Value Is in the Eye of the Beholder: Strategic Marking in Private Credit *

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Abstract

I study whether loan valuations reported by private credit funds reflect fund-level incentives. Comparing valuations assigned by different funds to the same loan at the same point in time, I find that funds report higher loan valuations precisely when their contemporaneous realized performance is weaker. Additional analyses of cross-sectional patterns show that this behavior is consistent with strategic marking that smooths reported returns. The effect is strongest in settings where valuation discretion is plausibly greater and where deviations matter most for reported performance and net asset value. The effect intensifies when funds have stronger incentives to relax binding leverage constraints through higher reported net asset values. The results cannot be explained by alternative channels such as asymmetric information, portfolio selection, and delayed updating of marks. These findings highlight an agency-based component of valuation in private credit and have implications for the reliability of reported net asset values and for the monitoring of financial stability risks in stress episodes.

JEL classification: G21, G23, G24, G28

Keywords: Private credit, business development companies, valuation, strategic marking, return smoothing, financial stability

1 Introduction

Private credit funds have grown from a niche segment of credit markets into a major source of corporate borrowing, comparable in size to the leveraged-loan and high-yield bond markets (PitchBook, 2025a; International Monetary Fund, 2024). Given their rapid expansion, regulators and industry observers have become increasingly concerned about the quality of loan valuations in the private credit industry.[1] Unlike publicly traded debt, private credit loans rarely trade after origination and are typically held to maturity. As a result, interim valuations rely heavily on mark-to-model estimates rather than market prices.[2] These valuations directly determine reported fund performance, net asset values, and leverage capacity, creating scope for managerial discretion. Indeed, both academics (Balloch and Gonzalez-Uribe, 2021; Jang and G. Kim, 2025) and industry observers (Benitez, 2024a) document incidents of substantial dispersion in reported valuations of the same loan held by different funds. The reliability of loan valuations matters because it can distort reported fund performance, mask emerging losses, and delay corrective action. These concerns are amplified by the deepening links between the private credit sector and the broader financial system, through bank financing and co-investment and through insurance and pension funds exposure to private credit funds.[3] These links increase the risk that hidden losses in private credit propagate across balance sheets and intensify repricing dynamics in stress episodes.

Against this backdrop, this paper asks what drives private credit funds' loan marks. In particular, I study why some funds report higher or lower loan fair values than others. I show that valuation differences between multiple funds holding the same loan reflect agency frictions. More precisely, loan-level valuation gaps are systematically explained by fund-level

[1] Regulators at the U.S. Securities and Exchange Commission, the European Central Bank, and the International Monetary Fund have raised concerns about the reliability of loan valuations in private credit, the risk of hidden losses, and vulnerabilities related to redemptions (see, e.g., Benitez (2024b), Weinstein (2024), European Central Bank (2026), Financial Stability Board (2026), and Hohl and Daly (2026)).

[2] See Section A.1 in Appendix for a description of the mark-to-model fair-value estimation framework.

[3] See Berrospide et al. (2025) on the exposure of banks to private credit and Meisenzahl et al. (2025) and International Monetary Fund (2024) on the exposure of life insurers and pension funds.

performance, even after accounting for plausible sources of fund and borrower heterogeneity and various alternative explanations such as stale pricing, asymmetric information, portfolio selection, within-portfolio correlations, loan restructuring and portfolio rebalancing.

I examine valuation behavior of private credit funds through the lens of U.S. Business Development Companies (BDCs), a close institutional analog of traditional private credit funds.[4] BDCs provide a particularly suitable setting for studying dispersion in loan valuations in the private credit industry for several reasons. First, BDCs are a central part of the U.S. private credit ecosystem: as of 2024, BDCs managed about $440 billion in assets, accounting for roughly 20% of private credit funds' assets under management.[5] Second, BDCs are also informative about the broader private credit market because sponsors of BDCs (asset managers) often manage other private credit funds and frequently co-invest in the same borrowers across funds, so BDC valuation practices shed light on practices in the wider sector (Jang, 2024). Finally, and crucially for my research setting, BDCs are SEC registrants that disclose an asset-by-asset schedule of investments in both their annual and quarterly reports.

To study valuation behavior in private credit, I construct a quarterly loan-level panel that links BDC financial statements, detailed asset-level portfolio holdings, and information on the asset managers behind each BDC. The holdings data include the loan-level information necessary for my empirical strategy, including borrower identity, loan characteristics, reported fair values, and the identity of the BDCs holding each loan. The final dataset covers the universe of BDCs from 2009 to 2024.

My empirical strategy combines fund-level performance data with granular loan-level valuations. I decompose fund performance into realized transactional outcomes and unrealized valuation changes, which differ sharply in the scope for managerial discretion.[6] I examine

[4]Throughout the rest of the paper, I use the terms "BDCs" and "funds" interchangeably to refer to Business Development Companies. I use "private credit funds" to refer to traditional private credit funds (that are not BDCs).

[5]Based on PitchBook (2025a) and author's calculations.

[6]The sum of the realized and unrealized components of the fund performance is net income, reported by BDCs as "Net increase/decrease in net assets from operations". Net income is the primary driver of changes in Net Asset Value (NAV). See Section 2.2 for a detailed description of the components of a typical BDC Income Statement.

how these two components co-move within reporting periods and whether loan valuation changes systematically offset realized performance. A key feature of my empirical setting is that multiple BDCs frequently hold the same loan at the same time, allowing me to compare valuations for identical credit exposures across funds within a given quarter.[7] This identification strategy holds underlying borrower risk constant and attributes cross-sectional differences in reported valuations to fund-level factors rather than to differences in loan fundamentals.

In the baseline specification, I apply the identification strategy of Khwaja and Mian (2008) at the loan level. I regress individual loan valuations on BDC realized performance and include loan-by-quarter fixed effects, so that identification comes from comparing how different BDCs value the same loan in the same quarter. I show that funds with weaker realized performance assign higher fair values to their loans relative to peer funds holding the same loan in the same quarter. For the median fund, a one standard deviation decrease in realized performance corresponds to total upward valuation adjustments amounting to approximately 4.75% of increase in net assets from operations in the same reporting period. This finding is robust across a wide range of checks, including alternative specifications and variable definitions, and different subsamples.

By decomposing realized performance into its components, I find that the effect is driven primarily by less predictable performance shocks. In particular, realized gains and losses arising from credit events and settlements, as well as the non-accrual loans in the loan portfolio, exhibit a significantly stronger relationship with loan valuations than more stable and anticipated components, such as recurring investment income and expenses. The evidence from non-accrual loans is particularly informative because non-accrual status is primarily driven by underlying borrower distress and therefore generates variation in funds' realized

[7]This setting is made possible by the prevalence of "club deals" in private credit lending, whereby multiple lenders participate in the same loan. Evidence from Block et al. (2024) suggests that approximately 44% of US private credit fund managers (general partners) syndicate debt transactions with other debt funds. Aldasoro and Doerr (2025) estimate that, as of 2024, approximately 40% of all private credit deals are club deals.

performance that is plausibly more exogenous to managers' contemporaneous discretion.

Further evidence of strategic valuation behavior emerges in the cross-section of loans. At the loan level, the association between BDC realized performance and loan valuations is stronger when valuations are harder to verify and when the loan has a larger impact on fund NAV. I also examine loans held by a single BDC, for which there is no same-loan peer valuation benchmark. Using a comparison group of BDCs lending to borrowers in the same sector, using the same debt instrument carrying the same seniority, I provide suggestive evidence that single-BDC-held loans exhibit even stronger upward valuation deviations when realized performance declines.

In the cross-section of funds, the effect is stronger among more leveraged funds. This pattern is intuitive, since negative shocks to realized performance reduce net asset value and tighten leverage constraints, increasing incentives to report higher valuations. I also test whether the effect is stronger around sponsor fundraising activity, but find no evidence of amplification through this channel.

Evidence from the loan level also translates into aggregate effects at the fund level. I show that individual loan-level valuation deviations, aggregated to the fund level, are negatively correlated with realized performance even after controlling for time-varying fund characteristics, fund fixed effects, and time fixed effects. These aggregate deviations are largest in the quarter in which performance is realized and gradually unwind over the following year. I also show that larger fund-level valuation deviations predict lower future return on invested equity, suggesting that upward deviations do not reflect stronger fundamentals but instead precede weaker subsequent fund performance. Finally, funds whose marks exceed those of co-lenders on the same loans subsequently experience a decline in bank borrowing, concentrated in revolving credit facilities, whose availability is tied to the value of the fund's portfolio. This pattern is consistent with lenders not relying on reported marks alone, and with lenders responding to changes in portfolio credit quality that are not yet fully reflected in reported valuations.

My granular data allows me to address several alternative explanations, with two channels being particularly important. The first is stale pricing. Curtis and Raney (2020) show that BDCs exhibit delays in adjusting asset valuations, particularly when reporting bad news. If co-lenders adjust the fair value of the same loan at different speeds, cross-fund dispersion in reported marks could partly reflect asynchronous updating rather than discretionary revaluation. I show that my results continue to hold in the subsample of loans for which valuations have been actively updated.

A second key concern is asymmetric information among lenders holding the same loan. A fund may mark a position higher or lower than its peers simply because it has superior borrower information. Although differences in information access do not easily explain a systematic relationship between loan valuations and realized performance, they remain a potential confounding factor. I address this concern in three ways. First, I control for funds' roles with respect to the portfolio company (borrower), such as whether the fund is a lead arranger or an equity investor in the portfolio company. Second, I focus on recently issued loans, for which asymmetric information among lenders should be more limited. Third, I include asset-manager-by-loan-by-quarter fixed effects, comparing valuations within the same asset manager holding the same loan through different funds in the same quarter. Across all three tests, the results continue to hold, suggesting that the baseline relationship is unlikely to be driven by differential information across lenders.

I also consider several additional, but perhaps less central, alternative explanations. First, the baseline relation could be confounded by portfolio rebalancing, whereby funds realize losses by selling underperforming loans and are left holding higher-quality assets. Second, loan restructurings could mechanically generate a similar pattern if a fund recognizes a realized loss on part of a loan while the remaining restructured position stays in the portfolio at a higher reported value. Third, portfolio selection or within-portfolio correlation across loans could create a correlation between realized performance and loan valuations even in the absence of discretionary marking. In Section 4.3, I discuss these channels and show why

they cannot account for the negative relation documented in the baseline results.

The rest of the paper proceeds as follows. The remainder of this section reviews the related literature. Section 2 describes the institutional background of BDCs, including the structure of their income statements and how reported valuations feed into net asset value. Section 3 describes the data sources and the construction of the main variables. Section 4 presents the results: it first documents the loan-level relationship between realized performance and loan valuations, along with its cross-sectional patterns across loans and funds, then examines the implications of valuation deviations for fund-level outcomes, and finally addresses alternative explanations. Section 5 concludes.

Related Literature This paper contributes to two related strands of literature. First, it contributes to the rapidly growing literature on private credit. Existing studies explore the drivers of private credit growth and its interaction with banks (Chernenko, Erel, et al., 2022; Davydiuk, Marchuk, et al., 2024; Haque, Mayer, et al., 2025; Avalos et al., 2025), its implications for financial stability and monetary policy transmission (Chernenko, Ialenti, et al., 2025; Jang and Rosen, 2025; Haque, Jang, et al., 2025; Berrospide et al., 2025; Matvos et al., 2026; Fang et al., 2026), the lending behavior of private credit funds over the business cycle (Rotermund, 2025; Hinzen et al., 2026), the role of private credit funds and BDCs as relationship lenders and dual debt and equity investors (Block et al., 2024; Jang, 2024; Rintamäki, 2025; Davydiuk, Erel, et al., 2024), the interactions between private credit and private equity (Ivashina, 2025; Jang, D. Kim, et al., 2025; Robinson and Wallskog, 2026), the performance of private credit as an asset class (Böni and Manigart, 2022; Suhonen, 2024; Erel et al., 2024), the use of payment-in-kind instruments (Rintamäki and Steffen, 2025).

Within the literature on private credit, a smaller set of papers focuses specifically on how private credit holdings are valued. Curtis and Raney (2020) document delayed reporting in BDCs' fair values. Balloch and Gonzalez-Uribe (2021) show that the slackness of regulatory leverage constraints affects how BDCs report fair values. Jang and G. Kim (2025) study the

role of third-party valuation firms in the valuation process. Daniel et al. (2026) find that funds offering investors greater redemption rights report lower prices on the same distressed loans. I contribute to this literature by introducing realized performance as a driver of valuation practices. Unlike the fund characteristics and reporting practices studied previously, realized performance captures the pressure a manager faces from the actual performance of the portfolio, and I show that this pressure filters directly into reported loan values.

The second strand is the literature on strategic marking of illiquid assets. Prior work documents discretionary valuations by banks (Huizinga and Laeven, 2012; Begley et al., 2017; Plosser and Santos, 2018; Behn et al., 2022), insurers (W. Hanley et al., 2018), mutual funds (Cici et al., 2011; Agarwal et al., 2023), and private equity and venture capital funds (Jenkinson, Sousa, et al., 2013; Barber and Yasuda, 2017; Chakraborty and Ewens, 2018; Brown et al., 2019; Jenkinson, Landsman, et al., 2020), as well as corporate managers' use of fair-value discretion to manage reported earnings (Dechow et al., 2010; Ramanna and Watts, 2012).

I contribute to this literature in two ways. First, I provide evidence of valuation biases in private credit, an asset class that is economically important in its own right and whose institutional setting differs from those of banks, insurers, and mutual funds. Second, relative to work on private markets, my setting offers a data advantage: BDCs' regulatory filings report asset-level marks at a quarterly frequency, allowing me to study valuation behavior at the asset level rather than infer it from fund-level aggregates. This granularity supports tighter identification and sharper tests against alternative explanations.

2 Institutional Background

2.1 Business Development Companies

BDCs are a closed-end fund structure created by the U.S. Congress in 1980 under the Small Business Investment Incentive Act, with the objective of expanding financing to small and

middle-market firms.[8] BDCs finance their investments with a mix of equity issuance (public or private), bonds, and bank credit facilities. In terms of leverage, BDCs are subject to an asset coverage requirement of 150%, implying a maximum debt-to-equity ratio of 2:1.[9] Although BDCs invest across the debt and equity of portfolio companies' capital structure, their portfolios are predominantly composed of debt instruments. The majority of BDCs specialize in direct lending, as opposed to other private credit investment strategies such as venture debt and distressed debt.[10]

The number of BDCs has increased over time, particularly in the post–global financial crisis period (Davydiuk, Marchuk, et al., 2024; Chernenko, Erel, et al., 2022). Figure 1 plots the number of active BDCs and their combined total assets over time. The figure shows a further expansion after 2020, consistent with heightened investor demand for yield (International Monetary Fund, 2024). As of 2024, there are 151 active BDCs with combined assets under management of $440 billion.

BDCs differ in terms of investor accessibility. Traded BDCs are listed on U.S. stock exchanges and accessible to both institutional and retail investors. As of 2024, there are 46 BDCs that are publicly listed. Non-traded BDCs may be public (retail-accessible) or private (accredited and institutional investors only). Non-traded public BDCs typically offer periodic liquidity windows that allow share issuance and redemption at NAV per share, subject to a pre-specified redemption limit per period (typically 5% of net assets). Non-traded private BDCs more closely resemble traditional private credit funds, with capital commitments and drawdowns, a lockup period, and a finite fund term. As of 2024, there are 73 BDCs that operate using this fund structure. Section A.2 in Appendix provides more information about business development companies.

[8] According to the U.S. National Center for the Middle Market (NCMM), "middle-market" firms are businesses with $10 million to $1 billion in annual revenues, or 50 to 500 employees. NCMM estimates that this segment accounts for approximately one-third of U.S. private-sector GDP and employment.

[9] Prior to 2018, BDCs were subject to an asset coverage requirement of 200%. A regulatory change in March 2018 lowered this requirement to 150%.

[10] According to Pitchbook fund type classification for each BDC.

2.2 Income Statement and Statement of Changes in Net Assets of Business Development Companies

The income statement reported in a BDC's Forms 10-Q and 10-K provides a detailed breakdown of the value generated for investors through operations. Figure A1 presents an illustrative example of a typical BDC income statement. The income statement can be broken down into three main components: net investment income, realized gains and losses, and unrealized gains and losses. Net investment income captures income from ordinary operations (interest, dividends, and fees) net of expenses (interest expense, management fees, and other operating costs). Realized gains and losses reflect the total of the gains and losses recognized upon the settlement, sale, or other disposition of investment and derivative positions. Unrealized gains and losses capture total changes in the fair value of investment and derivative positions. The sum of net investment income, realized gains and losses, and unrealized gains and losses constitutes the net income of the fund, typically reported as "Net Increase/Decrease in Net Assets from Operations".

Net income feeds directly into the "Statement of Changes in Net Assets", which decomposes period-to-period changes in the fund's net asset value (NAV). This statement consists of two components: the net increase/decrease in net assets from operations (net income) and capital transactions (dividends paid and share issuances and redemptions). Accordingly, net income plays a central role in shaping reported NAV and, by extension, reported fund performance. It also directly affects a BDC's distance to regulatory leverage limits, which are defined in terms of net assets measured at fair value rather than book value.

3 Data and Variable Definitions

My sample covers the universe of BDCs from 2009 to 2024 and includes 200 BDCs in total.[11] I combine four complementary data sources, described below.

[11] I drop three BDCs that operate mainly as REITs and one that operates as a venture capital fund, similar to Rintamäki and Steffen (2025). My results are robust to including or excluding those BDCs.

3.1 SEC EDGAR

I use the U.S. Securities and Exchange Commission's EDGAR API to access Forms 10-Q and 10-K filed by BDCs in my sample. I parse the balance sheets, income statements, and statements of cash flows from these filings. I then use a proprietary code to extract the key financial variables required for my analysis. From the income statement I extract total investment income, total expenses, net expenses, net investment income, total realized gains (losses), total change in unrealized gains (losses), and the net increase (decrease) in net assets from operations.[12] The variables extracted from the balance sheet are total assets, total liabilities, equity (net assets) and cash.

I then use the extracted information to construct a BDC-level quarterly panel containing the core financial variables for each fund. In addition, I use the disclosures in the filings to hand-collect information on BDC organizational structure, including whether the fund is publicly traded, non-traded, or private, and whether it is internally or externally managed.

