From Bridge Loans to CLOs to Private Credit: The Transformation of Pipeline Risk in LBO Financing

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March 26, 2026

Abstract

Banks transformed their exposure to leveraged buyout (LBO) financing risk after the Global Financial Crisis. Using a unique dataset of U.S. public-to-private and non-public-to-private LBOs between 2003 and 2023, we document that banks shortened commitment periods, reduced bridge loan commitments, and required more sponsor equity – while simultaneously shifting from high-yield bond financing toward covenant-lite syndicated term loans designed for collateralized loan obligations (CLOs). Banks replaced dependence on bond investors with dependence on CLO demand, building affiliated CLO channels to manage pipeline risk. Private credit funds partially offset this concentration: they expand into LBO lending when CLO issuance contracts, but this substitution remains confined to smaller buyouts and does not extend to the largest public-to-private transactions where pipeline risk is most relevant.

Keywords: Public-to-Private, LBOs, CLOs, Private Credit
JEL Classification: G21, G32, G34

We thank the seminar participants at the American University, EFI Workshop, ESADE, Frankfurt School of Finance & Management, IWH Halle, Stockholm School of Economics, Tulane University, and Bo Becker, Pierre Collin-Dufresne, Juanita González-Uribe, Ralf Meisenzahl, Emmanuel Mönch, Per Strömberg, Anil Shivdasani, Daniel Streitz, René Stulz, Annette Vissing-Jørgensen, and Yihui Wang for their comments and suggestions, as well as Jannik Callenberg, Samar Habibi, Hauke Lehnhoff, Lucas Peikert, and Idris Yahyapour, who provided excellent research assistance. Fahlenbrach gratefully acknowledges financial support from the Swiss Finance Institute. Steffen gratefully acknowledges financial support from the "Centre for European Transformation". This paper supersedes a previous version titled "Navigating New Norms: The Response of LBO Financing to Post-Crisis Regulation and Market Shifts". All errors are our own. Address correspondence to Sascha Steffen, Email: s.steffen@fs.de.

1 Introduction

In 2007, global banks had committed approximately $350 billion to finance U.S. leveraged buyout (LBO) deals. The subsequent freeze of the syndicated loan and high-yield bond markets during the Global Financial Crisis (GFC) left banks with massive "hung" commitments, triggering substantial losses.[1] The mechanism was straightforward: banks underwrote debt commitment letters for public-to-private LBOs, anticipating they would syndicate term loans and place high-yield notes with institutional investors before deal closing. When investor demand evaporated, banks were forced to retain loans or sell them at steep discounts and to honor bridge loan commitments that were never meant to stay on their balance sheets. The episode revealed a fundamental fragility in the financing of public-to-private LBOs: the dependence of bank underwriters on non-bank investors' willingness to absorb leveraged debt during the window between deal commitment and closing.

15 years later, the leveraged loan market has recovered, and public-to-private LBOs remain a significant segment of buyout activity, with a median deal volume of $2 billion. Yet, the 2020 COVID-19 shock and the 2022 Ukraine war produced similar episodes of market stress, with banks again grappling with prior LBO commitments. By the end of 2022, Wall Street banks were stuck with roughly $40 billion in unfunded loan commitments (Bloomberg News, 2022). This déjà vu raises an intriguing question: have the structural changes in LBO financing since the GFC genuinely reduced the fragility of bank underwriting, or have they merely transformed it?

We argue that the answer is the latter. Using a unique dataset of 445 U.S. public-to-private LBOs between 2003 and 2021, assembled from six databases including hand-collected SEC filings, we document a comprehensive restructuring of LBO financing that,

[1] Bruche et al. (2020) document significant pipeline risk for banks due to their LBO-related commitments, which encumbered bank capital and reduced (non-LBO) real sector lending. Ivashina and Scharfstein (2010) show that bank commitments via credit lines also substantially impaired bank balance-sheets during the GFC.

at first glance, appears to reflect prudent bank lending. Commitment periods shortened. Bridge loan commitments declined sharply. Private equity sponsors contributed substantially more equity. Each of these adjustments directly addresses the specific vulnerabilities that materialized during the GFC. Yet, these adaptations coexist with changes that create new forms of pipeline risk: banks dramatically increased their reliance on syndicated term loans at the expense of high-yield bond financing, structured these loans as covenant-lite to maximize their appeal to institutional investors (see Becker & Ivashina, 2016), and became critically dependent on a single investor class – collateralized loan obligations (CLOs) – to absorb the expanded supply of syndicated debt.[2] In short, banks solved the bridge-loan problem of 2007 by building a larger syndication pipeline that depends on sustained CLO demand.

We organize our analysis around a distinction between two hypotheses. The *risk reduction hypothesis* posits that banks internalized the lessons of the GFC and adapted their underwriting to lower their aggregate exposure to market frictions. The *risk transformation hypothesis* posits that banks shifted from one form of market-dependent pipeline risk – exposure to high-yield bond investor demand through bridge loan commitments – to another – exposure to CLO investor demand through larger syndicated term loan underwriting. Under the risk transformation hypothesis, the post-GFC equilibrium may appear more stable during normal times while harboring new fragilities that emerge when CLO demand contracts.[3]

Our evidence supports the risk transformation hypothesis. We document the adaptations in four steps. First, at the deal level, we show that banks reduced their exposure

[2] This dependence parallels the pre-GFC dynamic documented by Shivdasani and Wang (2011), who show that CLO growth fueled the earlier LBO boom. The post-GFC shift we document replaces one form of securitization-driven fragility with another.

[3] Several studies document channels through which CLO demand can become fragile. Fleckenstein (2023) shows that intermediary frictions generate cyclicality in CLO issuance. Kundu (2023) demonstrates that CLO covenant triggers can kindle fire sales with spillovers to unrelated borrowers. Acharya et al. (2025) show that fragility in the non-bank market impacts bank funding conditions of borrowers financed by non-banks.

along the dimensions that proved costly during the GFC. The commitment period shortened by 26 days, or 14% relative to the pre-crisis mean. The probability of bridge loan commitments fell by 15 percentage points. PE equity contributions rose by 9.4 percentage points, a 31% increase. These changes are economically large and robust to controls for target firm characteristics, macroeconomic conditions, and industry, rating, and lead arranger fixed effects. Importantly, unlike the pre-GFC period documented by Axelson et al. (2013), where LBO leverage appeared driven predominantly by market sentiment, we find that firm characteristics significantly predict LBO financing structures throughout our sample period, suggesting a more disciplined approach to underwriting.

Second, at the loan level, we document the corresponding build-up of new pipeline risk. The share of term loan B financing in total deal debt increased by 16 percentage points, a 37% increase that largely offsets the reduction in bond financing. Term loans B became 38 percentage points more likely to be covenant-lite post-GFC, making them more investable for CLOs but less monitored (Berlin et al., 2020). Banks priced these structural changes: the all-in-spread-drawn increased by 93 basis points across all loan types, a near 30% increase, with particularly large increases for term loans A (retained on balance sheet) and bridge loans. The pricing evidence suggests that banks are aware of the residual risk but have chosen to manage it through compensation rather than avoidance.

Third, we show that banks built specific institutional infrastructure to manage the new pipeline risk. Post-GFC, the probability that term loans B are sold to CLOs increased by 33 percentage points. Banks also leveraged relationship networks: when a CLO affiliated with the deal's PE sponsor purchased the LBO's debt, the share of term loan B financing increased by 15 percentage points, an effect that is entirely concentrated in the post-GFC period. This affiliated CLO channel suggests that banks cultivated captive demand within the CLO market to ensure their expanded syndicated loan pipeline could clear –

a rational response to pipeline risk, but one that introduces potential conflicts of interest and concentrated counterparty exposure (see Fleckenstein et al., 2025, on conflicts in nonbank lending). Banks also adjusted their syndication practices: loan term flexes became 21 percentage points more likely, and price flexes 33 percentage points more likely, indicating a greater reliance on primary market price discovery to match supply and demand.

Fourth, we examine the role of regulation and supervision in shaping these adaptations. Banks supervised under the Large Institution Supervision Coordinating Committee (LISCC) are, at baseline, more exposed to bridge loan risk.[4] Following the clarification of the Guidance on Leveraged Lending in 2014 (see Kim et al., 2018), LISCC banks significantly reduced bridge loan commitments (by 46 percentage points) and increased term loan B financing (by 22 percentage points). These effects are substantially larger than the unconditional post-GFC changes, indicating that regulatory pressure accelerated the substitution of one pipeline risk for another rather than achieving an overall reduction in risk exposure – consistent with the broader pattern of regulatory arbitrage between bank and non-bank sectors (Chernenko & Scharfstein, 2025).

We complement our analysis of the detailed committed and realized financing structures of public-to-private LBOs with a broader examination of the role of private credit in the LBO market. A natural question is whether the rapid post-GFC growth of private credit – from a niche mezzanine product to a market competing with syndicated loans in size (see Block et al., 2024; Ivashina, 2025, for an overview) – has reduced banks' exposure to the pipeline risk we document, or whether the two financing channels serve structurally different segments of the buyout market. Using PitchBook data on both public-to-private (499 deals) and non-public-to-private (3,120 deals) LBOs between 2003

[4] The Board of Governors of the Federal Reserve System (Board) established the "Large Institution Supervision Coordinating Committee" (LISCC) Program in 2010. The LISCC Program coordinates the Federal Reserve's supervision of large financial institutions that pose the greatest risk to U.S. financial stability.

and 2023, we show that the answer depends critically on the state of the CLO market.

We document three sets of results. First, the LBO market is segmented by deal size. Private credit funds have become the dominant financiers of smaller, non-public-to-private buyouts (consistent with the stylized facts established by Jang, 2022), where they now match or exceed the volume of bank-financed deals. However, private credit plays a limited role in public-to-private LBOs, where larger financing packages are likely to continue favoring bank underwriting. A one-standard-deviation increase in log deal size reduces the probability of private credit financing by 6.8 percentage points in the public-to-private market.

Second, bank- and private credit-financed LBOs differ sharply in their debt structures. Private credit deals carry substantially less syndicated term loan B debt – 37 percentage points less in the public-to-private market and 21 percentage points less in the non-public-to-private market – consistent with the finding by Haque et al. (2025) that private debt substitutes for banks' riskier term loans but complements their provision of credit lines. More strikingly, the prevalence of covenant-lite structures has reversed between the two channels. Pre-crisis, private credit deals were more likely to include covenant-lite loans, reflecting their concentration in subordinated tranches. Post-GFC, this pattern reverses. Bank-financed deals are now significantly more likely to be covenant-lite, consistent with the deliberate restructuring of syndicated loans to maximize CLO investability. Private credit lenders, holding concentrated positions, increasingly demand maintenance covenants that facilitate early intervention.[5]

Third, and most importantly, private credit actively expands into CLO lending when the CLO-dependent syndication channel tightens. Following Hinzen et al. (2026), we

[5] Jang et al. (2025) show that direct lenders employ a distinct lending technology centered on PE-backed, intangible-capital-intensive firms. Rintamäki and Steffen (2026) document that even when private credit contracts include apparent flexibility mechanisms such as payment-in-kind provisions, these primarily function as forbearance tools rather than efficient liquidity instruments, suggesting that the shift toward maintenance covenants reflects genuine monitoring capacity rather than merely formal covenant differences.

replace the binary post-GFC indicator with a continuous measure of trailing CLO issuance and show that a decline in CLO issuance significantly increases the probability that an LBO is financed by private credit. In the non-public-to-private market, higher CLO issuance directly enables larger syndicated loan pipelines and covenant-lite structures. Private credit thus substitutes for syndicated loans when bank pipeline risk is most likely to materialize. This substitution, however, remains incomplete. It is concentrated in smaller deals and does not extend to the largest public-to-private transactions where pipeline risk is most relevant. The net implications for financial stability are ambiguous: while private credit funds are far more equity-financed and exhibit little maturity mismatch relative to banks, and stress simulations suggest limited systemic risk under current configurations (Chernenko & Scharfstein, 2025), the incomplete substitution we document means that the largest and most systemically relevant LBO transactions remain exposed to CLO-dependent pipeline risk without a viable private credit backstop.

Related literature. Our paper contributes to different strands of the literature. First, we contribute to the literature on LBO financing and bank pipeline risk. Kaplan and Stein (1993) document that late-1980s buyouts relied on increasingly aggressive junk bond financing, leading to widespread financial distress when credit conditions reversed. Axelson et al. (2013) show that buyout leverage is driven primarily by credit market conditions rather than firm fundamentals, while Haddad et al. (2017) argue that aggregate discount rates explain the majority of variation in buyout activity. Bruche et al. (2020) develop a framework in which lead arrangers bear "pipeline risk": they commit to financing terms before syndication and retain larger shares of loans that prove difficult to place. Ivashina and Scharfstein (2010) document the sharp contraction in bank lending during the 2008 crisis. We extend this literature by documenting how pipeline risk has transformed after the crisis. Banks replaced dependence on bond investor demand with dependence on CLO demand, shortened commitment windows, and abandoned bridge

loan structures – reducing certain dimensions of risk while concentrating the remaining exposure in a different investor channel.

Second, we contribute to the literature on the leveraged loan market and CLOs. Shivdasani and Wang (2011) show that the growth of the securitization market fueled the pre-GFC LBO boom. Ivashina and Sun (2011) document that institutional demand pressure lowers loan spreads; Benmelech et al. (2012) argue that syndicate structure reduces adverse selection in CLO securitization. On CLO fragility, Cordell et al. (2023) find that CLOs are resilient due to their closed-end structure, while Kundu (2023) shows that CLO covenant triggers can kindle fire sales with spillovers to unrelated borrowers. Fleckenstein (2023) quantifies how intermediary frictions contribute to CLO issuance cyclicality. On the contractual side, Becker and Ivashina (2016) link the rise of covenant-lite loans to changes in the institutional investor base; Ivashina and Vallée (2023) study the sources of contractual complexity in leveraged loans; and Bräuning et al. (2025) show that incurrence covenants in leveraged loans have sizeable real effects. Berlin et al. (2020) demonstrate that control rights remain concentrated with revolving lenders even in covenant-lite syndicates, and Badoer et al. (2024) find that PE sponsor reputation substitutes for formal covenant protection. We contribute to this literature by documenting a structural shift from bond to syndicated loan financing in LBOs, showing that the post-GFC rise of covenant-lite structures was part of a deliberate restructuring to maximize CLO investability of term loans B, and identifying an affiliated CLO channel through which PE sponsors with CLO-managing affiliates shape deal-level debt structures.

