interest, tax, depreciation and amortization (EBITDA) divided by book value of total assets minus the same ratio for the median Datastream firm in the same FTSE level three industry group as the sample firm	Datastream
LOW IC	A dummy variable set equal to minus one if the firm has an interest coverage ratio of less than 0.8 and zero otherwise. Interest coverage is calculated as EBITDA divided by interest expense. Firms with no debt outstanding are coded as zero	Datastream
Panel B: CEO and board characteristics		
TURNOVER	A dummy variable set equal to one if the CEO leaves their position and zero otherwise	Annual reports and Nexis UK
FORCED	A dummy variable set equal to one if the CEO is forced from office and zero otherwise	Annual reports and Nexis UK
OUTSIDE	A dummy variable set equal to one if the new CEO is appointed from outside the company and zero otherwise	Annual reports and Nexis UK
FOUNDER	A dummy variable set equal to one if the current CEO is associated with the founding of the firm and zero otherwise	Annual reports and Nexis UK
BOARD	The number of directors on the firm's board	Annual reports
FRACTION NED	The number of non-executive directors divided by the total number of directors on the firm's board	Annual reports
BANK AFFILIATED	A dummy variable set equal to one if the firm has a bank affiliated director on the board, and zero otherwise	Annual reports
Panel C: Debt ownership characteristics		
PUBLIC LEVERAGE	The ratio of book value of total public bonds divided by book value of total assets	Annual reports and Datastream
BANK LEVERAGE	The ratio of book value of total bank debt divided by book value of total assets. Only private debt explicitly described as bank borrowings is classified as bank debt	Annual reports and Datastream
PUBLIC ISSUE	A dummy variable set equal to one if the firm issues public bonds and zero otherwise	Annual reports and Nexis UK
BANK ISSUE	A dummy variable set equal to one if the firm issues bank debt and zero otherwise	Annual reports and Nexis UK
PUBLIC ONLY	A dummy variable set equal to one if the firm issue public bonds and borrows from no other source during its financial year , and zero otherwise	Annual reports and Nexis UK
BANK ONLY	A dummy variable set equal to one if the firm borrows from a bank lender and no other source during its financial year and zero otherwise	Annual reports and Nexis UK

Table 2
Descriptive statistics for sample firms

Panel A: Firm characteristics	No. firm years	Mean	Median	St. Dev	Maximum	Minimum
ASSETS	2,095	2,619	668	9,462	169,964	11
LEVERAGE	2,095	0.2368	0.2059	0.2952	8.4853	0.0000
PUBLIC RATIO	2,095	0.2002	0.0000	0.3254	1.0000	0.0000
BANK RATIO	2,095	0.6363	0.7944	0.3856	1.0000	0.0000
PUBLIC LEVERAGE	2,095	0.0537	0.0000	0.1165	1.1193	0.0000
BANK LEVERAGE	2,095	0.1358	0.0833	0.1732	3.7733	0.0000
BOARD	2,076	9.0270	9.0000	2.5322	21.0000	4.0000
FRACTION NED	2,076	0.5587	0.5714	0.1358	0.8889	0.0000
BANK AFFILIATED	2,076	0.2464	-	-	-	-

Panel B: CEO turnover variables	No. firm years	Number of events / firm years	Turnover rate
TURNOVER	2,035	308	0.1514
FORCED	2,035	87	0.0428
OUTSIDE	302	121	0.4007
FOUNDER	2,110	373	0.1768

Panel C: Debt issuance variables	No. firm years	Number of events	Issuance rate
PUBLIC ISSUE	2,105	255	0.1211
PUBLIC ONLY	2,105	134	0.0637
BANK ISSUE	2,105	453	0.2152
BANK ONLY	2,105	342	0.1626
PRIVATE ISSUE	2,105	541	0.2570
PRIVATE ONLY	2,105	420	0.1995

This table reports descriptive statistics for a sample of non-financial FTSE-350 firms over the time period 2000-2008. PUBLIC RATIO and BANK RATIO are the ratios of balance sheet debt from public and bank sources to total debt respectively. BOARD is defined as the number of directors on the firm's board. Data on the source of the firm's debt is collected from the footnotes to annual reports. Note that there are six cases of CEO turnover where the firm is delisted before a replacement CEO is appointed, which results in 302 useable CEO succession events. All remaining variables are defined in Table 1.