To measure the realized performance of a BDC j at time t, I define *Realized Performance* as the sum of net investment income and realized gains (losses), scaled by lagged assets.[13]

$$Realized\ Performance_{j,t} = \frac{Net\ Investment\ Income_{j,t} + Realized\ Gains\ (Losses)_{j,t}}{Total\ Assets_{j,t-1}}. \quad (1)$$

Table 1 reports summary statistics for the BDC-level variables used in the analysis. The average BDC holds $1.6 billion in total assets, while the median BDC is substantially smaller, with assets of approximately $0.6 billion, indicating a right-skewed size distribution driven by a small number of large funds. BDCs operate with moderate leverage: the mean liabilities-to-assets ratio is 0.40, with an inter-quartile range from 0.33 to 0.52. Measures

[12] BDC income statements occasionally report one-off items, such as gains or losses from the extinguishment of debt. I classify these items as realized or unrealized based on their economic substance; they are rare and have a negligible effect on aggregate measures. See Section A.3 for detailed explanation of the construction of the BDC financials dataset.

[13] Throughout the remaining of this paper, *Realized Gains* refers to realized gains (losses), while *Realized Performance* refers to realized gains (losses) plus net investment income. Finally, *Unrealized Gains* refers to change in unrealized gains (losses). The three variables are scaled by 1-period lagged assets.

of operating performance exhibit considerable dispersion. The median realized performance is 1.2% per quarter, though realizations are occasionally negative in the lower tail of the distribution. Return on equity has an average of 1.6% and a median of 2.2% per quarter, with substantial variation across funds and over time (4.3% of standard deviation), reflecting heterogeneity in portfolio performance, leverage, and valuation outcomes.

3.2 Pitchbook

I manually match the BDCs in my sample to funds in Pitchbook to collect data about BDC sponsors and their fundraising activities. For externally-managed BDCs, a sponsor is the asset manager who is responsible for managing the BDC, including the assignment of loan valuations. The sponsor typically manages other BDCs and private credit funds. Historically, most BDCs were internally managed. Over time, the number of externally-managed BDCs has constantly increased, while the number of internally-managed BDCs has declined. As of 2024Q4, there are 144 externally-managed BDCs and 7 BDCs that are managed by an in-house management team.

3.3 S&P Capital IQ

I collect data on BDCs' debt financing from the S&P Capital IQ Debt Capital Structure database, which reports details about each BDC's outstanding debt at a quarterly frequency. For each filing date, the data record total principal outstanding by debt instrument type, aggregated across all facilities of that type. I match BDCs to this database using their SEC CIK identifiers, obtaining debt capital structure information for 69 BDCs in my sample.

3.4 SOLVE Workstation BDC Data

SOLVE is a fixed-income data provider that offers a dedicated BDC platform (Workstation BDC Data). The platform reports BDC portfolio holdings at the individual asset level, sourced from the investment schedules in BDC regulatory filings. For loans, the data covers key information: the name, country, and sector of the borrower, principal amount, cost

amount, fair value amount, reference interest rate and spread, as well as issuance and maturity dates. In addition, SOLVE also provides data on other types of individual holdings such as equity and structured products.

A key advantage of SOLVE Workstation BDC Data is loan identifiers. Using a proprietary algorithm that takes into account all loan and borrower characteristics (e.g., different variations of reporting the borrower name, borrower industry, loan currency, seniority, coupon and maturity) SOLVE links the same loan across BDCs and over time.[14] Another key advantage of SOLVE's dataset is the detailed information on non-accrual loans in each BDC filing. Non-accrual loans are loans for which the borrower hasn't paid principal or interest due for over 90 days, or for which the BDC's management believes that the principal is unlikely to be paid in the future. SOLVE extracts asset-level information on non-accrual loans from each BDC's schedule of investments and the associated footnotes. For each non-accrual position, SOLVE provides asset-level variables including the borrower's name and industry, maturity date, principal amount, fair value, and the first reporting date on which the loan is classified as non-accrual.

I limit my sample to U.S. portfolio companies and debt investment positions (loans and notes) in USD. I exclude revolvers and delayed-draw credit facilities and drop observations with missing principal amount, fair value amount, or maturity date. Furthermore, I follow Davydiuk, Erel, et al. (2024) and exclude observations with reported valuations below 0.6 (i.e., below 60 cents per dollar) and winsorize the right tail of the loan valuation distribution at 1%. In BDC filings, such low reported valuations frequently reflect non-economic (mechanical) marking of specific positions. These positions are usually unfunded or partially

[14] Approximately 17% of SOLVE loan identifiers are missing over 2009–2024, with the missing loan identifiers concentrated in the early years and declining over time. To retain the observations with missing identifiers, I use borrower and loan characteristics to (i) match loans without identifiers to identified loans and impute the corresponding SOLVE identifier where a match is found, and (ii) for the remaining unmatched loans, construct a consistent loan identifier based on the same borrower and loan characteristics. Borrower and loan characteristics used are: borrower name and industry, and loan seniority, coupon and maturity. The main results are robust to dropping loans with missing identifiers or to using only my custom identifier for the full sample instead of the loan identifier provided by SOLVE. The robustness checks for the baseline result are provided in Table A2, including a specification that uses firm-by-time fixed effects instead of loan-by-time fixed effects on the full sample of loans (including loans held by only one BDC).

funded commitments that are carried at a low mechanically-defined amount rather than a risk-implied valuation.[15] In addition, excluding these extreme values also aligns the sample with the paper's focus on performing and near-performing private credit loans, rather than deeply distressed positions.[16]

Finally, I follow a similar approach to Plosser and Santos (2018) and restrict the sample to loans held simultaneously by multiple BDCs. This allows me to benchmark a given BDC's reported loan valuation against those of other lenders on the same loan, while holding fixed loan fundamentals and borrower-level conditions throughout the analysis by using loan-by-time fixed effects.

The main dependent variable in my loan-level analysis is the loan fair value (*Loan Fair Value*), defined as the fair value amount of loan i to firm f as reported by BDC j in year-quarter t, divided by the principal amount of the loan.[17]

$$Loan\ Fair\ Value_{i,f,j,t} = \frac{Fair\ Value\ Amount_{i,f,j,t}}{Principal\ Amount_{i,f,j,t}}. \tag{2}$$

I also report specifications that use an alternative outcome variable, *Fair Value Deviation*, which measures cross-lender dispersion directly. *Fair Value Deviation* is defined as the valuation of loan i to firm f by BDC j in year-quarter t minus the average valuations by all other BDCs holding the same loan i in year-quarter t (excluding BDC j).[18] More specifically:

[15]Such positions often exhibit low (sometimes negative) fair value. For example, see T Series Middle Market Loan Fund LLC 2022Q2 Form 10-Q, Schedule of Investments footnote 10: https://www.sec.gov/Archives/edgar/data/1885968/000188596822000044/tseriesq3_2022.htm. Loans with reported valuations below 0.6 constitute roughly 3% of the left tail of the valuation distribution in the sample. The main results are robust to moving the 0.6 threshold by 0.1 higher or lower. The robustness checks for the baseline result are provided in Table A2.

[16]Consistent with this valuation boundary, the distressed-debt literature typically assumes loss-given-default of about 35%–40%, which implies recovery rates of 60%–65% and hence a natural lower bound near 0.6 for valuations in non-distressed samples (see, e.g., Sundaresan et al. (2015)).

[17]For example, *Loan Fair Value* of 0.95 can be interpreted as 95 cents per dollar of principal amount.

[18]Gormley and Matsa (2014) show that demeaning outcomes within groups (e.g., BDCs holding the same loan) can produce inconsistent estimates in the presence of unobserved group-level shocks. On the other hand, the fixed-effects estimator is consistent under standard assumptions. Accordingly, my baseline specifications use *Loan Fair Value* with loan-by-time fixed effects, and I report *Fair Value Deviation* as an alternative specification. Results of the specification using the *Fair Value Deviation* alternative output variable are robust to including BDC j when calculating the average valuation of loan i at time t.

$$\textit{Fair Value Deviation}_{i,f,j,t} = \textit{Loan Fair Value}_{i,f,j,t} - \frac{1}{N_{i,f,t}-1} \sum_{\substack{k \in \mathcal{J}_{i,f,t} \\ k \neq j}} \textit{Loan Fair Value}_{i,f,k,t} \tag{3}$$

where $\mathcal{J}_{i,f,t}$ denotes the set of BDCs holding loan i to firm f at time t, and $N_{i,f,t} = |\mathcal{J}_{i,f,t}|$.

Panel A of Table 2 reports summary statistics for the loan-level sample used in the empirical analysis. The sample contains 11,302 unique loans issued to 5,911 firms over 2009Q1–2024Q4. Loan size is right-skewed: the mean principal amount is $16.57 million, while the median is $5.78 million, consistent with a growing prevalence of larger loans in the later part of the sample. The average remaining time to maturity, defined as the difference between the maturity date and the reporting date, is 19.81 quarters. Most observations are floating-rate loans, as is standard in private credit, accounting for 85% of the sample. In terms of seniority, 77% of the observations belong to senior secured first-lien loans. For comparison, Panel B reports summary statistics for the full loan universe, including loans held by a single lender. Figure 2 documents the increasing prevalence of overlapping loan holdings across BDCs. Panel A shows a steady increase in the average number of BDC lenders per loan, coinciding with the expansion of private credit as an asset class and the entry of new BDCs into the market. Panel B shows that the share of loans held by more than one BDC rises steadily over the sample period, reaching nearly 40% of all BDC loans by 2024Q4.

4 Results

I begin by examining the loan-level panel of co-held loans to provide micro-level evidence on the relationship between realized performance and fair value deviations. Next, I present complementary evidence at the fund level to evaluate the aggregate implications of valuation deviations. Finally, I examine and rule out several alternative explanations for my results, including stale pricing, asymmetric information, portfolio selection, simultaneous learning, portfolio rebalancing, and restructuring of outstanding loans.

4.1 Loan-Level Results

4.1.1 Baseline Specification

I begin by examining valuation deviations at the individual loan level. Specifically, I regress *Loan Fair Value* on *Realized Performance* using the quarterly loan-level panel spanning 2009Q1–2024Q4. I control for a set of lagged, time-varying BDC characteristics: fund size (log total assets), leverage (liabilities to assets), liquidity (cash to assets), and profitability (return on equity). I further include BDC fixed effects, which absorb time-invariant differences across funds, such as valuation policies, investment strategy, or a persistent tendency to mark loans more aggressively or conservatively compared to other lenders. Finally, I include loan-by-time fixed effects, which absorb the year-quarter specific average valuation of each loan across all BDCs holding it, such that each fund's reported mark is identified from its deviation relative to all co-lenders average in that year-quarter. In addition, this fixed-effects structure flexibly controls for all time-varying loan- and borrower-level fundamentals. I cluster standard errors two-way at the BDC and year-quarter levels.[19] I estimate the following regression equation:

$$\textit{Loan Fair Value}_{i,f,j,t} = \beta\, \textit{Realized Performance}_{j,t} + \boldsymbol{\gamma}'\mathbf{X}_{j,t-1} + \alpha_j + \lambda_{i,t} + \varepsilon_{i,f,j,t}, \quad (4)$$

where $\textit{Loan Fair Value}_{i,f,j,t}$ is the fair value of loan i to firm f reported by BDC j at time t, $\textit{Realized Performance}_{j,t}$ denotes the realized performance of BDC j in quarter t, $\mathbf{X}_{j,t-1}$ is a vector of lagged BDC-level control variables, α_j are BDC fixed effects, $\lambda_{i,t}$ are loan-by-time fixed effects, and $\varepsilon_{i,f,j,t}$ is an error term.

Table 3 presents the results from Equation 4. Column (1) includes loan-by-time and BDC fixed effects without fund-level controls. Column (2) adds the full set of lagged, time-varying BDC controls. Column (3) weights observations by loan size, defined as the loan's principal amount scaled by the BDC's total assets. Finally, column (4) focuses on more recent history, limiting the sample to loan observations from 2020Q1 to 2024Q4. Across all specifications,

[19] Results are robust to clustering two-way by borrower and year-quarter or by loan and year-quarter.

the negative relationship between loan valuations and fund realized performance is stable and statistically significant. It is larger when observations are weighted by loan size, and increases by approximately 30% relative to the baseline result in column (2) when focusing on the post-2019 period (Covid-19 onwards).[20]

The effect is economically meaningful. Based on the estimates in column (2), a one–standard deviation change in *Realized Performance* implies a valuation deviation of $5,037 for the median loan in the sample. Aggregating across the median BDC's full portfolio of 51 loans yields a total deviation of $256,901, corresponding to 4.75% of net income for the median fund.[21] In Section 4.3, I discuss and rule out stale pricing, asymmetric information, portfolio selection, simultaneous learning, portfolio rebalancing, and loans restructuring as alternative explanations for this pattern.

4.1.2 Robustness

I conduct two sets of tests to assess the robustness of the baseline results. The first set examines whether the estimated relationship is sensitive to additional controls, alternative definitions of the dependent and independent variables, and a first-differences specification. The second set evaluates the stability of the coefficient across different subsamples.

The results of the first set of tests are reported in Panel A of Table 4. Column (1) augments the baseline specification with additional controls. Specifically, I include *Loan Share*, defined as the BDC's ownership share in a given loan relative to other co-lenders.

[20] This increase in magnitude may reflect broader changes in the private credit environment during the post-COVID period. Over this period, the industry experienced increased competition, driven by entry of new BDCs and private credit funds and rapid growth in assets under management (see Figure 1), alongside a sustained compression in loan origination spreads documented in industry reports. This may have increased the incentives of BDCs to manage their reported performance. In addition, the interest-rate hiking cycle that began in March 2022 likely increased financial pressure on floating-rate borrowers, and with it the frequency of credit events affecting realized performance.

[21] This estimate should be interpreted as a lower bound on the portfolio-level effect for various reasons. The loan sample excludes positions with missing maturity, principal, or fair value information. The sample also omits non-USD loans, loans to non-U.S. borrowers, and revolving or delayed-draw credit facilities. In addition, as I show later in Section 4.1.4, loans held by only one BDC likely exhibit even more valuation deviations compared to loans held by multiple BDCs. Finally, the analysis abstracts from the valuation of equity investments held by BDCs, which are not included in the loan sample and may exhibit similar valuation dynamics.

BDCs with larger ownership stakes may have superior access to borrower information or may internalize a greater likelihood of providing support to the borrower given their exposure. I also control for *Loan Weight* as a proxy for the importance of a given loan to the BDC's investment portfolio. *Loan Weight* is defined as the ratio of a loan's principal amount to the BDC's total assets in a given quarter.[22] Intuitively, larger loans may be valued differently (e.g., more conservatively or more aggressively) due to their larger impact on net assets. The results are similar in magnitude and statistical significance to the baseline result.

In column (2) I change the scaling of *Realized Performance* such that it is scaled by lagged equity instead of lagged assets. My results continue to hold with similar statistical significance and economic interpretation. In column (3), I take a complementary approach and focus on a fund's performance relative to peers. Specifically, I replace *Realized Performance* with the indicator variable *Under-performer*, which equals one if a BDC's realized performance falls in the bottom 25% of the cross-sectional distribution of realized performance in a given quarter, and zero otherwise. The coefficient is positive and statistically significant, indicating that funds underperforming relative to peers tend to assign higher valuations to their outstanding loans compared to peer funds holding the same loans.

Column (4) uses the logarithm of *Loan Fair Value* as the dependent variable. The estimated effect remains statistically significant and becomes slightly larger in economic magnitude. Columns (5) and (6) employ *Fair Value Deviations* as the dependent variable, which directly measures a BDC's valuation relative to peer lenders without relying on loan–time fixed effects to absorb the average valuation. In these specifications, I additionally control for security type, seniority and remaining time to maturity, as well as SIC 2-digit industry-by-time fixed effects. In column (5), the average valuation of the loan used to calculate *Fair Value Deviation* doesn't include the focal BDC's own valuation of the loan. In column (6), the focal BDC own valuation of the loan is included when calculating the average valuation

[22] Using principal amounts to construct weights is more robust than using fair values, which are endogenous to the valuation process. In contrast, principal amounts are fixed at loan origination and are therefore exogenous to contemporaneous valuation decisions. Nevertheless, my results are robust to using loan fair values to construct loan weights.

of the loan. The results in both columns are consistent with the baseline findings.

I next assess the validity of the baseline results across a set of economically motivated subsamples presented in Panel B of Table 4. Each restriction is designed to address a distinct concern about potential mechanical or sample-driven explanations for the valuation behavior documented above. The dependent variable in all regressions in Panel B is the same dependent variable as the baseline specification, *Loan Fair Value*.

One concern is that valuation deviations may be mechanically influenced by the number of co-lenders holding a loan. When a loan has very few lenders, the peer benchmark used to construct valuation deviations may be noisy; conversely, loans with a very large number of lenders may reflect syndicated structures with different information environments or valuation practices. Columns (1), (2), (3) and (4) in Panel B of Table 4 address this concern by restricting the sample to loans held by two lenders (column (1)), at least three lenders (column (2)), no more than four lenders (column (3)) and to loans held by more than 4 lenders (column (4)). The thresholds of 2, 3, and 4 lenders correspond to the 25th, 75th and the 90th percentile of the lender-count distribution in the data. The results remain robust across the four specifications, suggesting that the baseline findings are not driven by mechanical features of the peer benchmark or by extreme loan syndication structures.

A second concern is that the results may be driven by riskier or more discretionary segments of BDC portfolios. Column (5) in Panel B of Table 4 restricts the sample to senior secured loans. The persistence of the effect within this subsample indicates that the results are not concentrated in junior or high-risk loan categories.

A third concern is that some loans in the sample include a payment-in-kind (PIK) feature. PIK allows borrowers to defer cash interest payments by capitalizing the interest into the outstanding loan principal. Rintamäki and Steffen (2025) show that BDCs use PIK features and are more likely to activate them for borrowers experiencing financial distress. They also document that PIK usage is associated with greater dispersion in the valuations reported by different BDCs holding the same loan. To ensure that my results are not driven by loans with

PIK features, I exclude all loans with PIK coupons in column (6) of Panel B. The baseline result continues to hold, with a similar economic magnitude and statistical significance at the 1% level.

4.1.3 Decomposing *Realized Performance*

I next decompose *Realized Performance* into its two components to assess which elements drive the valuation effects documented above. Recall that *Realized Performance* is defined as the sum of net investment income and realized gains and losses. Net investment income reflects recurring cash flows from BDC investments—interest, dividends, and fees—net of financing, management, and operating expenses. Realized gains and losses, by contrast, arise from discrete events such as loan settlements, sales, restructurings, or defaults.

These two components differ markedly in their time-series properties and economic interpretation. Net investment income is largely governed by contractual payment schedules and is therefore relatively more predictable ex-ante. Realized gains and losses, in contrast, tend to be episodic and are often associated with adverse credit events, making them more salient signals of deterioration in portfolio performance. For this reason, I expect realized gains and losses to exert a stronger influence on valuation behavior than routine fluctuations in net investment income.

