Unstable Equity?

Combining Banking with Private Equity Investing[*]

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Theoretical work suggests that banks can be driven by market mispricing to undertake activity in a highly cyclical manner, accelerating activity during periods when securities can be readily sold to other parties. While financial economists have largely focused on bank lending, banks are active in a variety of arenas, with proprietary trading and investing being particularly controversial. We focus on the role of banks in the private equity market. We show that bank-affiliated private equity groups accounted for a significant share of the private equity activity and the bank's own capital. We find that banks' share of activity increases sharply during peaks of the private equity cycles. Deals done by bank-affiliated groups are financed at significantly better terms than other deals when the parent bank is part of the lending syndicate, especially during market peaks. While bank-affiliated investments generally involve targets with better ex-ante characteristics, bank-affiliated investments have slightly worse outcomes than non-affiliated investments. Also consistent with theory, the cyclicality of banks' engagement in private equity and favorable financing terms are negatively correlated with the amount of capital that banks commit to funding of any particular transaction.

In light of the financial crisis, the topic of risk-taking by banks and its consequences has attracted increasing scrutiny.[1] Shleifer and Vishny (2010) present a theoretical model of banks operating in markets shaped by investor sentiment. Focusing on the possibility that banks can syndicate or securitize loans that may be mispriced, they show that profit-maximizing banks will tend to fund projects where significant blocks can be resold at favorable prices, as opposed to those that cannot readily be sold off. As a result, bank activity tends to be highly cyclical, concentrated at periods when asset values are high. This tendency can lead to a variety of deleterious effects, including inefficiencies in what is being financed, the exacerbation of financial market cycles, and the possibility of dramatic losses during busts.

While much of the economics literature has focused on the consequences of commercial bank lending, it is clear that banks played a broader role in the economy. Banks have been active in both proprietary trading and investing activities that have been much less scrutinized by academics. These activities have been a particular concern of policy-makers, who have variously argued that trading and investing activities are highly risky and represent a conflict with customers' interests. The "Volcker Rule" provision of the recently-enacted financial reform bill limits banks' exposure to hedge funds and private equity to no more than three percent of their Teir 1 capital. This rule implies the need for substantial cutbacks. Most dramatically, Goldman Sachs, with $65 billion of Tier 1 capital at the end of 2009, would have to cut its principal investing from $29.1 billion to less than $2 billion.[2]

This paper seeks to address this gap by taking a comprehensive look at the role of banks in the private equity industry. Toward this end, we construct a sample of 7,902 unique U.S.

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[1] E,g,, Diamond and Rajan (2009), Adrian and Shin (2010), Acharya and Viswanathan (2010).

[2] http://www.thestreet.com/story/10796629/1/volcker-rule-all-about-goldman.html (accessed July 20, 2010).

private equity transactions between 1978 and 2009. For a significant fraction of the sample we have detailed information on financing terms, transaction structure and performance which enables us to look in depth at the nature of the private equity investments.

The following findings emerge from our analysis:

- The share of banks in the private equity market and of private equity as a percent of bank equity is substantial. Over the period between 1983 and 2009, over one-quarter of all private equity investments involved bank-affiliated private equity groups. Between 1997 and 2006, the total amount of transactions done by bank-affiliated private equity firms represented on average 9.4% of the bank's total equity during this period.

- The share of transactions affiliated with banks is pro-cyclical, peaking at times of big capital inflows into the private equity market.

- Prior to the transaction, targets of bank-affiliated investments generally have significantly better operating performance than other buyout targets, though their size and other features are similar. However, the subsample of deals where the parent bank is also in the lending syndicate involves targets with significantly *worse* ex-ante characteristics.

- Transactions that involved bank-affiliated groups are financed at significantly better terms than other deals *when* the parent bank is in the lending syndicate. The differences in financing terms appear particularly pronounced during the private equity boom years.

- The share of loan financing funded by the parent bank is countercyclical. Banks fund the smallest fraction of loans, and give the best terms, in years of the biggest expansion of their private equity business.[3]

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[3] We will focus in the paper largely on the syndication of the banks' loans in the private equity transactions, rather than the securitization of these loans. Syndication and securitization are alternative ways in which the banks' exposure can be reduced. In syndication the loan is

- Overall, bank-affiliated investments have slightly worse outcomes. Transactions done at the top of the market are most likely to experience subsequent distress. While this is a general patter, it is particularly pronounced for transactions involving banks' private equity groups.

Overall, the results are consistent with many of the worries about these transactions articulated in Shleifer and Vishny (2010). These investments do seem to exacerbate the amplitude of waves in the private equity market, leading to more transactions at precisely the times when the private (Kaplan and Stein, 1993; Kaplan and Schoar, 2005) and social (see, for instance, the evidence about productivity in Davis, et al., 2009) returns are likely to be the lowest. The patterns of the greatest syndication during booms, as well as the greater probability of distress, also seem consistent with theoretical suggestions.

Our findings relate to several strands in the literature. First, there is a large literature that investigates synergies between concurrent lending and underwriting of public securities. In particular, Kroszner and Rajan (1994) and Puri (1996) focus on understanding the implications of the Glass-Steagall Act, which prohibited national banks from engaging in any corporate securities businesses directly or through subsidiaries.

Our paper also relates to the internal capital market literature, which considers both the positive (e.g., Stein, 1997) and negative aspects (Rajan, Servaes, and Zingales, 2000; Scharfstein, 1998; Scharfstein and Stein, 2000) of organizational diversification across activities—in this context, banks that can engage in lending and investing—as an important element of efficient capital allocation.

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originated by one bank and funded, at origination, by a group (a syndicate) of lenders. In securitization original loan is transferred into a bankruptcy remote vehicle which would then issue new securities to raise funds. Both mechanisms are within Shleifer and Vishny (2010) framework.

The plan of this paper is as follows. In Section I, we discuss the construction of the sample and descriptive statistics. Our empirical analysis is presented in Section II. Section III concludes the paper.

I.   Data and descriptive statistics

Our focus is on U.S. private equity transactions. We use a broad definition of private equity transactions and include leveraged buyouts (LBOs) and growth investments by private equity firms (later in the paper, we consider these investments separately). We exclude venture capital and distressed investments from our sample. The data for this study were collected from two main sources: Standard and Poor's Capital IQ (CIQ) transaction database and Reuters' LPC DealScan loan database (DealScan).

Since 1999, CIQ has been specialized in tracking private equity deals on a world-wide basis. Through extensive research, it attempts to "back fill" information about investments prior to this period. Most data services tracking private equity investments were not established until the late 1990s. The most comprehensive exception, SDC VentureXpert, was primarily focused on capturing venture capital investments (rather than private equity transactions) until the mid-1990s. Strömberg (2008) compares the CIQ LBO data during the 1980s with the samples from older LBO studies using data from other sources and estimates the CIQ coverage to be somewhere between 70% and 85% for this period. The CIQ sample is likely to be biased towards deals for larger, surviving, and more established private equity firms before the mid-1990s.

DealScan primarily covers syndicated loans and is available to us for the period from 1988 through the end of 2008. This data contains detailed information as of the loan origination date. In particular, we use the borrower's name, lenders' names, financial sponsor name, loan

type, loan size, loan maturity and loan spread paid over London Inter Bank Offered Rate (LIBOR). We consolidate information at the loan level. We assume that loan facilities within the same seniority class have the same spread. The DealScan coverage of private equity transactions is significantly smaller than CIQ sample. Overall, our sample includes loans backing 2,105 unique U.S. private equity transactions between 1993 and 2005 with spread information. The deals might be missing in DealScan if its financing did not include a loan (as is the case in many growth equity investments) or if the loan was not syndicated. For a given transaction, we look at the first-lien facility spread (i.e., the spread on the most senior tranche, which is also typically the largest tranche). We select the first chronological loan for an LBO firm and borrower, excluding any follow-on transactions or refinancings. Thus, our final sample includes only one observation (loan) per transaction.

Sometimes, especially in the later years of the sample, a transaction is sponsored by a syndicate of investment firms. We categorize it as a bank deal if at least one of the financial sponsors is bank-affiliated. If the investment consortium consists of both a bank-affiliated group and a non-bank group, we flag it with a separate "mixed-type" indicator to identify such deals. We also differentiate between banks with commercial and investment banking origins.[4] Overall, our sample contains fourteen bank-affiliated groups, six of which—Goldman Sachs Capital Partners, Lehman Brothers Merchant Banking, Merrill Lynch Capital Partners, Morgan Stanley

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[4] Although historically commercial banks had lesser involvement in dealing with public securities, the main difference between commercial and investment banks in our sample is the regulatory framework under which they operate. In particular, between 2004 and fall of 2008, four of the large investment banks in our sample—Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley—were overseen by the Securities and Exchange Commission (SEC), while large bank holding companies were overseen by the Federal Reserve System. In principal, the regulatory framework imposed on commercial banks was associated with higher capital requirements; in practice, however, the higher cost of funding imposed by tighter regulatory standards could be overcome through loan syndication and risk hedging strategies.

Private Equity, DLJ Merchant Banking, and Wasserstein & Co.—are investment bank affiliates. We also identified cases where private equity groups spun out of banks.

Table I shows the distribution of private equity transactions over time based on the larger CIQ sample. This sample reflects the most complete picture of the overall investment portfolios of the different private equity groups. Between 1978 and 2009, there were a total of 7,902 unique transactions in our sample,[5] 26% of which involved bank-affiliated private equity groups.[6] Figure 1 shows, however, that this fraction fluctuates widely over time. Notably, it is related to the volume of LBO transactions. For example, the fraction reached a peak of close to 30% by volume during the buyout wave of the late 1980s (between 1985 and 1989). There is a dramatic decline in bank-affiliated private equity investments in the 1990s, when the leveraged buyout market was relatively quiet after the junk bond market collapse and the recession in the beginning of that decade. During this period, affiliated groups accounted for an average of 10% of the total deals. Their activities rose significantly during the market bull run of the late 1990s. After a temporary drop in the early 2000s, these activities reached an all-time high of close to 45% of total deals in the recent credit boom, before falling off sharply with the onset of the credit crunch of 2008.

[TABLE I]

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[5] We believe this figure understates the true number of private equity investments, due to sample omissions. In this table and subsequent analysis, we include only deals where the private equity groups are new investors in the targets. When we infer the complete portfolio from all deals where private equity groups are either current or past investors, we find nearly 20,000 deals in the same sample period. However, the qualitative result that affiliated groups account for roughly a quarter of the total investing activity is unchanged in the larger sample.