Third, our comparison of public-to-private and non-public-to-private LBO markets contributes to the rapidly expanding literature on private credit. Ivashina (2025) provides a comprehensive overview of the private credit market and identifies channels through which its growth may affect financial stability. Jang et al. (2025) document that direct lenders employ a distinct lending technology, serving primarily PE-backed firms

in intangible-capital-intensive industries, and are not a general substitute for banks in middle-market lending. Block et al. (2024) provide foundational evidence on LBO financing by private credit funds, while Jang (2022) establishes key stylized facts about direct lending to middle-market buyouts. On the interaction between bank and private debt, Haque et al. (2026) show that private debt substitutes for banks' riskier term loans but complements their provision of credit lines, a nuanced pattern consistent with the segmentation we document at the LBO deal level. On financial stability, Chernenko and Scharfstein (2025) use stress simulations to show that private credit funds pose limited systemic risk under current balance-sheet configurations, and Matvos et al. (2026) document that private credit funds are far more equity-financed than banks and exhibit little maturity mismatch. Jang and Rosen (2025) examine whether direct lenders amplify credit cycles, while Hinzen et al. (2026) show that private credit issuance is countercyclical relative to the broadly syndicated loan market, with firms switching to direct lending when syndicated loan conditions tighten. Davydiuk et al. (2024) document that market discipline functions effectively in the direct lending space despite the absence of banking regulation. On contractual practices, Rintamäki and Steffen (2026) show that payment-in-kind provisions in private credit primarily serve as forbearance mechanisms rather than efficient liquidity tools, raising questions about credit quality monitoring in direct lending. We contribute to this literature by documenting a CLO-market-dependent substitution pattern: private credit expands into bank territory, specifically when CLO issuance contracts, providing a partial safety valve for the leveraged buyout market. This substitution, however, remains concentrated in smaller, non-public-to-private transactions and does not extend to the largest deals where pipeline risk is most acute.

The remainder of the paper is organized as follows. Section 2 provides institutional details on public-to-private LBOs and their funding structures, highlighting the key friction of pipeline risk. Section 3 describes our data construction and summary statistics.

Section 4 outlines our empirical framework. Section 5 documents the post-GFC changes in deal-level structures and loan-level underwriting, presenting evidence for both risk reduction and risk transformation. Section 6 examines the syndication channel and the role of CLOs, including the affiliated CLO mechanism. Section 7 assesses the impact of regulation and supervision. Section 8 analyzes the role of private credit in both public-to-private and non-public-to-private LBO markets. Section 9 concludes.

2 Institutional details on public-to-private LBOs and their funding structures

The following sections describe the central friction in the financing of public-to-private LBOs – pipeline risk – and how the instruments through which this risk materializes have changed since the GFC. We first explain how lead arranger exposure arises and why traditional remedies failed during the crisis. We then compare two representative deals, one pre- and one post-GFC, to illustrate both the risk-reducing and risk-transforming changes that we formalize in our subsequent empirical analysis.

2.1 Pipeline risk in public-to-private LBOs

In a typical public-to-private LBO, a consortium of banks, known as lead arrangers, extends a debt commitment letter to the private equity sponsors upon a deal's announcement. This commitment, required to demonstrate the transaction's financial viability, often comprises multiple components, including credit lines, term loans destined for syndication, and bridge loans serving as backstop financing if the issuance of high-yield notes fails. While these commitments are firm, lead banks anticipate and typically succeed in significantly reducing their exposure by syndicating term loans and selling high-yield notes to institutional investors at deal consummation.

The key friction lies in the time lag between the commitment date and the deal's closing. During this interim period – which averaged 206 days pre-GFC in our sample – banks bear the full risk of their commitments while market conditions can deteriorate. If investor demand weakens between commitment and closing, banks are unable to offload the debt at the anticipated terms, creating what we refer to as *pipeline risk*: the exposure of lead arrangers to the willingness and capacity of non-bank investors to absorb leveraged debt. Crucially, the form of pipeline risk depends on the composition of the debt package and the identity of the target investors. Pre-GFC, pipeline risk was concentrated in banks' dependence on high-yield bond investors, channeled through bridge loan commitments that served as backstop financing for bond issuance. As we will document, post-GFC pipeline risk shifted toward dependence on leveraged loan investors – primarily CLOs – channeled through larger syndicated term loan underwriting.

Appendix Table A1, based on Fitch Ratings (2007), illustrates the magnitude of pre-GFC pipeline risk. Large banks' exposure in the 2007 leveraged loan market, termed the "forward calendar," was enormous. Large financial institutions such as Citigroup, JP-Morgan Chase, and Bank of America collectively bore approximately a third of the total exposure from the top 20 LBO deals pending during the 2007 market freeze. Culp (2013) succinctly highlights banks' conundrum during this period. Traditional crisis responses – reducing exposure, enhancing deal terms to boost investor demand, or reneging on commitments – proved inadequate in 2007/2008. Few loans underwent renegotiation because the crisis was not deemed a material adverse event (MAE), thereby preventing the activation of MAE clauses. Consequently, lead arrangers, bound by their firm commitments, faced a dilemma: either retain and restructure the forward calendar loans, thereby augmenting their risk exposure, or offload loans at substantial losses, either through hefty original issue discounts (OID) or in secondary markets at deflated prices.

The GFC experience thus exposed two distinct vulnerabilities: first, the sheer size of

banks' committed exposure during the pipeline period; and second, their dependence on a specific class of non-bank investors – high-yield bond buyers – whose demand proved fragile under stress. Our analysis will show that post-GFC adaptations addressed the first vulnerability more effectively than the second.

2.2 From bonds to syndicated loans: financing structures pre- and post-GFC

Table 1 compares the financing structures of two representative public-to-private LBOs, one preceding and the other succeeding the GFC. Panel A shows the financing package for the privatization of HUB International on June 13, 2007, arranged by Apax Partners and Morgan Stanley. Panel B displays the financing package for the acquisition of Albany Molecular Research by GTCR and Carlyle Group on August 31, 2017.

Both transactions utilize similar debt instruments – term loans A and B and a revolving credit facility – with a pronounced skew toward term loans B, i.e., syndicated debt. However, the 2017 deal illustrates the dual nature of post-GFC changes on LBO financing.

On the risk reduction side, the private equity sponsors injected substantially more equity ($995mn versus $724mn, despite a comparable deal size), a broader consortium of six banks underwrote the deal (versus two), the commitment period contracted (166 versus 200 contractual days), and no bridge loan commitment was required. Each of these changes directly mitigates the vulnerabilities exposed during the GFC: more equity reduces leverage, more underwriters disperse individual bank exposure, shorter commitment periods reduce the window of pipeline risk, and the absence of bridge loans eliminates the backstop obligation that proved most costly in 2007/2008.

On the risk transformation side, the 2017 deal was financed entirely through syndicated loans, with no high-yield bond component. The term loan B – the tranche destined

for sale to institutional investors, predominantly CLOs – constitutes the bulk of the debt package at $655mn, or 68%. Banks' ability to place this debt thus depends entirely on demand from the leveraged loan market rather than being split across bond and loan investors. The pricing of the term loans also increased sharply (655–700 bps versus 250–475 bps), suggesting that banks require greater compensation for the residual risk they bear.

Taken together, the comparison illustrates how post-GFC financing structures simultaneously reduced banks' exposure along some dimensions while concentrating their dependence on a single investor channel – syndicated loan investors, and CLOs in particular. We will show in the following sections that the changes across these two examples are representative of those across our entire sample.

3 Data and Summary Statistics

To assess post-GFC shifts in the debt market for public-to-private LBOs, we compile a unique dataset, drawing from six databases. CapitalIQ, SEC Edgar (the Electronic Data Gathering, Analysis, and Retrieval System from the U.S. Securities and Exchange Commission), LSEG Loan Connector[6], FISD (Mergent Fixed Income Securities Database), Compustat, and PitchBook[7].

Using CapitalIQ, we retrieve a list of 512 US public-to-private LBO transactions, spanning the period from January 2003 to December 2021, each with a deal volume exceeding $10 million. This dataset provides transactional specifics, including PE sponsors, timelines, and valuation metrics. To enrich our data, we manually collect regulatory filings from Edgar. Specifically, we use the SEC Form DEF14A, which details equity and debt commitments for public-to-private LBO transactions. LSEG Loan Connector

[6] Formerly known as Dealscan or Refinitiv's Loan Connector
[7] Now comprising the former S&P Leveraged Commentary Database (LCD)

provides comprehensive data on the actual bank financing at deal closure, offering information on lenders, pricing, and secondary market dynamics. Using PitchBook, we add data on loan syndication. Lastly, we obtain details on high-yield notes from the FISD database and financial information for each target company from Compustat.

Our data validation and matching process leads to a final sample of 445 public-to-private US LBOs.[8] It comprises 810 credit facilities from LSEG Loan Connector of 292 deals. For 104 deals in our sample, sponsors' equity commitments were sufficient to close the transactions. Hence, receipt of debt financing was not a closing condition for the transaction, and no debt commitment letter was provided for the deal announcement. 39 of these deals later secured debt financing, with data for 22 of them in LSEG Loan Connector.

Our sample deals come from 7 industries classified by PitchBook's primary industry sector, or 54 industries classified by their 2-digit SIC code. An important observation from Appendix Table A3 is the shift in the industry composition post-GFC. While most firms come from the same four industries, as classified by PitchBook's primary industry sector, pre- and post-GFC, industry concentration increased from 84% pre-GFC to 90% post-GFC. Also, pre-GFC, most deals came from the consumer products and services industry, constituting 32% of deals. Post-GFC, the consumer products and services industry ranked 3rd and was replaced by IT firms, now making up 32% of all deals.

Table 2 provides summary statistics. Approximately three-quarters of our sample deals were consummated post-2008. As depicted in Table 2 Panel A, there is a marked decline in the average gross transaction value, total commitment, and total debt commitment post-GFC by around $1.5 billion.[9] Especially, the commitment of bridge loans declined post-GFC. Fewer deals have bridge loan commitments (22% post- versus 33%

[8] Appendix Table A2 provides additional information about the deals excluded from our initial sample and the final sample composition.

[9] Appendix Table A4 displays the difference in period means for deal leverage defined as net debt/EBITDA. Deal leverage appears to increase from 9.73 pre-GFC to 13.05 post-GFC. Although economically large, the difference is not statistically significant.

pre-GFC) and the commitment itself more than halved from $528 million pre-GFC to $173 million post-GFC. Notably, the commitment period declined by 16% from 206 to 173 days, indicating a significant reduction in the underwriters' exposure to market frictions.

Panel B decomposes the received financing by type. Prior to the financial crisis, banks provided nearly 55% of LBO financing. This proportion contracted by 7% percentage points (pp) post-crisis.[10] Likewise, mezzanine financing substantially declined. The void was predominantly filled by increased equity contributions from PE sponsors. The PE equity share in total LBO financing increased from nearly 36% pre-crisis to 45% post-crisis. The residual *realized* financing was raised through high-yield bonds. Their portion remained stable at 6%, despite banks making fewer commitments. These findings combined are suggestive of two things. First, the 2007/2008 bond market breakdown, which forced lead arrangers to resort to bridge loan financing and significantly increased their risk exposure, led banks to undertake strategic efforts to mitigate their LBO debt exposure in the aftermath of the financial crisis. Second, banks have been more successful at placing their bonds post-GFC.

In Panel C of Table 2, we compare target characteristics before and after the GFC. Post-GFC deals are substantially smaller and exhibit smaller PPE-to-asset ratios. They hold more cash and have elevated R&D expenditures relative to assets, consistent with the change in industry composition. Operating income to assets, leverage, and their ability to service their interest payments are similar across periods. The creditworthiness of post-GFC firms, measured by their credit rating, is somewhat lower. The deviation, although statistically significant, is minimal: B+ for pre-crisis deals and B for post-crisis deals.[11]

[10] Note that the categories are not mutually exclusive.

[11] Appendix Figure A1 displays rating distribution of pre- and post-GFC public-to-private LBOs. Pre-GFC deals had an average rating of 14.12, which, rounded to 14, is equivalent to B+. Post-GFC deals had an average rating of 14.72, which, rounded to 15, is equivalent to B.

4 Empirical framework

Our empirical analysis is structured around the distinction between risk reduction and risk transformation in the financing of public-to-private LBOs. This section describes our baseline specification, discusses identification, and introduces the regulatory variation that provides our sharpest test.

4.1 Baseline specification

Our primary estimations contrast pre-GFC and post-GFC public-to-private LBOs at the deal and loan level:

$$y_{i,t} = \alpha + \beta\, Post_{i,t} + \boldsymbol{\theta_F}'\mathbf{F_{i,t-1}} + \boldsymbol{\theta_M}'\mathbf{M_t} + \tau_{ind(i)} + \eta_{rat(i)} + \nu_{lead(i)} + \epsilon_{i,t} \qquad (1)$$

where $Post_{i,t}$ is one for deals announced after 2008 and zero otherwise. We control for lagged firm characteristics ($\mathbf{F_{i,t-1}}$) – log assets, PPE/assets, cash/assets, R&D/assets, income/assets, leverage, and the interest coverage ratio – and for macroeconomic conditions at deal agreement ($\mathbf{M_t}$), including the VIX, the CPI, and the 10-year/3-month term spread. Industry ($\tau_{ind(i)}$), rating ($\eta_{rat(i)}$), and lead arranger ($\nu_{lead(i)}$) fixed effects absorb unobserved heterogeneity across sectors, creditworthiness, and bank-level underwriting practices. Lead arranger fixed effects are particularly important: β thus reflects *within-bank* changes in LBO financing across periods. Standard errors are clustered at the deal agreement year level.

We do not claim that the *Post* indicator identifies the causal effect of any single factor, but it is an equilibrium outcome that can be explained by different effects, such as bank learning, regulation, changes in investor composition, and macroeconomic shifts, acting simultaneously. Our contribution is to document the *joint pattern*: the simultaneous

presence of changes that reduce pipeline risk along GFC-exposed dimensions and those that create new pipeline risk through CLO dependence. This pattern distinguishes risk transformation from risk reduction.

Our controls mitigate key concerns. Firm characteristics address compositional shifts in the target pool (post-GFC deals are smaller, more IT-intensive, more cash-rich). Macro controls absorb credit market conditions. Lead arranger fixed effects ensure we compare the same bank's behavior across periods. Where sample size permits, we add year fixed effects to exploit within-year variation. We do not observe counterfactual deals that never occurred, a limitation inherent to the nature of LBOs.