I test this hypothesis using the specifications presented in Table 5. Column (1) in Table 5 replaces *Realized Performance* in the baseline loan-level specification with *Realized Gains*. Column (2) instead uses *Net Investment Income* as the explanatory variable. In columns (3) and (4), I further examine a plausibly more exogenous proxy for variation in net investment income by exploiting information on non-accrual loans.

Results from Table 5 shed light on which components of *Realized Performance* drive the valuation behavior documented in the baseline results. Column (1) shows that realized gains and losses are strongly negatively associated with loan fair values, indicating that periods of weak realized outcomes—driven by discrete events such as sales, restructurings, or

defaults—are accompanied by higher reported valuations of remaining positions. Column (2) focuses on net investment income. The estimated coefficient is negative, consistent with the baseline mechanism, but smaller in magnitude and statistically insignificant. This pattern suggests that routine, largely contractual cash-flow fluctuations play a more limited role in shaping valuation behavior than realized shocks, while still pointing in the same direction as the overall effect.

Columns (3) and (4) turn to non-accruals as a proxy for borrower-driven deterioration in operating cash flows. Non-accrual loans are loans for which interest or principal payments are at least 90 days past due, or for which full repayment is not expected by the fund management.[23] Non-accruals provide a useful proxy for changes in realized performance that is plausibly less endogenous to valuation discretion for two reasons. First, when a loan transitions to non-accrual status, the BDC stops recognizing interest income on that position, directly reducing net investment income and therefore lowering *Realized Performance* through its net-investment-income component. Importantly, the same transition does not mechanically generate realized gains or losses; realized losses are typically recognized only upon a subsequent sale, settlement, restructuring, or default resolution. Non-accruals thus proxy for an adverse realized cash-flow shock: an earnings deterioration driven by borrower distress, while remaining conceptually distinct from realized loss recognition.

Second, Non-accruals are costly to the fund. They reduce incentive fees by depressing net investment income and can lower base fees as loans are commonly marked down once placed on non-accrual. In addition, rising non-accrual rates are a negative signal to investors and creditors, potentially tightening funding conditions and limiting access to external capital. These features give managers strong incentives to avoid non-accrual designations where

[23]Non-accrual treatment for BDC loans is governed by U.S. GAAP and SEC reporting requirements rather than bank regulatory rules. While GAAP does not prescribe a mechanical delinquency threshold, SEC guidance and industry practice generally place loans on non-accrual when interest or principal is 90 days or more past due or when full collection is no longer expected, as commonly disclosed in BDC filings. The definition of non-accrual status and choice of 90-days as a threshold mirrors the regulations of the banking industry (see https://www.fdic.gov/resources/bankers/call-reports/crinst-031-041/1997/1997-09-rc-n.pdf).

possible, making movements in non-accruals less likely to be driven by discretionary fund actions and more reflective of borrower-side deterioration.

In column (3) of Table 5, the regressor is *Non-accruals*, defined as the ratio of the aggregate principal of non-accrual loans in a BDC's portfolio to lagged total assets. In column (4), the regressor is Δ *Non-accruals*, defined as the quarter-to-quarter change in *Non-accruals*. Column (3) uses *Loan Fair Value* as the dependent variable, while column (4) uses the quarter-to-quarter change in fair value of the loan (Δ *Loan Fair Value*) in a first-differences specification.

In contrast to the earlier specifications, the coefficients on non-accruals are positive: higher levels and increases in non-accruals are associated with higher reported loan valuations. This sign reversal is intuitive given that non-accruals proxy for adverse realized operating shocks. When borrower distress reduces interest income, funds appear to offset weaker realized performance by assigning higher fair values to their remaining loans. The estimates are economically meaningful and comparable to the baseline. The level specification is statistically significant at the 5% level (column (3)) and the changes specification at the 10% level (column (4)), with point estimates between 0.032 and 0.017. The interpretation of the coefficient of interest in column (3) suggests that a one standard deviation increase in the ratio of non-accruals to total assets (1.4%) translates into a relative overvaluation of 2.4% of net increase in assets from operations in a given period. Overall, the decomposition of *Realized Performance* suggests that the baseline relationship is present broadly, but becomes more pronounced when realized performance deteriorates due to borrower distress.

4.1.4 Cross-section of Loans

If BDCs use loan valuations to smooth realized performance, then this behavior is expected to be most pronounced when the rewards to this behavior are high and the costs are low. Rewards to such behavior are high when a loan represents a meaningful share of the portfolio. Valuation adjustments then move fund-level outcomes more strongly. Costs to this behavior arise due to internal audits, external monitoring, and the widespread use of third-party

valuation providers (Jang and G. Kim, 2025). These costs are more severe for borrowers with widely available information, for whom credit risk is relatively transparent and readily verifiable by investors, auditors, and regulators, making sustained deviations from peer valuations substantially harder to justify.

Table 6 tests these predictions by focusing on loan and borrower characteristics. I examine how valuations of loans within the same BDC respond to changes in realized performance. This allows me to drop all BDC-level time-varying controls and include BDC-by-time fixed effects. These fixed effects absorb all fund-level shocks. Therefore, identification in the specifications reported in Table 6 comes from differential valuation responses across loans with different characteristics within the same fund-quarter. Formally, I estimate the following specification:

$$\textit{Loan Fair Value}_{i,f,j,t} = \beta \left(\textit{Realized Performance}_{j,t} \times Z_{i,f,j,t} \right) + \alpha_j + \lambda_{i,t} + \delta_{j,t} + \varepsilon_{i,f,j,t}. \quad (5)$$

where $Z_{i,f,j,t}$ is the loan characteristic under consideration, α_j are BDC fixed effects, $\lambda_{i,t}$ are loan-by-time fixed effects, $\delta_{j,t}$ are BDC-by-time fixed effects, and $\varepsilon_{i,f,j,t}$ is an error term.

Columns (1) and (2) in Table 6 show how valuation sensitivity varies with loan size. Because BDCs differ substantially in scale, a given dollar loan may be material for a small BDC but immaterial for a large one. I therefore measure loan size using *Loan Weight*, defined as the loan's principal divided by the BDC's total assets. Column (1) applies loan weights as a continuous variable. Column (2) focuses on the largest loans, defined as those in the top quartile of portfolio weight within a BDC at time t. In both columns, the interaction between realized performance and loan weight is negative and statistically significant, indicating that valuation discretion responds more strongly to realized performance for larger, more consequential loans.

To capture the transparency channel, I run two tests. First, I exploit differences in borrower opacity. Specifically, I match borrowers to Compustat to identify public firms

and construct an indicator *I(Public Firm)* equal to one for listed borrowers in the sample. Public firms are less opaque, limiting valuation discretion because investors, auditors, and regulators observe their financial information. Column (3) in Table 6 supports this intuition. The interaction between realized performance and *I(Public Firm)* is positive and statistically significant. Public status attenuates the negative relation between realized performance and loan valuations.

Second, I extend the sample to include loans with only one lender and examine whether strategic marking is stronger for loans held by a single BDC. Single-held loans provide greater scope for discretion because there is no contemporaneous valuation from another lender that can serve as a benchmark. I therefore interact *Realized Performance* with an indicator *I(Single-lender loan)* equal to one if the loan is held by only one BDC in a given quarter. Because single-held loans lack cross-lender variation, I cannot rely on loan-by-time fixed effects as in the baseline specification. Instead, I divide loans into loan-types defined by security type, seniority, and SIC 2-digit industry code, and absorb loan-type-by-time fixed effects. Identification therefore comes from comparing loans with similar characteristics and borrower industries within the same quarter, while exploiting variation across loans within the same BDC-quarter

The results are presented in column (4) of Table 6. The interaction coefficient is negative and statistically significant, indicating that within the same BDC-quarter, the negative relationship between realized performance and loan valuations is stronger for single-held loans than for loans held by multiple lenders. This test is informative about valuation behavior in the portion of the loan portfolio that is not jointly held with other BDCs and therefore not directly identified in the baseline cross-lender comparisons.

4.1.5 Cross-section of BDCs

I examine two sources of cross-sectional heterogeneity across BDCs to test whether the baseline valuation-performance relationship is stronger when fund-level incentives to sup-

port reported asset values are more pronounced. First, I test whether the relationship is stronger among more leveraged funds, where valuation choices are more directly connected to regulatory asset coverage requirements and fund borrowing constraints. Second, I examine whether the relationship becomes stronger around fund sponsor, or asset-manager, fundraising activity.

Fund Leverage: A central institutional feature of BDCs is that leverage is directly tied to the reported fair value of assets. BDCs are subject to statutory asset coverage requirements, which constrain their debt capacity as a function of the fair value of their investment portfolios.[24] In addition, BDCs commonly rely on bank credit facilities, where portfolio loans serve as collateral and borrowing capacity depends on the marked value of loans and other investment positions. This channel is especially relevant for private BDCs, the segment of the BDC market most closely resembling traditional private credit funds. Hinzen et al. (2026) show that, compared to public BDCs, private BDCs rely heavily on bank-originated debt and often lack access to unsecured debt markets, making their funding structure particularly sensitive to portfolio valuations and credit quality.[25] Thus, when realized performance is weak, BDCs have strong incentives to monitor leverage for both regulatory and contractual reasons.

I therefore test whether leverage amplifies the baseline relationship between realized performance and loan valuations. Specifically, I augment the baseline loan-level specification by interacting *Realized Performance* with one-period lagged leverage, centered at its sample mean. Centering leverage makes the coefficient on *Realized Performance* directly interpretable as the valuation-performance sensitivity for a BDC with average leverage. Results

[24]Prior to 2018, BDCs were subject to an asset coverage requirement of 200%, implying a maximum debt-to-equity ratio of 1:1. The Small Business Credit Availability Act of 2018 lowered this requirement to 150%, allowing eligible BDCs to operate with debt-to-equity ratios of up to 2:1. The reduced asset coverage requirement did not apply automatically: BDCs could elect to apply the new limit after either shareholder approval or board approval.

[25]Using BDC tax identifiers matched to Federal Reserve Y-14 data, Haque, Jang, et al. (2025) estimate that 75% of BDCs borrow from banks. Hinzen et al. (2026) show that 72% of private-BDC debt is bank-originated, and that the median private BDC has no access to the unsecured debt market. The same bank-borrowing incentives are likely to apply to traditional private credit funds. Block et al. (2024) survey U.S. traditional private debt fund managers and show that fund-level leverage is common in this market: among U.S. funds in their survey, 95% use non-zero leverage, with leverage averaging 40% of total capital.

are reported in Table 7. Column (1) interacts *Realized Performance* with *Leverage*, while column (2) additionally interacts the baseline BDC controls with *Leverage*. In both columns, the coefficient on *Realized Performance* is negative and statistically significant, indicating that weaker realized performance is associated with higher reported loan valuations for BDCs with average level of leverage. More importantly, the interaction between *Realized Performance* and *Leverage* is negative and statistically significant. This shows that the sensitivity of loan valuations to realized performance becomes stronger as leverage increases, consistent with leverage amplifying fund-level incentives to support reported asset values when realized performance is weak. In Appendix A.4, I explore these incentives further by directly examining proximity to the regulatory leverage limit and the contractual link between reported valuations and a fund's borrowing capacity.

Fundraising activity: I next examine whether valuation behavior is related to fundraising activity at the asset-manager level. This test is motivated by evidence from the private equity and venture capital literature showing that underperforming managers may have incentives to support reported NAVs when raising subsequent funds (e.g., see Brown et al. (2019)). If similar incentives operate in the private credit industry, the sensitivity of loan valuations to realized performance should become stronger when the BDC's sponsor is raising a new debt fund.

To measure fundraising activity, I use PitchBook data on debt fund closings. PitchBook (2025b) shows that the time required to raise a new debt fund has increased over time, from an average of 14 months in 2009 to 20.1 months in 2024. I therefore define *I(Raising New Debt Fund)* as an indicator equal to one if the asset manager sponsoring the BDC closes a new debt fund within the following four quarters. This forward-looking window is designed to capture the fundraising period rather than only the closing quarter, since any incentive to support NAVs should arise while the fund is being marketed to investors, not necessarily

only at the date of final close.[26]

Columns (3) and (4) of Table 7 report the results. Column (3) interacts *Realized Performance* with *I(Raising New Debt Fund)*, while column (4) additionally interacts the baseline BDC controls with the fundraising indicator. In both specifications, the interaction between *Realized Performance* and *I(Raising New Debt Fund)* is small and statistically insignificant. Thus, I find no evidence that the baseline relationship between loan valuation and realized performance becomes stronger around asset-manager fundraising activity. This absence of a fundraising effect is consistent with Jang and G. Kim (2025), who also find no evidence that valuation behavior changes around fundraising episodes.[27]

4.2 Fund-Level Results

I next examine whether the loan-level patterns documented above also appear in aggregate fund-level outcomes, and whether these patterns are informative about the fund's future performance. First, I test whether valuation deviations at the individual-loan level translate into economically meaningful deviations at the fund level. I then examine whether the decomposition of realized performance documented at the loan level is also mirrored in aggregate fund-level valuation deviations. Finally, I examine whether these aggregate valuation deviations predict subsequent fund performance and amount of available credit from banks. Together, these tests assess whether the asset-level marking behavior documented in the baseline analysis has broader implications for reported fund outcomes.

4.2.1 Fair Value Deviations at the Fund Level

Having established a relationship between *Realized Performance* and loan-level valuations in the micro data, it is important to examine whether these patterns also hold at the fund

[26] The results remain similar when defining the fundraising window using two or six quarters or using an indicator for the closing quarter itself instead of the four-quarters ahead indicator in Table 7.

[27] One possible explanation for the absence of results is the institutional setting of BDCs. Unlike traditional closed-end private credit funds, BDCs include public, public non-traded, and private vehicles. Public and public non-traded BDCs can raise capital continuously through equity and bond markets at the fund level. As a result, valuation incentives may operate more through fund-level capital access, leverage, and NAV considerations than through discrete asset-manager-level fundraising events.

level. Put differently, strategic marking of individual loans is economically meaningful only if its effects translate into aggregate fund outcomes. To this end, I aggregate loan-level valuation deviations at the level of each BDC, and regress this aggregate deviation measure on realized performance. I construct two complementary BDC-level measures that differ in how loan-level deviations are aggregated.

My primary measure is *Total Deviations (% Assets)*, which captures the dollar impact of valuation deviations on the fund's balance sheet. For each loan, I multiply the loan's fair value deviation by its principal amount to obtain the dollar deviation relative to peer valuations. I then sum these dollar deviations across all loans in the BDC's portfolio that are simultaneously held by other lenders in the same quarter and scale the total by the fund's lagged assets. This measure therefore captures how much reported net assets are affected by valuation deviations in response to realized performance in a given period, expressed as a fraction of beginning-of-period assets.

$$\textit{Total Deviations (\%Assets)}_{j,t} = \frac{\sum_{i \in \mathcal{L}_{j,t}} \textit{Fair Value Deviation}_{i,j,t} \times \textit{Principal}_{i,j,t}}{\textit{Assets}_{j,t-1}}, \quad (6)$$

where i indexes individual loans and $\mathcal{L}_{j,t}$ denotes the set of loans held by BDC j at time t that are also held by at least one other lender.

As an alternative measure, I also construct *Total Deviations (Portfolio Weighted)*, which corresponds to a portfolio-weighted average of loan-level fair value deviations. Specifically, loan weights are defined as the ratio of a loan's principal amount to the BDC's total assets in a given quarter, and portfolio-level deviations are computed as the weighted sum of loan-level fair value deviations across all co-held loans.[28]

$$\textit{Total Deviations (Portfolio Weighted)}_{j,t} = \sum_{i \in \mathcal{L}_{j,t}} \textit{Loan Weight}_{i,j,t} \times \textit{Fair Value Deviation}_{i,j,t}, \quad (7)$$

[28]For example, a *Total Deviations (Portfolio Weighted)* of 0.05 can be interpreted as a weighted average deviation of 5 cents per dollar assets of a given BDC in a given quarter.

I then regress total deviations on realized performance in a two-way fixed effects regression:

$$Y_{j,t} = \beta \, \textit{Realized Performance}_{j,t} + \boldsymbol{\gamma}' \mathbf{X}_{j,t-1} + \alpha_j + \delta_t + \varepsilon_{j,t}, \tag{8}$$

where $Y_{j,t}$ is the total deviations measure, $\mathbf{X}_{j,t-1}$ is the vector of lagged BDC-level controls, α_j are BDC fixed effects, δ_t are time fixed effects, and $\varepsilon_{j,t}$ is an error term.

The results from Equation 8 are presented in Table 8. Columns (1) and (3) use the *Total Deviation (% Assets)* measure, while columns (2) and (4) use the *Total Deviations (Portfolio Weighted)* measure. Columns (1) and (2) use the full sample. Columns (3) and (4) limit the sample to the post-Covid period, to understand the magnitude in the more recent history. The negative statistically significant coefficients in all columns confirm the presence of a negative relationship between valuation deviations at the portfolio level and realized performance. The sharp increase in coefficients and adjusted R^2 of columns (3) and (4) compared to columns (1) and (2) show that the effect has intensified in the post-Covid period (2020-2024). Furthermore, this aggregate result also suggests that the loan-level findings are unlikely to be driven by random measurement error, stale pricing, or differences in borrower information across lenders. Each of these would generate loan-specific deviations that vary in sign across a fund's portfolio, and that should therefore largely cancel out when aggregated to the fund level, unless they are systematically related to the fund's realized performance. Nevertheless, I later address each of these channels directly using the loan-level data in Section 4.3.

4.2.2 Fair Value Deviations and *Realized Performance* Decomposition

I next examine whether the decomposition of realized performance documented at the loan level is also reflected in aggregate fund-level valuation deviations. This exercise mirrors the loan-level analysis in Section 4.1.3, but uses BDC-level deviations constructed from individual loan-level deviations. Specifically, I relate the two aggregate deviation measures, *Total Deviations (% Assets)* and *Total Deviations (Portfolio Weighted)*, to the main components

of realized performance: realized gains and net investment income. I also use non-accruals as a useful proxy for changes in realized performance that are plausibly less endogenous to managerial discretion.

The results are reported in Table 9. The pattern is consistent with the loan-level evidence provided in Section 4.1.3. In both panels of Table 9, the coefficient on realized gains is negative and statistically significant. The coefficient on net investment income is also negative, but statistically insignificant, suggesting that the more predictable component of realized performance has limited explanatory power for valuation deviations. By contrast, non-accruals are positively related to valuation deviations, indicating that funds with weaker portfolio quality exhibit larger upward deviations relative to peer valuations, both in levels (column 3 of each panel) and first-differences using the change in non-accruals (column 4 of each panel). Overall, these results provide reassuring evidence that the fund-level deviation measures, constructed from individual loan-level marks, capture the same economic forces documented in the loan-level decomposition.