[6] In this table, when multiple sponsors are involved in a deal, we count it only once, except when at least one sponsor is an affiliated type and at least one is a non-affiliated type. In such situations, the deal is counted once in each group. Thus, this table includes mixed deals. Excluding mixed deals give similar patterns, with the affiliated sample accounting for 22% of the total.

Since the overall private equity activity has been well documented to be highly cyclical, the dramatic rises and falls of affiliated-groups activities against such a base is particularly remarkable. It suggests that affiliated groups enter the market in an opportunistic fashion. This may further suggest that there is somewhat a speculative element in banks' forays into private equity: if activities are particularly high during times of high economic-wide leverage, this may lead to the concern that such activities create undue systemic risks. However, such concerns must be assessed through empirical analysis.

[FIGURE 1]

As mentioned earlier, often—especially during the recent credit bubble—multiple sponsors are involved in the same deal. An investment syndicate can contain both affiliated groups and unaffiliated groups. Table I also tabulates the frequency of these "mixed" deals. Overall, mixed deals account for 15% of the sample, but the fraction is much higher for the affiliated sample (28%) than for the unaffiliated sample (10%). The fraction of mixed deals in the overall sample is strongly pro-cyclical: mixed deals were relatively rare in the 1990s, but surged to 25% of the total in 2000 before plateauing around 15%.

Between 1997 and 2006 total amount of transactions done by bank-affiliated private equity firms represented on average 9% of their total equity and 11% of the total revenues.[7] The importance of the private equity engagement with respect to the overall bank business is also highly pro-cyclical. In 2005-2006 boom period, banks' private equity engagement represented on average 23% of their total equity (26% of the revenues), however in the four years preceding the

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[7] It is hard to get consistent time-series for the banks in our sample; investment banks, commercial banks and foreign banks all have different ways of reporting data). Thus, scaling private equity engagement by total equity, total revenues or assets generates the most reliable time-series. We use fiscal year end data. Many financial institutions experienced sever distress in 2007 and 2008, therefore, we exclude these years from the calculations.

expansion their private equity business represented only 4% of their total equity (5% of the revenues). Although for most of the banks private equity engagement is significantly smaller than their traditional businesses like lending, Shleifer and Vishny (2010) suggest that the mechanism for overall economic spillover is not only through the bank's balance sheet, but also through direct engagement of outside capital through syndication.

Table II ranks affiliated and unaffiliated groups by activity measured by both deal count (Panel A) and total dollar amount (Panel B). All 14 affiliated groups are shown, whereas only the top 15 groups are shown for the unaffiliated sample. Activities in the affiliated sample are highly concentrated: Goldman Sachs Capital Partners alone accounts for 29% of total deals and 36% of total dollar amount invested among affiliated groups. The top five groups—Goldman Sachs, JP Morgan Capital, Citigroup Private Equity, and Lehman Brothers Merchant Banking—account for 76% of total deals and over 80% of total dollar amount. This level of concentration is much higher than in the non-affiliated sample. The top group by deal count (Oak Investments) carries out 12% of total deals, and the top group by dollar amount (Kohlberg Kravis & Roberts) accounts for 15% of the total dollar volume. Top five groups in the non-affiliated sample account for roughly one-third of total deals and over half of dollars invested.

[TABLE II]

Table III tabulates the industry distribution of the private equity investments. Whether measured by deal count (Panel A), or by dollar amount (Panel B), consumer staples, information technology, and healthcare appear to attract private equity interest. While financials and utilities account for only about 7% of deals each, they respectively account for about 15% and 20% of dollar amount invested. This reflects the fact that financials and utility deals are generally large in size. Overall, the sector distribution does not appear very different between the affiliated

sample and the non-affiliated sample. While affiliated groups statistically have less activity in the consumer staples sector, this sector accounts for a small fraction of overall investments, and thus the economic significance here is not large. Interestingly, there is some evidence that affiliated groups are more active in the financial sector. This could be due to affiliated groups, being subsidiaries of large investment banks, have naturally better understanding and information of the financial sector. While the statistical significance for this is borderline (the difference is only significant at the 8% confidence level), perhaps due to the small sample size.

[TABLE III]

II. Empirical Analysis

A. Financing terms

We start by analyzing financing terms for our sample deals. We are able to match 2,105 of our deals with financing information from the DealScan database. The sample is smaller than Capital IQ sample partly because not all of the transactions in our sample are backed by large— and therefore syndicated—leveraged loans. DealScan mainly covers syndicated loans; the data on private transactions is collected from Reuters contributors and is primarily used by market participants as a benchmark for loan terms and for construction of league tables. Thus, if the loan is not syndicated, it is unlikely that it is in our sample. Overall, the sample is biased toward large and leveraged transactions. However, there is no reason to believe that DealScan data coverage has cross-sectional bias. Our final sample is comparable to other studies that relied on the DealScan data for the analysis (Axelson, et al., 2008; Ivashina and Kovner, 2008).

The analysis is designed to distinguish between transactions done by bank-affiliated private equity firms with and without parent bank as lender, and transactions done by pure

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private equity firms. We also separate transactions done by a syndicate of bank-affiliated private equity firms and a pure private equity firms (*mixed deals*).

Table IV reports regression results of main financing terms at the time of loan origination: total loan amount, maturity, and total spread paid over LIBOR. The main explanatory variables include an indicator for bank-affiliated deal, an indicator for the fact that a deal is of a mixed type (i.e., deal backed by a syndicate of private equity firms, where at least one of the investors is a bank-affiliated firm and at least one other investor is a stand-alone firm), and the credit rating of the deal. In addition, one variable of key interest is *Parent bank in syndicate*, which equal 1 if the parent bank of the affiliated private equity sponsor plays an important role in the lending syndicate for the deal and 0 otherwise. In other words, this variable indicates that the bank has two roles in the deal: as an investment sponsor (through its private equity subsidiary), and as an arranger of debt financing. We only include banks with large commitments (i.e., banks receiving syndicate roles other than "participant"). The results control for industry sector, target and transactions characteristics as reported by CIQ, and year fixed effects.

[TABLE IV]

Coefficients on the bank-affiliated indicator suggest that bank-affiliated deals are generally associated with lower lending amounts, shorter maturity, and higher yield spreads. However, the situation is dramatically different when the parent bank of the affiliated private equity group is in the lending syndicate. When this is the case, deals done by affiliated private groups enjoy a significantly larger borrowing amount, a longer maturity, and a lower spread. The *Parent bank in syndicate* dummy is highly statistically significant for all three regressions. The economic magnitude of the results is also worth noting. Panel A of Table IV indicates that

having the parent bank in the lending syndicate increases loan amount by $557 million, a nearly

a 100% increase over the average loan size of $612 million in our sample. The parent bank's

presence in the lending syndicate increases the maturity of the loan by more than 4.3 years, over

two-thirds of the average maturity of 6.0 years. Finally, the same presence reduces loan spreads

by 33 basis points, 10% of the average spread of 317 basis points in the sample. Thus, a parent

bank's involvement in the lending syndicate results in statistically and economically large

improvements in the financing terms, even after controlling for standard credit quality measures.

We hypothesize that the effects would be stronger for traditional buyout investments than

growth equity ones, particularly if the balance sheet expansion hypothesis holds. Growth equity

deals are less likely to either need or to be able to support large amounts of leverage. We repeat

the analysis by restricting the sample to buyout investments. The results in the loan amount and

loan spread regressions are generally stronger: the presence of the parent bank in the syndicate

appears to lead to larger loans with narrower spread. LBO deals done by bank-affiliated firms

that have a parent bank in the lending syndicate, on average, have $1.2 billion larger loan

financing and 64 basis points lower spread. The results regarding loan maturity, however, are

weaker. Notice that overall there are no differences in financing terms between LBOs done by

bank-affiliated and stand-alone private equity firms.

In Panel B we examine the period before and after the enactment of the Graham-Leach-

Bliley Act, the 1999 legislation that repealed the Glass-Steagall Act.[8] If the ability to engage in

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[8] This test is weak. In 1999, Graham-Leach-Bliley Act broadly allowed integration of
commercial banks, securities and insurance companies. However many large banks were allowed
to engage in non-traditional banking activities—in particular, private equity investment—several
decades before by the Bank Holding Company Amendment Act of 1970. Permitted activities
were determined at the discretion of the Federal Reserve Bank, and although originally only six
institutions were affected by the 1970 Amendment, the list quickly grew to over fifty bank
holding companies.

universal banking has greatly facilitated banks' abilities to exploit their advantages (which both the information advantage and the balance sheet expansion hypotheses might suggest), the effects of having a parent bank of a private equity investor in the syndicate may be much more modest during this earlier period. Indeed, the results suggest that these relationships were much weaker during the pre-repeal period.

The finding that terms on deal financing is significantly stronger when parent bank is also the main lender is very robust. In order to distinguish potentially different roles of investment banks and commercial banks, we created a dummy for cases where the bank has a background in commercial banking. Either including this dummy or dropping the commercial bank sample entirely leads to insignificant changes to the regression results. Another concern is whether this is just a "Goldman Sachs" effect, because this group alone accounts 30% of the affiliated groups' activity. When we exclude Goldman Sachs from the sample, the results are very similar to the baseline: the improvements on the loan size, maturity, and spreads are 828 million, 4.5 years, and 44 basis points, respectively.

The tests in Table IV rely on comparison of transactions done by bank-affiliated private equity firms and transactions done by pure or non-bank affiliated private equity firms. One potential concern with this methodology is that these transactions are fundamentally different and the results are driven by unobserved heterogeneity between the deals undertaken by bank-affiliated and unaffiliated groups. For example, given that—unlike pure private equity firms—bank-affiliated private equity firms are required to publicly report their performance on a quarterly basis, there could lead to selection of deals with different risk profiles and investment horizons.

To address this issue, we use spin-offs of private equity firms from their bank parent as a quasi-experiment.[9] We look at transactions by eight private equity groups that had been spun out of banks including Mercury Capital (spun-off from Merrill Lynch in 2000), Lightyear Capital (spun-off from UBS in 2002), MidOcean Partners (spun-off from Deutsche Bank in 2003), Diamond Castle (spun-off from CSFB in 2004), Metalmark Capital (spun-off from Morgan Stanley in 2004), Avista Capital (spun-off from CSFB in 2005), CCMP Capital Advisors (spun-off from JP Morgan in 2006) and Court Square Capital Partners (spun-off from Citigroup in 2006).