4.2 Exploiting regulatory variation

To sharpen our identification, we exploit two sources of variation. The first source of variation is over time: the Guidance on Leveraged Lending, issued in March 2013, was clarified in December 2014 and effectively revoked following an opinion by the US Government Accountability Office (GAO) in October 2018. We partition the effective period of the Guidance on Leveraged Lending into an initial phase ($LLG1$, 2013–2014) and a post-clarification phase ($LLG2$, 2015–2017). The second source of variation is cross-sectional: banks supervised under the Federal Reserve's "Large Institution Supervision Coordinating Committee" (LISCC) Program – the six largest U.S. bank holding companies, which dominate LBO underwriting – faced heightened scrutiny of their leveraged lending. We combine both for the following estimation framework:

$$y_{i,t} = \alpha + \lambda_1 LISCC_i + \lambda_2 LLG1_{i,t} \times LISCC_i + \lambda_3 LLG2_{i,t} \times LISCC_i \tag{2}$$
$$+ \boldsymbol{\theta_F}' \mathbf{F_{i,t-1}} + \boldsymbol{\theta_M}' \mathbf{M_t} + \tau_{ind(i)} + \eta_{rat(i)} + \nu_{lead(i)} + \sigma_t + \epsilon_{i,t}$$

The estimations employ the same set of controls for firm characteristics and macroeconomic conditions, as well as fixed effects, as the estimations following Equation 1. Additionally, year fixed effects (σ_t) absorb economy-wide trends, so that λ_2 and λ_3 identify the differential response of LISCC banks during each regulatory phase. This generates a testable distinction: under risk reduction, LISCC banks should reduce *all* forms of pipeline exposure during heightened scrutiny. Under risk transformation, they should reduce bridge loan commitments, which were the main source of GFC losses and the focus of regulatory attention, but *increase* term loan B volumes. The risk transformation hypothesis thus predicts opposite signs on λ_1 for bridge loans and on λ_2 for term loans B. Risk reduction predicts the same sign. Section 7 presents the results.

5 Risk reduction — changes to deal-level structures

We begin our empirical analysis with the evidence for risk reduction. Using the baseline specification from equation (1), we examine four deal-level outcomes that directly address the vulnerabilities exposed during the GFC: the length of the commitment period, the probability and size of bridge loan commitments, and the equity share contributed by PE sponsors. If the post-GFC adaptations reduced pipeline risk, we should observe shorter exposure windows, fewer bridge loan obligations, and larger equity cushions. Table 3 confirms all three.

Banks significantly shortened their commitment periods after the GFC (column (1)). The commitment period shrinks by nearly 26 days, a 14% reduction relative to the unconditional mean of 187 days. This directly reduces the window during which lead arrangers are exposed to deteriorating market conditions. Yet, while shorter, the post-GFC commitment period still averages roughly 173 days – nearly six months during which banks bear pipeline risk.

The estimates in columns (2) and (3) document a sharp reduction in bridge loan

commitments, the instrument most directly associated with GFC-era losses. Post-2008 deals are 15.2 pp less likely to include a bridge loan commitment (column (2)), and the share of committed bridge loan financing fell by 7.18 pp, or 46% of the pre-crisis mean (column (3)). Both effects are statistically significant. Since bridge loans serve as backstop financing for high-yield bond issuance, their decline reflects banks' retreat from the specific channel – the dependence on bond investor demand – that proved fragile in 2007/2008.

Column (4) provides evidence for a substantial increase in PE equity contributions. Sponsors contribute 9.44 pp more equity after 2008, a 31% increase relative to the pre-crisis average of 30.65%. Higher equity cushions reduce deal leverage and, by extension, banks' loss-given-default on committed debt. Target characteristics also matter: firm size is a strong predictor of financing structures across all columns. This contrasts with Axelson et al. (2013), who find that LBO leverage between 1986 and 2008 was predominantly driven by credit conditions rather than firm attributes. Appendix Table A5 confirms that firm characteristics such as PPE-to-assets significantly predict LBO structures in both periods, suggesting that post-GFC underwriting was not solely driven by market sentiment.

Taken together, the deal-level evidence is consistent with the risk reduction hypothesis: banks shortened their exposure windows and overall debt commitments, and required more equity. These are genuine, economically large improvements. However, they address only one side of the pipeline risk problem – the *size and duration* of banks' committed exposure. They do not speak to the *composition* of the debt package or the identity of the investors on whom banks rely to absorb that debt. We turn to these questions next.

6 Risk transformation – the new pipeline

Section 5 showed that banks reduced their pipeline exposure along the dimensions most directly associated with GFC-era losses. In this section, we document that the same post-GFC period saw a fundamental shift in the *composition* of LBO debt and the *identity* of the investors on whom banks rely to absorb it. Banks replaced their dependence on high-yield bond investors – channeled through bridge loan commitments – with dependence on leveraged loan investors, predominantly CLOs, channeled through a substantially larger syndicated term loan B pipeline. We present this evidence in three steps: the shift in debt composition and pricing (Section 6.1), the changes in syndication practices (Section 6.2), and the rise of CLO dependence and the affiliated CLO channel (Section 6.3).

6.1 From bond investors to CLO investors: changes in loan underwriting

Deal-level evidence. Table 4 analyzes changes in banks' underwriting at the deal (Panel A) and loan (Panel B) level. Panel A examines the composition of realized LBO debt: the shares of term loan B, bond, and credit line financing, and the probability that a deal includes a covenant-lite loan. If the decline in bridge loan commitments documented in Section 5 reflects a retreat from bond-market dependence, we should observe a corresponding decline in bond financing and a reallocation toward syndicated loans.

The results confirm this substitution. The share of term loans B increased by 15.7 pp after the GFC (column (1)), a 37% increase relative to the pre-crisis mean. The share of bond financing dropped by 7.3 pp (column (2)), a 44% reduction. The magnitudes are striking: the increase in syndicated loan volume more than doubles the reduction in bond financing, indicating that the shift was not merely a compositional rebalancing but

an expansion of the syndicated loan pipeline. Banks did not simply replace bonds with loans of equivalent size – they built a larger pipeline that required more investor demand to clear.

Credit line volumes remained largely unchanged (column (3)), suggesting that banks maintained their monitoring role through this channel. However, the monitoring embedded in the *loans* themselves weakened substantially. Post-2008 deals are 19.4 pp more likely to include a covenant-lite loan (column (4)), a 30% increase relative to the pre-crisis probability of 64.5%. The combination is telling: banks maintained credit lines, the instrument through which they directly monitor borrowers, but relaxed covenants on the syndicated tranches destined for sale to institutional investors. This is consistent with banks deliberately structuring their loans to maximize investability for CLOs, which generally prefer covenant-lite structures.

Loan-level evidence. Panel B confirms the pattern at the individual loan level and examines pricing. Term loans B are 38 pp more likely to be covenant-lite post-GFC (column (1)), directly linking the deal-level finding to the specific tranche that enters the CLO market.

For pricing, we interact the *Post* indicator with loan-type indicators (term loan A, term loan B, bridge loan), using credit lines as the reference group.[12] Across all loan types, the pricing of public-to-private LBO loans increased by 92.6 bps after the GFC (column (2)), a near 30% increase. This broad repricing indicates that banks recognize the residual risk in LBO underwriting – the deal-level adaptations documented in Section 5 did not eliminate it.

The repricing is concentrated in two loan types. Term loans A, typically retained on banks' balance sheets, carry 101–108 bps higher spreads post-GFC (columns (2) and (3)), a 24–26% increase. Banks thus require substantially greater compensation for holding

[12] Column (3) additionally includes year fixed effects. Column (4) interacts *Post* with all four loan types, omitting the baseline *Post* effect.

LBO loans. Bridge loans also appear more expensive post-GFC, though the estimates are imprecise due to the small sample of 17 post-2008 bridge loans.[13] Notably, term loans B – the tranche central to the risk transformation story – do *not* exhibit a differential price increase beyond the overall post-GFC repricing. This is consistent with banks structuring term loans B as commoditized, CLO-friendly instruments: covenant-lite, competitively priced, designed to clear the syndication pipeline rather than to compensate banks for retained risk.

Column (4) reinforces these findings. When interacting *Post* with all loan types without a pre-crisis reference group, spreads increase significantly for every loan type, confirming that the repricing is broad-based. The largest increases are for term loans A and bridge loans – the instruments banks retain or use as backstops – while term loans B, although significantly more expensive, see the smallest incremental change.

In sum, the loan-level evidence reveals a clear division of function. Banks price retained exposure (term loans A) and backstop risk (bridge loans) more aggressively, while structuring syndicated loans (term loans B) to be as liquid as possible. The strategy is internally coherent: charge more for what you keep, make what you sell easier to sell. But it deepens banks' dependence on a functioning syndication market – and, as we show next, on a specific class of buyers within it.

6.2 The syndication response: loan flexes and price discovery

If banks expanded their syndicated loan pipeline, they also needed to adapt how they manage the syndication process. Bruche et al. (2020) argue that lenders use loan flexes – adjustments to spreads, prices, or amounts – to identify investor demand and match supply accordingly. Price flexes, in particular, function as a mechanism for investors to reveal their demand, a practice commonly referred to as underpricing.

[13] Compared to 32 bridge loans pre-GFC, consistent with the sharp decline documented in Section 5.

Table 5 shows that syndication practices changed substantially after the GFC. The probability that banks flex loan terms increases by 20.5 pp (column (1)), and the probability of price flexes increases by 32.8 pp (column (2)), both statistically significant at the 1% level. Banks thus adjusted terms more frequently to match supply and demand, with the most pronounced change in their willingness to compensate investors through price concessions during demand discovery. Column (3) examines the magnitude of realized price adjustments. The coefficient is negative, consistent with banks offering greater underpricing, but small (0.48 bps) and statistically insignificant.

The syndication evidence complements the loan-level findings. Banks did not merely shift toward syndicated debt and hope for the best. They actively adapted the mechanics of the syndication process – more frequent flexing, more price concessions – to manage the larger pipeline they created. This is rational pipeline risk management. But it also reveals the cost of the new equilibrium: banks must work harder and concede more in pricing to place their expanded term loan B books. The question is who absorbs this supply.

6.3 CLO dependence and the affiliated CLO channel

CLOs are the dominant investors in the U.S. leveraged loan market, purchasing up to 70% of all syndicated leveraged loans. Given the heightened importance of loan syndication for public-to-private LBOs documented above, the risk transformation hypothesis predicts that more LBO loans should flow to CLOs after the GFC. This subsection tests this prediction and examines a specific mechanism – affiliated CLO relationships – through which banks manage the resulting dependence.

Column (1) of Table 6 estimates a linear probability model for the likelihood that a term loan B is purchased by a CLO. The probability increases by 33 pp after 2008, a result that is both economically large and statistically significant. Banks' post-GFC

syndication pipeline thus terminates, to a significant degree, in the CLO market. This completes the substitution documented throughout this section: banks replaced their dependence on high-yield bond investor demand (the source of GFC-era losses) with dependence on CLO investor demand. Whether this substitution reduces aggregate risk depends on the relative stability of CLO demand – a question to which we disuss below in this paper.

A natural mechanism for banks to manage their CLO dependence is through relationship lending. PE sponsors of public-to-private LBOs are typically large asset managers that also administer CLOs through affiliated subsidiaries. Blackstone, for example, manages both private equity funds and CLOs. We examine whether these affiliated CLO relationships enable banks to reduce their pipeline risk by constructing an indicator variable, $Affiliated CLO$, equal to one if a CLO belonging to the same asset manager as at least one PE sponsor purchased the deal's debt. We interact this variable with *Post* and include year fixed effects.[14]

The results in columns (2) and (3) reveal an asymmetric pattern. The purchase of LBO debt by affiliated CLOs increases deal leverage by 13.9% at the baseline (column (2)), but there is no statistically significant differential effect post-GFC. For term loan B volumes, however, the post-GFC effect is large and precisely estimated: having an affiliated CLO purchase the deal's debt increases the term loan B share by 15.2 pp after 2008 (column (3)). This effect is entirely concentrated in the post-GFC period – the baseline coefficient is small and insignificant.

The affiliated CLO channel thus operates specifically on the dimension most relevant to risk transformation: the share of syndicated debt. Banks with access to affiliated CLO demand can underwrite larger term loan B packages, precisely because they have a captive buyer for the loans. This is rational pipeline risk management at the individual

[14] Of the 292 deals with leveraged loan data, 40 (13.7%) had their debt purchased by at least one affiliated CLO.

deal level. At the market level, however, it raises questions about the independence of CLO investment decisions and the concentration of counterparty risk within vertically integrated asset management complexes. If affiliated CLOs absorb LBO debt not because of its risk-return characteristics but because of organizational ties to the PE sponsor, the risk transformation may be accompanied by a deterioration in the quality of credit allocation – a concern consistent with Fleckenstein et al. (2025).

Taken together, the evidence in this section documents a coherent pattern of risk transformation. Banks reduced their exposure to bond-market pipeline risk (fewer bridge loans, less bond financing) by building a larger syndicated loan pipeline (more term loans B, covenant-lite structures, more frequent flexing) that depends critically on CLO demand. They cultivated relationships with affiliated CLOs to support this pipeline.

7 Effects of regulation and supervision

The post-GFC adaptations documented in the preceding sections reflect an equilibrium response to bank learning, changes in investor composition, and macroeconomic shifts. In this section, we isolate the role of regulation and supervision by exploiting variation in both the timing of regulatory interventions and the intensity of supervisory scrutiny across lenders.

In March 2013, US regulatory bodies issued the "Guidance on Leveraged Lending" to reform leveraged lending practices.[15] The guidance established foundational underwriting and risk management standards. Simultaneously, the Federal Reserve Board had established the "Large Institution Supervision Coordinating Committee" (LISCC) in 2010 to intensify supervision of the largest US financial institutions. The combination of a rule-based intervention with cross-sectional variation in supervisory intensity provides a useful setting to test whether regulation reduced pipeline risk or merely accelerated its

[15] For information on the Guidance of Leveraged Lending, refer to the Federal Register.

transformation. Under the risk reduction hypothesis, heightened scrutiny should lead LISCC banks to reduce *all* forms of pipeline exposure. Under the risk transformation hypothesis, LISCC banks should reduce bridge loan commitments – the instrument most directly associated with GFC-era losses and the focus of regulatory attention – while simultaneously expanding term loan B volumes. Table 7 presents the results.