4.2.3 Dynamic Estimation of Fair Value Deviations

I next examine how fund-level valuation deviations evolve over the quarters that follow realized performance at time t. Conducting this exercise at the fund level is informative because it tracks the fund's overall valuation posture rather than the marks on individual positions. A loan-level analysis follows the same position over time and therefore captures whether a specific mark reverts or persists. It cannot capture whether a fund that decreases its deviation on one loan increases it on another in the following quarter, and it excludes positions that are sold, repaid, or newly added to the portfolio. The fund-level measures instead aggregate deviations across the entire co-held portfolio in each quarter and therefore track the component of reported net assets that is affected by valuation deviations.

This exercise is also informative about timing. Because private credit portfolios are illiquid, realized performance could be persistent for some periods, and a fund's response to

weak performance could extend over several quarters. Nevertheless, I expect the response to be concentrated in the quarter in which performance is realized, when new information about the period's realized outcomes is revealed and the incentive to offset it is most salient. I estimate the following specification separately for each horizon $h \in \{0, 1, 2, 3, 4\}$:

$$Y_{j,t+h} = \beta_h \textit{ Realized Performance}_{j,t} + \gamma_h' \mathbf{X}_{j,t-1} + \alpha_j + \delta_t + \varepsilon_{j,t+h}, \tag{9}$$

where $Y_{j,t+h}$ is the total deviations measure of BDC j in quarter $t+h$, *Realized Performance*$_{j,t}$ is the realized performance of BDC j in quarter t, $\mathbf{X}_{j,t-1}$ is the vector of lagged BDC-level controls, α_j are BDC fixed effects, δ_t are time fixed effects, and $\varepsilon_{j,t+h}$ is an error term. The coefficient β_h therefore traces the relationship between realized performance in quarter t and the fund's aggregate valuation deviations h quarters later.

The results are presented in Figure 3. Panel A uses *Total Deviations (% Assets)*, and Panel B uses *Total Deviations (Portfolio Weighted)*. In both panels, the coefficient on *Realized Performance* is negative and statistically significant in the contemporaneous quarter ($h = 0$), with estimates identical to those reported in Table 8, as expected. The relationship is strongest at this horizon and gradually attenuates in the following quarters. The point estimates remain negative but become smaller and statistically insignificant, and are close to zero by the fourth quarter. The upward deviations associated with weak realized performance are therefore largest in the quarter in which the period's performance is realized and unwind gradually thereafter, consistent with funds using valuation discretion to temporarily offset weak realized performance rather than holding persistently different views about the value of their loans.

4.2.4 Fair Value Deviations and Fund Future Performance

I next examine whether valuation deviations are informative about subsequent fund-level performance. If upward deviations capture strategic inflation of asset values, then funds

with larger upward deviations may subsequently experience lower performance as valuations revert back to mean valuations (loan valuations provided by other funds holding the same loans) or as underlying credit fundamentals materialize.

To test this intuition, I use my two aggregate deviation measures (*Total Deviations (% Assets)* and *Total Deviations (Portfolio Weighted)*) to estimate fund-level regressions of future return on equity on these deviation measures (lagged by one period). I control for lagged baseline BDC characteristics (size, leverage, liquidity and profitability), in addition to including BDC and quarter-year fixed effects. The results from this exercise are reported in Table 10. Columns (1) and (3) use next-quarter ROE as the dependent variable, while columns (2) and (4) use cumulative four-quarter ROE, calculated as the sum of net income over the subsequent four quarters scaled by beginning-of-period equity.[29] Across both aggregation methods, larger valuation deviations are associated with lower subsequent ROE. The persistence over four-quarter horizon, suggests that these deviations predict persistent future underperformance rather than short-term accounting noise. This pattern is consistent with the interpretation that upward valuation deviations temporarily support reported asset values but do not reflect stronger underlying fundamentals in the fund's credit portfolio.[30]

4.2.5 Fair Value Deviations and Bank Credit

The cross-sectional evidence in Section 4.1.5 shows that the valuation response to weak realized performance intensifies with fund leverage, consistent with higher marks helping to preserve borrowing capacity. Whether this relief persists depends on how lenders respond. BDCs differ considerably in the type of debt they issue. Many do not issue bonds, and the median private BDC has no access to bond markets (Hinzen et al., 2026). I therefore focus

[29]For the regressions using cumulative returns, columns (2) and (4), the standard errors are calculated using Driscoll-Kraay standard errors to account for the serial correlation created by the rolling four-quarter ROE measure.

[30]The results are similar when additionally controlling for lagged *Realized Performance*, which accounts for persistence in fund performance. The relationship between valuation deviations and subsequent ROE is therefore not explained by the fact that funds with weak realized performance in a given quarter tend to continue performing poorly.

on bank debt, which is common to almost all BDCs.

Within bank debt, most borrowing takes the form of revolving credit facilities rather than term loans (Berrospide et al., 2025; Jang and Rosen, 2025; Matvos et al., 2026). Revolving facilities tie the amount a fund can borrow to the value of its portfolio, but they do not rely on reported marks alone. As I discuss in Appendix A.4.2, the borrowing base is typically computed from the fund's own valuations, while the lender retains several forms of control: it has the valuations of a set portion of the fund's loans periodically tested by an independent valuation provider, request additional testing at the fund's expense, and, where the fund's mark exceeds the provider's valuation by more than a set tolerance, use a lower value in computing the borrowing base. In addition, the lending bank decides at each renewal whether to extend its commitment.[31] If lenders detect or infer elevated marks, the relief a fund obtains from higher valuations may be short-lived, and large fund-level valuation deviations would then predict a subsequent contraction in bank credit. This contraction should be concentrated in revolving facilities, whose availability depends on the borrowing base and on lender discretion, rather than in term loans, whose amounts are fixed once drawn.

To test the above intuition, I use data from S&P Capital IQ, which reports the debt capital structure of BDCs, aggregated by instrument type, and allows me to separate revolving facilities from term loans. These data are available for 69 BDCs in my sample, and the analysis below is conducted on this subsample. I estimate

$$\Delta \ln(\text{Bank Debt})_{j,t} = \beta \, \text{Total Deviations}_{j,t-1} + \boldsymbol{\gamma}' \mathbf{X}_{j,t-1} + \alpha_j + \delta_t + \varepsilon_{j,t}, \tag{10}$$

where $\Delta \ln(\text{Bank Debt})_{j,t}$ is the change in the log amount of total bank debt outstanding for BDC j between quarters $t-1$ and t, and Total Deviations is the fund-level aggregate of loan-level deviations defined in Equation 6. $\mathbf{X}_{j,t-1}$ contains the baseline fund-level controls,

[31] Notably, revolving facilities credit agreements generally do not require the fund to adopt the lender's or the independent provider's valuation in its own financial statements. Agreements typically state explicitly that values determined for the borrowing base are not to be treated as fair value for financial reporting purposes. The same loan can therefore carry two different values at the same date: one used to determine borrowing capacity, and another reported to investors.

lagged one quarter, with the exception of leverage. I exclude leverage for two reasons. First, it is mechanically related to the dependent variable: leverage embeds the lagged level of bank debt, which is the base of the growth rate on the left-hand side. Second, leverage is computed from the same fair values that enter the deviation measure, so controlling for it would partly absorb the variation of interest.

Table 11 reports the results. Higher deviations are followed by a significant decline in bank debt (column (1)), and the result is robust to baseline controls (column (2)). As a robustness check, column (3) additionally controls for leverage lagged two quarters, which is measured before the deviations at $t-1$ and is therefore less directly affected by the marks of interest. The coefficient falls by about 40% but remains statistically significant at 5%. Columns (4) and (5) separate revolving facilities from term loans. The decline is concentrated in revolvers, while term loans show no significant response.[32]

Taken together, these results provide suggestive evidence that banks do not rely solely on reported marks: funds with larger deviations subsequently experience a decline in the amount of available revolving credit. This is consistent with banks responding to deterioration in underlying credit quality of the fund's portfolio that elevated marks temporarily obscure.

4.3 Alternative Channels

In the remainder of this section, I examine several alternative channels that could potentially confound the interpretation of the baseline results. Specifically, I consider explanations related to stale pricing, differential access to borrower information, portfolio selection, simultaneous learning, portfolio rebalancing, and restructuring of outstanding loans.

4.3.1 Stale Pricing

I examine whether stale pricing could drive the patterns in my baseline results. Curtis and Raney (2020) show that BDCs may intentionally delay updating asset valuations, partic-

[32]The term-loan estimate is imprecise given the small sample, so I cannot rule out a similar response for term loans. The result is similar when missing term-loan observations are set to zero and the dependent variable is the change in $\ln(1 + \text{Outstanding Term Loans})$.

ularly when incorporating negative information. If co-lenders adjust the fair value of the same loan at different speeds, cross-fund dispersion in reported marks could partly reflect asynchronous updating rather than active valuation of loans. While delaying markdowns when realized performance is weak would itself be consistent with strategic marking, I test whether my results hold independently of such delays.

To isolate active revaluation from delayed updating, I restrict the sample to BDC–loan observations whose reported marks reflect an updated valuation: positions whose fair value changes between quarters $t-1$ and t, and new positions, defined as loans that enter the BDC's portfolio for the first time in quarter t. The first mark on a new position is by construction a contemporaneous valuation and therefore cannot be stale.[33] Column (1) of Panel A in Table 12 reports the corresponding estimates. The coefficient on *Realized Performance* remains negative and statistically significant at the 5% level, indicating that stale pricing is unlikely to be driving the main findings.

4.3.2 Asymmetric Borrower Information

Next, I consider whether heterogeneity in access to borrower information could confound the baseline results. The direction of any bias from this channel is a priori unclear: better information should primarily improve valuation accuracy rather than mechanically generate higher or lower marks. While differential information access can rationalize cross-fund dispersion in valuations of the same loan, it does not naturally imply a systematic relationship between a fund's realized performance and its reported valuation of that loan. It is also reassuring that the aggregate fund-level results in Section 4.2.1 point to the same relationship, since loan-specific borrower information, when aggregated to the fund level, is more likely to introduce noise than to generate a systematic relationship between aggregate valuation deviations and realized performance.

[33]New positions include loans originated in quarter t, as well as positions that a BDC acquires in loans originated earlier, for example through secondary purchases or by joining an existing facility. Loans held in a BDC's first quarter in the sample are not classified as new positions, since they may have been acquired before the sample period.

Nevertheless, I implement several tests to ensure that the baseline estimates are not driven by differential access to borrower information. First, I restrict the sample to recently originated loans, for which valuations are less likely to reflect accumulated private information about the borrower. Specifically, I focus on loans issued in the same month as the reporting date and, separately, on loans issued within the six months of the reporting date. Columns (2) and (3) of Panel A in Table 12 report the results for these two subsamples. In both columns, the estimated coefficient on *Realized Performance* remains negative and economically meaningful, and is in fact larger in magnitude than in my baseline estimate. The coefficient is statistically significant at the 5% level for loans issued within six months and at the 10% level for loans issued in the reporting month, where the sample is considerably smaller (10,566 observations).

Second, I augment the baseline loan-level specification in Equation 4 with an indicator variable, *I(Equity Ownership)*, equal to one if the BDC holds an equity stake in the borrowing firm. Davydiuk, Erel, et al. (2024) show that dual holders, which hold both debt and equity positions in the same investee firm, tend to be more effective monitors and may have enhanced information and governance channels. I also include BDC-by-loan fixed effects to absorb time-invariant features of a fund–loan relationship, including preferential roles such as lead-lender status in club deals. Indeed, Jang and G. Kim (2025) document that lead lenders may incorporate superior information into their valuations, particularly in periods of credit stress. With BDC-by-loan fixed effects, identification comes from within BDC–loan variation over time. I test whether a BDC's realized performance predicts that BDC's valuation deviation for the same loan over time, holding the BDC–loan match constant. Column (4) of Panel A in Table 12 reports the results. The coefficient on *Realized Performance* remains negative and statistically significant at the 5% level, although smaller in magnitude (-0.029 compared to the baseline estimate of -0.044). Finally, column (5) applies an even tighter specification by including sponsor-by-loan-by-time fixed effects. This specification compares valuations of the same loan in the same quarter across funds managed by the same sponsor (asset-manager), and therefore absorbs any loan-time information available at the

asset-manager level. This is a demanding test because valuation differences across funds managed by the same sponsor should naturally be small: large within-sponsor deviations for the same loan may be costly from both an audit perspective and an investor-perception perspective. Nevertheless, the coefficient on *Realized Performance* remains negative and statistically significant, although the magnitude is smaller and significance falls to the 5% level. This attenuation is expected, since deviations across managers are likely to be larger than deviations across funds managed by the same sponsor. The persistence of the result in this within-sponsor comparison further suggests that the baseline relationship is unlikely to be driven by differential access to borrower information.

4.3.3 Portfolio Selection

The BDC-by-loan fixed-effects specification also helps address concerns that the baseline results reflect portfolio selection skills rather than valuation behavior. Funds may differ in screening ability, loan risk pricing, or ex-ante access to private information, which can shape both the composition of their portfolios and their realized performance over longer horizons. BDC-by-loan fixed effects absorb the time-invariant BDC–loan match, thereby removing cross-sectional differences in loan selection capabilities and identifying the effect from within BDC–loan changes over time.

In addition, a pure selection-based explanation would tend to generate the opposite sign of the coefficient. If higher-performing funds systematically select better loans, they should both realize stronger performance and hold loans with higher credit quality and, therefore, higher valuations. Such a mechanism would imply a positive association between realized performance and outstanding loan valuations over time, and would bias estimates toward zero rather than produce the negative relationship documented in the data.

4.3.4 Simultaneous Learning

Another related concern to the portfolio composition is a "simultaneous learning" mechanism tied to portfolio concentration (Plosser and Santos, 2018). If credit outcomes are

correlated across a fund's holdings—for example, because the fund specializes in a particular sector—realized outcomes on one borrower may reveal information about the risk of other borrowers in the portfolio. For instance, a borrower default both reduces current investment income and generates a realized loss upon settlement, thereby lowering realized performance. At the same time, the default may lead the fund to reassess sector-wide risk and mark down valuations on other loans exposed to the same underlying shock. This channel would generate co-movement between realized performance and unrealized valuation changes. Importantly, however, it would imply a positive association between realized performance and outstanding loan valuations—better realized performance coinciding with upward valuation revisions, and worse realized performance coinciding with mark-downs—and therefore would attenuate the estimated negative relationship rather than produce it.

4.3.5 Portfolio Rebalancing

A more substantive concern is that the baseline relationship reflects mechanical portfolio rebalancing rather than discretionary valuation behavior. In particular, a fund could improve the apparent quality of its remaining portfolio by selling underperforming loans, thereby realizing losses that depress realized performance while mechanically increasing the average quality, and hence valuations, of the loans that remain.

Several features of the setting and the evidence make this explanation unlikely. First, private credit loans are highly illiquid, which limits the scope for frequent and systematic portfolio turnover. Second, identification in my baseline specification comes from loan-by-time variation: even if a fund realizes losses by selling loans with low valuations, such rebalancing cannot explain why the remaining loan is valued more highly by that fund than by other funds holding the same loan in the same quarter. This argument is particularly strong in specifications that restrict attention to loans for which the fund actively updates its valuation relative to the prior quarter.

Finally, a portfolio-rebalancing mechanism implies that weak realized performance today

should predict improved portfolio quality going forward: if funds realize losses by selling low-quality or non-performing loans, the share of non-accrual loans in their portfolios should subsequently decline. This would generate a positive relationship between lagged realized performance and future non-accruals. I test this intuition using two specifications in columns (1) and (2) of Panel B in Table 12. The coefficients in both columns are negative and statistically insignificant, providing no evidence of the positive relationship implied by systematic portfolio rebalancing.

4.3.6 Restructuring of Outstanding Loans

Another possible concern is that loan restructurings may confound the negative relationship between realized performance and the valuations of outstanding loans. Consider an example in which a fund initially holds a loan with principal of \$100 and a fair value of 0.99 (99 cents per dollar of principal). If borrower risk subsequently increases, the fair value of the loan may fall (e.g., to 0.7). The fund may then decide to restructure the loan, recognizing a realized loss on part of the original principal while reporting the remaining restructured loan at a fair value closer to par. If this pattern occurs systematically across many loans in the same period, weak realized performance could mechanically coincide with higher reported valuations on the remaining outstanding restructured loans.

The results for recently originated loans in columns (2) and (3) of Panel A in Table 12 already speak against this explanation. Loans issued in the reporting month, or within the preceding six months, have had little time to experience the kind of distress that typically leads to a restructuring, so their valuations are unlikely to reflect renegotiated terms. Nevertheless, to formally assess this alternative explanation, Panel C in Table 12 restricts the sample to loans for which the reported principal amount does not decrease relative to the previous quarter. This restriction removes observations in which a decline in principal may reflect a restructuring that involves a partial loss recognition.[34] Column (1) shows that the

[34]This is a conservative restriction because it also excludes loans with amortizing repayment schedules, for which principal naturally declines over time. However, the purpose of the restriction is to ensure that the results are not driven by restructurings that generate realized losses.

coefficient on *Realized Performance* in this restricted sample remains negative and statistically significant at the 1% level, and is slightly larger than the baseline coefficient. Column (2) further restricts the sample to loans for which the BDC actively updated the reported valuation, as well as newly issued loans, thereby combining the no-principal-decrease restriction with the stale pricing test used earlier. The coefficient remains slightly larger than in the baseline and statistically significant at the 1% level. Overall, these tests indicate that the baseline relationship is unlikely to be driven by loan restructurings.

5 Conclusion

This paper studies the drivers of loan valuations in private credit using granular data on U.S. Business Development Companies. Holding the underlying credit exposure fixed by comparing marks across funds that hold the same loan at the same time, I show that reported fair values covary with fund-level incentives. Funds report higher fair values when contemporaneous realized performance is weaker, effectively preserving fund NAV through valuation discretion. The pattern is strongest for more opaque loans and for larger portfolio positions, where a given deviation has a larger effect on reported NAV. It also intensifies for highly leveraged funds, when incentives are stronger, as the resulting changes in NAV impact fund's leverage position. A wide set of tests mitigates alternative channels such as asymmetric information, delayed updating, and mechanical portfolio rebalancing. Finally, larger upward valuation deviations predict lower subsequent fund performance and a contraction in bank credit, suggesting that the relief obtained through reported values is temporary.

The valuation behavior documented in this paper raises the risk that private credit asset values are overstated during periods of stress. This may delay the recognition of losses and potentially distort capital allocation. A related concern is that valuation problems in private credit may not remain confined to individual funds, but instead spread across the asset class. When valuation practices are not easily verifiable, investors may face difficulty distinguishing between genuine performance and managerial discretion in reported marks.