A spin-off breaks the connection between the private equity firm and the bank (the firms stop being an affiliated firm and becomes a pure private equity firm); but does not affect the type of the transactions undertaken by the firms. Indeed, anecdotal evidence suggests that the spin-offs were primarily driven by the desire of the private equity groups' management to receive a larger share of the carried interest.[10] This had little to do with the spun-off firms being able to undertake different transactions and, therefore, it is reasonable to assume that the transactions undertaken by bank spun-off private equity firms before and after the firm became independent were essentially unchanged and the only true change is bank affiliation. This setting allows us to implement a differences-in-differences approach.

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[9] As an alternative quasi-experimental setting, we also looked at deals that generated interest from both affiliated and unaffiliated private equity firms, using the bidding data compiled by Officer, Ozbas, and Sensoy (2010). Unfortunately, only three cases in their sample (out of 19 with disclosed bidders' identity) attracted bids from affiliated and non-affiliated groups.

[10] Banks often received between 25% and 50% of the carried interest from affiliated groups prior to spin-out, and a much small fraction (if any at all) afterwards (e.g., Hardymon, et al., 2004). Case study evidence and practitioners' accounts suggest that the spin-off process is not associated with a dramatic change in strategy or structure for private equity groups; they typically remained focused on their given area of specialization.

In Table V, we analyze transactions done by private equity firms that are or *were* affiliated with the bank; the omitted category is bank-affiliated transactions. The results suggest that after the spin-off, the financing terms deteriorate: the loan amount is smaller, loan maturity is shorter and the spread is larger. Having *ex*-affiliated bank as the lender does not undo these results. Although the economic magnitude is large, and deterioration in financing terms is consistent with post spin-off transactions being closer to pure private equity transactions than the bank-affiliated transactions, the differences are not statistically significant. Overall, these findings suggest that the impact of parent bank on the financing terms of affiliated private equity firms is not a result of selection biases; however, spun-off transactions might not be directly comparable to pure private equity transactions.

[TABLE V]

B. *Transaction and target characteristics*

The previous section documents that bank-affiliated transactions are financed at better terms when the parent bank is in the lending syndicate. There are two explanations for this pattern that have very different implications. On the one hand, this could indicate banks taking advantage of cheap credit that they have preferential access to and passing it on to their private equity subsidiaries. On the other hand, it could be that banks' information advantage allows them to select superior transactions and targets. We partially differentiated between the two hypotheses in the previous section by examining peak periods. The fact that banks' financing advantage concentrates only in peak period gives more support to the first argument.

To further examine the different hypotheses, we explicitly compare the transaction and target characteristics in different subsamples. Table VI presents a non-parametric comparison of these characteristics. Panel A compares the bank sample versus the non-bank sample. Panel B

compares the sub-group in the bank sample that involves the parent bank in the lending syndicate versus the sub-group that does not.

Results in Panel A indicate that transaction characteristics are generally similar between the bank and non-bank samples, with the exception that the implied ratio of enterprise value to EBITDA is lower in the bank sample, which means that *ceteris paribus* bank-affiliated groups tend to pay a lower valuation. Target characteristics, however, show some differences between the two samples. In particular, the bank sample involves targets that have better ex ante performance measures. Target firms in bank deals have better liquidity (Cash/Total Assets), higher return on assets (EBITDA/Total Assets and EBITDA/Net Assets), and superior operating margins (EBITDA/Sales and Net Income/Sales). These patterns are consistent with banks possessing superior information on potential targets.

[TABLE VI]

Panel B, however, shows that within the bank sample, deals involving the parent bank in the lending syndicate differ significantly from deals financed by unaffiliated banks. In terms of transaction characteristics, parent-financed deals are much bigger than other bank deals, and have significantly *higher* EBITDA ratios, meaning they are more expensive. In terms of target characteristics, deals involving parent bank in the lending syndicate involve targets that have significantly *worse* ex-ante characteristics. These patterns are opposite of those seen in the general comparison between bank deals and non-bank deals (Panel A).

These findings are also the opposite from what one would expect to find if parent bank's involvement in lending serves as a positive signal. Importantly, recall that in Section II.A, we showed that the superior financing terms are concentrated precisely in this subgroup of deals involving parent banks in the lending syndicate. Putting these results together, it is highly

unlikely that the superior financing is explained by banks' information advantage, strengthening the argument banks' preferential access to capital may be a source of advantage.

C. Cyclicality of financing terms

A willingness to be present in the lending syndicate could be a vote of confidence and have a certification effect. This would indicate an information advantage from, combining different types of activities. On the other hand, the better terms could indicate balance sheet expansion by the banks, that is, their ability to take advantage of cheap capital. Which explanation is more plausible is at the heart of the policy debate. To assess the informational advantage and balance sheet expansion hypotheses, we analyze whether the superior financing terms are concentrated only in peak years of the private equity cycle. If the primary driver of the superior financing terms is access to cheap capital, we should see the effect limited to market peaks. The information advantage argument would have a harder time explaining such a time-varying pattern.

In Table VII, we re-estimate the financing terms regressions by adding interaction terms between the key explanatory variables and an indicator variable for peak years of the private equity cycle. The loan data is available for the 1993-2009 period. Thus, there are two peak periods in our sample: the technology-bubble period between 1998 and 2000, and the credit bubble of 2005 to 2007. The *Peak year* dummy is equal to 1 for these years and 0 otherwise.

[TABLE VII]

The results in Table VII show that the ability to borrow more at longer maturities as a result of a parent bank's involvement in the lending syndicate stems largely from the peak periods. For both the loan amount and maturity regressions, after introducing the interaction term

between *Parent bank in syndicate* and *Peak year*, the explanatory power of *Parent bank in syndicate* disappears completely and the effect entirely loads on the interaction term. Interestingly, in the loan spread regression, we see a different pattern. Here, having a parent bank in the lending syndicate still has a significantly negative effect, but the incremental effect for the peak years is not statistically different from zero.

These results suggest that, while the parent bank's presence in the lending syndicate leads to significantly better financing terms, this effect is concentrated almost entirely at the peaks of the market. Such a time-varying pattern is consistent with the view that bank-affiliated deals enjoy a financing advantage at the peak of the market (the balance sheet expansion hypothesis); during this period, the ability to access large amounts of capital facilitates strategic lending behavior in a manner not seen at other times. It is more difficult to reconcile these cyclical patterns with the information-advantage view, unless the pattern is driven by credit constraints limiting such preferential lending by banks during non-peak periods.

Interestingly, our analyses also suggest that the advantages that affiliated groups enjoy from balance sheet expansion at market peaks primarily take the form of larger borrowing amounts and longer maturities, instead of a lower loan spread. Bank-affiliated funds involvement in the lending syndicate has a time-invariant effect of reducing loan spreads, which indicate that this pricing parameter may be capturing some information-related advantages.[11]

We check whether the recent credit bubble of 2005-2007 plays a particularly important role in driving these results. During the most recent credit bubble, parent banks could more

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[11] Consistent with the hypothesis that banks expand their balance sheet through their private equity arms when financing terms are lax, we observe that bank investments become more concentrated in the "hot" industries in the peak years. However, the concentration is smaller for bank affiliated firms (a 4% increase) as compared to non-affiliated firms (13%).

easily shed their loan exposures than ever before, thanks to the large inflow of institutional capital into the securitized loan market (Ivashina and Sun, 2008). The results for 2005-2007 period are very similar to the peaks over the entire period, indicating that much of the effect comes from this recent period. This result lends further support to the view that the superior financing terms come from preferential access to cheap capital, rather than an information advantage.

Finally, we examine the extent to which the participation of the parent bank in loans rises and falls with market conditions. The Shleifer and Vishny (2010) model delineated above implies that banks would be more likely to syndicate transactions during booms. Although they do not model the share retained by the originating bank, it follows from their framework that the originating bank would rely more on external (uninformed) capital to reduce its own exposure to overvalued loans.[12] In Table VIII, we analyze the cyclicality of the bank share of loan financing in bank-affiliated private equity transactions for each transaction where parent bank is part of the lending syndicate (and where we have the necessary data).

While we cannot exactly measure the extent of the parent bank's "skin in the game," we can examine two proxies. The first proxy, *Parent bank allocation* is the share of the total loan financed by the parent bank. Because this is only available for 19 transactions, we consequently use predicted share when the actual data are not available, which is computed from a regression using the lender's syndicate role, number of syndicate members, loan size, type, maturity, and year as independent variables and employing *all* U.S. transactions available in DealScan in

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[12] Ivashina and Scharfstein (2010) document strong counter-cyclicality of the loan share retained by the originating bank and point out shocks to investors' sentiment as one of the main explanations of this finding.

which bank syndicate share is not missing. As a second proxy, we use the share of the loan funded by banks, as opposed to non-bank institutions.[13]

The basic pattern is consistent with theory. The parent bank's share of loans provided is considerably lower in the years with the greatest buyout activity, such as 1998 to 2000 and 20005 and 2007. Moreover, the share is lower for the highest valued deals (measured as a multiple of EBITDA). This is consistent with the proposition that banks aggressively take advantage of their ability to raise more outside financing when market conditions are favorable.

[TABLE VIII]

D. Performance

To further understand the underlying characteristics of transactions undertaken by bank-affiliated private equity firms, we next examine exit patterns of the two samples. We employ Per Strömberg's data on exits, whose construction is described in Strömberg (2008). We supplement that data with hand-collected information on more recent IPOs, bankruptcies, and mergers and acquisitions (M&A) transactions through January 2010 from CIQ and SDC Platinum.

Table IX compares the outcomes of bank-affiliated deals with the non-bank sample. Over the entire sample period, about 13% of deals eventually have an IPO exit, and about 73% have a trade-sale exit. The bank sample has a higher ratio of bankruptcies (7.7%) relative to non-bank sample's 5.7%. This difference is significant at the 10% level. Also, a smaller fraction of bank deals (63%) have what are typically profitable exit (exits where the exit-multiple exceeds 1) than

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[13] A detailed explanation of the syndication process is provided in Ivashina and Sun (2008).The main idea is that one part of the loan is funded by banks and another portion by other financial institutions, including special purpose vehicles, hedge funds, and mutual funds. The fraction syndicated to banks is determined first. Interpreting this in the Shleifer and Vishny (2010) context, it takes more than one bank to originate a syndicated loan; several banks need to commit capital to be able to syndicate to institutions. So, it is banks' share—including the affiliated private equity group's parent bank—that should be counter-cyclical.

the non-bank sample (74%).[14] Thus exits seem overall slightly less successful in the bank sample than in the control sample.