Following Kim et al. (2018), we partition the Guidance on Leveraged Lending into two periods. While the guidance was initially issued in March 2013, further clarifications on compliance were issued in December 2014. In October 2018, the Government Accountability Office (GAO) issued an opinion requiring Congress to review the guidance for it to take legal effect; by that point, market participants widely considered it revoked and non-binding. We therefore define two indicator variables: $LLG1$, equal to one for deals announced in 2013–2014, and $LLG2$, equal to one for deals announced in 2015–2017. The lender-type indicator variable $LISCC$ equals one for banks falling under the purview of the LISCC Program.[16]

Our regressions assess the effects of the guidance and LISCC supervision on banks' commitment length, bridge loan commitments, term loan B volume, leverage, and the deal's equity share. Consistent with the regulatory view that LISCC lenders conduct riskier lending, the baseline estimates indicate that LISCC banks commit to bridge loans more frequently and in larger amounts, and that their deals carry a lower term loan B share – reflecting their greater pre-GFC reliance on bond-market financing. LISCC lenders also tend to require somewhat smaller PE equity contributions at higher leverage, although neither estimate is statistically significant.

The key results concern the interaction terms, which reveal how LISCC banks responded to regulatory pressure. During the initial phase of the guidance (2013–2014),

[16] For a list of these lenders, see Appendix 11.3. Note that the lender information is based on the lender's commitments. Thus, we exclude equity deals and those that received financing ex-post ($N = 341$). Also, the largest committed lender must not be supervised by the LISCC Program. For example, Deutsche Bank, a non-supervised entity, ranks ahead of Morgan Stanley, a supervised lender. Consequently, our lead arranger fixed effects do not drop the baseline effect for LISCC lenders.

LISCC lenders significantly increased their commitment periods by 21.5 days (column (1)), extending their exposure window to pipeline risk. This likely reflects operational delays as banks adapted underwriting processes to the new compliance requirements rather than a deliberate increase in risk-taking.

The economically important effects emerge in the post-clarification period (2015–2017). LISCC banks reduced bridge loan commitments sharply: the probability of committing to a bridge loan fell by 46 pp (column (2)), and the committed bridge loan share declined by 14.6 pp (column (3)). Both effects are substantially larger than the unconditional post-GFC changes documented in Table 3 – roughly double in magnitude – indicating that regulatory pressure was a first-order driver of the retreat from bridge loan financing among the largest banks. Crucially, term loan B financing increased in lockstep. The share of term loan B financing in deals underwritten by LISCC lenders rose by 22.4 pp during the same period (column (4)).[17]

The pattern of coefficients provides direct evidence for the risk transformation hypothesis. Under risk reduction, the regulatory coefficients on bridge loans and term loans B should carry the same sign: LISCC banks should reduce both forms of pipeline exposure. Instead, the coefficients carry opposite signs – bridge loan commitments fall while term loan B volumes rise – precisely as predicted by risk transformation. Regulation targeted the instrument that generated the largest GFC-era losses, and banks responded by substituting toward the instrument that generates the new form of pipeline risk. From the perspective of individual LISCC banks, this substitution is rational: bridge loan commitments represent a concentrated, difficult-to-hedge exposure to bond-market demand, whereas the pipeline risk embedded in term loan B syndication can be managed through CLO relationships and loan flexes (as documented in Sections 6.2 and 6.3). From a sys-

[17] The coefficient's t-statistic falls just below the critical value for statistical significance at the 10% level. This is most likely due to the limited number of deals underwritten by LISCC lenders during the second period of the Guidance on Leveraged Lending (16 deals, compared to 159 in the reference group), accompanied by the overall increase in term loan B lending in the post-GFC period.

temic perspective, however, the substitution is less reassuring. It suggests that post-crisis regulation channeled the form of adaptation rather than achieving an overall reduction in fragility – consistent with the broader pattern of regulatory arbitrage between bank and non-bank sectors documented by Chernenko and Scharfstein (2025).

8 Private credit and the segmentation of the LBO market

With the exponential growth of the private credit market since the early 2010s, private credit funds have become important financiers of PE buyouts (Block et al., 2024; Jang, 2025). A natural question is whether this growth has reduced banks' exposure to the pipeline risk documented in the preceding sections or whether private credit and bank-intermediated lending serve structurally different segments of the LBO market. In this section, we show that the answer depends critically on the state of the CLO market. Private credit absorbs LBO financing precisely when CLO issuance contracts, acting as a substitute for the leveraged loan channel rather than an independent alternative. This substitution, however, remains concentrated in smaller, non-public-to-private transactions.

8.1 Private credit in the public-to-private vs. non-public-to-private market

We begin with descriptive evidence. Figure 4 Panels A and B display the distribution of public-to-private and non-public-to-private LBOs by financing type between 2003 and 2023. Contrary to the view that private credit has come to dominate LBO financing, Panel A reveals that the public-to-private market remains heavily dependent on banks and leveraged loans. Only in 2022 and 2023 did private credit funds finance as many

public-to-private deals as banks. By contrast, Panel B shows that the non-public-to-private LBO market has shifted decisively toward private credit since the mid-2010s, with private debt funds financing more transactions than banks in the most recent years.

The divergence between these two markets is consistent with a size-driven segmentation. The average public-to-private LBO in our sample has a deal size of $1,831 million, compared to only $299 million for non-public-to-private transactions. Public-to-private LBOs require substantially larger financing packages, implying greater risk concentration, a need for more underwriting capacity, and, often, more diversified debt structures that combine syndicated loans with bond issuance. Banks are well-positioned to underwrite these transactions by virtue of their balance sheet size and their ability to distribute risk through syndication. This same distribution capacity, however, is what generates the pipeline risk that this paper focuses on: the dependence on CLO demand during the window between commitment and closing. The public-to-private LBO market thus continues to occupy a distinctive role for banks – one in which private credit funds have, to date, participated only at the margin.[18]

We formalize these patterns in Tables 8 and 9. For both analyses, we compile datasets of US public-to-private (499 deals) and non-public-to-private (3,120 deals) LBOs closed between 2003 and 2023 using PitchBook. 282 of the public-to-private deals correspond to those in our main sample. All deals are classified by financing type – bank/leveraged loan or private credit fund – following Block et al. (2024). Because these data are drawn from PitchBook, the analysis covers *realized* financing structures rather than committed financing. All estimations control for deal characteristics and macroeconomic conditions

[18] The largest private credit transactions have begun to approach the scale of mid-sized public-to-private LBOs. In August 2023, Oak Hill Advisors and Blue Owl Capital led a $5.3 billion refinancing for Finastra Group, the largest private credit facility on record, assembled through a club of over 20 direct lenders. In 2022, a consortium including Blackstone Credit, Apollo, Blue Owl, HPS, and Ares provided approximately $5 billion in debt for the $10.2 billion public-to-private acquisition of Zendesk by Hellman & Friedman and Permira. While these transactions demonstrate that private credit can mobilize substantial capital through club structures, they remain exceptions rather than the norm, and the coordination costs of assembling 20+ lenders for a single deal differ qualitatively from a bank's ability to commit unilaterally and syndicate post-closing.

six months prior to deal closing.

Table 8 estimates the probability of private credit fund financing using a linear probability model. Column (1) indicates that the probability of private credit financing in public-to-private LBOs increased by 12.4 pp post-GFC, a near 70% increase relative to the pre-crisis mean. However, this unconditional increase is largely explained by deal size. When interacting *Post* with $log(Deal\,size)$ in columns (2) and (3), we find that larger deals remain substantially less likely to be financed by private credit. A one-standard-deviation increase in log deal size (1.58) reduces the probability by 6.8 pp. The interaction term suggests that private credit funds have begun financing somewhat larger deals post-2008, but the effect is small and statistically insignificant, particularly in column (3), which includes industry-year fixed effects.

The non-public-to-private market exhibits markedly different dynamics. Columns (4)–(6) show that larger non-public-to-private LBOs have become significantly more likely to be financed by private credit after the crisis. A one-standard-deviation increase in deal size (1.75) raises the probability by 5.25–5.6 pp, or approximately 13% of the pre-crisis average. Nevertheless, even in this market, the largest deals remain bank-financed. The entire post-crisis increase in private credit financing can be explained by the migration of private credit into larger – but not the largest – deal segments.[19]

8.2 Financing structures across deal types

Table 9 examines the financing structures of bank- versus private credit-financed LBOs, focusing on syndicated debt and covenant-lite loan usage. The results illuminate the

[19] The upward drift in private credit deal size has accelerated in recent years. By 2024, the largest direct lenders – including Ares Management (with over $400 billion in credit AUM), Blue Owl Capital ($158 billion in direct lending AUM), and HPS Investment Partners (acquired by BlackRock for $12 billion in 2024) – could individually commit $1–3 billion to single transactions. Unitranche deal volume for large-cap borrowers reached $210 billion in 2024, more than double the 2023 figure. Whether this trajectory will eventually erode the size-based segmentation we document is an important question that our sample period cannot fully resolve.

structural differences between these two financing channels.

Columns (1) and (2) assess the share of term loan B financing by deal type. The estimates confirm that private credit deals carry substantially less syndicated debt in both markets, with the differential markedly larger for public-to-private LBOs (36.9 pp) than for non-public-to-private transactions (21.4 pp). This pattern does not reverse post-2008. The lower syndicated debt share in private credit deals reflects the different intermediation model: private credit funds hold loans on their own balance sheets (or those of affiliated vehicles) rather than distributing them to institutional investors. This means they do not require CLO demand to clear their pipeline, but it also means their lending capacity for any single transaction is bounded by the capital they can commit or assemble through club arrangements.

Columns (3) and (4) reveal an instructive reversal in covenant-lite structures. At baseline and in both markets, private credit deals are approximately 24 pp more likely to include a covenant-lite loan. Post-2008, however, this pattern reverses sharply. A post-GFC public-to-private deal financed by private credit is 19.9 pp *less* likely to include a covenant-lite loan than a comparable bank deal; the corresponding figure for non-public-to-private deals is 9.7 pp.

Two mechanisms likely explain this reversal. First, pre-crisis private credit predominantly financed mezzanine or deeply subordinated tranches, which typically lacked maintenance covenants by design. As the private credit industry expanded into senior lending "across the entire capital structure," maintenance covenants became more prevalent in private credit deals.[20] Second, banks' post-GFC shift from bond to syndicated debt financing, documented in Table 4, was accompanied by an increase in covenant-lite structures designed to maximize the investability of term loans B for CLOs. Because syndi-

[20] This expansion is well documented. Ares Management, for example, raised $34 billion for its Senior Direct Lending Fund III, explicitly targeting first-lien senior secured loans that would previously have been originated by banks. The shift from mezzanine to senior lending mechanically increased the prevalence of maintenance covenants in private credit deals, as senior lenders demand tighter protections than subordinated creditors.

cation remains concentrated in bank-financed and larger LBOs (columns (1) and (2)), the relative prevalence of covenant-lite structures tilted toward bank-financed deals – particularly in the public-to-private market, where banks retain a dominant role.

8.3 CLO market conditions and private credit as a substitute

The preceding analysis documents a segmentation of the LBO market between banks and private credit funds. We now ask whether this segmentation is static or whether private credit expands specifically when the CLO-dependent syndication channel tightens. If private credit serves as a substitute for bank-intermediated leveraged lending, its market share should increase as CLO issuance declines – precisely the conditions under which bank pipeline risk is most acute.

Table 10 tests this hypothesis directly. Following Hinzen et al. (2026), we measure CLO market conditions using the log of cumulative CLO issuance over the six months preceding deal closing and interact this variable with deal size and private credit financing indicators. The estimations include lead arranger and industry-year fixed effects, and a set of deal controls.

Columns (1) and (2) examine how CLO issuance affects the probability of private credit financing. In the public-to-private market, the coefficient on $log(CLO\,issuance)$ is -0.19 and statistically significant (column (1)). A one-standard-deviation decline in trailing log CLO issuance (1.1) increases the probability that a public-to-private LBO is financed by private credit by 20.8 pp. The interaction with deal size is positive but small, indicating that this substitution is not confined to smaller deals within the public-to-private segment. In the non-public-to-private market (column (2)), the direct effect of CLO issuance is economically small and insignificant (-0.030), but the interaction with deal size is positive and significant (0.010), suggesting that when CLO markets are active, larger non-public-to-private deals are more likely to use bank/leveraged loan financing

rather than private credit.

Columns (3) and (4) confirm the mirror image for bank-intermediated lending. A one-standard-deviation higher $log(CLO\,issuance)$ is associated with a 5.9 pp increase in the share of term loan B financing in non-public-to-private deals (significant at the 5% level), consistent with the interpretation that CLO demand directly enables the syndicated loan pipeline. For public-to-private deals, the effect is negative (-1.86) but insignificant, likely because these transactions use bank syndication regardless of CLO market conditions – they have no practical alternative at the scale required. When we interact CLO issuance with the private credit indicator in columns (3) and (4), the coefficients are large and negative (-4.07 and -2.62, both significant), indicating that private credit-financed deals carry substantially less syndicated debt precisely when CLO issuance is high – that is, when the syndicated loan channel is most available, there is the sharpest differentiation between the two financing models.

Columns (5) and (6) examine covenant-lite structures. Higher one-standard-deviation higher log CLO issuance is associated with 8 pp greater probability of covenant-lite loans in non-public-to-private deals (significant at the 1% level), reinforcing the link between CLO demand and the covenant-lite structures designed to attract CLO investment. The interaction between CLO issuance and private credit financing is negative and significant in both markets (-0.16 and -0.12), confirming that private credit deals are less likely to adopt covenant-lite structures even when CLO market conditions would otherwise push in that direction. This is consistent with the contractual differences between the two channels: private credit lenders, holding concentrated positions, prefer maintenance covenants that facilitate early intervention; banks, distributing loans to CLOs, prefer incurrence-only covenants that maximize secondary market liquidity.

Taken together, the evidence in Table 10 reveals that private credit does not merely occupy a separate segment of the LBO market – it actively expands into bank territory

when CLO-dependent syndication becomes less viable. This substitution pattern has two implications. First, it suggests that private credit provides a partial safety valve for the leveraged buyout market when bank pipeline risk is most likely to materialize. When CLO issuance contracts and banks face difficulty placing syndicated loans, private credit funds can absorb some of the financing demand that would otherwise go unmet. Second, the substitution remains incomplete. It is concentrated in smaller deals and does not extend to the largest public-to-private transactions where bank pipeline risk is most acute.