As a result, doubts about the credibility of valuations at a subset of funds may contaminate perceptions of the entire market.[35] This dynamic may weaken fundraising and ultimately impair the flow of credit supply to the real economy.

The results of this paper speak directly to market design and regulatory oversight. One implication is that disclosures could more clearly distinguish model-based inputs from hard information and facilitate cross-fund comparisons. Improvements in this direction may include standardized reporting of key valuation assumptions, structured disclosure of material changes in valuation inputs, and greater transparency regarding the role of third-party valuation providers and any overrides of their assessments. Another implication is that the development of a more active secondary market for private credit, supported by greater standardization of loan terms, improved transferability, and broader market participation, could provide transaction-based price anchors that discipline valuations and reduce the scope for discretionary valuations. While such reforms involve tradeoffs (e.g., confidentiality, bespoke contracting, and liquidity management), improving the informational foundation of reported valuations would strengthen investor protection and make stress-period risk monitoring more reliable.

Finally, the findings of the paper raise questions about how institutional investors respond to this behavior. Whether they are aware of the potential inflation in some of the reported marks, and whether they price it, is not something my data can speak to. Another possibility is that some investors value the smoother return profile that valuation discretion produces: reported volatility is itself a determinant of portfolio allocations and of how performance is evaluated, so smoothed marks may serve the interests of the allocator as well as the manager. Answering this question would clarify whether the behavior documented here is a

[35]Recent public scrutiny of private credit valuations is consistent with this concern. In 2026, US federal prosecutors publicly indicated law-enforcement scrutiny of private credit valuation practices, including cases in which multiple funds mark the same asset at different levels. In the same year, an investor in a Blue Owl private credit fund filed a lawsuit alleging that the fund's adviser inflated fund values and charged excessive fees. See https://www.reuters.com/markets/us/us-prosecutors-are-asking-about-private-markets-valuations-dojs-clayton-says-2026-06-03/ and https://www.reuters.com/legal/litigation/blue-owl-adviser-sued-over-allegedly-inflating-fund-values-charging-excessive-2026-04-28/

friction to be corrected or an equilibrium outcome between institutional investors and private credit fund managers. A second open question concerns the credit cycle. My sample period covers an expansionary phase for private credit with relatively few large-scale defaults. how valuation practices behave through a severe and prolonged downturn, when the incentive to defer recognition is strongest and the scope for discretion is greatest, is an important question for assessing the stability of the asset class.

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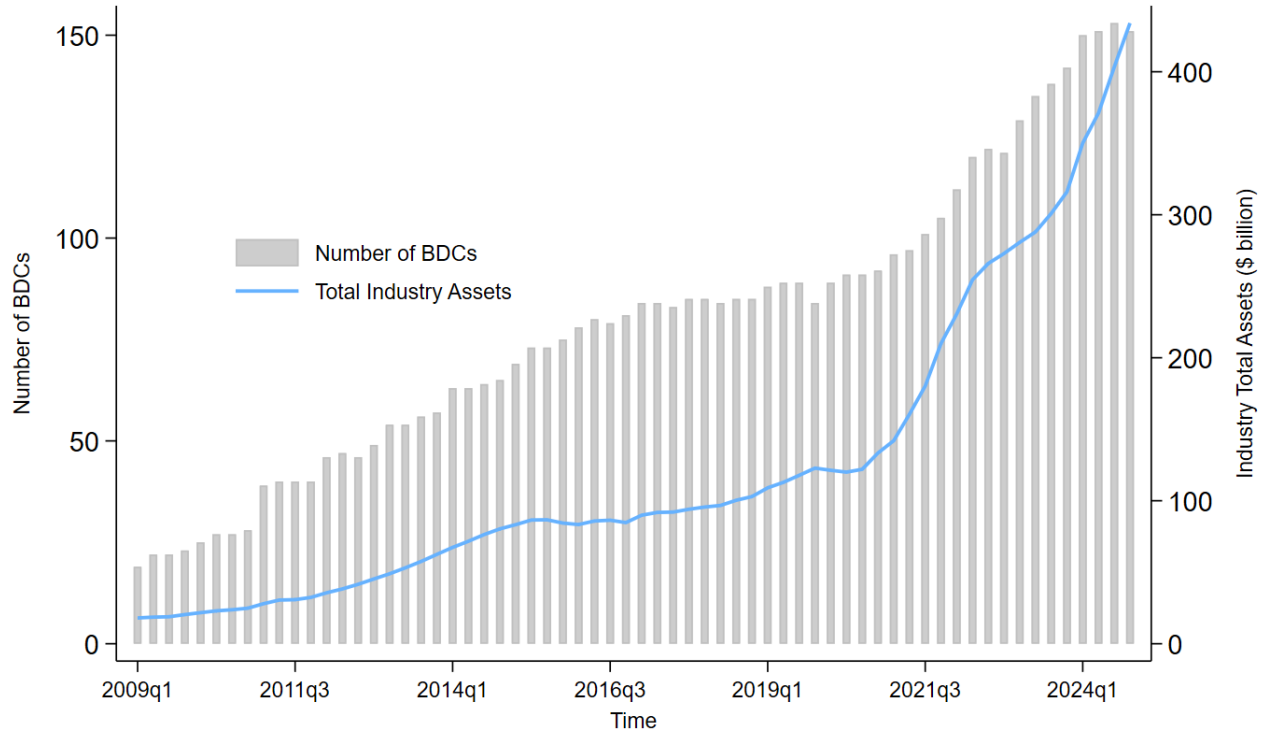
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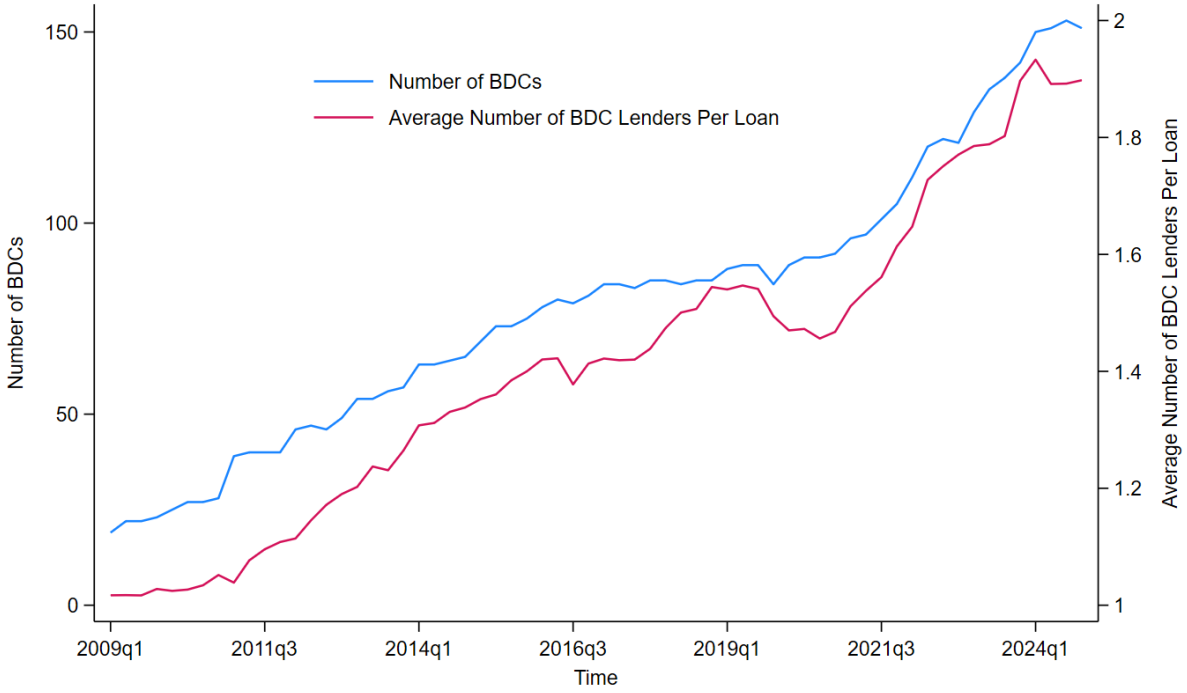
Figure 1: Number of BDCs and Total AUM (2009-2024)



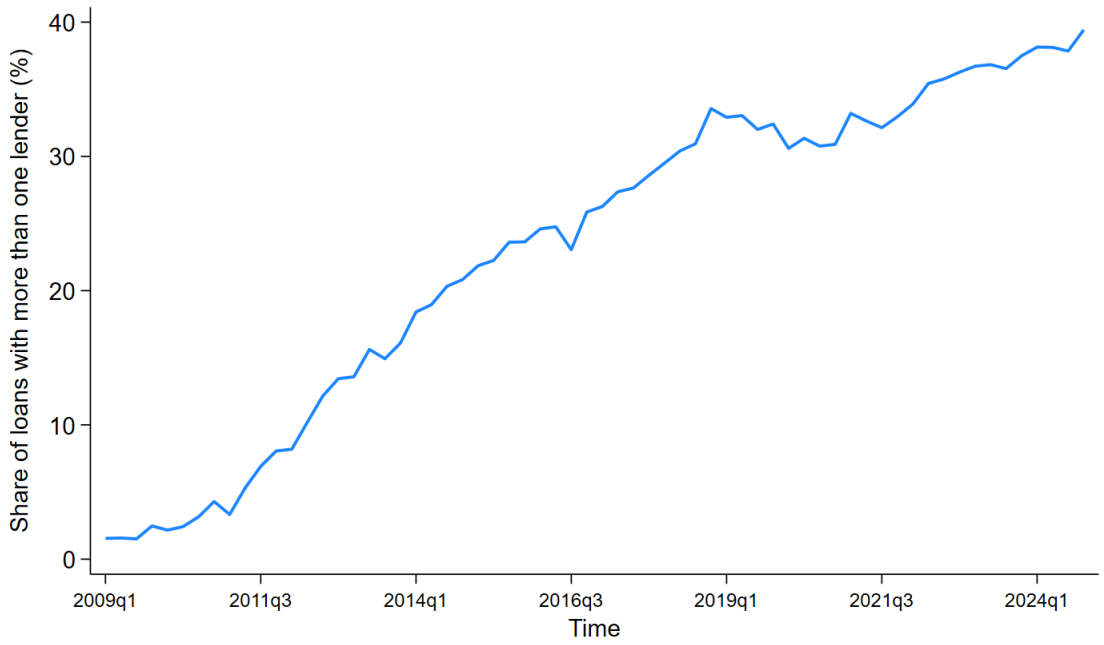
This figure shows the time series of the number of active BDCs and their combined total assets (in USD billion) from 2009Q1 to 2024Q4. The data include 200 BDCs that were active during this period.

Figure 2: Evolution of Loans Held by Multiple BDCs

Panel A: Average Number of Lenders Per Loan and the Number of BDCs



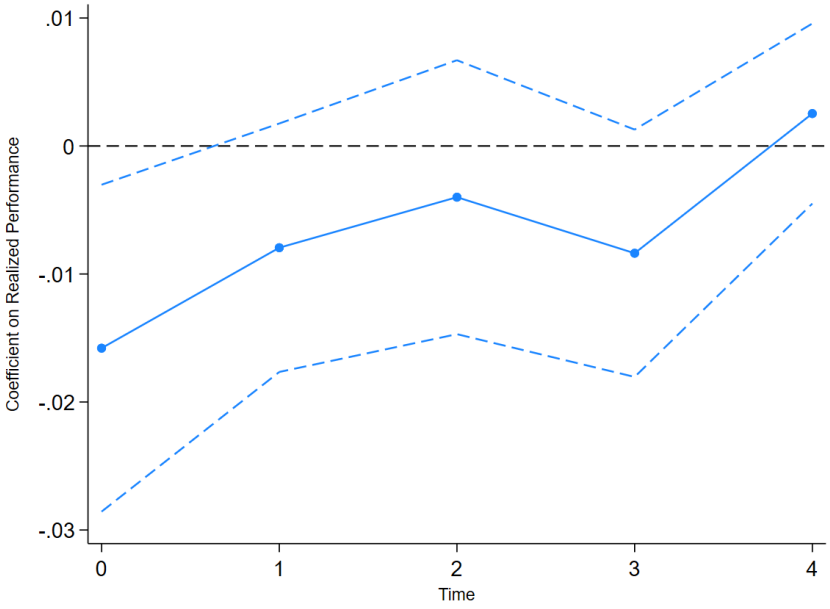
Panel B: Share of Loans Held by Multiple BDCs (% of all loans)



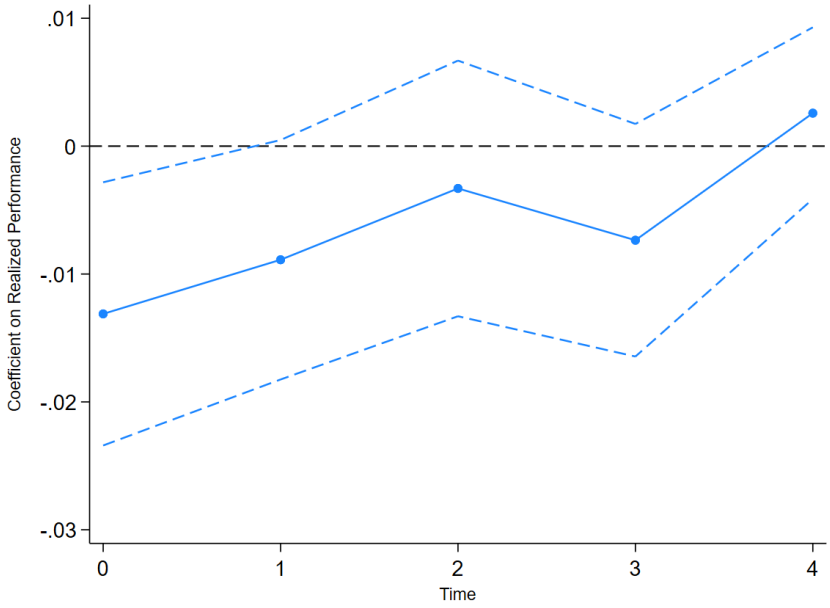
This figure documents the increasing prevalence of loans held by multiple BDC lenders. Panel A shows the evolution of the average number of BDCs holding the same loan (red line) and the number of active BDCs in the sample (blue line). Panel B shows the evolution of the number of loans held by multiple BDCs as a percentage of all loans in the sample.

Figure 3: Dynamic Estimation of Total Deviations

Panel A: Total Deviations (% Assets)



Panel B: Total Deviations (Portfolio Weighted)



This figure plots the estimated coefficients β_h on *Realized Performance* from the following fund-level regressions, estimated separately for each horizon $h \in \{0, 1, 2, 3, 4\}$:

$$\textit{Total Deviations}_{j,t+h} = \beta_h \textit{ Realized Performance}_{j,t} + \gamma_h' \mathbf{X}_{j,t-1} + \alpha_j + \delta_t + \varepsilon_{j,t+h},$$

where $\textit{Total Deviations}_{j,t+h}$ is the aggregate valuation deviation of BDC j in quarter $t+h$, measured as *Total Deviations (% Assets)* in Panel A and *Total Deviations (Portfolio Weighted)* in Panel B. The horizontal axis reports the horizon h in quarters. Standard errors are clustered two-way at the BDC and quarter-year levels.

Table 1: Summary Statistics - BDC Level

	Mean	St. Dev.	p10	p25	Median	p75	p90	N
Total Assets (USD,mio)	1571.369	3692.201	68.485	249.845	572.785	1560.228	3414.256	4,986
Ln(Total Assets)	13.215	1.580	11.134	12.429	13.258	14.260	15.043	4,986
Leverage (Liabilities/Assets)	0.402	0.173	0.080	0.331	0.443	0.519	0.586	4,986
Cash (%TA)	0.078	0.116	0.006	0.015	0.032	0.080	0.208	4,985
Net-inv-income(%TA)	0.012	0.009	0.002	0.009	0.013	0.016	0.020	4,832
Realized Gains (%TA)	-0.003	0.015	-0.014	-0.002	0.000	0.001	0.004	4,832
Realized Performance (%TA)	0.009	0.020	-0.008	0.006	0.012	0.017	0.022	4,832
Unrealized Gains (%TA)	0.001	0.028	-0.023	-0.007	0.000	0.008	0.025	4,832
ROE (%)	0.016	0.043	-0.025	0.005	0.022	0.034	0.051	4,830

This table presents the summary statistics for the BDC-level variables used in the empirical analysis. The sample period is from 2009Q1 to 2024Q4, covering 200 BDCs that were active during this period. The denominator of return ratios (*Net-inv-income*, *Realized Gains*, *Realized Performance*, *Unrealized Gains*) is 1-period lagged assets. *Realized Performance* is defined as the sum of Net Investment Income plus Realized Gains divided by 1-period lagged assets. All ratio variables are winsorized at the 1st and 99th percentiles.

Table 2: Summary Statistics - Loan Level

Panel A: Loans with multiple lenders

	Mean	St. Dev.	p10	p25	Median	p75	p90	Number of Loans
Principal(USD'1000)	16576.668	47733.257	500.000	1852.000	5782.000	15000.000	34600.000	11,302
Loan Fair Value (USD'1000)	16215.544	46955.092	497.000	1803.985	5591.671	14850.168	33392.957	11,302
Time-to-maturity (quarters)	19.814	7.062	11.000	15.000	20.000	24.000	28.000	11,302
Original Maturity (quarters)	21.947	7.339	12.000	18.000	23.000	28.000	28.000	9,231
I(Fixed Rate Loan)	0.147	0.354	0.000	0.000	0.000	0.000	1.000	11,302
I(Senior Secured First Lien)	0.767	0.423	0.000	1.000	1.000	1.000	1.000	11,302
Loan Fair Value (% of Principal)	0.975	0.053	0.934	0.976	0.990	1.000	1.003	11,302
Fair Value Deviation	0.000	0.019	-0.008	-0.001	0.000	0.001	0.010	11,302
Number of Lenders per Loan	2.838	1.891	2.000	2.000	2.000	3.000	4.000	11,302
Number of loans per BDC-Time	44.107	50.545	3.000	10.000	27.000	61.000	106.000	

Panel B: All loans

	Mean	St. Dev.	p10	p25	Median	p75	p90	Number of Loans
Principal(USD'1000)	13628.302	34934.885	644.000	2000.000	5375.500	13588.000	29476.000	39,634
Loan Fair Value (USD'1000)	13288.200	34177.939	625.000	1980.000	5200.000	13174.000	28390.000	39,634
Time-to-maturity (quarters)	18.536	8.206	8.000	13.000	20.000	24.000	28.000	39,634
Original Maturity (quarters)	19.759	7.904	10.000	15.000	20.000	24.000	28.000	21,864
I(Fixed Rate Loan)	0.284	0.451	0.000	0.000	0.000	1.000	1.000	39,634
I(Senior Secured First Lien)	0.658	0.474	0.000	0.000	1.000	1.000	1.000	39,634
Loan Fair Value (% of Principal)	0.973	0.061	0.923	0.976	0.990	1.000	1.004	39,634
Number of Lenders per Loan	1.355	1.091	1.000	1.000	1.000	1.000	2.000	39,634
Number of Loans per BDC-Time	70.197	68.641	11.000	25.000	51.000	97.000	146.000	

This table presents summary statistics for the loan-level samples. Panel A reports statistics for loans held by multiple lenders, which constitute the primary sample used in the analysis. Panel B reports statistics for the full loan universe, including loans held by a single lender. The sample period spans 2009Q1–2024Q4. *Loan Fair Value* is winsorized at the 99th percentile (right tail only); all other variables are reported without winsorization.