Interestingly, investment performance between the two samples differs more for peak periods than in non-peak periods. (Here, peak periods are the late 1980s buyout wave between 1985 and 1988, the tech-bubble period between 1998 and 2000, and the credit bubble of 2005 to 2007. The *Peak years* dummy is computed using the year of the transaction and not the year of the exit.) First, during peak years, bank deals have significantly higher odds of an IPO than non-bank deals (13.5% vs. 9%). Second, investments made by non-bank-affiliated funds during peaks have significantly lower odds of an IPO than investments in non-peak years (9% vs. 15%). This under-performance of peak-period investments is consistent with prior literature, having first been documented by Kaplan and Stein (1993). The probability of a bank-affiliated portfolio company going public during peak periods is also lower, but the drop-off is less dramatic. Third, during peak years, bank deals have significantly lower incidences of trade sale exits than non-bank deals. During non-peak years, the two samples look more similar, but the bank sample still has higher probability of bankruptcy. Overall, these patterns suggest that bank deals have slightly worse exits than non-bank deals.

Table X analyses the exit patterns in a regression framework. The baseline regressions in Panel A show that bank deals have a higher likelihood of an IPO exit than non-bank deals. This result is significant at the 5% level. On the other hand, the sub-sample of bank deals done by

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[14] We compute exit multiple as exit value divided by original transaction value. For trade-sale exits, the exit value is taken as the transaction value of the sale. For bankruptcies, exit value is taken as the assets of the firm at bankruptcy filing. For IPOs, exit value is the total IPO proceeds. This calculation ignores dividends and recaps that could generate additional returns to the private equity investor. Exit value information is obtained from Stromberg (2008).

commercial banks is significantly more likely to experience bankruptcy. Thus, overall the exit results are mixed for bank deals. Panel B augments the baseline model with interaction terms with the peak year indicator. Once we control for these market conditions, there is virtually no difference between the two samples in terms of their IPO exits and trade-sale exits. However, commercial bank deals and large deals have a significantly higher likelihood of bankruptcy.

Interestingly, among the most significant variables is the interaction term between *Mixed type* and *Peak year*. This term is positive and highly significant statistically, indicating that mixed deals involving both bank-affiliated and non-bank private equity groups done at the peak of the market have markedly higher odds of bankruptcy. This result, combined with the previous result that deals financed at the peak of the market with affiliated banks participating in the syndicate enjoy significantly better terms, points to the concern that agency problem may be particularly severe in banks' involvement with private equity investments during market peaks.

[TABLE X]

E. Future Lender and Advisor Choice

The Shleifer-Vishny model implies that the types of patterns seen in the paper are consistent with value maximization for banks. Private equity affiliates can enhance banks's profits in a variety of ways. Having the private equity subsidiary as a financial sponsor on a transaction might guarantee the bank future businesses from the target in terms of additional lending, underwriting (for example, when the target firm eventually goes public or raises additional private capital), or M&A transactions. We investigate this hypothesis empirically.

To identify subsequent investment banking transactions by the targets, we collect all public offerings of equity, private placements of equity, and M&A data between 1980 and 2009 from the Thomson SDC database. For subsequent lending transactions, we use DealScan

database. We then manually match the issuers in this dataset with the target firms in our private equity transaction dataset, and focus on the banking transactions *after* the original private equity transaction.

One problem is that we only observe the actual lenders and advisors chosen, and not all potential lenders and advisors for each deal. To overcome this information limitation, we create pair-wise hypothetical matches between potential lenders or underwriters with each deal. In particular, for potential lenders, we use the top 15 banks that finance LBO transactions identified by Ivashina and Kovner (2009). For the advisors, we use the top 15 investment banks over the sample period identified using SDC data. In this analysis, the dependent variable takes the value of 1 if that particular lender/advisor is actually chosen, and 0 otherwise. The key independent variable is *Bank-affiliated*, which takes the value of 1 if the lender/advisor is the parent bank of the sponsor in the original private equity transaction. For example, suppose Goldman Sachs Capital Partners is the sole sponsor of a buyout of ABC Corp. ABC Corp subsequently issues equity, and the co-book-runners are Goldman Sachs and JP Morgan. In this case, there will be 15 observations involving ABC Corp's equity issuance in the completed dataset, one for each potential major underwriter. The dependent variable is set to 1 for the two observations where Goldman Sachs and JP Morgan were the potential underwriters, and 0 for the other 13 banks. The independent variable *Bank-affiliated* equals 1 for the observation listing Goldman as the potential underwriter but 0 for the observation involving JP Morgan.

Panels A, B, and C of Table XI report the results on future lender, M&A advisor, and underwriter choice, respectively. After controlling for sector, lender, and year fixed effects, affiliation is still an overwhelmingly strong predictor of lender choice, with a p-value close to 0.

Marginal probability calculations show that an affiliated bank is 22% more likely to be chosen as a future lender than unaffiliated banks.

<center>[TABLE XI]</center>

Table XI also shows similar results in a couple of robustness checks. First, we are interested in whether the effects differ between banks with a commercial bank background and those that have primarily been investment banks. When we add an indicator for a commercial bank background, this variable turns up negative in the regression (unreported). Consistent with this, when we drop the commercial banks entirely from the regressions, we find that the results become even stronger: the marginal probability now increases to 40% (column 2). Finally, we are concerned that much of the result may be driven by Goldman Sachs, the most prominent player in the sample. Column 3 shows that while dropping Goldman Sachs from the sample weakens the above effect, the marginal probability is still strong (16%).

With respect to future M&A advisor choice and equity-underwriter choice (Panels B and C), we again find that an investment relationship significantly increases the parent bank's odds of being chosen. In the whole sample, parent banks of the affiliated private equity groups are 7% more likely to win future M&A mandates, and 18% more likely to be book-runners of future equity issuances. When we drop the commercial bank sample, the result becomes stronger in the M&A advisor choice equation, with virtually no change in the equity underwriter choice equation. Interestingly, when we exclude Goldman Sachs from the sample, affiliation no longer increases the parent banks' odds of being chosen to advise on future M&A deals (the marginal probability is 3%, with insignificant statistics). The effect of affiliation on underwriter choice also weakens (a marginal probability of 11%, as compared to 18% when Goldman is included), but z-stat is still highly significant.

Overall, results in this section show that, when lending bank and private equity investor are affiliates, the parent bank is significantly more likely to win future lending, M&A advisory, and equity underwriting business for that specific target.[15] This effect is true both for banks with a commercial or an investment banking origin. There is some evidence that Goldman Sachs plays an influential role in driving these results; but the phenomenon we document here certainly is not a Goldman Sachs phenomenon alone—excluding this group leaves most results highly significant.

F. Robustness Checks

Taken together, a number of results in the previous sections suggest that combining banking and private equity investing leads to patterns consistent with theory. For instance, we find a strong cylical pattern, despite the fact that investments made by commercial banks during market peaks have significantly higher rates of bankruptcy. But other questions about robustness naturally follow. To what extent are these patterns being driven by a few risk-taking banks? Or is this an industry-wide pattern? If the former, we might be more optimistic that market forces (as opposed to regulatory fiat) could at least partially address these concerns.

To gain some insights into these questions, we collect additional data on bank-level credit expansion measures, and relate these measures to financing terms. In particular, using DealScan, we construct bank-level variables that measure: (i) the growth of average loan originations to non-investment grade borrowers in the LBO peak years (1998-2000 and 2005-2007) as compared to the average in the three years preceding the peak, (ii) the growth of average loan originations for restructuring purposes (including LBOs, mergers and acquisitions, and stock repurchases) in the LBO peak years as compared to the average in the three years preceding the

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[15] This is consistent with, and generalizes, the finding in Hellmann, Lindsey, and Puri (2008) that prior VC relationships increase banks' odds of winning lending businesses.

peak, and (iii) the contraction in overall credit origination in the year of economic recession following the LBO peak years. We examine whether the superior financing terms in peak years are primarily provided by banks that are particularly aggressive in opportunistic credit expansion in peak years.

Table XII reports expanded regression models for the key financing terms. Compared to the baseline model of Table VI, this table introduces the parent-bank level variables that indicate whether the parent bank of the transaction engaged in high credit expansion activities. Panel A and B use the banks' expansion in non-investment grade and restructuring credit respectively to identify "expanding banks." Panel C uses the banks' post-peak contraction to identify "contracting banks". All three measures seek to capture the banks' risk-taking behavior.

Consistent with baseline results in Table VI, we find that deals involving the parent-bank on the lending syndicate are financed at better terms (larger amount, longer maturity, and lower yields). The effects on amount and maturity are concentrated in peak years while the effect on spreads is more general. The bank-level variables reveal additional patterns. In Panels A and B, aggressively expanding banks tend to finance smaller loans with the shorter maturity and lower spreads, everything else equal, but mixed syndicates that involve these banks undertake larger deals. In Panel C, when ex-post contraction to measure potential engagement in riskier business over the peak year, the results are weaker. All-in-all, the results suggest that this behavior is not confined to a few risk-seeking banks.

[TABLE XII]

III.   Conclusion

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This paper is motivated by theoretical work about the cyclicality of banking activity, as well as the recent initiative to limit the ability of banks to undertake proprietary investing and trading activities. We focus on understanding the experience of bank-affiliated funds with private equity to shed light on these issues.

Examining a large sample of private equity transactions undertaken between 1978 and 2009, we find that the share of banks in the private equity market and of private equity as a percent of bank equity is substantial. Consistent with theory, the share of transactions affiliated with banks is pro-cyclical, peaking at times of big capital inflows into the private equity market. The transactions that involved bank-affiliated groups are financed at significantly better terms than other deals *when* the parent bank is in the lending syndicate, particularly during private equity booms. The share of loan financing funded by the parent bank is countercyclical, also consistent with theory. Finally, transactions done at the top of the market—particularly those involving banks' private equity groups—are most likely to experience subsequent distress.

These findings raise a variety of broader questions about cyclicality of banking activity and the Volcker rule. There is a need for considerable further research. To cite one example, while our analysis indicates that the increased negative outcomes of bank-affiliated transactions are concentrated at market peaks, the lasting social consequences of these unsuccessful outcomes remain unclear. Andrade and Kaplan (1998) argue that the lasting effects of financial distress for private equity transactions in the early 1990s was quite modest, a view also consistent with the more aggregated analyses of Bernstein, et al. (2010). Thus the negative impact may be muted overall.

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Figure 1
Private equity activities over time

The figures plot percentage of deals done by bank-affiliated private equity firms. The figures were compiled based on number of deals (Panel A) and dollar values of the transactions (Panel B). Equity market capitalization corresponds to non-financial corporate business equity compiled from Flow of Funds Accounts (indexed, 1983=1).