8.4 Implications for pipeline risk

The evidence in this section points to two conclusions about the relationship between private credit growth and bank pipeline risk. First, the LBO market is structurally segmented. Private credit funds have become the dominant financiers of smaller, non-public-to-private buyouts, and they have begun to move up-market, but the largest public-to-private transactions remain predominantly bank-financed. This segmentation reflects not a single friction but a combination of factors: deal size, the coordination costs of assembling large lending clubs, and the speed and certainty of execution that bank commitment letters provide to PE sponsors in competitive auction processes.

Second, the relationship between private credit and bank-intermediated lending is not one of independent coexistence but of CLO-market-dependent substitution. Private credit expands when CLO issuance contracts, providing a partial buffer for the LBO market. This buffer, however, does not extend to the scale required for public-to-private transactions. Unlike the pre-GFC era, when bond and loan markets provided partially independent sources of investor demand, the current equilibrium concentrates bank underwriting and investor absorption within the leveraged loan–CLO channel for the largest and most systemically relevant transactions. Private credit operates alongside this chan-

nel and partially substitutes for it in smaller deals, but it does not provide a backstop at the scale where pipeline risk is most concentrated.

The net effect of post-GFC changes on systemic risk thus remains ambiguous. Banks have clearly reduced their exposure along several dimensions – shorter commitment periods, fewer bridge loans, and higher equity cushions. But the remaining risk is more concentrated in a single market mechanism, and the alternative financing channel that has grown most rapidly cannot yet absorb that risk if the mechanism fails.

9 Conclusion

The Great Financial Crisis of 2007/08 revealed fundamental fragility in the financing of public-to-private LBOs: underwriters' dependency on non-bank investors' willingness to absorb high-yield, leveraged debt – jeopardized when market fundamentals deteriorate. With public-to-private LBOs remaining a significant segment of the buyout market and new stress periods, such as the COVID-19 pandemic and the Ukraine war, leaving banks struggling again with their prior commitments, we investigate whether the structural changes in LBO financing since the GFC have genuinely reduced banks' underwriting fragility, or whether fragility has merely been transformed.

Our evidence suggests that the latter is the case. At first glance, the comprehensive restructuring of LBO financing we document appears to reflect more prudent bank lending. Equity sponsors contribute 30% more equity, and banks have a near 50% lower probability of committing bridge loans to back the issuance of high-yield bonds - one of the key loss drivers during the GFC.

However, with these changes, banks have created a new form of fragility. While reducing their exposure to high-yield bond investors, they increased their reliance on syndicated loan investors substantially, with post-GFC deals having 37% more term loan B debt. To mitigate this new pipeline risk, we show that banks built a specific institutional

infrastructure, making loans more investable for CLOs and using CLOs affiliated with the deal's PE sponsors to cultivate captive demand in the CLO market. Yet, while this new post-GFC equilibrium that substituted bond with syndicated loan investors may appear more stable during normal times, it may harbor new fragilities that emerge when CLO demand contracts.

Complementing our analysis, we assess how the rapid post-GFC growth of private credit affected banks' exposure to the pipeline risk we document. We provide evidence that private credit funds have become the dominant financiers of smaller and non-public-to-private buyouts. Their role, however, in financing public-to-private LBOs remains limited, as their larger financing packages are likely to continue favoring bank underwriting.

Importantly, private credit lending to LBOs expands when the CLO-dependent syndication channel tightens, and banks' pipeline risk is more likely to materialize. However, this substitution remains incomplete. Concentrated in smaller and non-public-to-private deals, it does not extend to the largest public-to-private transactions, where pipeline risk is most relevant. By financing the largest and most systemically relevant LBO transactions, banks thus remain exposed to CLO-dependent pipeline risk.

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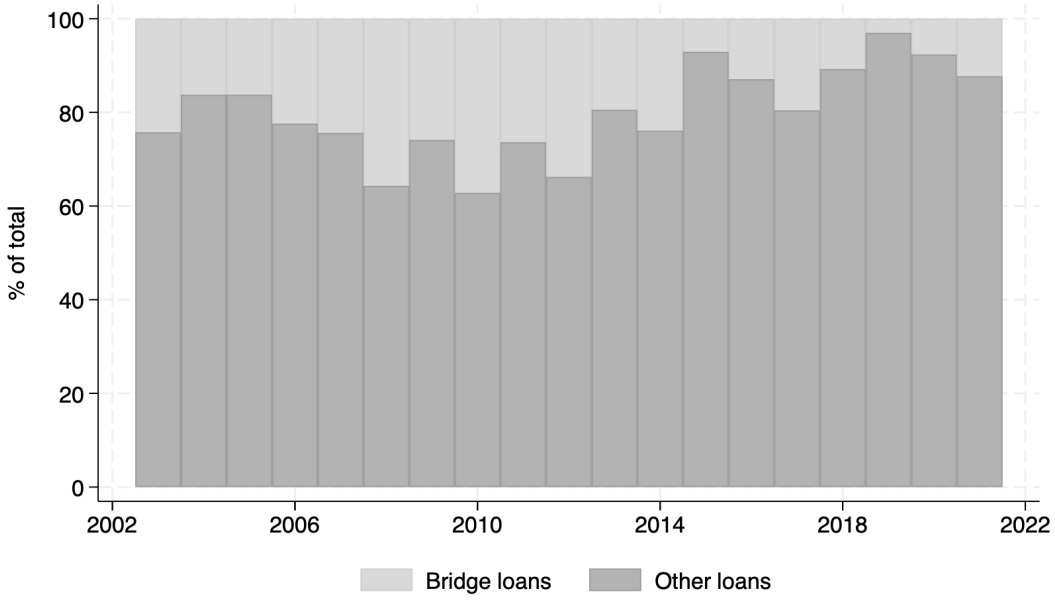
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Figure 1: Committed and realized financing by type

The figure in Panel A shows the annual share of committed financing, dividing commitments into bridge loans and all other loans. The figure in Panel B shows the annual share of realized financing by type (bridge loans/notes, term loans B, term loans A, and credit lines). Because we omit "other" loans, such as standby letters of credit, the shares do not add up to 100% in 2005, 2006, and 2011. Both panels omit equity deals. The number of observations is $N = 341$ in Panel A, and $N = 270$ in Panel B.

Panel A: Committed financing



Panel B: Realized financing

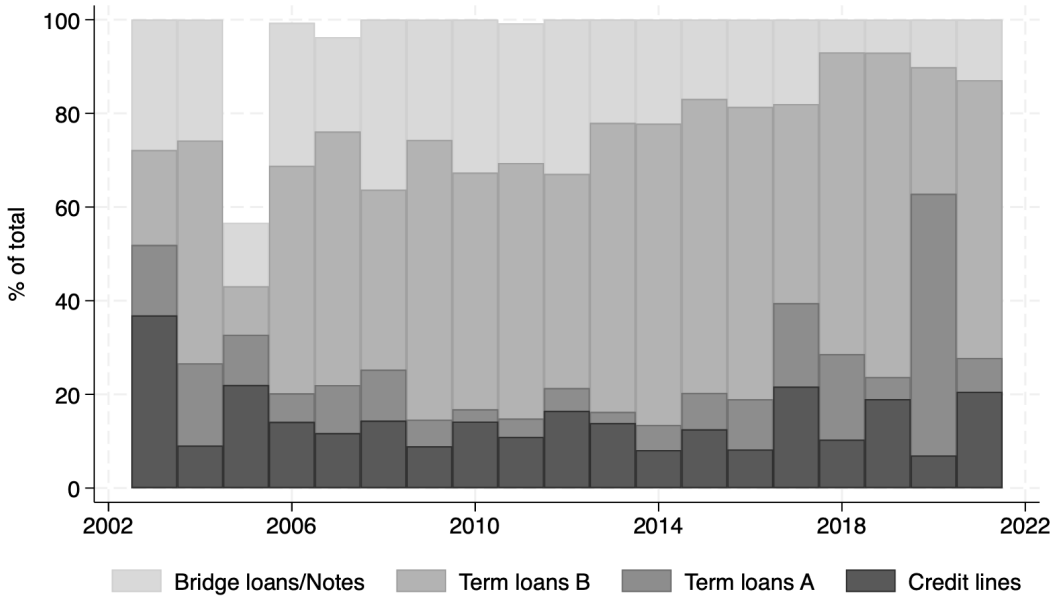


Figure 2: Loan pricing until and after 2008

The figure displays the pricing of LBO loans by loan type and period. Loan pricing corresponds to the loans' all-in-spread-drawn (AISD) in basis points (bps). The different loan types are: bridge loans, credit lines, term loans A, and term loans B. The boxplots in dark gray display the pricing of loans issued through 2008. The boxplots in light gray display the pricing of loans issued after 2008. Outliers are omitted. The total number of observations is $N = 728$.

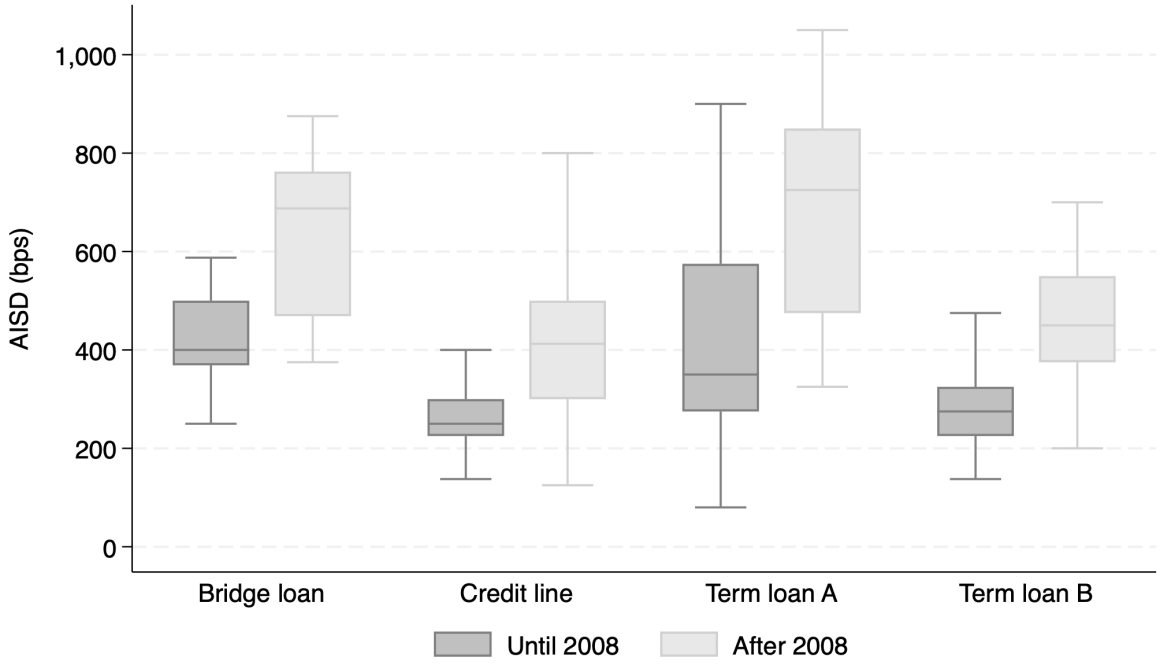


Figure 3: Term loan B versus bond financing

The figure displays the annual share of realized term loan B financing (circles) and the annual share of realized bond financing (squares), both expressed as percentages of total deal debt. The solid black line is a fitted line for the annual share of term loan B financing. The dashed line is a fitted line for the annual share of bond financing. Equity deals and deals without financing information are omitted ($N = 274$).

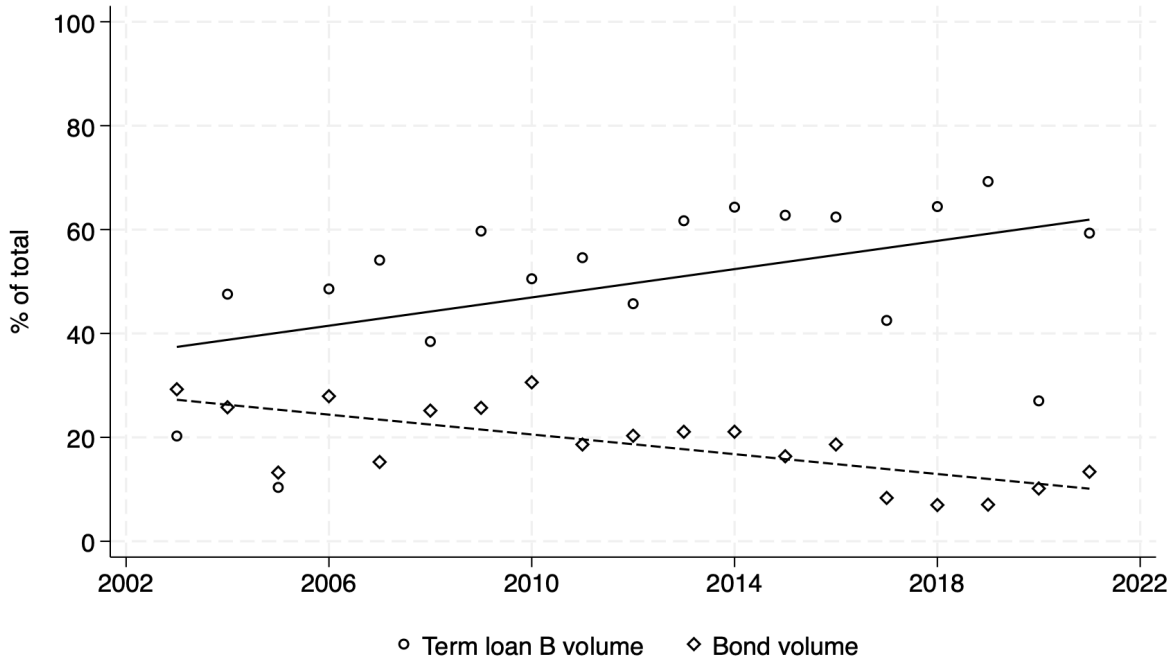
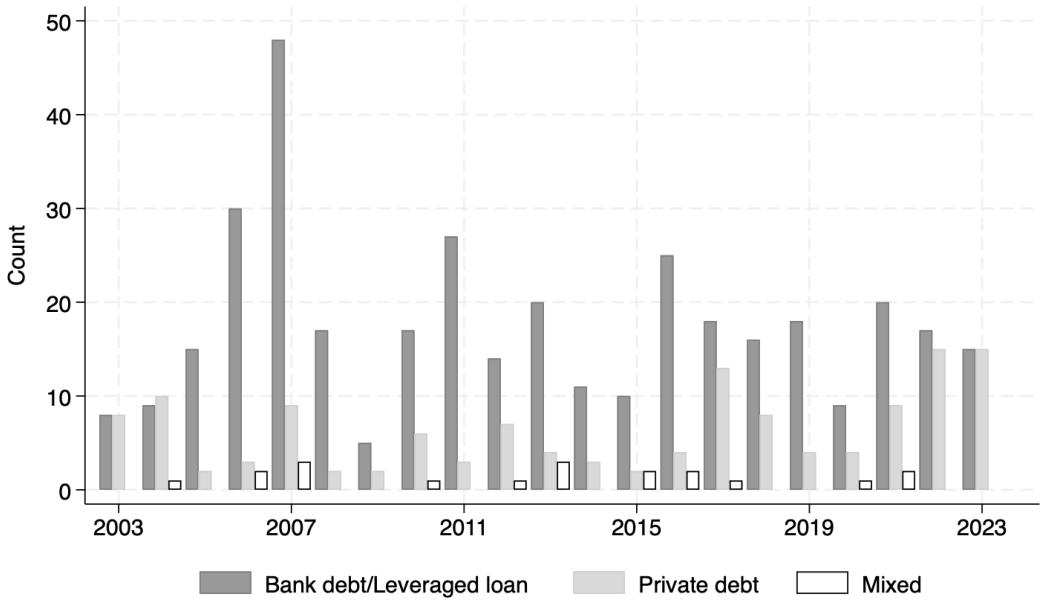


Figure 4: Deal type of LBOs between 2003 and 2023

The figure in Panel A shows the annual number of deals by financing type for public-to-private US LBOs between 2003 and 2023. The total number of observations is $N = 544$. The graph omits 18 deals financed solely by bonds. The figure in Panel B displays the annual number of deals by financing type for non-public-to-private US LBOs between 2003 and 2024. The total number of observations is $N = 3,542$. The graph omits 96 deals financed solely by bonds.