Table 3: Fair Value Deviations at the Individual Loan Level

	Loan Fair Value			
	(1) OLS	(2) OLS	(3) Weighted OLS	(4) OLS 2020-2024
Realized Performance	-0.034**	-0.044***	-0.055***	-0.057**
	(-2.400)	(-3.197)	(-3.569)	(-2.502)
Size		0.001	0.000	0.000
		(0.962)	(0.564)	(0.338)
Leverage		0.007**	0.012***	0.009**
		(2.403)	(3.537)	(2.412)
Liquidity		-0.009**	-0.006	-0.007
		(-2.287)	(-1.627)	(-0.970)
ROE		0.016*	0.016*	0.019
		(1.680)	(1.778)	(1.648)
Loan x Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes
Observations	178,627	174,060	174,060	118,631
Adj. R^2	0.842	0.844	0.869	0.821

This table reports estimates from Equation 4. Columns (1) and (2) use the full sample (2009Q1–2024Q4) and are estimated without loan-size weighting. Column (3) uses the full sample and applies loan-size weights, defined as the loan's principal amount scaled by the BDC's total assets. Column (4) reports the unweighted specification estimated on the post-2019 subsample (2020Q1–2024Q4). Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 4: Robustness

Panel A: Additional Controls, Alternative Definitions and Alternative Specification

	(1) Fair Value	(2) Fair Value	(3) Fair Value	(4) Ln(Fair Value)	(5) Deviation	(6) Deviation
Realized Performance (% Assets)	-0.044***			-0.050***	-0.023**	-0.016***
	(-3.216)			(-3.129)	(-2.490)	(-4.690)
Realized Performance (% Equity)		-0.028***				
		(-3.417)				
I(Bottom 25% of Realized Performance)			0.001**			
			(2.040)			
Loan Share	0.001	0.001	0.001	0.000	-0.001	-0.001***
	(1.004)	(0.988)	(0.936)	(0.478)	(-1.591)	(-7.581)
Loan Weight	-0.003	-0.003	-0.002	-0.010	0.020	0.014***
	(-0.085)	(-0.093)	(-0.055)	(-0.241)	(0.954)	(3.013)
BDC Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Loan Controls	No	No	No	No	Yes	Yes
Loan x Year x Qrt FE	Yes	Yes	Yes	Yes	No	No
BDC FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry x Year x Qrt FE	No	No	No	No	Yes	Yes
Observations	174,060	174,060	174,060	174,060	175,887	175,887
Adj. R^2	0.844	0.844	0.844	0.838	0.033	0.038

Panel B: Subsample Analysis

	Loan Fair Value					
	(1) Only 2 Lenders	(2) Min. 3 Lenders	(3) Max. 4 Lenders	(4) >4 Lenders	(5) Senior Secured	(6) Excluding PIK Loans
Realized Performance (% Assets)	-0.037**	-0.046**	-0.039**	-0.054*	-0.040***	-0.038***
	(-2.282)	(-2.501)	(-2.439)	(-1.962)	(-2.871)	(-2.730)
BDC Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes
Loan × Year × Qrt FE	Yes	Yes	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	70,240	103,819	130,994	43,063	164,221	161,165
Adj. R^2	0.902	0.813	0.874	0.719	0.834	0.842

This table reports additional robustness tests of the baseline loan-level findings. Panel A presents a series of robustness tests that uses alternative variable definitions and specifications. Panel B re-estimates the baseline specification across different subsamples. In Panel A, Columns (1) adds further controls to the baseline regression. Column (2) replaces the independent variable *Realized Performance*, which is scaled by lagged total assets in the baseline, with *Realized Performance (% Equity)* that scales performance by lagged equity. Column (3) replaces the independent variable *Realized Performance* with the indicator variable *I(Under-performer)*, which equals one if BDC realized performance is in the bottom 25% of the distribution of *Realized Performance* in a given time period. Column (4) uses the log transformation of *Loan Fair Value* as the dependent variable. Columns (5) and (6) use *Fair Value Deviation* as the dependent variable. In column (5), the average valuation of the loan used to calculate *Fair Value Deviation* doesn't include the focal BDC's own valuation of the loan. In column (6), the focal BDC own valuation of the loan is included when calculating the average valuation of the loan. In columns (5) and (6) Loan Controls include security type (term loan or note), seniority, and remaining time to maturity. In Panel B, Column (1) restricts the sample to loans held by exactly two lenders. Columns (2) and (3) restrict the sample to loans with at least three co-lenders and at most four co-lenders, respectively. Column (4) restricts the sample to loans with more than 4 lenders. Column (5) restricts the sample to senior secured loans. Column (6) excludes loans that includes payment-in-kind (PIK) feature. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Decomposing Realized Performance

	(1) Fair Value	(2) Fair Value	(3) Fair Value	(4) Δ Fair Value
Realized Gains	-0.048***			
	(-2.839)			
Net Investment Income		-0.028		
		(-0.537)		
Non-accruals			0.032**	
			(2.273)	
Δ Non-accruals				0.017*
				(1.840)
Baseline BDC Controls	Yes	Yes	Yes	Yes
Loan x Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	No
Observations	174,060	174,060	173,058	128,956
Adj. R^2	0.844	0.844	0.841	0.693

This table reports estimates from variants of the baseline loan-level specification in Equation 4, in which *Realized Performance* is decomposed into its constituent components. Column (1) replaces *Realized Performance* with *Realized Gains*. Column (2) uses *Net Investment Income*. Columns (3) and (4) use non-accrual measures as proxies for changes in realized performance, with Column (3) using the level of non-accruals and Column (4) using changes in non-accruals in a first-differences specification. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 6: Cross-section of Loans

	Loan Fair Value			
	(1)	(2)	(3)	(4)
Realized Performance × Loan Weight	-3.081**			
	(-2.641)			
Realized Performance × I(Large Loan)		-0.049**		
		(-2.429)		
Realized Performance × I(Public Firm)			0.125**	
			(2.082)	
Realized Performance × I(Single-Lender Loan)				-0.097**
				(-2.190)
Loan x Year x Qrt FE	Yes	Yes	Yes	No
BDC x Year x Qrt FE	Yes	Yes	Yes	Yes
Loan-Type x Year x Qrt FE	No	No	No	Yes
Observations	173,772	173,772	173,772	315,789
Adj. R^2	0.857	0.857	0.857	0.183

This table reports estimates from regressions that examine how the sensitivity of loan fair values to a BDC's realized performance varies with loan-level characteristics. All specifications are estimated using Equation 5 which includes an interaction between realized performance and the loan characteristic under consideration. Column (1) interacts *Realized Performance* with *Loan Weight*, defined as the loan's principal amount divided by the BDC's total portfolio in that quarter. Column (2) replaces *Loan Weight* with *I(Large Loan)*, an indicator equal to one if the loan is in the highest portfolio-weight quartile within the BDC-quarter, and zero otherwise. Column (3) interacts *Realized Performance* with *I(Public Firm)*, an indicator equal to one if the borrower is publicly listed during the lending relationship. Column (4) interacts *Realized Performance* with *I(Single-Lender Loan)*, and indicator equal to one if the loan is held by only one BDC. Loan-type fixed effects group together loans that have the same security type, seniority, and 2-digit SIC industry classification. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7: Cross-section of BDCs

	Loan Fair Value			
	(1)	(2)	(3)	(4)
Realized Performance	-0.050***	-0.049***	-0.054***	-0.056***
	(-3.562)	(-3.519)	(-3.721)	(-3.752)
Realized Performance × Leverage	-0.280**	-0.264**		
	(-2.320)	(-2.182)		
Leverage	0.010***	0.027		
	(2.849)	(1.432)		
Realized Performance × I(Raising New Debt Fund)			0.028	0.037
			(0.772)	(0.921)
I(Raising New Debt Fund)			-0.001	0.005
			(-0.881)	(1.013)
Leverage x Baseline BDC Controls	No	Yes		
I(Raising New Debt Fund) x Baseline BDC Controls			No	Yes
BDC Baseline Controls	Yes	Yes	Yes	Yes
Loan x Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes
Observations	174,060	174,060	170,899	170,899
Adj. R^2	0.844	0.844	0.842	0.842

This table reports estimates from specifications that interact *Realized Performance* with measures of fund-level incentives. Columns (1) and (2) interact *Realized Performance* with 1-period lagged *Leverage*, with *Leverage* centered around the sample mean. Column (1) includes only the interaction between *Realized Performance* and *Leverage*, while Column (2) additionally interacts the baseline BDC controls with *Leverage*. Columns (3) and (4) interact *Realized Performance* with *I(Raising New Debt Fund)*, an indicator equal to one if the asset manager sponsoring the BDC closes a new debt fund over the following four quarters. Column (3) includes only the interaction between *Realized Performance* and *I(Raising New Debt Fund)*, while Column (4) additionally interacts the baseline BDC controls with *I(Raising New Debt Fund)*. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 8: Fair Value Deviations at the Fund Level

Total Deviations

	(1) % Assets Full Sample	(2) Portfolio Weighted Full Sample	(3) % Assets 2020-2024	(4) Portfolio Weighted 2020-2024
Realized Performance	-0.016**	-0.013**	-0.030***	-0.029***
	(-2.421)	(-2.498)	(-3.042)	(-3.258)
Baseline BDC Controls	Yes	Yes	Yes	Yes
Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes
Observations	3,853	3,851	1,945	1,945
Adj. R^2	0.494	0.487	0.644	0.646

This table reports estimates from Equation 8. Columns (1) and (3) use the *Total Deviation (% Assets)* measure, while columns (2) and (4) use the *Total Deviations (Portfolio Weighted)* measure. Columns (1) and (2) use the full sample. Columns (3) and (4) limit the sample to the post-Covid period (2020Q1–2024Q4). Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 9: Fair Value Deviations and Realized Performance Decomposition

Panel A: Total Deviations (% of Assets)

	(1)	(2)	(3)	(4)
Realized Gains	-0.016**			
	(-2.252)			
Net Investment Income		-0.033		
		(-1.158)		
Non-accruals			0.013**	
			(2.303)	
Δ Non-accruals				0.009*
				(1.842)
Baseline BDC Controls	Yes	Yes	Yes	Yes
Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	No
Observations	3,851	3,851	3,851	3,600
Adj. R^2	0.494	0.493	0.487	0.000

Panel B: Total Deviations (Portfolio Weighted)

	(1)	(2)	(3)	(4)
Realized Gains	-0.012**			
	(-2.372)			
Net Investment Income		-0.020		
		(-0.812)		
Non-accruals			0.012**	
			(2.360)	
Δ Non-accruals				0.010**
				(2.201)
Baseline BDC Controls	Yes	Yes	Yes	Yes
Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	No
Observations	3,851	3,851	3,851	3,600
Adj. R^2	0.487	0.492	0.487	0.000

This table reports estimates from variants of the specification in Equation 8, in which *Realized Performance* is decomposed into its constituent components. In Panel A, the dependent variable is *Total Deviations (% Assets)*. In Panel B, the dependent variable is *Total Deviations (Portfolio Weighted)*. In both panels, Column (1) replaces *Realized Performance* with realized gains, Column (2) uses net investment income, Column (3) uses non-accruals as a proxy for portfolio credit deterioration, and Column (4) uses the change in non-accruals (Δ *Non-accruals*) and the change in total deviations and controls (first-difference specification). Column (4) reports Within R^2 instead of Adjusted R^2. All specifications include the baseline set of BDC-level controls. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 10: Fair Value Deviations and Fund Future Performance

	ROE (%)			
	(1)	(2)	(3)	(4)
	t+1	t+4	t+1	t+4
Total Deviations (% Assets)	-0.520*	-1.637**		
	(-1.922)	(-2.172)		
Total Deviations (Portfolio Weighted)			-0.590*	-1.714*
			(-1.862)	(-1.922)
Baseline BDC Controls	Yes	Yes	Yes	Yes
Year x Qrt FE	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes
Observations	3,819	3,340	3,819	3,340
Adj. R^2	0.466		0.466	

This table reports fund-level regressions of future return on equity (ROE) on portfolio-level valuation deviations. Columns (1) and (3) use next-quarter ROE as the dependent variable, while Columns (2) and (4) use cumulative four-quarter ROE, calculated as the sum of net income over the subsequent four quarters divided by beginning-of-period equity. Columns (1) and (2) use *Total Deviations (% Assets)*. Columns (3) and (4) use *Total Deviations (Portfolio Weighted)*. All specifications include baseline BDC controls, BDC fixed effects, and quarter-year fixed effects. Standard errors in Columns (1) and (3) are clustered at the BDC and quarter-year levels. The standard errors for Columns (2) and (4) are calculated using Driscoll-Kraay standard errors to account for the serial correlation created by the rolling four-quarter ROE measure. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 11: Fair Value Deviations and Bank Credit

	Δ ln(Bank Debt)				
	(1) Total	(2) Total	(3) Total	(4) Revolvers	(5) Term Loans
Total Deviations (% of Assets)	-5.668***	-5.478***	-3.254**	-3.216**	2.002
	(-2.932)	(-3.629)	(-2.570)	(-2.029)	(0.312)
L2. Leverage			-0.999***	-1.017***	-0.090
			(-7.292)	(-10.192)	(-0.482)
BDC Baseline Controls	No	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes	Yes
Year x Qrt FE	Yes	Yes	Yes	Yes	Yes
Observations	2,170	2,169	2,169	2,053	441
Adj. R^2	0.023	0.041	0.059	0.061	0.000

This table reports fund-level regressions of the change in bank debt amount on lagged portfolio-level valuation deviations. The dependent variable is the quarterly change in the log amount of bank debt outstanding, measured as total bank debt in Columns (1) to (3), revolving credit facilities in Column (4), and term loans in Column (5). BDC Baseline Controls excludes leverage; Columns (3) to (5) additionally controls for leverage lagged two quarters. Results in columns (3) to (5) are robust to excluding the leverage control. Column (5) reports Within R^2. All specifications include BDC fixed effects and quarter-year fixed effects. The sample consists of BDCs with debt capital structure data from S&P Capital IQ. Standard errors are clustered at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 12: Alternative Explanations

Panel A: Stale Pricing and Information Access

	Loan Fair Value				
	(1) Updated Valuation	(2) Origination Month	(3) $\leq$ 6 months	(4) Full Sample	(5) Full Sample
Realized Performance	-0.033**	-0.075*	-0.056**	-0.029**	-0.019**
	(-2.442)	(-1.692)	(-2.113)	(-2.218)	(-2.592)
I(Equity Ownership)				0.001	
				(0.530)	
BDC Baseline Controls	Yes	Yes	Yes	Yes	Yes
Loan x Year x Qrt FE	Yes	Yes	Yes	Yes	No
BDC FE	Yes	Yes	Yes	No	Yes
BDC x Loan FE	No	No	No	Yes	No
Sponsor x Loan x Year x Qrt FE	No	No	No	No	Yes
Observations	125,355	10,566	43,875	165,294	100,051
Adj. R^2	0.861	0.797	0.781	0.881	0.970

Panel B: Lagged Realized Performance and Portfolio Quality

	(1) Non-accruals	(2) Δ Non-accruals
L.Realized Performance	-0.038	
	(-1.672)	
L.Δ Realized Performance		-0.009
		(-0.673)
BDC Baseline Controls	Yes	Yes
BDC FE	Yes	No
Year x Qrt FE	Yes	Yes
Observations	4,388	4,128
Adj. R^2	0.201	0.017

Panel C: Restructuring of Outstanding Loans

	Loan Fair Value	
	(1) No decrease in principal	(2) No decrease in principal & updated loan valuation
Realized Performance	-0.060***	-0.050***
	(-3.261)	(-3.111)
BDC Baseline Controls	Yes	Yes
Loan x Year x Qrt FE	Yes	Yes
BDC FE	Yes	Yes
Observations	94,641	70,906
Adj. R^2	0.851	0.860

This table reports the results of additional tests addressing several alternative explanations for the baseline relationship between realized performance and loan valuations. Panel A presents loan-level regressions that assess whether the baseline results are driven by stale pricing or differential borrower information across funds. Column (1) restricts the sample to loans for which the BDC actively changes the reported fair value relative to the previous quarter or the loan appears for the first time as a new holding in the portfolio. Columns (2), (3), (4) and (5) control for differential information access. Columns (2) and (3) limit the sample to loans originated in the same month as the filing date or within the past six months of this date, respectively. Column (4) includes the indicator variable I(Equity Ownership) and BDC x Loan FE. I(Equity Ownership) equals one if the BDC holds an equity stake in the borrowing firm, and zero otherwise. Column (5) includes Sponsor x Loan x Time FE. Panel B examines whether the results can be explained by a portfolio rebalancing mechanism. These regressions are estimated on the BDC–quarter panel. The dependent variables are Non-accruals in Column (1) and Δ Non-accruals in Column (2). Non-accruals are defined as the total principal amount of non-accrual loans held by a BDC divided by total assets of the BDC at time $t-1$, while Δ Non-accruals is the quarter-to-quarter change in this ratio. Column (2) uses a first-differences specification. Panel C addresses the possibility that loan restructurings confound the baseline relationship by restricting the sample to observations for which the reported principal amount does not decrease relative to the previous quarter. Column (2) further restricts the sample to loans for which the BDC actively changes the reported fair value relative to the previous quarter or the loan appears for the first time as a new holding. All specifications include the baseline set of BDC-level controls. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Value Is in the Eye of the Beholder: Strategic Marking in Private Credit

APPENDIX

A.1 Loan Valuations in the Private Credit Industry

A.1.1 Valuation Accounting Standards

The Accounting Standards Codification (ASC) is the authoritative compilation of U.S. Generally Accepted Accounting Principles (U.S. GAAP) issued and maintained by the Financial Accounting Standards Board (FASB). For entities that report under U.S. GAAP, the Codification is the binding source of accounting guidance. This includes Business Development Companies, which file financial statements with the U.S. Securities and Exchange Commission and therefore must apply U.S. GAAP in their reported financials. Private credit funds are not uniformly subject to SEC reporting, but when they prepare investor financial statements under U.S. GAAP (or are audited on that basis), they generally follow the same fair-value measurement framework.