Table 3
Pairwise correlations amongst independent variables

	ASSETS	ΔIROA	LOW IC	FOUNDER	FRACTION NED	PUBLIC LEVERAGE	BANK LEVERAGE	PUBLIC ISSUE	BANK ISSUE	PUBLIC ONLY	BANK ONLY	BANK AFFILIATED
ASSETS	1.0000											
ΔIROA	-0.0215	1.0000										
	(0.0000)											
LOW IC	0.0035	0.2003	1.0000									
	(0.8740)	(0.0000)										
FOUNDER	-0.1960	-0.0035	0.0279	1.0000								
	(0.0000)	(0.8732)	(0.2030)									
FRACTION NED	0.2334	0.0164	-0.0849	-0.1862	1.0000							
	(0.0000)	(0.4595)	(0.0001)	(0.0000)								
PUBLIC LEVERAGE	0.3930	-0.0127	-0.0264	-0.0620	0.1151	1.0000						
	(0.0000)	(0.5640)	(0.2298)	(0.0045)	(0.0000)							
BANK LEVERAGE	-0.0699	-0.0476	-0.0041	-0.0138	0.0161	-0.1057	1.0000					
	(0.0014)	(0.0306)	(0.8535)	(0.5269)	(0.4633)	(0.0000)						
PUBLIC ISSUE	0.4105	-0.0185	0.0115	-0.0418	0.0845	0.2384	-0.0024	1.0000				
	(0.0000)	(0.3991)	(0.6003)	(0.0551)	(0.0001)	(0.0000)	(0.9144)					
BANK ISSUE	0.1971	0.0104	0.0113	-0.0602	0.0350	0.0947	0.0548	0.1103	1.0000			
	(0.0000)	(0.6350)	(0.6054)	(0.0057)	(0.1102)	(0.0000)	(0.0121)	(0.0000)				
PUBLIC ONLY	0.2956	-0.0071	0.0088	-0.0129	0.0696	0.1840	-0.0131	0.7023	-0.1367	1.0000		
	(0.0000)	(0.7479)	(0.6876)	(0.5557)	(0.0015)	(0.0000)	(0.5489)	(0.0000)	(0.0000)			
BANK ONLY	0.0677	0.0134	0.0031	-0.0339	0.0161	0.0492	0.0477	-0.1637	0.8411	-0.1150	1.0000	
	(0.0019)	(0.5423)	(0.8877)	(0.1201)	(0.4622)	(0.0244)	(0.0290)	(0.0000)	(0.0000)	(0.0000)		
BANK AFFILIATED	0.3175	-0.0070	-0.0022	-0.1295	0.0871	0.1928	-0.0467	0.1320	0.0760	0.0790	0.0409	1.0000
	(0.0000)	(0.7506)	(0.9191)	(0.0000)	(0.0001)	(0.0000)	(0.0325)	(0.0000)	(0.0005)	(0.0003)	(0.0608)	

This table reports pairwise correlations for explanatory variables in our subsequent regression analysis. The sample covers non-financial FTSE-350 firms over the time period 2000-2008. P-values are reported in parenthesis. All variables are defined in Table 1.