Panel A: Public-to-private LBOs



Panel B: Non-public-to-private LBOs

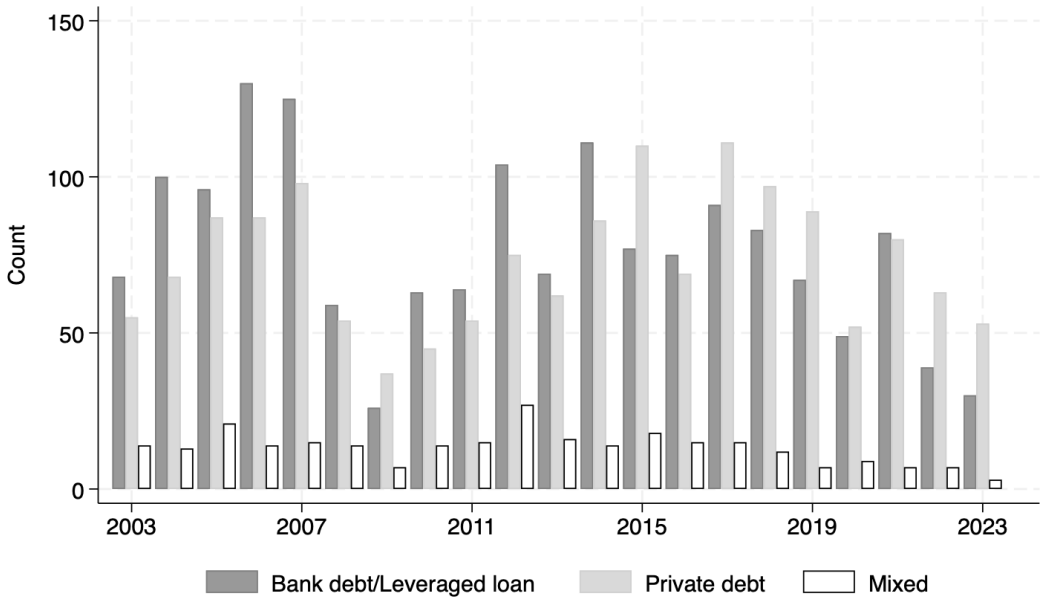


Table 1: Representative public-to-private LBOs before the GFC and 10 years after

Panel A displays the financing structure of an average-sized deal closed in 2007 (before the GFC), HUB International Ltd., which closed on June 13, 2007. Panel B depicts the financing structure of an average-sized deal closed in 2017 (10 years after the GFC), Albany Molecular Research Inc., which closed on August 31, 2017. The gross transaction value at closing of HUB International Ltd. (Panel A) was $1757.86 million, and that of Albany Molecular Research (Panel B) was $1635.22 million. The debt commitment letter of HUB International had a contractual length of 200 days. The realized commitment period was 108 days. HUB International had an S&P long-term issuer rating of B. The debt commitment letter of Albany Molecular Research had a contractual length of 166 days. The realized commitment period was 87 days. Albany Molecular Research had an S&P long-term issuer rating of B. In both panels, the *Pricing* refers to the all-in-spread-drawn (AISD, in basis points(bps) over Libor.

Panel A: HUB International Ltd.

Equity characteristics				
Committed equity	$724mn			
# PE sponsors	2			
Names	Apax Partners, Morgan Stanley			
Debt characteristics				
Total debt commitment	$1525mn			
Loans received	$965mn			
Senior debt	$865mn			
Contingent debt	$100mn			
Bonds issued	$700mn			
Loan details	**Amount**	**Terms**	**Pricing**	**# Underwriter**
Term loan A	$140mn	7-year secured	250bps	2
Term loan B	$200mn	7-year secured	475bps	2
Term loan B	$525mn	7-year secured	250bps	2
Revolving credit facility	$100mn	6-year secured	250bps	2

Panel B: Albany Molecular Research Inc.

Equity characteristics				
Committed equity	$995mn			
# PE sponsors	2			
Names	GTCR, Carlyle Group			
Debt characteristics				
Total debt commitment	$960mn			
Loans received	$960mn			
Senior debt	$860mn			
Contingent debt	$100mn			
Loan details	**Amount**	**Terms**	**Pricing**	**# Underwriter**
Term loan A	$205mn	8-year secured	700bps	6
Term loan B	$655mn	7-year secured	655bps	6
Revolving credit facility	$100mn	5-year secured	325bps	6

Table 2: Summary statistics

Panel A shows deal characteristics by period. Panel B shows the sample LBOs' financing structures as a percentage share of total realized financing by period. Panel C depicts target firms' characteristics by period. In all panels, columns (2) and (3) show period averages, except for the last two rows in Panel A, which show only period averages as percentage shares. Column (4) displays the difference in period means and indicates whether it is statistically significant, with the exception of the last two rows in Panel A. ***, **, and * indicate the statistical significance for difference in means tests at the 1%, 5%, and 10% level, respectively. Panel B omits equity deals that did not receive debt financing according to LSEG Loan Connector post-closing. In Panels A and C, the sample consists of 445 deals: 177 deals for the period between 2003 and 2008, and 268 deals for the period between 2009 and 2021. In Panel B, the sample consists of 302 deals: 125 deals for the period between 2003 and 2008, and 177 deals for the period between 2009 and 2021.

Panel A. Deal characteristics

	2003-2008 Mean	**2009-2021** Mean	**Difference** t-statistic
Gross transaction value ($mn)	3656	2153	(2.13)**
Total commitment ($mn)	3177	1745	(2.61)***
Debt commitment ($mn)	2308	961	(3.18)***
Committed bridge financing ($mn)	528	173	(3.08)***
Commitment period (days)	206	173	(4.62)***
Deals with bridge loan (% of all deals in period)	33	22	(.)
Equity deals (% of all deals in period)	19	26	(.)
Observations	177	268	445

Panel B. Realized LBO financing by type

	2003-2008 Mean	**2009-2021** Mean	**Difference** t-statistic
Total bank financing	54.57	48.42	(3.02)***
Senior secured	45.61	41.34	(1.67)*
Senior unsecured	7.75	7.08	(0.34)
Subordinated	1.21	0.00	(2.90)***
Bridge financing	5.07	2.65	(2.01)**
Contingent debt	12.62	8.51	(2.73)***
Total equity financing	35.84	44.70	(-5.25)***
Sponsor equity	30.38	36.93	(-3.00)***
Rollover equity	1.35	0.68	(1.31)
Other equity	0.40	0.09	(1.29)
Total bond financing	6.04	6.05	(-0.01)
Total mezzanine financing	2.98	0.70	(2.71)***
Observations	122	174	296

Panel C. Target characteristics

	2003-2008 Mean	**2009-2021** Mean	**Difference** t-statistic
Assets ($mn)	2205.81	1221.28	(2.21)**
PPE/Assets (%)	27.16	21.38	(2.46)**
Cash/Assets (%)	10.82	13.99	(-2.42)**
R&D/Assets (%)	2.64	4.38	(-2.39)**
Income/Assets (%)	11.40	10.03	(1.06)
Leverage (%)	23.42	20.84	(1.06)
ICR (%)	19.49	13.44	(1.29)
Observations	177	268	445

Table 3: Effect of the GFC on financing structures of public-to-private LBOs

Column (1) displays the results of an ordinary least squares (OLS) regression of the debt letter commitment period in days on the indicator variable *Post (0/1)* and a set of control variables. Column (2) shows the results of a linear probability model (LPM) regression of the indicator variable *Bridge loan commitment (0/1)*, which is one if a deal had a bridge loan commitment and zero otherwise, on the indicator variable *Post (0/1)* and a set of control variables. Column (3) depicts the results of an OLS regression of the committed bridge loan financing as a fraction of total committed debt financing on the indicator variable *Post (0/1)* and a set of control variables. Column (4) shows the results of an OLS regression of the equity share, defined as committed equity by private equity (PE) sponsors over total committed funds, on the indicator variable *Post (0/1)* and a set of control variables. The indicator variable *Post (0/1)* is one if a deal was agreed after 2008 and zero otherwise. All variables are defined in the data appendix (Section 12). All estimations include industry, rating, and lead (arranger) fixed effects. Industries correspond to 1-digit SIC industries. Ratings denote the target's S&P long-term issuer rating. The lead arranger is a deal's largest bank sponsor as stated in the debt commitment letter. All estimations exclude equity deals. Standard errors are clustered at the deal agreement year level. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level. The sample consists of 341 public-to-private LBO deals.

	(1) Commitment period (days)	(2) Bridge loan commitment (0/1)	(3) Bridge loan commitment (%)	(4) PE equity share (%)
Post (0/1)	-25.407***	-0.152**	-7.182**	9.436***
	(-3.708)	(-2.206)	(-2.811)	(6.072)
log(Assets)	19.138***	0.172***	4.277***	-1.565**
	(6.144)	(9.898)	(4.494)	(-2.237)
PPE/Assets (%)	0.087	-0.003**	-0.108*	0.005
	(0.650)	(-2.687)	(-2.026)	(0.140)
Cash/Assets (%)	0.117	0.001	0.041	0.128
	(0.439)	(0.909)	(0.478)	(1.452)
R&D/Assets (%)	0.061	-0.004	-0.359	0.356
	(0.057)	(-0.607)	(-1.603)	(1.637)
No R&D (0/1)	-2.184	0.053	-0.370	1.550
	(-0.411)	(0.760)	(-0.117)	(0.895)
Income/Assets (%)	-0.016	0.012***	0.266	-0.167
	(-0.040)	(3.302)	(1.576)	(-1.529)
Leverage (%)	-0.159	0.002*	0.089	-0.030
	(-0.721)	(1.757)	(1.419)	(-0.676)
ICR	0.074	-0.003**	-0.191**	0.046
	(0.366)	(-2.247)	(-2.273)	(0.922)
No ICR (0/1)	-12.512	-0.007	0.257	-1.028
	(-1.461)	(-0.117)	(0.114)	(-0.468)
VIX (%)	0.800	-0.004	-0.142	0.043
	(1.665)	(-0.898)	(-0.789)	(0.256)
CPI (%)	0.099	0.000	0.010	0.000
	(1.209)	(0.482)	(0.516)	(0.018)
Term spread	-6.657**	0.047*	2.344*	-0.236
	(-2.719)	(1.765)	(2.007)	(-0.311)
Constant	72.322***	-0.776***	-11.295	39.970***
	(3.302)	(-4.437)	(-1.389)	(5.320)
Industry FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes	Yes
Adj. R^2	0.302	0.374	0.253	0.286
N	305	315	315	315

Table 4: Underwriting public-to-private LBOs

Panel A displays the results of deal-level estimations. Columns (1), (2), and (3) show the results of OLS regressions. The dependent variable in column (1) is the realized term loan B volume as a percentage share of total deal debt. The dependent variable in column (2) is the realized bond volume as a percentage share of total deal debt. The dependent variable in column (3) is the realized credit line volume as a percentage share of total deal debt. Column (4) displays the results of an LPM, using the indicator variable *Deal with covlite loan (0/1)* as the dependent variable. All estimations regress the dependent variables on the indicator variable *Post (0/1)* and a set of control variables. Panel B displays the results of loan-level estimations. Column (1) shows the results of an LPM regression for a subsample of term loans B, regressing the indicator variable *Covelite loan (0/1)*, which is one for covenant-lite loans and zero otherwise, on the indicator variable *Post (0/1)* and a set of control variables. Columns (2), (3), and (4) regress the all-in-spread-drawn (AISD, in bps) on the indicator variable *Post (0/1)*, loan type indicator variables, and a set of control variables. The indicator variable *Term loan B (0/1)* is one for term loans B and zero otherwise. The indicator variable *Term loan A (0/1)* is one for term loans A and zero otherwise. The indicator variable *Bridge loan (0/1)* is one for bridge loans and zero otherwise. The indicator variable *Credit line (0/1)* is one for credit lines and zero otherwise. In both panels, the indicator variable *Post (0/1)* is one if the deal agreement year is after 2008 and zero otherwise. The control variables and fixed effects are equivalent to Table 3. Additionally, year fixed effects denote the deal agreement year. Standard errors are clustered at the deal agreement year level. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level. The sample in Panel A consists of 292 deals. The sample in Panel B consists of 810 loans or 267 term loans B.