Within the Codification, ASC 820, titled "Fair Value Measurement", provides the framework for fair value estimation, applicable under U.S. GAAP.[36] ASC 820 defines fair value as an exit price: the price that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. Market participants are assumed to be independent of the reporting entity, knowledgeable, able, and willing to transact in the principal (or most advantageous) market, and acting in their own economic interest.

ASC 820 establishes a three-level fair value hierarchy that ranks valuation inputs by observability. Level 1 inputs are quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date. Level 2 inputs are observable inputs other than Level 1 quoted prices, such as quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in less active markets, or other inputs that are observable or corroborated by observable market data. Level 3 inputs are unobservable inputs used when observable market evidence is limited, and they are significant

[36]For more on ASC 820, see https://asc.fasb.org/1943274/2147482134/820-10-35-2

to the measurement; these typically arise from valuation techniques such as pricing models or discounted cash-flow methods that rely on material unobservable assumptions.

Since BDCs mostly originate loans and hold them to maturity, their investment portfolios are likely dominated by Level 2 and Level 3 assets. As of 2023, Chernenko, Ialenti, et al. (2025) estimate that 20% of loans held by BDCs are sourced from the broadly syndicated loan market. The remaining private credit loans are individually negotiated, rarely trade, and lack quoted prices, so their fair values typically rely on significant unobservable inputs and are classified as Level 3.

A.1.2 Valuation Process

Curtis and Raney (2020) provide an overview of the valuation process for a typical BDC. BDC loan valuations are determined through a multi-layered internal and external process that combines portfolio-manager input, independent oversight, and board-level approval. The process starts at the investment team responsible for monitoring the asset (typically the same team responsible for origination). The team is responsible for producing initial fair value estimates for each portfolio position on a quarterly basis, consistent with U.S. GAAP fair value accounting standards. These valuations are typically based on a combination of discounted cash-flow analyses, comparable market transactions, observable secondary-market prices when available, and borrower-specific information such as operating performance and covenant compliance. For illiquid private credit instruments, for which observable market prices are often unavailable, this process necessarily involves a degree of managerial judgment, particularly with respect to assumptions about credit risk, recovery values, and discount rates.

To mitigate potential conflicts of interest and ensure compliance with accounting standards, BDCs employ multiple lines of defense in the valuation process. Most BDCs maintain an internal valuation committee that reviews the proposed marks. Many BDCs also use a third-party valuation firm that provides asset-level fair value assessments (Jang and G. Kim,

2025). Finally, all valuations are subject to approval by the BDC's board of directors.

It is important to note that the use of third-party valuation firms does not necessarily eliminate potential bias in asset valuations.[37] First, valuation firms are hired and compensated by the BDC (or its sponsor) under ongoing commercial relationships, which can in principle create conflicts of interest similar to those documented for credit rating agencies (Efing and Hau, 2015; Bolton et al., 2012). Second, third-party valuation marks are advisory rather than binding, and BDCs retain ultimate discretion over the marks they report. Third, valuation firms typically review only a subset of portfolio positions in any given quarter, so the entire investment book is not independently reassessed at the same time. Fourth, BDCs are not required to disclose which specific assets have been valued by third-party firms or the recommended valuations for those assets. Finally, and perhaps most importantly, third-party valuations generally rely on information supplied by the BDC itself. Jang and G. Kim (2025) document instances in which the same valuation provider assigns different values to the same loan for different BDCs, attributing these differences to variation in the information communicated by each fund. Hence, the third-party firm is effectively valuing on the basis of the information set of the lender rather than through direct engagement with the underlying portfolio company.

A.1.3 Valuation Models

Valuation of private credit loans typically begins with an enterprise or collateral value coverage test that classifies the exposure as performing or non-performing.[38] The test assesses whether the borrower's enterprise or collateral value is sufficient to cover outstanding debt obligations. If coverage is adequate, the position is treated as performing and valued using going-concern methodologies. If coverage is partial or clearly insufficient, valuation instead

[37] International Monetary Fund (2024) raise similar concerns about the effectiveness of third-party valuations in the private credit industry.

[38] For a detailed discussion of valuation methods in private credit, see, for example, the technical report published by the European Leveraged Finance Association https://elfainvestors.com/wp-content/uploads/2022/02/ELFA-Diligence-Technical-Guide-for-Valuation-of-Private-Debt-Investments-1.pdf and Financial Stability Board (2026).

relies on recovery- or liquidation-based approaches.

Enterprise value is a measure of the value of the firm's core operations, usually defined as the market value of equity plus total long-term debt minus excess cash. In practice, two broad approaches are used to estimate enterprise value. A market approach infers enterprise value from observed valuations of comparable companies or precedent transactions. An income approach derives enterprise value from the present value of expected future cash flows, discounted at an appropriate rate that reflects the firm's risk profile.

Against this backdrop, private credit exposures are commonly valued using one or more of four approaches: (i) an income approach based on yield analysis, (ii) a net recovery approach, (iii) a liquidation analysis, and (iv) broker quotes. The choice of method depends on both the outcome of the coverage test and the availability and reliability of market-based inputs. For performing loans without reliable broker quotes or observable trading activity, fair value is typically estimated using a yield-based income approach.[39] The two main inputs in the income approach are cash flows projections and discount rate. Cash flows are based on the contractual terms of the loan. Discount rate estimation is based on the changes in observed credit spreads and yields and the changes in the borrower-specific risk factors.

For non-performing loans, where repayment depends primarily on collateral realization rather than going-concern cash flows, fair value is often based on a combination of net recovery, liquidation, and scenario analyses, reflecting the range of potential outcomes in distress.

A.2 Business Development Companies

To elect a Business Development Company (BDC) status, a fund files Form N-54A with the U.S. Securities and Exchange Commission (SEC). Maintaining BDC status requires compliance with several statutory and regulatory constraints. First, at least 70% of total assets

[39] Given the sample filters described in Section 3.4, the resulting dataset consists predominantly of performing loans, for which the yield-based income approach is the relevant valuation benchmark.

must be invested in eligible assets.[40] Second, BDCs are subject to an asset-coverage ratio minimum requirement of 150%. Third, BDCs must offer "managerial assistance" to portfolio companies, which in practice can involve sustained strategic and operational engagement, including input on business plans, financing choices, and broader corporate policies. Fourth, BDCs must satisfy a diversification constraint: a BDC may not invest more than 25% of total assets in the securities of any single issuer (other than U.S. government securities or cash items). Finally, BDCs must have a class of equity securities registered with the SEC and are therefore subject to ongoing public reporting requirements, including periodic filings such as Forms 10-K and 10-Q.

Although not required for BDC status, BDCs elect to be taxed as Regulated Investment Company (RIC) under Subchapter M of the Internal Revenue Code of 1986.[41] RIC tax treatment allows BDCs to avoid entity-level corporate income tax provided they satisfy ongoing qualification and distribution requirements. To qualify for and maintain RIC status, a BDC must derive at least 90% of gross income from qualifying investment-type sources (e.g., interest, dividends, and gains from securities), satisfy asset diversification tests, and meet an annual distribution requirement. The latter requires distributing at least 90% of taxable income to shareholders as dividends. In addition, RICs are subject to a 4% federal excise tax on undistributed income. Funds may avoid this tax by distributing roughly 98% of ordinary income and 98.2% of capital gains each year. In practice, these constraints shape BDC business models by creating strong incentives to pay out earnings rather than retain them, thereby making external capital raising (equity issuance or debt financing subject to asset-coverage limits) central to growth.

BDCs differ along two key structural dimensions: management form and investor accessibility. First, a BDC can be internally or externally managed. Internally managed BDCs are run by an in-house investment team compensated through operating-company style compen-

[40] Eligible assets are securities issued by U.S. private companies and small public companies with market capitalization up to $250 million, as well as government securities and cash.

[41] For more on tax treatment of RICs, see https://www.irs.gov/instructions/i1120ric.

sation packages. Externally managed BDCs are typically sponsored by an asset manager that provides management services under an Investment Advisory and Administrative Services Agreement, which specifies the asset manager compensation. This compensation includes base management fees and performance incentive fees. While most BDCs were internally managed in the early years of the industry, the sector has shifted markedly toward external management: as of 2024, more than 90% of active BDCs are externally managed, and almost all new funds formed after 2020 adopt the external-management model.

Second, BDCs differ in accessibility: they can be traded or non-traded. Traded BDCs are listed on U.S. stock exchanges and accessible to both institutional and retail investors. As of 2024, 46 BDCs are publicly listed. Non-traded BDCs may be public (retail-accessible) or private (institutional-only). Non-traded public BDCs typically offer periodic liquidity windows that allow share issuance and redemption at NAV per share, subject to a pre-specified redemption limit per period. Non-traded private BDCs more closely resemble traditional private credit funds, with capital commitments and capital calls, a lockup period, and a finite fund term. As of 2024, 73 BDCs operate using this fund structure.

A.3 Construction of the BDC Financial Statement Panel

This appendix describes the construction of the BDC-level financial statement panel briefly described in Section 3.1. I construct the panel from BDC financial statements filed with the SEC and available through EDGAR. The data are extracted from 10-Q and 10-K filings and cover the universe of BDCs available in SOLVE Workstation BDC Data over the period 2009Q1 to 2024Q4. The final dataset contains quarterly balance sheet and income statement variables for each BDC in the sample. The construction of the dataset proceeds in four main steps.

Extraction of raw financial statements: I develop custom Python scripts to retrieve BDC filings from SEC EDGAR using each fund's CIK. The extraction code downloads

each BDC's 10-K and 10-Q filings, parses the filing HTML, identifies the balance sheet, income statement, and cash flow statement tables using statement titles and content-based keywords, and exports the extracted tables into BDC-specific Excel files. The code also appends continuation tables when a financial statement is split across multiple HTML tables in the filing. Although BDCs are now required to provide Inline XBRL-tagged financial statement information, I do not rely on XBRL data for the construction of the financial statement panel because the requirement does not cover most of my sample period and because the relevant income statement items are not consistently standardized across BDCs over time.[42]

Extraction and construction of variables: I use separate Python scripts to extract the relevant variables from each BDC's downloaded financial statements, together with the reporting date and period-end date of each filing. The process differs across balance sheet and income statement variables. Balance sheet variables are relatively straightforward to extract because they are stock variables that measure the financial position of the BDC at a specific reporting date. For example, total assets, total liabilities, cash, and net assets are reported as of the balance sheet date. I therefore extract these variables directly from the statement of assets and liabilities in each filing.

Income statement variables require a different procedure for two reasons. First, income statement items are flow variables. Annual 10-K filings typically report cumulative values for the full fiscal year, while quarterly 10-Q filings report values for interim fiscal periods. To construct quarterly income statement flows, I account for each BDC's fiscal year-end. For annual filings, I recover the fourth-quarter value by subtracting the values reported in the previous three quarters of the same fiscal year.[43] This procedure also accounts for BDCs with non-standard fiscal year-end (different year-end compared to calendar year-end).

[42]The SEC's structured data reporting rules for BDCs became effective on August 1, 2022, requiring BDCs to tag certain submissions using Inline XBRL.

[43]For BDCs that begin reporting in the middle of their fiscal year, I subtract the values from the one or two preceding quarters available before the annual filing.

Second, the key income statement items, particularly realized and unrealized gains and losses, are not standardized in the way they are reported across BDCs or even within the same BDC over time. Some BDCs report explicit aggregate lines for total realized gains and total unrealized gains. Others, particularly in earlier years of the sample, report a sequence of separate components without a single total line, requiring the components to be identified and aggregated using customized extraction rules. Reporting formats may also change over time within the same BDC and may include or exclude particular non-recurring items, such as gains or losses from the extinguishment of outstanding debt. To address this issue, I classify BDCs according to their reporting format and apply different extraction and aggregation routines depending on whether the filing reports aggregate realized and unrealized gain lines or only disaggregated components. The income statement variables are defined as follows:

1. **Total Investment Income**: includes income from operations, including interest income, dividend income, and fee income. This item is standardized in BDC income statements.

2. **Total Expenses**: includes operating and administrative expenses, as well as compensation paid to the investment adviser, including base management fees and incentive fees. This item is standardized in BDC income statements.

3. **Net Expenses**: defined as total expenses net of any management-fee waivers provided by the BDC sponsor. This item is standardized in BDC income statements.

4. **Net Investment Income**: defined as total investment income minus net expenses and is measured before taxes. This item is standardized in BDC income statements.

5. **Realized Gains and Losses**: captures gains and losses arising from completed transactions, including realized gains and losses on investments, financial derivatives, and other transaction-based items.

6. **Change in Unrealized Gains and Losses**: captures changes in the reported fair value of investments and financial derivatives that have not yet been realized through a transaction, as well as valuation reversals of settled positions.

7. **Net Increase or Decrease in Net Assets Resulting from Operations** : corresponds to the final income statement line. This measure incorporates net investment income, realized gains and losses, unrealized gains and losses, taxes, and any additional non-recurring items included in the final income statement result. This item is standardized in BDC income statements.

Validation and reconciliation of extracted variables: After the initial extraction, the realized and unrealized gain variables are reviewed and corrected when necessary. This review process starts flagging any non-standard item near both realized and unrealized gains and losses in any income statement and then reviewing the item in this particular filing. This review is particularly important because some filings include additional items near the realized or unrealized gains and losses lines that are not reported in a standard format across BDCs but must be treated consistently when constructing the variables. Specifically, gains or losses from the extinguishment of debt are classified as realized gains or losses because they arise from completed transactions. Similarly, gains or losses from the redemption or repurchase of shares, as well as gains or losses from acquisitions, are treated as realized items. Losses from goodwill impairment are not included in unrealized gains or losses, since they are not mark-to-market valuation changes and are generally irreversible from an accounting perspective. Dividends paid to preferred shareholders are not subtracted from net income when they appear below the final net income line, because the objective is to capture the BDC's net income before the allocation of that income across different classes of shareholders.[44]

Tax reporting creates an additional standardization issue. BDCs do not report taxes

[44]Notice that the occurrence of all these items is very rare and unlikely to affect the results regardless of how they are treated.

uniformly in their income statements. Some report separate tax effects for different components of income, while some report a single aggregate tax line. For this reason, I measure net investment income, realized gains and losses, and unrealized gains and losses before taxes. The full effect of taxes is nevertheless captured in the net income variable, which corresponds to the final reported income statement line.[45]

Standardizing reporting units and time periods: Finally, I standardize reporting units across filings, since some BDCs report values in absolute dollars, while others report values in thousands or millions. The final panel is organized at the BDC-quarter level. The time variable is constructed so that the financial statement information corresponds to the same reporting period as the BDC's portfolio holdings data used in the loan-level analysis. This harmonization is particularly important for BDCs with non-standard fiscal year-ends, since the fiscal quarter reported in the financial statements may not coincide mechanically with the calendar quarter label used in the loan holdings data. This approach ensures that financial statement data for a given reporting period are matched to the loan holdings reported in the same filing.

A.4 Fund Leverage Channel

Section 4.1.5 shows that the valuation response to weak realized performance intensifies with fund leverage. This appendix explores the mechanisms behind this pattern. I report additional tests focusing on proximity to the regulatory leverage limit and on the role of revolving credit, and describe the contractual mechanics through which reported valuations affect a fund's borrowing capacity.

[45]Because BDCs typically elect to be treated as Regulated Investment Companies (RICs), they generally avoid entity-level corporate income tax provided they satisfy the relevant distribution and qualification requirements. As a result, taxes appear infrequently in BDC income statements. Nevertheless, the main results are robust to controlling explicitly for taxes.

A.4.1 Proximity to the Regulatory Leverage Limit

If the leverage channel operates through the regulatory asset coverage requirement, the valuation response should intensify as a fund approaches its limit. I test this by replacing leverage with *Proximity to Limit*. For robustness, I define *Proximity to Limit* using two alternative measures. The first measure is calculated as a distance, estimated as lagged leverage minus lagged regulatory leverage limit. The second measure is calculated as a ratio, defined as lagged leverage divided by lagged regulatory leverage limit. I then interact *Proximity to Limit* with *Realized Performance* in the baseline loan-level specification. Columns (1) to (4) in Table A1 report the results. Columns (1) and (2) use the distance measure, while columns (3) and (4) use the ratio measure. Columns (2) and (4) restrict the sample to the period following the regulatory change introduced in the first quarter of 2018, which allowed BDCs, subject to specified approval and disclosure requirements, to reduce their minimum asset coverage ratio from 200 to 150 percent and thereby increase their maximum regulatory leverage capacity (see Section 4.1.5).

The interaction between *Realized Performance* and *Proximity to Limit* is negative and statistically significant across all four specifications. The estimated interaction coefficients are -0.257 and -0.271 using the distance measure and -0.151 and -0.166 using the ratio measure. Because higher values of both measures indicate greater proximity to the regulatory leverage limit, these estimates show that the negative relationship between realized performance and loan valuations becomes stronger as funds approach their limit. In other words, following a deterioration in realized performance, funds closer to their regulatory leverage constraint report relatively higher loan valuations. This finding is consistent with valuation discretion becoming more important when downward valuation adjustments would have greater consequences for compliance with the regulatory asset coverage requirement.[46]

[46]Notice that in columns (3) and (4) the coefficient on *Realized Performance* is by construction evaluated at leverage level equal to zero, which corresponds to a fund with no leverage. Since no fund in the sample operates at or near this point, the standalone coefficient has no meaningful economic interpretation and is reported only for completeness.

A.4.2 How Valuations Enter Borrowing Capacity Calculations

BDC revolving credit facilities tie the amount a fund may borrow to the value of its portfolio through a borrowing base that is continuously evaluated.[47] Each pledged investment contributes an advance rate applied to its reported fair value, and the borrowing base is the sum of these contributions across the portfolio. Advance rates vary by seniority of the investment. The borrowing base determines how much a fund may have outstanding at any time, so a decline in reported loan valuations reduces available capacity in the credit facility. For investments without readily available market quotations, which constitute the bulk of a BDC's portfolio, value is determined quarterly by the fund itself in accordance with its own valuation policy, with a minimum share of the portfolio valued with the assistance of an approved third-party appraiser. Higher marks therefore mechanically expand the borrowing capacity of the BDC.