Table 4
Probit regressions of forced CEO turnover on firm performance and borrowing source

Model	ΔIROA		LOW IC	
	(1)	(2)	(3)	(4)
LN_ASSETS	0.0020	0.0112	-0.0102	0.0026
	(0.0461)	(0.0438)	(0.0449)	(0.0429)
	[0.0001]	[0.0008]	[-0.0007]	[0.0002]
FOUNDER	-0.5767	-0.5699	-0.5238	-0.5128
	(0.1855)***	(0.1848)***	(0.1778)***	(0.1774)***
	[-0.0302]	[-0.0298]	[-0.0269]	[-0.0262]
PERFORM	-0.9801	-0.9864	-0.7492	-0.6749
	(0.3025)***	(0.3003)***	(0.1487)***	(0.1458)***
	[-0.0709]	[-0.0711]	[-0.0519]	[-0.0463]
PUBLIC LEVERAGE	0.4299	0.4328	0.3427	0.3911
	(0.4564)	(0.4573)	(0.4582)	(0.4550)
	[0.0311]	[0.0312]	[0.0237]	[0.0268]
BANK LEVERAGE	0.3726	0.3965	0.4137	0.4187
	(0.1913)*	(0.1895)**	(0.1923)**	(0.1917)**
	[0.0270]	[0.0286]	[0.0287]	[0.0287]
BANK AFFILIATE	-0.1496	-0.1437	-0.1497	-.01477
	(0.1285)	(0.1277)	(0.1308)	(0.1306)
	[-0.0101]	[-0.0096]	[-0.0096]	[-0.0094]
PUBLIC ISSUE	0.1802		0.2859	
	(0.1700)		(0.1746)	
	[0.0148]		[0.0243]	
BANK ISSUE	-0.0709		-0.1579	
	(0.1310)		(0.1512)	
	[-0.0049]		[-0.0101]	
PUBLIC ONLY		0.1549		0.1210
		(0.2024)		(0.2236)
		[0.0126]		[0.0092]
BANK ONLY		-0.1488		-0.3794
		(0.1561)		(0.1959)*
		[-0.0098]		[-0.0206]
PUBLIC ISSUE x PERFORM	-1.5367		0.4514	
	(1.1092)		(0.3775)	
	[-0.1112]		[0.0313]	
BANK ISSUE x PERFORM	-2.6985		-0.4083	
	(1.0395)***		(0.2802)	
	[-0.1953]		[-0.0283]	
PUBLIC ONLY x PERFORM		-2.8819		0.0761
		(1.3067)**		(0.4891)
		[-0.2078]		[0.0052]
BANK ONLY x PERFORM		-2.9368		-0.7113
		(1.1596)**		(0.3182)**
		[-0.2117]		[-0.0487]
Intercept	-2.0730	-2.2548	-1.9821	-2.2159
	(0.9122)**	(0.8704)***	(0.9060)**	(0.8691)**
Industry Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
LR statistic	70.63***	74.54***	90.46***	94.14***
Pseudo R^2	0.0857	0.0870	0.1069	0.1087
No. Observations	1,994	1,994	2,002	2,002

This table reports coefficients and marginal effects from a probit model of the determinants of forced CEO turnover. Our sample is drawn from non-financial FTSE-350 firms over the time period 2000 to 2008. In all specifications the

dependent variable is FORCED. PERFORM is firm performance measured using ΔIROA and LOW IC as specified. All remaining variables are defined in Table 1. The marginal effect of a regressor is given as the derivative of the probability of turnover with respect to an individual regressor and is calculated at the mean value of all continuous variables. For dummy variables, the marginal effect represents a discrete change in the dummy variable from zero to one. Marginal effects are reported in brackets. Robust standard errors for the regression coefficients are reported in parenthesis. ***, **, and * denote the parameters are significant at the 1%, 5%, and 10% levels respectively.

Table 5
Probit regressions of external CEO succession on firm performance and borrowing source