Panel A: Deal counts
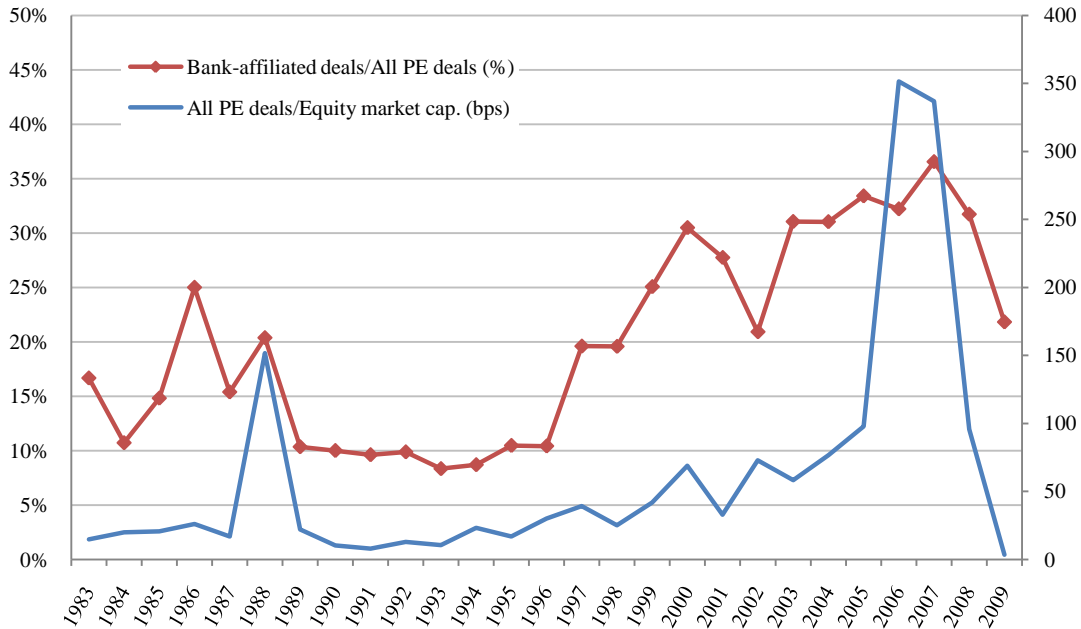
Panel B: Dollar volume
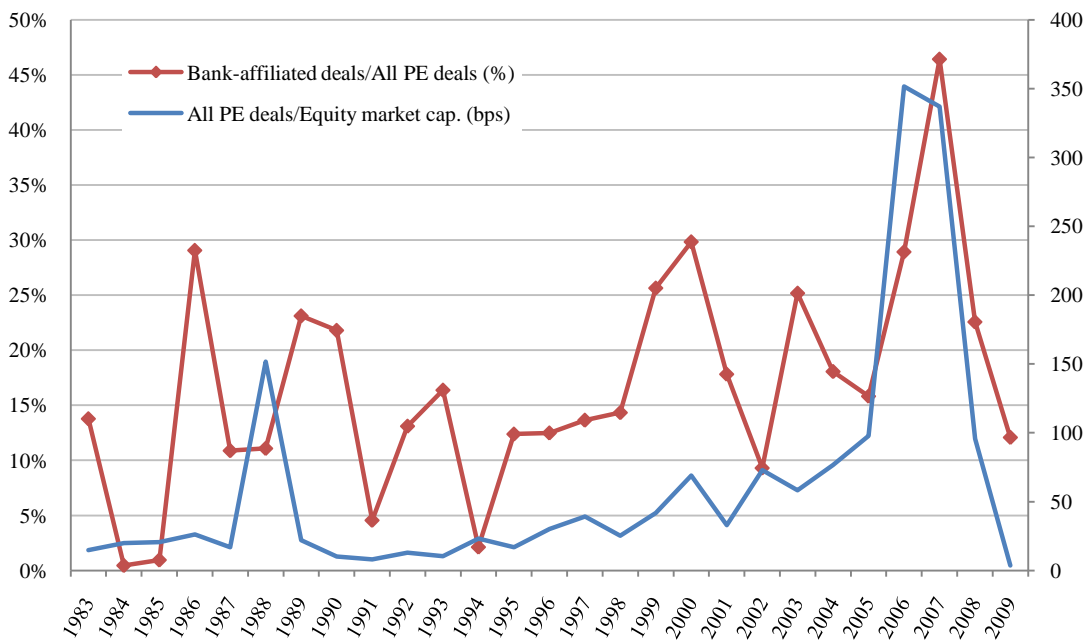
Table I
Number of Deals

This table presents deal distribution by year. *Bank-affiliated* identifies deals backed by private equity firms affiliated with a bank. *Non-affiliated* identifies deals backed by stand-alone private equity firms. *Pure* deals are deals backed by only one type (affiliated or non-affiliated) of private equity investors. *Mixed* deals are defined as deals backed by a syndication of private equity firms, where at least one of the investors is a bank-affiliated firm and at least one other investor is stand-alone firm.

Year	Bank-affiliated	Non-affiliated	Total	% Bank-affiliated	Pure	Mixed	% Mixed
1978	0	1	1	0.00%	1	0	0.00%
1979	0	1	1	0.00%	1	0	0.00%
1980	0	1	1	0.00%	1	0	0.00%
1981	0	5	5	0.00%	5	0	0.00%
1982	0	10	10	0.00%	10	0	0.00%
1983	4	20	24	16.67%	22	2	8.33%
1984	3	25	28	10.71%	24	4	14.29%
1985	4	23	27	14.81%	23	4	14.81%
1986	11	33	44	25.00%	40	4	9.09%
1987	6	33	39	15.38%	35	4	10.26%
1988	11	43	54	20.37%	48	6	11.11%
1989	6	52	58	10.34%	58	0	0.00%
1990	4	36	40	10.00%	38	2	5.00%
1991	5	47	52	9.62%	52	0	0.00%
1992	8	73	81	9.88%	73	8	9.88%
1993	7	77	84	8.33%	84	0	0.00%
1994	10	105	115	8.70%	115	0	0.00%
1995	18	154	172	10.47%	162	10	5.81%
1996	25	215	240	10.42%	220	20	8.33%
1997	58	238	296	19.59%	268	28	9.46%
1998	73	300	373	19.57%	345	28	7.51%
1999	199	595	794	25.06%	643	151	19.02%
2000	450	1,026	1,476	30.49%	1,087	389	26.36%
2001	167	435	602	27.74%	483	119	19.77%
2002	87	329	416	20.91%	362	54	12.98%
2003	136	302	438	31.05%	384	54	12.33%
2004	153	340	493	31.03%	433	60	12.17%
2005	160	319	479	33.40%	424	55	11.48%
2006	172	362	534	32.21%	464	70	13.11%
2007	197	342	539	36.55%	461	78	14.47%
2008	105	226	331	31.72%	287	44	13.29%
2009	12	43	55	21.82%	47	8	14.55%
Total	2,091	5,811	7,902	26.46%	6,700	1,202	15.21%

Table II
League Table of Private Equity Activities

This table presents deal distribution by private equity firm. *Bank-affiliated* identifies deals backed by private equity firms affiliated with a bank. There are a total of 14 bank-affiliated private equity firms in our sample. For compactness, non-affiliated sample only reports top 15 out of 51 private equity firms that are use as a control sample.

Panel A: Deal distribution by PE firm, equally-weighted

Rank	Bank-affiliated sample			Non-affiliate sample (Top 15)		
	Sponsor name	Number of deals	Percent of total	Sponsor name	Number of deals	Percent of total
1	Goldman Sachs Capital Partners	684	29.17%	Oak Investment Partners	1,026	12.62%
2	JPMorgan Capital	341	14.54%	TA Associates Inc	544	6.69%
3	CSFB Private Equity	294	12.54%	Warburg Pincus	485	5.97%
4	Citigroup Private Equity	279	11.90%	Sprout Group	414	5.09%
5	Lehman Brothers Merchant Banking	197	8.40%	Bain Capital	334	4.11%
6	Wachovia Partners	167	7.12%	Carlyle Group	298	3.67%
7	Deutsche Bank Capital Markets	162	6.91%	Harbour Group	295	3.63%
8	Wasserstein & Co	87	3.71%	Technology Crossover Ventures	289	3.56%
9	Merrill Lynch Capital Partners	59	2.52%	Advent	285	3.51%
10	Morgan Stanley Private Equity	37	1.58%	Summit Partners	248	3.05%
11	CCMP Capital Advisors	18	0.77%	J H Whitney & Co	241	2.97%
12	Macquarie Funds Management	9	0.38%	TPG	222	2.73%
13	Diamond Castle	8	0.34%	General Atlantic LLC	205	2.52%
14	DLJ Merchant Banking	3	0.13%	Blackstone Group	177	2.18%
15	--	--	--	KKR & Co	154	1.89%
	Total	2,345	100.00%	Total (full sample)	8,127	100.00%

Table II - continued

Panel B: Deal distribution by PE firm, value-weighted (million USD)

		Bank-affiliated sample			Non-affiliated sample (Top 15)		
Rank	Sponsor name	Total transactions value	Percent of total		Sponsor name	Total transactions value	Percent of total
1	Goldman Sachs Capital Partners	259,595.50	36.01%		KKR & Co	291,840.00	15.70%
2	Citigroup Private Equity	124,967.70	17.34%		TPG	253,524.80	13.64%
3	Lehman Brothers Merchant Banking	88,477.70	12.27%		Blackstone Group	222,870.70	11.99%
4	Merrill Lynch Capital Partners	84,210.65	11.68%		Bain Capital	139,631.50	7.51%
5	Deutsche Bank Capital Markets	45,711.64	6.34%		Carlyle Group	133,948.80	7.21%
6	JPMorgan Capital	28,428.82	3.94%		Thomas H Lee Trust	97,397.17	5.24%
7	Wachovia Partners	23,117.23	3.21%		Apollo Partners	90,544.53	4.87%
8	CSFB Private Equity	22,968.51	3.19%		Providence Equity Partners	75,746.80	4.07%
9	CCMP Capital Advisors	15,422.23	2.14%		Madison Dearborn Partners	65,030.27	3.50%
10	Macquarie Funds Management	12,082.77	1.68%		Warburg Pincus LLC	52,167.19	2.81%
11	DLJ Merchant Banking	5,452.64	0.76%		Silver Lake	34,511.41	1.86%
12	Wasserstein & Co	4,651.38	0.65%		Welsh Carson Anderson & Stowe	33,665.60	1.81%
13	Diamond Castle	3,502.42	0.49%		Clayton Dubilier & Rice Inc	31,518.00	1.70%
14	Morgan Stanley Private Equity	2,304.28	0.32%		Hillman & Freeman Co	30,172.36	1.62%
15	--	--	--		Oak Investment Partners	30,096.46	1.62%
	Total	720,893.47	100.00%		Total (Whole Sample)	1,858,825.30	100.00%