Two features of revolving credit agreements make the impact of loan valuations particularly relevant for funds that rely heavily on revolving credit. First, the borrowing base is recomputed against the portfolio each quarter, so the amount a fund can draw under a revolving facility moves with its reported valuations. A fund that finances itself mainly through revolvers therefore has a larger share of its debt capacity continuously tied to its own marks than a fund that relies on term debt or unsecured notes, whose amounts are fixed once drawn. Second, the terms used to compute the borrowing base tighten as the fund's asset coverage ratio declines. Advance rates fall, and concentration limits, which apply at the level of the individual portfolio company and the asset type, decline as asset coverage ratio falls. Because the asset coverage ratio is itself computed from reported fair values, a higher mark relieves the constraint in two ways for a revolver-dependent fund: it raises the value against which credit is extended, and it can keep the fund above the thresholds at which advance rates and concentration limits are set more generously.

[47] At the BDC sector level, revolving facilities account for the large majority of BDC borrowing from banks. Using Federal Reserve Y-14 data, Berrospide et al. (2025) report $49 billion of revolving credit lines extended to BDCs as of 2024Q4, against $7 billion in term loans.

Lenders retain substantial control over this process. A subset of the valuations entering the borrowing base are tested periodically (typically quarterly) by an independent valuation provider selected by the lender; where a fund's mark exceeds the provider's estimate by more than a set tolerance, the borrowing base uses a lower value. Lenders may request additional testing at any time, without limit and at the fund's expense, and facilities are renegotiated periodically, with individual lenders deciding whether to extend their commitments. Figure A2 shows the relevant provisions from a representative agreement.[48]

A.4.3 The Role of Revolving Credit

The contractual mechanics described above operate through revolving facilities, where borrowing capacity is recomputed against the portfolio each period. Term debt, once drawn, is unaffected by subsequent changes in reported values. If reported values matter through borrowing capacity, funds that rely more heavily on revolving credit should be more reluctant to lower their marks, since any markdown directly reduces the credit available to them. Their valuation response to realized performance should therefore be asymmetric: muted following strong quarters, and stronger when realized losses threaten borrowing capacity. I test this by interacting *Realized Performance* with an indicator *I(Large Share of Revolvers)*, which takes the value of 1 when a fund is in the top quartile of the distribution of revolving facilities as a share of total debt in a given quarter, and with an indicator *I(Loss Quarter)*, which takes 1 for quarters in which the fund records net realized losses and zero otherwise. The revolver share is constructed from the S&P Capital IQ debt capital structure data described in Section 3.3. The specification includes the baseline BDC controls, the standalone indicators *I(Large Share of Revolvers)* and *I(Loss Quarter)*, and all lower-order interactions.

Column (5) of Table A1 reports the results. The negative and significant triple interac-

[48]Recent events illustrate how lenders exercise control over the valuations that enter the borrowing base. In March 2026, JPMorgan reportedly restricted lending to a group of private credit funds after marking down the value of certain loans in their portfolios, which serve as collateral for the funds' borrowing. The markdowns reduced the amount the bank lends against these loans going forward. See https://www.reuters.com/business/finance/jpmorgan-restricts-private-credit-lending-after-markdowns-bloomberg-news-reports-2026-03-12/.

tion indicates that, relative to other funds, the sensitivity of marks to realized performance becomes significantly more negative in loss quarters than in non-loss quarters for funds that rely heavily on revolving credit. In non-loss quarters, by contrast, these funds' marks respond significantly less to realized performance than those of other funds. This pattern is consistent with borrowing capacity shaping valuation behavior. When reported values determine available credit, downward adjustments are costly, particularly for funds that are more dependent on revolving credit. These estimates should nonetheless be interpreted as suggestive evidence, as the analysis is restricted to the 69 funds matched to the debt capital structure data.

Table A1: Fund Leverage Channel

	Loan Fair Value				
	(1) Full Sample	(2) Post Regulatory Change	(3) Full Sample	(4) Post Regulatory Change	(5) S&P Capital IQ Sample
	Distance	Distance	Ratio	Ratio	Credit Revolvers
Realized Performance	-0.079***	-0.090***	0.071*	0.075	-0.134**
	(-3.139)	(-3.029)	(1.731)	(1.377)	(-2.072)
Proximity to Leverage Limit	0.010***	0.009**	0.006***	0.005**	
	(2.912)	(2.162)	(3.102)	(2.231)	
Realized Performance × Proximity to Leverage Limit	-0.257**	-0.271**	-0.151**	-0.166**	
	(-2.361)	(-2.072)	(-2.473)	(-2.152)	
Realized Performance × I(Large Share of Revolvers)					0.164**
					(2.159)
Realized Performance × I(Loss Quarter)					0.097
					(1.372)
Realized Performance × I(Large Share of Revolvers) × I(Loss Quarter)					-0.214**
					(-2.043)
BDC Baseline Controls	Yes	Yes	Yes	Yes	Yes
Loan × Year × Quarter FE	Yes	Yes	Yes	Yes	Yes
BDC FE	Yes	Yes	Yes	Yes	Yes
Observations	174,060	139,540	174,060	139,540	78,117
Adjusted R^2	0.844	0.825	0.844	0.825	0.854

This table reports estimates of the relationship between realized performance and loan fair values. Distance and Ratio denote alternative measures of proximity to the regulatory leverage limit (*Proximity to Leverage Limit*). Distance measures the proximity to leverage limit as lagged leverage minus lagged regulatory limit. Ratio measures the proximity as lagged leverage divided by lagged regulatory limit. In column (5), *I(Large Share of Revolvers)* is an indicator equal to one if a BDC is in the top quartile of the distribution of revolving credit facilities as a share of total debt in a given quarter. *I(Loss Quarter)* is an indicator equal to one if a BDC has aggregate negative Realized Gains(Losses) in the income statement of a given quarter. Column (5) estimates the below equation:

$$
\begin{aligned}
\textit{Loan Fair Value}_{i,f,j,t} = {} & \beta_1 \, \textit{Realized Performance}_{j,t} + \beta_2 \, \textit{I(Large Share of Revolvers)}_{j,t} + \beta_3 \, \textit{I(Loss Quarter)}_{j,t} \\
& + \beta_4 \, \textit{Realized Performance}_{j,t} \times \textit{I(Large Share of Revolvers)}_{j,t} \\
& + \beta_5 \, \textit{Realized Performance}_{j,t} \times \textit{I(Loss Quarter)}_{j,t} \\
& + \beta_6 \, \textit{I(Large Share of Revolvers)}_{j,t} \times \textit{I(Loss Quarter)}_{j,t} \\
& + \beta_7 \, \textit{Realized Performance}_{j,t} \times \textit{I(Large Share of Revolvers)}_{j,t} \times \textit{I(Loss Quarter)}_{j,t} \\
& + \gamma' \mathbf{X}_{j,t-1} + \alpha_j + \lambda_{i,t} + \varepsilon_{i,f,j,t},
\end{aligned}
$$

Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table A2: Loans Sample Construction Robustness

	Loan Fair Value			
	(1)	(2)	(3)	(4)
	Custom Loan Identifier	Firm-time FE	All loans above 0.5 Fair Value	All loans above 0.7 Fair Value
Realized Performance	-0.041***	-0.046***	-0.047***	-0.035**
	(-3.072)	(-3.091)	(-3.092)	(-2.529)
Baseline BDC Controls	Yes	Yes	Yes	Yes
Loan x Year x Qrt FE	Yes	No	Yes	Yes
Firm x Year x Qrt FE	No	Yes	No	No
BDC FE	Yes	Yes	Yes	Yes
Observations	163,994	234,297	175,081	172,475
Adj. R^2	0.836	0.704	0.844	0.840

This table reports robustness tests for the construction of the loan-level sample. The dependent variable is *Loan Fair Value*. Columns (1) and (2) use the full sample, including loans held by only one BDC. Column (1) uses my custom loan identifier, such that loans with the same borrower name and industry, and security type, seniority, maturity, and coupon share the same loan identifier. Column (2) replaces loan-by-time fixed effects with firm-by-time fixed effects. Columns (3) and (4) restrict the sample to loans with multiple lenders, the sample used throughout the paper. Column (3) includes loans with fair value at or above 0.50. Column (4) includes loans with fair value at or above 0.70. All specifications include the baseline set of BDC-level controls. Standard errors are clustered two-way at the BDC and quarter-year levels. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Figure A1: Illustrative examples of BDC Income Statement and Statement of Changes in Net Assets

Panel A: Income Statement

For the three months ending March 2025

Investment Income	
Interest income	$100
Dividend income	$50
Fee income	$20
Total investment income	**$170**
Expenses	
Interest and other financing expenses	$30
Management fees	$20
Administrative expenses	$10
Total expenses	**$60**
Net investment income	**$110**
Realized Gains / Losses	
Realized gain (loss) on investments	($15)
Realized gain (loss) on derivatives	$5
Total realized gains (losses)	**($10)**
Unrealized Gains / Losses	
Unrealized gain (loss) on investments	$25
Unrealized gain (loss) on derivatives	($10)
Total unrealized gains (losses)	**$15**
Net increase / decrease in net assets from operations	**$115**

Panel B: Statement of Changes in Net Assets

Increase (decrease) in net assets resulting from operations	
Net investment income	$110
Net realized gains (losses)	($10)
Net unrealized gains (losses)	$15
Net increase (decrease) in net assets from operations	**$115**
Capital transactions	
Distributions to stockholders	($100)
Issuance of common stock	-
Net increase (decrease) in net assets from capital transactions	**($100)**
Net assets at the beginning of the period	**$15000**
Net assets at the end of the period	**$15015**

This figure shows illustrative examples of a typical BDC Income Statement and Statement of Changes in Net Assets, in a given quarterly reporting period.

Figure A2: Valuation and Borrowing Capacity in a BDC Revolving Credit Facility

Panel A: Determination of Values

(ii) Determination of Values. The Borrower will conduct reviews of the value to be assigned to each of its Portfolio Investments as follows:

(A) Quoted Investments—External Review. With respect to Portfolio Investments (including Cash Equivalents) for which market quotations are readily available ("Quoted Investments"), the Borrower shall, not less frequently than once each calendar week, determine the market value of such Portfolio Investments which shall, in each case, be determined in accordance with one of the following methodologies (as selected by the Borrower):

(w) in the case of public and 144A securities, the average of the mean prices as determined by two Approved Dealers selected by the Borrower,

(x) in the case of bank loans, the mean price as determined by one Approved Dealer or Approved Pricing Service selected by the Borrower,

(y) in the case of any Portfolio Investment traded on an exchange, the closing price for such Portfolio Investment most recently posted on such exchange, and

(z) in the case of any other Portfolio Investment, the fair value thereof as determined by an Approved Pricing Service; and

(B) Unquoted Investments- External Review. With respect to Portfolio Investments for which market quotations are not readily available ("Unquoted Investments"), the Borrower shall value such Portfolio Investments quarterly in a manner consistent with its "Net Asset Valuation Policy" (the "Valuation Policy"), including valuation of at least 35% by value of all Unquoted Investments using the assistance of an Approved Third Party Appraiser.

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Panel A sets out how portfolio investments are valued for borrowing base purposes. Quoted investments are priced weekly using approved dealers or pricing services. Unquoted investments, which constitute the bulk of a BDC's portfolio, are valued quarterly by the fund itself under its own valuation policy, with at least 35% by value appraised with the assistance of an approved third party.

Panel B: Internal Review and Scheduled Testing of Values

(C) Internal Review. The Borrower shall conduct an internal review of the aggregate value of the Portfolio Investments included in the Borrowing Base, and of the Borrowing Base, at least once each calendar week which shall take into account any events of which the Borrower has knowledge that materially affects the aggregate value of the Portfolio Investments included in the Borrowing Base or the Borrowing Base. If, based upon such weekly internal review, the Borrower determines that a Borrowing Base Deficiency exists, then the Borrower shall, within five Business Days as provided in Section 5.01(c), deliver a Borrowing Base Certificate reflecting the new amount of the Borrowing Base and shall take the actions, and make the payments

and prepayments (and provide cover for Letters of Credit), all as more specifically set forth in Section 2.09(c).

(D) Failure to Determine Values. If the Borrower shall fail to determine the value of any Portfolio Investment as at any date pursuant to the requirements of the foregoing sub-clauses (A) through (C), the "Value" of such Portfolio Investment as at such date shall be deemed to be zero;

provided that, in no event shall any Portfolio Investment be valued pursuant to the foregoing requirements less frequently than annually.

(iii) Scheduled Testing of Values.

(A) Each April 30, July 31, October 31 and February 28 of each calendar year (each a "Valuation Testing Date"), the Administrative Agent through an independent valuation provider selected by the Administrative Agent (the "Independent Valuation Provider") will test the values determined pursuant to Section 5.12(b)(ii) above of those Portfolio Investments included in the Borrowing Base selected by the Administrative Agent; provided, that the aggregate fair value of such Portfolio Investments tested on any Valuation Testing Date will be approximately equal to the Tested Amount (as defined below).

(B) For purposes of this Agreement, the "Tested Amount" shall be equal to the greater of: (i) an amount equal to (y) 125% of the Covered Debt Amount (as of the applicable Valuation Testing Date) minus (z) the sum of the values of all Quoted Investments included in the Borrowing Base (as of the applicable Valuation Testing Date) and (ii) 10% of the aggregate value of all Unquoted Investments included in the Borrowing Base; provided, however, in no event shall more than 25% (or, if clause (ii) applies, 10%, or as near thereto as reasonably practicable) of the aggregate value of the Unquoted Investments in the Borrowing Base be tested by the Independent Valuation Provider in respect of any applicable Valuation Testing Date.

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Panel B describes how reported values are monitored. The fund reviews the borrowing base weekly and must deliver a borrowing base certificate within five business days where a deficiency arises. On four scheduled testing dates each year, an independent valuation provider selected by the lender tests the fund's own valuations, subject to a cap on the share of unquoted investments tested at any one date.

Panel C: Advance Rates by Asset Coverage Ratio

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Portfolio Investment[1]	**Relevant Asset Coverage Ratio ≥ 2.00:1:00**		**2.00:1:00 > Relevant Asset Coverage Ratio ≥ 1.75:1.00**		**1.75:1:00 > Relevant Asset Coverage Ratio ≥ 1.50:1.00**	
	Quoted	Unquoted	Quoted	Unquoted	Quoted	Unquoted
Cash, Cash Equivalents and Short-Term U.S. Government Securities	100%	n.a.	100%	n.a.	100%	n.a.
Long-Term U.S. Government Securities	95%	n.a.	95%	n.a.	95%	n.a.
Performing First Lien Bank Loans	85%	75%	85%	75%	85%	75%
Performing First Lien Unitranche Bank Loans	85%	75%	80%	70%	75%	65%
Performing First Lien Last Out Bank Loans	80%	70%	75%	65%	70%	60%
Performing Second Lien Bank Loans	75%	65%	70%	60%	65%	55%
Performing Cash Pay High Yield Securities	70%	60%	65%	55%	60%	50%

Panel C reports the schedule of advance rates applied to the value of each portfolio investment. Rates vary by seniority and by whether the investment is quoted, and decline as the fund's asset coverage ratio deteriorates.

Panel D: Concentration Caps

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SECTION 5.13. Calculation of Borrowing Base. For purposes of this Agreement, the "Borrowing Base" shall be determined, as at any date of determination, as the sum of the Advance Rates of the Value of each Portfolio Investment, provided that:

(a) if, as of such date, the Relevant Asset Coverage Ratio is (i) greater than or equal to 2.00:1:00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments of all issuers in a consolidated group of corporations or other entities in accordance with GAAP exceeding 6% of the aggregate Value of all Portfolio Investments in the Collateral Pool, shall be 50% of the otherwise applicable Advance Rate; (ii) less than 2.00:1:00 and greater than or equal to 1.75:1.00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments of all issuers in a consolidated group of corporations or other entities in accordance with GAAP exceeding 5% of the aggregate Value of all Portfolio Investments in the Collateral Pool, shall be 50% of the otherwise applicable Advance Rate or (iii) less than 1.75:1:00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments of all issuers in a consolidated group of corporations or other entities in accordance with GAAP exceeding 4% of the aggregate Value of all Portfolio Investments in the Collateral Pool, shall be 50% of the otherwise applicable Advance Rate;

(b) if, as of such date, the Relevant Asset Coverage Ratio is (i) greater than or equal to 2.00:1:00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments of all issuers in a consolidated group of corporations or other entities in accordance with GAAP exceeding 12% of the aggregate Value of all Portfolio Investments in the Collateral Pool shall be 0%; (ii) less than 2.00:1:00 and greater than or equal to 1.75:1.00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments of all issuers in a consolidated group of corporations or other entities in accordance with GAAP exceeding 10% of the aggregate Value of all Portfolio Investments in the Collateral Pool shall be 0% or (iii) less than 1.75:1:00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments of all issuers in a consolidated group of corporations or other entities in accordance with GAAP exceeding 8% of the aggregate Value of all Portfolio Investments in the Collateral Pool shall be 0%;

(c) if, as of such date, the Relevant Asset Coverage Ratio is (i) greater than or equal to 2.00:1:00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments in any single Industry Classification Group that exceeds 25% of the aggregate Value of all Portfolio Investments in the Collateral Pool shall be 0%, (ii) less than 2.00:1:00 and greater than or equal to 1.75:1.00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments in any single Industry Classification Group that exceeds 20% of the aggregate Value of all Portfolio Investments in the Collateral Pool shall be 0%, provided that, with respect to Portfolio Investments in the Collateral Pool in a single Industry Classification Group from time to time designated by the Borrower to the Administrative Agent, such 20% figure shall be increased to 25%, or (iii) less than 1.75:1:00, the Advance Rate applicable to that portion of the aggregate Value of the Portfolio Investments in any single Industry Classification Group that exceeds 20% of the aggregate Value of all Portfolio Investments in the Collateral Pool shall be 0%;

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Panel D reports the concentration limits applied in computing the borrowing base. Positions exceeding a specified share of the collateral pool receive a reduced advance rate, and positions above a higher share receive none at all. The thresholds at which the caps bind tighten as the fund's asset coverage ratio deteriorates.

This figure reproduces excerpts from a representative BDC revolving credit facility, illustrating how reported loan valuations enter a fund's borrowing capacity and the controls lenders retain over those valuations. The excerpts are drawn from the Fifteenth Amended and Restated Senior Secured Credit Agreement between Ares Capital Corporation and JPMorgan Chase Bank, N.A., as administrative agent, dated April 12, 2024, filed as an exhibit to Ares Capital Corporation's Form 8-K of April 2024 (page 115 onwards). The agreement is available at https://www.sec.gov/Archives/edgar/data/1287750/000128775024000021/arcc-jpmfacility15thamendm.htm.