Panel A. Deal-level estimations

	(1) Term loan B volume (% of total)	(2) Bond volume (% of total)	(3) Credit line volume (% of total)	(4) Deal with covlite loan (0/1)
Post (0/1)	15.716***	-7.332*	-1.981	0.194**
	(3.745)	(-2.022)	(-0.615)	(2.265)
Industry FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Adj. R^2	0.212	0.282	0.250	0.053
N	273	273	273	273

Panel B. Loan-level estimations

	(1) Covlite loan (0/1)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)
Post (0/1)	0.383***	92.562***		
	(4.433)	(4.019)		
Term loan B (0/1)		48.529***	45.748***	48.529***
		(7.467)	(8.902)	(7.467)
Term loan A (0/1)		145.691***	147.551***	145.691***
		(14.776)	(14.843)	(14.776)
Bridge loan (0/1)		206.276***	198.783***	206.276***
		(6.917)	(7.120)	(6.917)
Post (0/1) × Term loan B (0/1)		9.078	7.118	101.640***
		(0.754)	(0.613)	(4.894)
Post (0/1) × Term loan A (0/1)		101.403**	107.534***	193.966***
		(2.870)	(3.161)	(4.651)
Post (0/1) × Bridge loan (0/1)		42.846	66.037	135.409**
		(0.767)	(1.196)	(2.195)
Post (0/1) × Credit line (0/1)				92.562***
				(4.019)
Industry FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	No
Controls	Yes	Yes	Yes	Yes
Adj. R^2	0.209	0.531	0.566	0.531
N	251	701	701	701
Loan sample	Term loan B	All	All	All

Table 5: Loan flexes

Column (1) displays the results of an LPM, regressing the indicator variable *Flexed*, which is one if either the spread, price, or amount of a loan was flexed and zero otherwise, on the indicator variable *Post (0/1)* and a set of control variables. Column (2) displays the results of an LPM, regressing the indicator variable *Flexed price*, which is one if the price of a loan was flexed and zero otherwise, on the indicator variable *Post (0/1)* and a set of control variables. The OLS regression in column (3) regresses the variable *Price*, defined as the loan price in bps, on the indicator variable *Post (0/1)* and a set of control variables. *Price* is replaced with 100 if not observed in our data. All regressions employ the same control variables as Table 3. Additionally, they control for deal characteristics using *# Loans*, which is the number of loans syndicated by a firm for the respective LBO. All estimations employ industry, rating, and lead arranger fixed effects as defined in Table 3, as well as loan type fixed effects. Standard errors are clustered at the closing year level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level. The total number of observations is $N = 401$.

	(1) Flexed (0/1)	(2) Flexed price (0/1)	(3) Price (bps)
Post (0/1)	0.205*** (2.952)	0.328*** (4.926)	-0.482 (-1.381)
Industry FE	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes
Loan type FE	Yes	Yes	Yes
Adj. R^2	0.363	0.368	0.264
N	401	401	401

Table 6: Affiliated CLOs

Column (1) displays the results of an LPM regression of the indicator variable *In CLO (0/1)*, which is one if a term loan B was purchased by a CLO and zero otherwise, on the indicator variable *Post (0/1)* and a set of control variables. The estimation is at the loan level. Columns (2) and (3) display the results of OLS regressions of LBO leverage, defined as the log value of committed debt divided by EBITDA, and the share of term loan B financing, defined as in Table 4, on the indicator variable *Affiliated CLO (0/1)* interacted with the indicator variable *Post (0/1)* and a set of control variables. Both estimations are at the deal level. The indicator variable *Affiliated CLO (0/1)* is one if an affiliated CLO purchased the deal's debt and zero otherwise. An affiliated CLO is a CLO whose manager is the same asset manager as at least one PE sponsor of the deal. The indicator variable *Post (0/1)* is one if the deal agreement year is after 2008 and zero otherwise. All estimations employ the same control variables and fixed effects as the estimations in Table 3. The estimations in columns (2) and (3) additionally add fixed effects for the deal agreement year. At the deal and loan level, standard errors are clustered by deal agreement year. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level. At the loan level, the estimates use a sample of term loans B. The number of observations is $N = 266$, of which 196 were bought by CLOs. At the deal level, the estimation in column (2) omits equity deals. The number of observations is $N = 341$. For 39 deals, affiliated CLOs bought their debt. In column (3), $N = 292$) and debt of 40 deals was purchased by affiliated CLOs.

	(1) In CLO (0/1)	(2) log(Committed debt /EBITDA)	(3) Term loan B volume (% of total)
Post (0/1)	0.327** (2.794)		
Affiliated CLO (0/1)		0.139** (2.175)	0.987 (0.358)
Affiliated CLO (0/1) × Post (0/1)		0.170 (0.805)	15.193*** (3.574)
Industry FE	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes
Year FE	No	Yes	Yes
Controls	Yes	Yes	Yes
Adj. R^2	0.175	0.411	0.276
N	249	302	273
Level	Loan	Deal	Deal

Table 7: The effect of regulation and supervision on the financing structures of public-to-private LBOs

All columns but column (2) display the results of OLS regressions. Column (2) displays the result of an LPM regression. The dependent variables in columns (1) to (5), and (6) are defined as in Tables 3 and 4. The dependent variable in column (5) is defined as in Table 6. All estimations regress the dependent variables on two period indicator variables interacted with a lender-type indicator variable and a set of control variables. The indicator variable *LLG1 (0/1)* is one if a deal was agreed in 2013 or 2014 and zero otherwise. The indicator variable *LLG2 (0/1)* is one if a deal was agreed in 2015, 2016, or 2017 and zero otherwise. The indicator variable *LISCC (0/1)* is one if an underwriter has been under the supervision of the Large Institution Supervision Coordinating Committee (LISCC) Program and zero otherwise. For a list of these lenders, see Appendix 11.3. All regressions employ the same control variables and fixed effects as Tables 3 plus deal agreement year fixed effects. Standard errors are clustered at the deal agreement year level. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level. The estimations omit equity deals. In columns (1) to (3), (5), and (6), the number of observations is ($N = 341$), and $N = 270$ in column (4).

	(1) Commitment period (days)	(2) Bridge loan commitment (0/1)	(3) Bridge loan commitment (%)	(4) Term loan B volume (% of total)	(5) log(Committed debt /EBITDA)	(6) PE equity share (%)
LISCC (0/1)	-12.869	0.288**	8.079*	-12.365	0.257	-3.344
	(-1.081)	(2.678)	(1.872)	(-1.598)	(1.138)	(-1.175)
LLG1 (0/1) × LISCC (0/1)	21.456*	-0.005	0.005	2.005	-0.405**	2.985
	(1.740)	(-0.034)	(0.002)	(0.319)	(-2.472)	(1.092)
LLG2 (0/1) × LISCC (0/1)	21.231	-0.460***	-14.640**	22.438	-0.361	4.553
	(1.435)	(-4.817)	(-2.217)	(1.596)	(-1.201)	(1.596)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.274	0.408	0.254	0.308	0.412	0.299
N	305	315	315	251	302	315

Table 8: Bank versus private credit fund financing

The table displays the results of LPM regressions for a sample of 499 public-private LBOs (PtP) closed between 2003 and 2023 ($N = 499$, columns (1) to (3)) and a sample of 3,120 non-public-private LBOs (Non-PtP) closed between 2003 and 2023 ($N = 3,120$, columns (4) - (6)) available in PitchBook. 282 of the public-to-private deals are equivalent to our sample deals. All columns regress the indicator variable *Private Debt* (0/1), which is one for deals financed by private debt funds and zero if financed by banks, on the indicator variable *Post* (0/1), which is one for deals closed after 2008 and zero otherwise, and a set of control variables. For the estimations in columns (2), (3), (5), and (6), *Post* (0/1) is interacted with *log*(*Deal size*), which is the log amount of each deal's size in $ million. The estimations control for whether a deal has a covenant-lite loan, whether it was sponsored by a top PE fund, whether it has a bond, and the percentage share of term loan B financing. Also, all estimations control for the CPI, VIX, and median term spread six months before closing, and include industry or industry-year fixed effects and lead arranger fixed effects. Industry fixed effects are based on PitchBook's primary industry sector, and year fixed effects on deals' closing years. The lead arranger is a deal's largest bank sponsor, according to the lender information available in PitchBook. Deals financed by a mixed group of lenders and bonds only are omitted from the sample. Standard errors are clustered at the deal year. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level.

	(1) Private debt (0/1)	(2) Private debt (0/1)	(3) Private debt (0/1)	(4) Private debt (0/1)	(5) Private debt (0/1)	(6) Private debt (0/1)
Post (0/1)	0.124**	-0.007		0.063***	-0.090	
	(2.732)	(-0.044)		(5.278)	(-1.593)	
log(Deal size)	-0.030**	-0.043**	-0.039***	-0.017**	-0.039***	-0.039***
	(-2.335)	(-2.353)	(-2.892)	(-2.467)	(-3.951)	(-4.073)
Post (0/1) × log(Deal size)		0.021	0.007		0.032***	0.030**
		(1.064)	(0.375)		(2.986)	(2.810)
Industry FE	Yes	Yes	No	Yes	Yes	No
Lead FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	No	No	Yes	No	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.547	0.547	0.602	0.595	0.597	0.596
N	495	495	465	3,118	3,118	3,115
Sample	PtP	PtP	PtP	Non-PtP	Non-PtP	Non-PtP

Table 9: Financing structures of bank- versus private credit-financed LBOs

The table displays the results of OLS regressions in columns (1) and (2) and of LMPs in columns (3) and (4) for a sample of 499 public-private LBOs (PtP) closed between 2003 and 2023 ($N = 499$, columns (1) and (3)) and a sample of 3,120 non-public-private LBOs (Non-PtP) closed between 2003 and 2023 ($N = 3,120$, columns (2) and (4)) available in PitchBook. 282 of the public-to-private deals are equivalent to the deals in our sample. Columns (1) and (2) regress a deal's term loan B volume, defined as a percentage share of total deal size, (*Term loan B* (0/1)) and columns (3) and (4) regress the indicator variable *Deal with covlite loan* (0/1), which is one for deals with at least one covenant lite loan and zero otherwise, on the interaction of the indicator variable *Private Debt* (0/1) with the indicator variable *Post* (0/1), both as defined in Table 8, and a set of control variables. The control variables and fixed effects are equivalent to Table 8, and also include *log*(*Deal size*). Note that columns (1) and (2) do not control for the share of term loan B financing because it is the dependent variable in these estimations. Again, deals financed by a mixed group of lenders and bonds only are omitted from the sample. Standard errors are clustered at the deal year. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level.

	(1) Term loan B volume (% of total)	(2) Term loan B volume (% of total)	(3) Deal with covlite loan (0/1)	(4) Deal with covlite loan (0/1)
Private debt (0/1)	-36.893***	-21.457***	0.236***	0.245***
	(-3.631)	(-6.417)	(3.039)	(4.385)
Post (0/1) × Private debt (0/1)	0.500	-1.597	-0.435***	-0.342***
	(0.056)	(-0.527)	(-6.941)	(-7.803)
Lead FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Adj. R^2	0.270	0.282	0.499	0.566
N	465	3,115	465	3,115
Sample	PtP	Non-PtP	PtP	Non-PtP

Table 10: CLO issuance and LBO financing

The table displays the results of re-estimations from Tables 8 and 9, whereby *log(Deal size)* and *Private debt* (0/1) are interacted with the logarithm of the cumulative CLO issuance over the past 6 months (including the current deal closing month) instead of the indicator variable *Post* (0/1). Variable definitions, control variables, and fixed effects are equivalent to Table 8 columns (3) and (6) and all columns from Table 9. Again, deals financed by a mixed group of lenders and bonds only are omitted from the sample. The public-to-private LBO sample (PtP) comprises $N = 499$ observations. The non-public-to-private LBO sample (Non-PtP) comprises $N = 3,120$ observations. The samples are indicated at the bottom of the table. Standard errors are clustered at the deal year. T-statistics are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All continuous independent variables are winsorized at the 1% and 99% level.

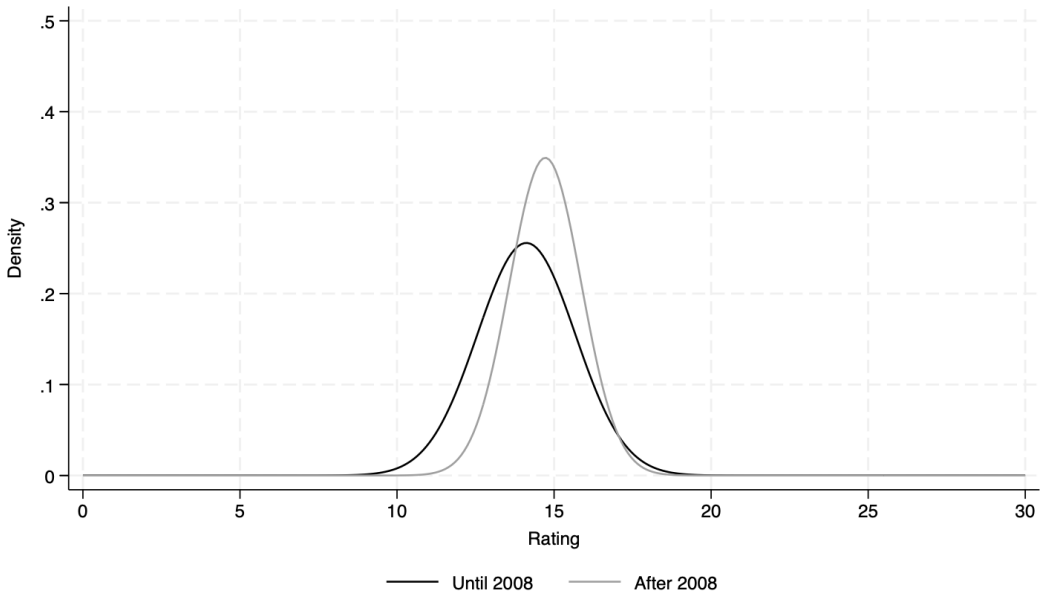
	(1)	(2)	(3)	(4)	(5)	(6)
	Private debt (0/1)	Private debt (0/1)	Term loan B volume (% of total)	Term loan B volume (% of total)	Deal with covlite loan (0/1)	Deal with covlite loan (0/1)
log(CLO issuance)	-0.189**	-0.030	-1.864	5.368**	0.116	0.073***
	(-2.260)	(-0.977)	(-0.318)	(2.775)	(1.519)	(3.385)
log(Deal size)	-0.059*	-0.053***	-1.318	1.650**	0.032*	0.028***
	(-1.839)	(-3.542)	(-0.880)	(2.308)	(1.916)	(5.357)
Private debt (0/1)			-22.792***	-13.369***	0.480***	0.412***
			(-3.145)	(-3.227)	(2.852)	(4.716)
log(CLO issuance) × log(Deal size)	0.007	0.010**				
	(0.836)	(2.814)				
log(CLO issuance) × Private debt (0/1)			-4.068*	-2.619**	-0.162***	-0.115***
			(-2.081)	(-2.380)	(-4.006)	(-5.170)
Lead FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.601	0.596	0.265	0.282	0.494	0.547
N	465	3,115	465	3,115	465	3,115
Sample	PtP	Non-PtP	PtP	Non-PtP	PtP	Non-PtP

11 Appendix

11.1 Figures

Figure A1: Ratings of LBO firms by period

The figure displays the density of the public-to-private LBO companies' S&P long-term issuer rating by period. All ratings were converted to a numerical scale. A rating of 15 equals a B rating. A rating of 14 equals a B+ rating. For target firms in the group "Until 2008", the year of the deal agreement date was 2008 or earlier. For target firms in the group "After 2008", the year of the deal agreement date was after 2008. In total, we have rating information for 158 firms: 68 until 2008 and 90 after 2008. 287 firms lack a rating and are excluded from the graph: 109 until 2008 and 178 after 2008.