Table III
Deal Distribution by Industry

This table presents deal distribution by industrial sector. We use Capital IQ to identify sector for each transaction. *Bank-affiliated* identifies deals backed by private equity firms affiliated with a bank. *Non-affiliated identifies* deals backed by stand-alone private equity firms. We first calculate industry distribution for each individual private equity firm. We then average and report the mean distribution for each type (affiliated or non-affiliated) of investor. The t-stat is based on the cross-section of individual firms in each sample. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Sector	Equally-weighted				Value-weighted			
	Bank-affiliated sample	Non-affiliated sample	Diff. *t*-stat		Bank-affiliated sample	Non-affiliated sample	Diff. *t*-stat	
Consumer Discretionary	12.4%	17.7%	-1.78	*	16.5%	23.0%	-0.71	
Consumer Staples	1.2%	3.6%	-2.97	***	1.1%	4.2%	-2.43	**
Energy	4.2%	6.2%	-0.62		5.2%	7.1%	-0.43	
Financials	7.2%	5.5%	0.66		16.4%	7.9%	1.86	*
Healthcare	13.6%	9.8%	1.00		14.1%	7.8%	1.10	
Industrials	10.0%	9.4%	0.28		7.1%	12.5%	-1.41	
Information Technology	38.5%	35.8%	0.65		14.8%	20.4%	-1.01	
Materials	2.0%	3.2%	-1.49		1.8%	3.8%	-1.51	
Telecommunication Services	4.5%	6.6%	-1.07		3.9%	7.2%	-1.69	
Utilities	6.4%	2.1%	1.16		19.2%	6.0%	1.77	

Table IV
Financing Terms

This table examines financing terms—amount, maturity and spread paid over LIBOR—on the loans baking the private equity transactions. Loan data comes from DealScan and covers 1993-2008 period. Each observation in the sample corresponds to a different transaction. *Bank-affiliated* is a dummy equal to 1 if the deal is backed by a private equity firm affiliated with a bank. Pure private equity deals constitute the omitted category in the analysis. *Mixed type deal* is a dummy equal to 1 if the deal is backed by a syndication of private equity firms, where at least one of the investors is a bank-affiliated firm and at least one other investor is a stand-alone firm (*Bank-affiliated* and *Mixed type* are not mutually exclusive). *Parent bank in syndicate* is a dummy equal to 1 if the parent bank of the bank-affiliated private equity sponsor is on the lending syndicate. We only count lenders participate in the first and second tier of the lending syndicate. *Investment grade* is a dummy equal to 1 if borrower's is BBB or higher. Target and transaction data was compiled from Capital IQ. *No financial data* is a dummy equal to 1 if no target or transaction data is available. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Full sample, 1993-2008

Dependent variable:	LBOs and growth capital deals							LBOs only						
	Loan amount			Loan maturity			Loan spread			Loan amount			Loan maturity			Loan spread		
	Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat	
Bank-affiliated	-100.70	-1.24		-1.95	-3.69	***	15.37	1.88	*	-41.35	-0.15		-0.08	-0.27		4.22	0.20	
Mixed type deal	1,231.46	8.18	***	5.66	5.79	***	2.62	0.17		1,197.49	3.43	***	-0.39	-0.97		7.38	0.27	
Parent bank in syndicate	556.91	4.30	***	4.26	5.06	***	-33.30	-2.56	**	1,209.20	3.22	***	0.62	1.45		-64.42	-2.18	**
Investment grade	220.93	1.05		-1.88	-1.38		-50.31	-2.38	**	1,380.83	2.30	***	0.12	0.17		-44.70	-0.95	
Log(Transaction value)	215.69	10.90	***	-0.02	-0.16		-10.10	-5.08	***	216.66	7.78	***	0.12	3.81	***	-9.20	-4.20	***
EV/EBITDA	6.47	0.88		-0.07	-1.40		-0.20	-0.27		-0.33	-0.03		-0.02	-1.76	*	-0.36	-0.48	
Log(Target assets)	143.58	12.49	***	0.31	4.14	***	-9.56	-8.27	***	145.63	4.43	***	0.05	1.23		-6.05	-2.34	**
EBITDA/Sales	1,771.02	3.74	***	-0.40	-0.13		13.78	0.29		1,990.73	2.80	***	-0.14	-0.18		-65.87	-1.18	
No financial data	854.52	4.71	***	1.39	1.18		-37.38	-2.05	**	925.22	3.25	***	-0.16	-0.49		-25.57	-1.14	
Fixed effects:																		
Sector	Yes			Yes			Yes			Yes			Yes			Yes		
Year	Yes			Yes			Yes			Yes			Yes			Yes		
Observations	2,105			2,105			2,105			2,105			2,105			2,105		
R-squared	0.33			0.05			0.20			0.43			0.11			0.21		

Table IV - continued

Panel B: Effect of the Gramm-Leach-Bliley Act

	Before Gramm-Leach-Bliley Act (1988-1999)									After Gramm-Leach-Bliley Act (2000-2008)								
Dependent variable:	Loan amount			Loan maturity			Loan spread			Loan amount			Loan maturity			Loan spread		
	Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat	
Bank-affiliated	8.62	0.23		-0.44	-1.49		11.39	1.52		-108.12	-0.93		-2.50	-3.28	***	16.15	1.41	
Mixed type deal	-199.37	-0.82		1.25	0.65		11.00	0.22		1,134.86	6.14	***	5.68	4.69	***	8.99	0.49	
Parent bank in syndicate	151.50	1.99	**	2.11	3.49	***	-3.15	-0.21		571.97	3.32	***	4.88	4.32	***	-38.29	-2.25	**
Investment grade	158.69	1.80	*	-0.68	-0.97		-3.11	-0.17		408.86	1.30		-2.79	-1.35		-85.49	-2.75	***
Log(Transaction value)	92.12	7.70	***	0.27	2.80	***	-2.27	-0.94		245.14	9.25	***	-0.05	-0.27		-11.81	-4.51	***
EV/EBITDA	5.51	1.89	*	-0.03	-1.15		-0.69	-1.17		13.42	1.15		-0.12	-1.53		-0.02	-0.01	
Log(Target assets)	32.68	5.89	***	0.03	0.66		-6.25	-5.59	***	186.43	11.53	***	0.42	3.94	***	-10.93	-6.85	***
EBITDA/Sales	1,408.72	6.05	***	1.13	0.61		-28.42	-0.61		2,081.97	3.09	***	-2.00	-0.45		19.28	0.29	
No financial data	451.97	5.20	***	-0.45	-0.65		-38.55	-2.20	**	1,253.11	4.80	***	1.82	1.06		-45.46	-1.76	*
Fixed effects:																		
Sector	Yes			Yes			Yes			Yes			Yes			Yes		
Year	Yes			Yes			Yes			Yes			Yes			Yes		
Observations	694			694			694			1,411			1,411			1,411		
R-squared	0.27			0.05			0.16			0.34			0.06			0.10		

Table V
Bank-affiliated Privet Equity Spin-offs

This table examines financing terms for the private equity transactions done by firms that were spun-off from a bank holding company. The variable of interest is *After spin-off* equal to 1 in the years following private equity firm separation from the bank holding company. The interaction term, *Parent bank in syndicate*After spin-off*, captures the incremental effect of the spin-off on having the parent bank on the lending syndicate. The rest of the variables are defined Table IV. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Dependent variable:	Loan amount			Loan maturity			Loan spread		
	Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat	
Mixed type deal	988.35	3.09	***	4.31	2.49	**	11.58	0.48	
Parent bank in syndicate	204.46	0.95		2.14	1.83	*	-17.85	-1.09	
After spin-off	-349.04	-0.99		-0.85	-0.45		44.17	1.64	
Parent bank in syndicate*After spin-off	-155.19	-0.25		-0.7	-0.21		-19.28	-0.41	
Investment grade	781.48	0.93		-1.58	-0.35		-99.77	-1.55	
Log(Transaction value)	525.31	5.47	***	-0.4	-0.77		-15.68	-2.14	**
EV/EBITDA	-7.08	-0.26		-0.03	-0.21		0.35	0.17	
Log(Target assets)	182.33	5.18	***	0.41	2.17	**	-12.3	-4.59	***
EBITDA/Sales	12,836.51	5.51	***	-1.19	-0.09		190.76	1.07	
No financial data	2,918.11	3.46	***	3.21	0.7		-69.27	-1.08	
Fixed effects:									
Sector	Yes			Yes			Yes		
Year	Yes			Yes			Yes		
Observations	445			445			445		
R-squared	0.49			0.06			0.25		

Table VI
Transaction and Target Characteristics

This table compares information for targets and transactions for private equity firms affiliated (case) and unaffiliated (control) with a bank. The data was compiled from Capital IQ. *Bank-affiliated* is a sample of deals backed by private equity firms affiliated with a bank. *Mixed deals* are defined as deals backed by a syndication of private equity firms, where at least one of the investors is a bank-affiliated firm and at least one other investor is stand-alone firm. *Parent bank in syndicate* is a sample of bank-affiliated deals where the parent bank of the private equity sponsor is on the lending syndicate. Standard deviations are reported in parenthesis; for differences in means we report *t*-statistics.