	ΔIROA		LOW IC	
Model	(1)	(2)	(3)	(4)
LN_ASSETS	0.0724	0.0883	0.0743	0.0907
	(0.0725)	(0.0707)	(0.0737)	(0.0717)
	[0.0278]	[0.0340]	[0.0286]	[0.0349]
FORCED	0.8133	0.8221	0.8834	0.8880
	(0.1954)***	(0.1941)***	(0.1992)***	(0.1979)***
	[0.3145]	[0.3179]	[0.3405]	[0.3422]
FRACTION NED	2.4147	2.2599	2.2959	2.1577
	(0.6565)***	(0.6513)***	(0.6554)***	(0.6510)***
	[0.9280]	[0.8693]	[0.8838]	[0.8313]
PERFORM	-1.0289	-0.9352	-0.1039	-0.0888
	(0.5551)*	(0.5362)*	(0.2386)	(0.2332)
	[-0.3954]	[-0.3597]	[-0.0400]	[-0.0342]
PUBLIC LEVERAGE	-0.6474	-0.7191	-0.8854	-0.9322
	(0.7779)	(0.7764)	(0.8075)	(0.7959)
	[-0.2488]	[-0.2766]	[-0.3408]	[-0.3591]
BANK LEVERAGE	-0.7209	-0.7143	-0.6491	-0.6500
	(0.6049)	(0.6047)	(0.5972)	(0.5973)
	[-0.2771]	[-0.2748]	[-0.2499]	[-0.2504]
BANK AFFILIATE	-0.0388	-0.0353	0.0006	0.0028
	(0.1984)	(0.1961)	(0.1973)	(0.1951)
	[-0.0149]	[-0.0136]	[0.0002]	[0.0011]
PUBLIC ISSUE	-0.3523		-0.3428	
	(0.2502)		(0.2506)	
	[-0.1291]		[-0.1261]	
BANK ISSUE	0.6859		0.6687	
	(0.1977)***		(0.1952)***	
	[0.2675]		[0.2610]	
PUBLIC ONLY		-0.3902		-0.3939
		(0.3279)		(0.3274)
		[-0.1408]		[-0.1423]
BANK ONLY		0.4757		0.4656
		(0.2123)**		(0.2102)**
		[0.1868]		[0.1829]
Intercept	-2.9465	-3.1676	-2.9606	-3.1963
	(1.4845)**	(1.4634)**	(1.4994)**	(1.4744)**
Industry Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
LR statistic	70.19***	60.69***	68.30***	59.21***
Pseudo R^2	0.1546	0.1377	0.1532	0.1372
No. Observations	291	291	292	292

This table reports marginal effects from a probit model of the determinants of external CEO succession. Our sample is drawn from non-financial FTSE-350 firms over the time period 2000 to 2008. In all specifications the dependent variable is OUTSIDE. PERFORM is firm performance measured using ΔIROA and LOW IC as specified. All remaining variables are defined in Table 1. The marginal effect of a regressor is given as the derivative of the probability of turnover with respect to an individual regressor and is calculated at the mean value of all continuous variables. For dummy variables, the marginal effect represents a discrete change in the dummy variable from zero to one. Marginal effects are reported in brackets. Robust standard errors for the regression coefficients are reported in parenthesis. ***, **, and * denote the parameters are significant at the 1%, 5%, and 10% levels respectively.

Table 6
Event study cumulative average abnormal returns (CAARs) on announcement of CEO turnover

Type of turnover	Number of announcements	-1 to +1
TURNOVER	302	-0.0134 (-5.2844)***
FORCED	87	-0.0452 (-7.6091)***
VOLUNTARY	215	-0.0005 (-0.1858)
OUTSIDE	120	-0.0093 (-2.0494)**
INSIDE	182	-0.0160 (-4.7584)***
TURNOVER and PUBLIC ISSUE	40	-0.0041 (-0.7289)
TURNOVER and BANK ISSUE	65	0.0126 (2.3392)**
TURNOVER and PUBLIC ONLY	21	-0.0010 (-0.1364)
TURNOVER and BANK ONLY	51	0.0111 (1.6888)*
FORCED and PUBLIC ISSUE	13	-0.0013 (-0.1180)
FORCED and BANK ISSUE	20	0.0578 (4.5115)***
FORCED and PUBLIC ONLY	7	0.0025 (0.1681)
FORCED and BANK ONLY	14	0.0631 (3.6978)***
OUTSIDE and PUBLIC ISSUE	14	0.0.118 (1.2299)
OUTSIDE and BANK ISSUE	37	0.0243 (3.2254)***
OUTSIDE and PUBLIC ONLY	7	0.0101 (0.6954)
OUTSIDE and BANK ONLY	27	0.0254 (2.6274)**