11.2 Tables

Table A1: Banks' LBO exposure as estimated by Fitch Ratings

The table displays the total allocation to LBO deals and the resulting LBO exposure of lenders active in the syndication of LBO credit facilities in 2007, as provided by Fitch Ratings (2007). Column (2) displays the total allocation of LBO lenders to their top 20 pending deals in $ million. Column (3) shows the total allocation of LBO lenders to their top 20 pending deals and their top 10 completed deals in $ million. The exposure displayed in column (4) is calculated as the percentage change in a lender's equity capital to asset ratio if 75% of the lender's top 20 pending deals and 50% of the lender's top 10 completed deals return to the lender's balance sheet.

	Top 20 pending $US million	**Total allocation** $US million	**Exposure** Δ equity ratio in %
Citigroup	37,057	56,538	1.70%
JPMorgan Chase	28,771	37,318	1.70%
Bank of America	31,753	33,109	1.60%
Lehman Bros.	29,398	31,566	3.70%
Goldman Sachs	21,270	29,929	2.10%
Deutsche Bank	26,404	27,587	0.80%
Morgan Stanley	25,673	26,856	1.60%
Royal Bank of Scotland	19,028	21,318	0.80%
Credit Suisse	18,155	18,927	1.20%
Merrill Lynch	11,340	16,241	1.00%
Toronto-Dominion	12,752	12,752	2.70%
UniCredito	2,015	6,916	0.40%
Barclays	6,275	6,275	0.20%
Wachovia	4,447	5,803	0.60%
HSBC	3,667	3,667	0.10%
Bear Stearns	2,881	3,654	0.60%
Rabobank	0	1,183	0.10%
Royal Bank of Canada	0	1,107	0.10%
UBS	0	1,107	0.00%
Total	280,886	341,853	

Table A2: Sample composition

Panel A displays the total number of US public-to-private LBOs closed between 2003 and 2021 that would be eligible to enter our sample. It then details how many deals we exclude and why. Panel B shows the number of deals in our final sample and decomposes these by type. 2 of the 272 deals with commitments and financing data are deals for which only notes and no loans were issued. * Indicates that the data on a deal's debt financing comes either from LSEG Loan Connector or PitchBook. There are 22 equity deals with data in LSEG Loan Connector. ** Indicates that the data on a deal's debt financing only comes from PitchBook. *** Indicates that two of these deals comprise mezzanine financing for which no further financing details are available.

Panel A: Initial sample

US deals closed between 2003 and 2021	**512**
OTC pink sheet transactions	20
Deals with undisclosed financing/missing information in their regulatory filings	28
Deals with various other data issues	19
Final number of deals	**445**

Panel B: Final sample

Final number of deals	**445**
Deals with commitments & financing data	272
Equity deals	104
for which we found debt financing upon closing*	39
for which we did not find debt financing upon closing	65
Non-equity deals without syndication data	69
for which we found debt financing upon closing**	46
for which we did not find debt financing upon closing***	23

Table A3: Industry composition by period

The table displays the top 4 industries of all public-to-private LBOs during the pre-GFC (2003 - 2008) and post-GFC (2009 - 2021) period. Column (2) displays the industries' names. Column (3) displays the industries' rank. Column (4) displays the industries' percentage share for the respective sample period. Industry descriptions are based on PitchBooks' primary industry sectors.

Period	**Industry**	**Rank**	%
2003 - 2008	Consumer Products and Services (B2C)	1	32.20
	Business Products and Services (B2B)	2	22.03
	Information Technology	3	19.21
	Healthcare	4	10.73
2009 - 2021	Information Technology	1	32.21
	Business Products and Services (B2B)	2	22.85
	Consumer Products and Services (B2C)	3	18.73
	Healthcare	4	16.48

Table A4: Deal leverage pre- and post-GFC

The table displays summary statistics for deals' net debt-to-EBITDA, defined as total debt commitment divided by EBITDA. Columns (2) and (3) show averages for pre- and post-GFC deals. Column (4) displays the difference in group means and indicates whether it is statistically significant. ***, **, and * indicate the statistical significance for the difference in means test at the 1%, 5%, and 10% level, respectively. The data is winsorized at the 1% and 99% level. Equity deals were omitted from the sample, and EBITDA is only available for 324 deals ($N = 324$).

	2003-2008 Mean	**2009-2021** Mean	**Difference** t-statistic
Net debt/EBITDA	9.73	13.05	(-1.12)
Observations	133	191	324

Table A5: Firm characteristics and LBO structures post-GFC

The table re-estimates the regressions from Table 3, interacting all control variables with the indicator variable *Post (0/1)* and additionally including deal agreement year fixed effect.

	(1) Commitment period (days)	(2) Bridge loan commitment (0/1)	(3) Bridge loan commitment (%)	(4) PE equity share (%)
log(Assets)	22.331***	0.185***	5.238***	-0.923
	(7.072)	(8.978)	(6.424)	(-1.450)
Post (0/1) × log(Assets)	-8.677**	-0.009	-1.472	-1.232
	(-2.349)	(-0.359)	(-0.936)	(-1.063)
PPE/Assets (%)	-0.018	-0.006***	-0.249***	-0.019
	(-0.057)	(-5.410)	(-4.546)	(-0.423)
Post (0/1) × PPE/Assets (%)	0.194	0.006***	0.278***	0.050
	(0.556)	(3.763)	(3.667)	(0.690)
Cash/Assets (%)	0.124	-0.002	-0.161	0.106
	(0.349)	(-0.700)	(-1.236)	(0.641)
Post (0/1) × Cash/Assets (%)	0.017	0.004	0.315*	0.042
	(0.032)	(1.066)	(2.084)	(0.220)
R&D/Assets (%)	-2.102	0.015**	0.106	0.357**
	(-0.994)	(2.241)	(0.290)	(2.344)
Post (0/1) × R&D/Assets (%)	2.863	-0.020*	-0.440	-0.029
	(1.336)	(-2.084)	(-1.157)	(-0.103)
No R&D (0/1)	-3.394	0.130**	2.394	0.788
	(-0.408)	(2.518)	(0.735)	(0.430)
Post (0/1) × No R&D (0/1)	-1.350	-0.130	-4.452	-0.264
	(-0.142)	(-1.496)	(-0.973)	(-0.110)
Income/Assets (%)	-0.487	0.014**	0.395	0.222*
	(-1.359)	(2.256)	(1.396)	(2.060)
Post (0/1) × Income/Assets (%)	0.450	-0.003	-0.173	-0.472***
	(0.744)	(-0.473)	(-0.477)	(-2.911)
Leverage (%)	0.226	0.001	0.048	-0.122*
	(0.670)	(0.591)	(0.516)	(-2.072)
Post (0/1) × Leverage (%)	-0.514	0.001	0.047	0.090
	(-1.344)	(0.284)	(0.321)	(0.982)
ICR	-0.321	-0.004***	-0.266***	0.121
	(-1.108)	(-3.741)	(-4.568)	(1.393)
Post (0/1) × ICR	0.537*	0.003	0.153	-0.113
	(1.745)	(1.162)	(1.036)	(-1.039)
No ICR (0/1)	4.242	0.019	0.821	-4.832***
	(0.247)	(0.234)	(0.244)	(-3.835)
Post (0/1) × No ICR (0/1)	-22.102	-0.121	-2.419	9.375***
	(-0.959)	(-1.134)	(-0.456)	(3.108)
VIX (%)	3.219**	-0.023***	-1.190***	-0.752*
	(2.472)	(-4.180)	(-3.821)	(-1.753)
Post (0/1) × VIX (%)	-3.716*	0.023***	0.752*	0.226
	(-1.985)	(2.963)	(1.755)	(0.475)
CPI (%)	-0.005	-0.001	-0.013	-0.032*
	(-0.035)	(-1.216)	(-0.488)	(-1.922)
Post (0/1) × CPI (%)	0.237	0.003**	0.018	0.015
	(0.961)	(2.218)	(0.242)	(0.322)
Term spread	-10.360	0.147**	5.714*	7.500***
	(-0.717)	(2.519)	(1.747)	(3.001)
Post (0/1) × Term spread	-0.875	-0.204**	-6.497	-10.499***
	(-0.028)	(-2.572)	(-1.686)	(-2.960)
Industry FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Lead FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Adj. R^2	0.277	0.402	0.248	0.315
N	305	315	315	315

11.3 Lenders under the LISCC

The lenders under the supervision of the Large Institution Supervision Coordinating Committee (LISCC) Program, ranked alphabetically, are:

- Bank of America
- Citigroup
- Goldman Sachs
- JPMorgan Chase
- Morgan Stanley
- Wells Fargo

12 Data Appendix

Variable	Description	Source
$\#PE\ sponsors$	Number of private equity sponsors	CapitalIQ
$Affiliated\,CLO\,(0/1)$	Indicator variable - 1 if a CLO belonging to the same asset manager as at least one PE sponsor purchased the deal's debt, zero otherwise	LSEG LPC Collateral
$AISD$	In bps - All-in-spread-drawn	LSEG Loan Connector
$Bond\,volume$	In % - Bond debt as a percentage share of total deal debt	LSEG Loan Connector/FISD
$Bridge\,loan\,(0/1)$	Indicator variable - 1 if a loan was a bridge loan, 0 otherwise	LSEG Loan Connector
$Bridge\,loan\,commitment\,(0/1)$	Indicator variable - 1 for deals with a bridge loan commitment, zero otherwise	SEC EDGAR
$Bridge\,loan\,commitment$	In % - Committed bridge loan financing as a percentage share total committed financing (equity plus debt)	SEC EDGAR
$Cash/Assets$	In % - Cash divided by total assers	Compustat
$Commitment\,period$	In days - Number of days between the provision date of the debt commitment letter and its expiration date	SEC EDGAR
$Covlite\,loan$	Indicator variable - 1 for deals agreed/closed after 2008, zero otherwise	LSEG Loan Connector
CPI	In % - Monthly growth rate of the consumer price index	FRED
$Credit\,line\,volume$	In % - Credit line debt as a percentage share of total deal debt	LSEG Loan Connector/FISD

Variable	Description	Source
Credit line (0/1)	Indicator variable - 1 if a loan was a credit line, 0 otherwise	LSEG Loan Connector
Deal with covlite loan (0/1)	Indicator variable - 1 for deals with at least one covenant-lite loan, zero otherwise	LSEG Loan Connector
Flexed (0/1)	Indicator variable - 1 if either the spread, price, or amount of a loan was flexed during the syndication process, 0 otherwise	PitchBook
Flexed price (0/1)	Indicator variable - 1 if the price of a loan was flexed, 0 otherwise	PitchBook
ICR	In % - Interest coverage ratio; Interest expenditure over EBITDA	Compustat
In CLO (0/1)	Indicator variable - 1 for loans purchased by CLOs, 0 otherwise	LSEG LPC Collateral
Income/Assets	In % - Operating income divided by total assets	Compustat
Leverage	In % - Long-term debt divided by total assets	Compustat
LISCC (0/1)	Indicator variable - 1 if an underwriter has been under the supervision of the Large Institution Supervision Coordinating Committee (LISCC) Program, 0 otherwise	SEC EDGAR
*LLG*1 (0/1)	Indicator variable - 1 for deals agreed in 2013 or 2014, zero otherwise	CapitalIQ
*LLG*2 (0/1)	Indicator variable - 1 for deals agreed in 2015, 2016, or 2017 and zero otherwise	CapitalIQ
log(*Assets*)	Logarithm to total assets	Compustat

Variable	Description	Source
$log(Committed\,debt/EBITDA)$	Logarithm of committed debt divided by EBITDA	SEC EDGAR/Compustat
$log(Deal\,Size)$	Logarithm of the deal size in $US million	PitchBook
$log(CLO\,issuance$	Logarithm of the cumulative CLO issuance over the past 6 months, including the current deal closing month	PitchBook
$No\,ICR\,(0/1)$	Indicator variable - 1 if a firm did not have an interest coverage ratio, zero otherwise	Compustat
$No\,R\&D\,(0/1)$	Indicator variable - 1 if a firm did not have any R&D expenditure, zero otherwise	Compustat
$PE\,equity\,share$	In % - Share of equity provided by a deal's private equity sponsors as a percentage share of total committed deal financing (equity plus debt)	SEC EDGAR
$Post\,(0/1)$	Indicator variable - 1 for deals agreed/closed after 2008, zero otherwise	CapitalIQ
$PPE/Assets$	In % - Net property, plant, and equipment divided by total assets	Compustat
$Price$	In pp - Loan price, replaced with 100 if missing	PitchBook
$Private\,debt\,(0/1)$	Indicator variable - 1 if a deal was underwritten by private credit funds, 0 if underwritten by banks	PitchBook
$R\&D/Assets$	In % - R%D expenditure divided by total assets	Compustat
$Term\,loan\,A\,(0/1)$	Indicator variable - 1 if a loan was a term loan A, 0 otherwise	LSEG Loan Connector
$Term\,loan\,B\,(0/1)$	Indicator variable - 1 if a loan was a term loan B, 0 otherwise	LSEG Loan Connector

Variable	Description	Source
$Term\,loan\,B\,volume$	In % - Term loan B debt as a percentage share of total deal debt	LSEG Loan Connector/FISD
$Term\,spread$	In % - Monthly median term spread (10-years vs. 3-month T-Bill)	FRED
VIX	In points - Monthly average CBOE Volatility Index	FRED