	Full sample						Excluding mixed deals					
	Bank-affiliated sample	Non-affiliated sample		Parent bank in syndicate	Parent bank not in syndicate		Bank-affiliated sample	Non-affiliated sample		Parent bank in syndicate	Parent bank not in syndicate	
	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.
	(A)	(B)	(A-B)	(C)	(D)	(C-D)	(E)	(F)	(E-F)	(G)	(H)	(G-H)
Transaction characteristics:												
Transaction size	346.58	285.05	61.53	8,000.11	236.98	7763.13	157.29	210.63	-53.3342	2440.14	132.17	2,307.97
	(2,590.67)	(1,830.23)	(1.01)	(10,398.10)	(2,094.16)	(5.17)	(1,407.68)	(1,209.11)	(-1.26)	(4,976.41)	(1,261.58)	(1.85)
Cash portion	0.85	0.86	-0.01	0.86	0.85	0.01	0.85	0.85	0.00	0.87	0.85	0.02
	(0.24)	(0.23)	(-0.30)	(0.15)	(0.25)	(0.28)	(0.25)	(0.24)	(-0.02)	(0.19)	(0.26)	(0.35)
EV/Sales	2.89	2.37	0.52	2.81	2.81	0.00	2.60	2.28	0.32	4.17	2.20	1.97
	(3.02)	(3.38)	(1.45)	(2.87)	(2.90)	(0.01)	(3.33)	(3.63)	(0.64)	(5.02)	(2.77)	(1.14)
EV/EBITDA	11.64	14.33	-2.69	18.44	10.32	8.12	9.98	14.44	-4.46	14.12	9.06	5.06
	(8.87)	(22.56)	(-1.76)	(19.79)	(5.40)	(2.24)	(5.67)	(24.61)	(-2.68)	(5.03)	(5.39)	(2.58)
Equity/NI	42.29	71.16	-28.87	49.97	42.12	7.85	49.17	80.47	-31.30	38.98	50.70	-11.72
	(73.29)	(369.12)	(-1.37)	(56.67)	(81.65)	(0.53)	(92.95)	(415.07)	(-1.10)	(22.82)	(101.53)	(-0.62)

Table VI-continued

	(A)	(B)	(A-B)	(C)	(D)	(C-D)	(E)	(F)	(E-F)	(G)	(H)	(G-H)
Target characteristics:												
Total asset	1,037.57	1,791.17	-753.6	8,612.42	754.16	7,858.26	517.83	1,622.74	-1104.91	2,192.83	539.19	1,653.64
	(3,988.43)	(7,341.81)	(-2.66)	(11,279.22)	(3,042.40)	(3.93)	(2,128.51)	(7,830.78)	(-3.71)	(4,241.68)	(2,273.98)	(1.17)
Sales	1,656.66	1,024.14	632.52	4,429.86	1,544.31	2,885.55	1,664.45	909.26	755.19	638.08	1692.33	-1,054.25
	(23,738.95)	(5,303.03)	(0.64)	(5,706.76)	(24,331.76)	(2.18)	(27,125.01)	(5,654.99)	(0.58)	(423.56)	(27,101.97)	(-0.82)
Debt/Assets	0.32	0.33	-0.01	0.25	0.33	-0.07	0.33	0.34	-0.02	0.28	0.33	-0.05
	(0.76)	(0.39)	(-0.11)	(0.22)	(0.78)	(-1.43)	(0.84)	(0.41)	(-0.41)	(0.22)	(0.84)	(-0.59)
Debt/EBITDA	3.41	14.66	-11.25	4.62	3.41	1.21	3.65	18.60	-14.95	3.12	3.63	-0.51
	(18.11)	(260.83)	(-1.39)	(8.99)	(18.40)	(0.68)	(20.37)	(302.16)	(-1.38)	(3.50)	(20.25)	(-0.34)
Cash/Assets	0.31	0.23	0.08	0.04	0.32	-0.28	0.31	0.20	0.11	0.04	0.32	-0.28
	(0.30)	(0.26)	(5.46)	(0.06)	(0.30)	(-16.47)	(0.30)	(0.24)	(6.77)	(0.07)	(0.30)	(-10.20)
EBITDA/Assets	0.66	0.39	0.27	0.15	0.68	-0.53	0.70	0.34	0.35	0.15	0.70	-0.55
	(1.34)	(0.83)	(4.35)	(0.08)	(1.36)	(-8.82)	(1.44)	(0.83)	(4.69)	(0.07)	(1.44)	(-7.61)
EBITDA/Net assets	2.55	1.06	1.49	0.16	2.65	-2.49	2.77	0.75	2.02	0.16	2.76	-2.60
	(10.47)	(3.31)	(3.27)	(0.09)	(10.66)	(-5.40)	(11.61)	(2.19)	(3.60)	(0.09)	(11.55)	(-4.73)
EBITDA/Sales	0.26	0.22	0.04	0.19	0.27	-0.08	0.25	0.21	0.04	0.27	0.25	0.02
	(0.22)	(0.20)	(3.03)	(0.14)	(0.23)	(-2.67)	(0.22)	(0.20)	(2.36)	(0.19)	(0.22)	(0.31)
NI/Sales	0.24	0.16	0.08	0.07	0.25	-0.18	0.24	0.15	0.09	0.08	0.24	-0.16
	(0.26)	(0.22)	(4.81)	(0.04)	(0.27)	(-10.88)	(0.26)	(0.20)	(4.98)	(0.05)	(0.26)	(-6.65)

Table VII
Importance of Peak Years in Setting Financing Terms

This table re-examines financing terms—amount, maturity and spread paid over LIBOR—on the loans backing the private equity transactions. The sample and variables definitions are exactly the same as in Table IV. The focus is on the interaction terms with the *Peak year* dummy. In the specifications including all peak periods, *Peak year* is equal to 1 for 1998-2000, 2005-2007 years and 0 otherwise. In the specifications including only 2005-2007 peak period, *Peak year* is equal to 1 for 2005-2007 years and 0 otherwise. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Dependent variable:	All peak periods									*2005-2007 peak period*								
	Loan amount			Loan maturity			Loan spread			Loan amount			Loan maturity			Loan spread		
	Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat	
Bank-affiliated	-75.03	-0.93		-1.83	-3.48	***	14.93	1.83	*	-67.20	-0.83		-1.79	-3.39	***	14.36	1.75	*
Mixed type deal	-43.63	-0.13		0.59	0.28		40.72	1.24		-61.79	-0.19		0.48	0.23		35.57	1.09	
Parent bank in syndicate	110.96	0.54		1.83	1.35		-35.46	-1.69	*	168.27	0.95		2.17	1.89	*	-20.02	-1.12	
Mixed type*Peak year	1,515.54	4.15	***	5.89	2.47	**	-48.25	-1.30		1,470.81	4.02	***	5.66	2.37	**	-36.04	-0.97	
Parent bank in syndicate*Peak year	598.95	2.44	**	3.37	2.11	**	5.31	0.21		659.60	2.81	***	3.67	2.40	**	-23.32	-0.98	
Investment grade	217.00	1.04		-1.91	-1.41		-50.59	-2.40	**	216.57	1.04		-1.89	-1.39		-50.20	-2.38	**
Log(Transaction value)	215.84	10.98	***	-0.02	-0.16		-10.14	-5.09	***	214.48	10.91	***	-0.03	-0.22		-10.05	-5.04	***
EV/EBITDA	5.04	0.69		-0.07	-1.54		-0.18	-0.24		4.67	0.64		-0.08	-1.58		-0.15	-0.20	
Log(Target assets)	141.84	12.42	***	0.30	4.04	***	-9.55	-8.26	***	141.80	12.43	***	0.30	4.05	***	-9.51	-8.23	***
EBITDA/Sales	1,899.74	4.03	***	0.13	0.04		10.27	0.22		1,894.82	4.02	***	0.09	0.03		10.66	0.22	
No financial data	895.79	4.97	***	1.54	1.31		-38.82	-2.13	**	892.20	4.95	***	1.53	1.30		-38.28	-2.10	**
Fixed effects:																		
Sector	Yes			Yes			Yes			Yes			Yes			Yes		
Year	Yes			Yes			Yes			Yes			Yes			Yes		
Observations	2,105			2,105			2,105			2,105			2,105			2,105		
R-squared	0.34			0.06			0.20			0.34			0.06			0.20		

Table VIII
Cyclicality of Bank Loan Share

This table analyses cyclicality of bank share of loan financing backing bank-affiliated private equity transactions. Sample includes transactions where parent bank is part of the lending syndicate. (Number of observations is also reduced due to availability of the dependent variable.) *Parent bank allocation* is share of the loan financed by the parent bank. For our sample the actual share is available only for 19 transactions, consequently we use predicted share when data is not available. Predicted share is computed based on lender's syndicate role, number of syndicate members, loan size, type, maturity and year using all DealScan U.S. data where bank syndicate share is not missing. *Overall bank allocation* is share of the loan funded by the banks, as opposed to non-bank institutions. Because we only count lenders participate in the first and second tier of the lending syndicate, this is an alternative proxy for parent bank share. The focus is on the *Peak year* dummy equal to 1 for 1998-2000, 2005-2007 years and 0 otherwise. The variables definitions are the same as in Table IV. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Dependent variable:	Parent bank allocation			Overall bank allocation		
	Coeff.	*t*-stat		Coeff.	*t*-stat	
Peak year	-2.58	-3.79	***	-0.06	-2.2	**
Investment grade	3.81	1.31		0.14	1.28	
Log(Transaction value)	0.10	0.26		0.00	0.2	
EV/EBITDA	-0.19	-5.02	***	0.01	3.99	***
Log(Target assets)	-0.19	-1.94	*	0.01	1.46	
EBITDA/Sales	9.47	1.43		0.6	2.4	**
No financial data	-0.74	-0.34		0.21	2.6	**
Fixed effects:						
Sector	Yes			Yes		
Observations	171			146		
R-squared	0.36			0.20		

Table IX
Exit Distribution

This table compares the frequency of different types of exits between the bank-affiliated and the unaffiliated sample. Exit outcome was compiled using Stromberg (2008) data supplemented with hand collected information from Capital IQ and SDC Platinum. Profitable exit is an indicator variable that equals 1 if the exit multiple exceeds 1 and 0 otherwise. Exit multiple is exit value divided by original transaction value. For trade-sale exits, the exit value is taken as the transaction value of the sale. For bankruptcies, exit value is taken as the assets of the firm at bankruptcy filing. For IPOs, exit value is the total IPO proceeds. Exit value information is obtained from Stromberg (2008). *t*-statistics correspond to the differences in means in the two samples. *** , ** , * indicate statistical significance at 1%, 5% and 10% level, respectively.