The table reports market model cumulative average abnormal returns (CAARs) on announcements of CEO turnover. Market model parameters are estimated over the trading period -200 to -31 relative to the event date. The three-day event window (-1, +1) is measured relative to the first announcement day, 0. The FTSE-350 Index is used as the market benchmark for estimating CAARs. CEO turnover and debt issuance sub-samples are categorized based on CEO turnover and debt issuance occurring during the same financial year. VOLUNTARY are all non-forced CEO turnover events and inside are all CEO turnover events where an internal successor is appointed to replace the outgoing CEO. All remaining variables are defined in Table 1. Two-tailed student's t-tests are reported in parenthesis. ***, **, and * denote the test statistics are significant at the 1%, 5%, and 10% levels respectively.

Table 7
Ordinary least squares regressions of three-day cumulative abnormal returns (CARs) on announcement of CEO turnover

Model	(1)	(2)	(3)	(4)
LN_ASSETS	0.0042 (0.0042)	0.0050 (0.0042)	0.0038 (0.0042)	0.0039 (0.0042)
FORCED	-0.0977 (0.0246)***	-0.0702 (0.0215)***	-0.0959 (0.0247)***	-0.0926 (0.0241)***
OUTSIDE	0.0214 (0.0140)	0.0071 (0.0160)	0.0136 (0.0161)	0.0187 (0.0157)
PUBLIC LEVERAGE	0.0408 (0.0447)	0.0236 (0.0445)	0.0448 (0.0451)	0.0449 (0.0462)
BANK LEVERAGE	-0.0197 (0.0379)	-0.0138 (0.0386)	-0.0166 (0.0385)	-0.0198 (0.0387)
BANK AFFILIATE	0.0011 (0.0141)	-0.0017 (0.0148)	0.0001 (0.0143)	0.0017 (0.0144)
PUBLIC ISSUE	-0.0130 (0.0168)	-0.0162 (0.0224)	-0.0200 (0.0186)	
BANK ISSUE	-0.0152 (0.0126)	-0.0094 (0.0169)	-0.0243 (0.0185)	
PUBLIC ONLY				-0.0116 (0.0197)
BANK ONLY				-0.0211 (0.0201)
PUBLIC ISSUE x FORCED	0.0271 (0.0467)		0.0116 (0.0618)	
BANK ISSUE x FORCED	0.1256 (0.0421)***		0.1176 (0.0416)***	
PUBLIC ONLY x FORCED				0.0661 (0.0721)
BANK ONLY x FORCED				0.1318 (0.0581)**
PUBLIC ISSUE x OUTSIDE		0.0448 (0.0361)	0.0346 (0.0516)	
BANK ISSUE x OUTSIDE		0.0561 (0.0338)*	0.0206 (0.0322)	
PUBLIC ONLY x OUTSIDE				0.0239 (0.0589)
BANK ONLY x OUTSIDE				0.0162 (0.0336)
Intercept	-0.0863 (0.0854)	-0.1051 (0.0873)	-0.0768 (0.0854)	-0.0783 (0.0858)
Industry Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
F-statistic	1.60**	1.52*	1.47*	1.53*
Adjusted R^2	0.2151	0.1873	0.2183	0.2127
No. Observations	295	295	295	295

The table reports ordinary least squares (OLS) regression results of announcement period cumulative abnormal returns (CARs) on announcements of CEO turnover. Market model parameters are estimated over the trading period -200 to -31 relative to the event date. The three-day event window (-1, +1) is measured relative to the first announcement day, 0. The FTSE-350 Index is used as the market benchmark for estimating CAARs. CEO turnover and debt issuance sub-samples are categorized based on CEO turnover and debt issuance occurring during the same financial year. All variables are defined in Table 1. Robust standard errors are reported in parenthesis. ***, **, and * denote the parameters are significant at the 1%, 5%, and 10% levels respectively.