Type of exit:	All years				Peak years				Non-peak years			
	Bank-affiliated	Unaffiliated	*t*-stat		Bank-affiliated	Unaffiliated	*t*-stat		Bank-affiliated	Unaffiliated	*t*-stat	
IPO	0.137	0.126	0.76		0.135	0.090	2.22	**	0.141	0.153	-0.53	
Trade sale	0.725	0.728	-0.13		0.730	0.785	-2.04	**	0.719	0.684	0.25	
Bankruptcy	0.077	0.057	1.71	*	0.078	0.069	0.53		0.076	0.047	1.65	*
Profitable exit	0.626	0.740	-3.14	***	0.558	0.670	-2.22	**	0.720	0.800	-1.57	

Table X

Exit Analysis

This table presents analysis of the type of investment exit. Data on exit outcome was compiled using Capital IQ and SDC Platinum. *Investment bank* is a dummy equal to 1 if the deal is backed by a private equity firm affiliated with an investment bank. *Commercial bank* is a dummy equal to 1 if the deal is backed by a private equity firm affiliated with a commercial bank. *Mixed type deal* is a dummy equal to 1 if the deal is backed by a syndication of private equity firms, where at least one of the investors is a bank-affiliated firm and at least one other investor is a stand-alone firm. In Panel B, the focus is on the interaction terms with the *Peak period* dummy equal to 1 for transactions close in 1985-1988, 1998-2000, 2005-2007 years and 0 otherwise. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Benchmark analysis

Dependent variable (type of exit):	IPO			Trade-sale			Bankruptcy			Exit multiple			Holding years		
	Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat	
Investment bank	-0.015	-0.71		0.060	2.18	**	-0.009	-0.56		-8.878	-0.38		-0.058	-0.28	
Commercial bank	0.045	1.67	*	-0.116	-3.38	***	0.052	2.70	***	-10.199	-0.32		0.329	1.28	
Mixed type deal	-0.005	-0.24		-0.016	-0.69		0.013	0.98		3.276	0.16		-0.297	-1.66	*
Log(Transaction value)	0.011	3.26	***	-0.006	-1.41		-0.007	-2.79	***	-24.952	-4.19	***	-0.110	-3.36	***
EV/EBITDA	-0.002	-0.59		-0.005	-1.55		0.008	4.15	***	-1.970	-0.16		-0.010	-0.28	
Log(Target assets)	0.016	2.41	**	-0.044	-5.12	***	0.027	5.50	***	-3.178	-0.40		-0.110	-1.58	
EBITDA/Sales	-0.019	-0.15		-0.118	-0.70		-0.100	-1.04		35.374	0.23		-0.807	-0.55	
No financial data	-0.031	-0.54		-0.115	-1.56		0.161	3.86	***	-70.920	-0.58		-0.356	-0.56	
Fixed effects:															
Sector	Yes			Yes			Yes			Yes			Yes		
Observations	2,957			2,957			2,957			987			2,595		
R-squared	0.04			0.13			0.03			0.03			0.03		

Table X – continued

Panel B: Including peak year interaction terms

Dependent variable (type of exit):	IPO			Trade-sale			Bankruptcy			Exit multiple			Holding years		
	Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat		Coeff.	*t*-stat	
Investment bank	-0.029	-0.86		0.094	2.18	**	-0.007	-0.31		3.180	0.09		-0.149	-0.45	
Commercial bank	0.025	0.60		-0.118	-2.24	**	0.081	2.72	***	-2.584	-0.05		0.592	1.47	
Mixed type deal	0.027	0.90		-0.018	-0.49		-0.041	-1.95	*	6.703	0.21		-0.837	-2.86	***
Peak year	-0.053	-3.70	***	0.065	3.58	***	0.025	2.46	**	33.498	1.88	*	0.008	0.06	
Investment bank*Peak year	0.034	0.77		-0.070	-1.24		-0.008	-0.24		-25.999	-0.54		0.148	0.35	
Commercial bank*Peak year	0.037	0.69		0.000	-0.01		-0.050	-1.28		-13.943	-0.22		-0.432	-0.83	
Mixed type*Peak year	-0.043	-1.16		-0.006	-0.12		0.085	3.17	***	-10.328	-0.26		0.825	2.28	**
Log(Transaction value)	0.012	3.54	***	-0.007	-1.61		-0.007	-3.08	***	-25.999	-4.33	***	-0.112	-3.43	***
EV/EBITDA	-0.002	-0.67		-0.005	-1.48		0.008	4.23	***	-1.080	-0.09		-0.009	-0.25	
Log(Target assets)	0.016	2.42	**	-0.044	-5.10	***	0.027	5.47	***	-2.848	-0.36		-0.114	-1.64	
EBITDA/Sales	-0.031	-0.24		-0.108	-0.64		-0.090	-0.94		40.556	0.27		-0.693	-0.47	
No financial data	-0.036	-0.62		-0.111	-1.50		0.164	3.94	***	-66.870	-0.55		-0.335	-0.53	
Fixed effects:															
Sector	Yes			Yes			Yes			Yes			Yes		
Observations	2,957			2,957			2,957			987			2,595		
R-squared	0.04			0.13			0.04			0.03			0.04		

Table XI
Future Bank Business Allocation

This table examines the choice of banks for transactions following the original takeover— subsequent loans and exit related transactions (sale to a different firm or IPO). The empirical model is a conditional logit. Each observation is a pairing of the private equity firm with a set of potential lenders. The dependent variable is a dummy equal to 1 for the lenders chosen for the transaction and 0 otherwise. The explanatory variable of interest is *Bank-affiliated* equal to 1 if the private equity firm was affiliated with that particular lender, 0 if not. In conditional logit model, deal characteristics are not requires, however, we include lender fixed effects to account for the fact that some lenders do more deals than others. The analysis also includes industry and year fixed effects. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

	Full sample			Excluding commercial banks			Excluding Goldman Sachs		
	Coeff.	dF/dx	z-stat	Coeff.	dF/dx	z-stat	Coeff.	dF/dx	z-stat
Panel A: Lender choice									
Bank-affiliated	0.8451	0.2261	12.39 ***	1.3066	0.4081	11.41 ***	0.6761	0.1680	8.59 ***
Fixed effects:									
Lender	Yes			Yes			Yes		
Sector	Yes			Yes			Yes		
Year	Yes			Yes			Yes		
Observations	34,162			30,093			32,840		
Pseudo R^2 (%)	6.55			6.37			6.40		
Panel B: M&A advisor choice									
Bank-affiliated	0.5473	0.0739	3.91 ***	0.6966	0.1243	4.33 ***	0.3178	0.0370	1.37
Fixed effects:	Yes			Yes			Yes		
Lender	Yes			Yes			Yes		
Sector	Yes			Yes			Yes		
Year	Yes			Yes			Yes		
Observations	23,775			15,447			17,832		
Pseudo R^2 (%)	0.002			0.003			0.000		
Panel C: Underwriter choice									
Bank-affiliated	0.9891	0.1800	8.28 ***	1.0091	0.1862	7.54 ***	0.7214	0.1134	4.29 ***
Fixed effects:									
Lender	Yes			Yes			Yes		
Sector	Yes			Yes			Yes		
Year	Yes			Yes			Yes		
Observations	20,600			17,775			14,784		
Pseudo R^2 (%)	0.009			0.008			0.320		

Table XII
Relating Financing Terms with Credit Expansion

This table expands results on financing terms reported in Table VII. The focus is on the interaction terms with the bank-specific variables. The goal of these additional interaction terms is to see if the better financing terms in peak years are related to riskier activities at the bank level. The sample and variables definitions are exactly the same as in Table IV. The *Peak year* dummy is equal to 1 for 1998-2000 and 2005-2007 and 0 otherwise. In Panel A, *Expanding banks* is a dummy equal to 1 for banks that grow loan originations to non-investment grade borrowers during the corresponding peak year period as compared to the average in the three years preceding the peak. In Panel B *Expanding banks* is a dummy equal to 1 for banks that grow loan originations for restructuring purposes (including LBOs, mergers and acquisitions, and stock repurchases) in the LBO peak years as compared to the average in the three years preceding the peak. In Panel C, *Contracting banks* is a dummy equal to 1 for banks with below the median contraction in overall credit origination in the year of economic recession following the peak years. All regressions include industry and year fixed effects. ***, **, * indicate statistical significance at 1%, 5% and 10% level, respectively.

Panel A: Banks with the large expansion into non-investment grade loans

Dependent variable:	Loan amount			Loan maturity			Loan spread		
	Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat	
Bank-affiliated	-77.87	-0.94		-1.50	-2.78	***	13.21	1.58	
Mixed type deal	-38.46	-0.12		0.56	0.27		40.65	1.24	
Parent bank in syndicate	110.41	0.53		1.58	1.17		-34.04	-1.62	
Mixed type*Peak year	1,002.66	2.55	**	4.90	1.91	**	-20.74	-0.52	
Parent bank in syndicate*Peak year	1,187.93	3.74	***	7.13	3.44	***	-40.90	-1.27	
Mixed type*Peak year*Expanding banks	1,102.24	3.16	***	0.11	0.05		-47.93	-1.35	
Parent bank in syndicate*Peak year*Expanding banks	-913.43	-3.04	***	-5.39	-2.75	***	69.22	2.27	**
Control variables (Table VII)	Yes			Yes			Yes		
Observations	2,105			2,105			2,105		
R-squared	0.34			0.06			0.20		

Table XII-continued

Panel B: Banks with the large expansion into restructuring loans

Dependent variable:	Loan amount			Loan maturity			Loan spread		
	Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat	
Bank-affiliated	-105.00	-1.27		-1.43	-2.65	***	13.94	1.66	*
Mixed type deal	-34.54	-0.11		0.55	0.26		40.70	1.24	
Parent bank in syndicate	129.37	0.63		1.52	1.13		-34.61	-1.65	*
Mixed type*Peak year	857.49	2.19	**	4.60	1.80	*	-31.51	-0.79	
Parent bank in syndicate*Peak year	1,149.47	3.62	***	8.08	3.90	***	-22.55	-0.70	
Mixed type*Peak year*Expanding banks	1,547.86	4.46	***	0.43	0.19		-29.48	-0.84	
Parent bank in syndicate*Peak year*Expanding banks	-895.42	-2.97	***	-6.77	-3.45	***	41.88	1.37	
Control variables (Table VII)	Yes			Yes			Yes		
Observations	2,105			2,105			2,105		
R-squared	0.34			0.07			0.20		

Panel C: Banks with the largest post-peak credit contraction

Dependent variable:	Loan amount			Loan maturity			Loan spread		
	Coeff.	t-stat		Coeff.	t-stat		Coeff.	t-stat	
Bank-affiliated	-123.92	-1.53		-1.77	-3.33	***	16.28	1.97	**
Mixed type deal	-40.49	-0.13		0.57	0.27		40.63	1.24	
Parent bank in syndicate	141.61	0.69		1.78	1.32		-36.31	-1.73	*
Mixed type*Peak year	1,062.58	2.84	***	5.37	2.18	**	-36.05	-0.94	
Parent bank in syndicate*Peak year	672.99	2.55	**	4.42	2.55	**	3.62	0.13	
Mixed type*Peak year*Contracting banks	1,959.96	5.02	***	2.02	0.79		-52.87	-1.33	
Parent bank in syndicate*Peak year*Contracting banks	-482.49	-1.62		-3.08	-1.58		12.22	0.40	
Control variables (Table VII)	Yes			Yes			Yes		
Observations	2,105			2,105			2,105		
R-squared	0.35			0.06			0.20		