The Fragility of Semi-Liquid Private Credit Funds*

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Abstract

We study fragility in semi-liquid private credit funds, which have expanded rapidly and now manage over $300 billion in assets. These funds perform liquidity transformation by holding far more illiquid loans than traditional loan mutual funds while allowing investors to redeem at NAV through quarterly repurchase offers, typically capped at 5% of shares outstanding. We show that cash buffers and contractual loan repayments are insufficient to meet repeated 5% quarterly redemptions; inflows tend to decline when outflows rise; and net outflows are met with loan sales and two forms of leverage: external borrowing and delayed payments through repurchases payable. Strategic complementarity arises, as liquidation, leverage, and dilution costs are borne by the remaining investors, amplifying redemptions. Overall, quarterly gates and redemption caps do not eliminate run-like fragility, raising cautions about hidden leverage in private markets, the design of retail access to private credit, and the allocation of liquidity risk to households.

Keywords: private credit, liquidity transformation, strategic complementarity

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1 Introduction

Private credit has moved to the center of debates about financial stability and household access to alternative investments. After a decade of rapid growth, global private credit has become a multi-trillion-dollar market, with recent estimates above $3 trillion (Alternative Investment Management Association, 2025). Policymakers and asset managers are also considering ways to expand household access to private credit, including through retirement accounts. At the same time, the asset class has faced warning signs, including rising concerns about credit quality, negative news about exposure to software borrowers, and unusually large redemption requests from retail-oriented private credit funds.[1] These developments raise important questions. How fragile are vehicles that offer periodic liquidity while holding highly illiquid private credit assets? How do they compare with banks and open-end mutual funds, which traditionally transform liquidity and may be subject to runs? Are they appropriate vehicles for retail investors and retirement savers to access increasingly important private asset markets?

In this paper, we study these questions by focusing on an economically important yet understudied segment of private credit markets: semi-liquid private credit funds. These funds invest in illiquid private credit assets while offering investors periodic, typically quarterly, liquidity through share repurchases or tender offers, often capped at 5% of shares outstanding.[2] Based on a novel regulatory-filing-based dataset, we document that semi-liquid private credit funds have grown rapidly, hold highly illiquid assets, and recently experienced unprecedented redemption pressure. We then study how funds meet this pressure. Contrary to prevailing views, capped redemptions cannot be easily absorbed by cash buffers or investment income. Funds facing larger repurchases receive weaker new issuance, sell illiquid loans, borrow more, and delay payments to redeeming investors through repurchases payable. These responses reveal fragility on both sides of the balance sheet: outflows can lead to costly loan liquidations, while the liquidity ultimately provided to investors may be less immediate than what headline repurchase terms promise. Finally, we show that outflows are sensitive to fundamentals and that this sensitivity is significantly

[1] For recent discussions of stress in private credit, see Jamie Dimon's "cockroach" warning following credit concerns in private markets, https://www.bloomberg.com/news/articles/2025-10-15/dimon-s-cockroach-barb-ruptures-uneasy-truce-with-private-credit. Various private credit funds including Blue Owl, Blackstone, BlackRock, Apollo, Ares, and Cliffwater have reported repurchase requests above their usual quarterly caps.

[2] These repurchase programs typically do not guarantee full liquidity. When repurchase requests exceed the cap, redemptions are generally prorated and may remain subject to fund-level liquidity constraints.

amplified by liquidation costs, leverage costs, and dilution costs. Overall, the findings show that semi-liquid private credit funds can generate run-like dynamics even with quarterly gated redemptions, with implications for retail access to private credit, redemption design, leverage regulation, and the transmission of stress to borrowers, banks, and retail investors.

To start, we assemble a novel dataset of semi-liquid business development companies (BDCs) directly from regulatory filings. BDCs are registered investment companies that specialize in private credit and file Form 10-K and Form 10-Q with the SEC. We focus on semi-liquid BDCs, that is, those that offer investors periodic liquidity through share repurchases or tender offers. The regulatory filings allow us to observe a segment of the private credit market that is economically important but difficult to study using standard commercial fund databases.

We identify semi-liquid funds using their disclosed liquidity terms and extract granular information from their financial statements. We start from the universe of BDCs and classify a fund as semi-liquid if its 10-K or 10-Q filings indicate that it offers periodic tender offers or share repurchases, typically on a quarterly basis and at the discretion of the board. For example, Blue Owl Capital Corp II disclosed that it began offering quarterly share repurchases in 2017 and continued to do so until it later announced in 2025 that it no longer intended to engage in quarterly repurchases. We then extract granular information on assets and liabilities, including holdings of cash and loans, share issuance and repurchase activity, debt issuance, and repurchases payable directly from these filings. Such detailed information on both sides of the balance sheet is generally unavailable in existing studies of banks and open-end mutual funds, and is critical for tracing how semi-liquid BDCs uniquely meet redemptions.

Leveraging this newly assembled dataset, we first document three stylized facts about semi-liquid private credit funds. First, semi-liquid private credit funds have grown rapidly, much faster than other segments of private credit. Semi-liquid BDCs expanded from about $10 billion in total assets in 2019 to more than $300 billion by 2026, overtaking both traditional loan mutual funds and ETFs as well as closed-end BDCs. Second, semi-liquid BDCs hold very illiquid loans, far more illiquid than those held by traditional loan mutual funds. On average, around 80% of the loans held by semi-liquid BDCs are unrated, and less than 20% of the loans are held by 10 distinct investors or more. In contrast, less than 35% of the loans held by loan mutual funds are unrated, and close to 80% are held by 10 or more distinct fund families. This asset composition implies

substantial liquidity transformation, as these semi-liquid BDCs offer investors periodic liquidity while holding assets that are much less liquid than those held by traditional loan mutual funds. Third, semi-liquid BDCs have experienced unprecedented gross outflows starting in late 2025. While gross inflows are still larger, they have declined substantially in parallel, and there is a clear trend towards aggregate net outflows for the first time.

With these stylized facts in mind, we study the financial fragility risks associated with semi-liquid private credit funds by examining the increasing redemption pressure at both the aggregate and fund levels, and how semi-liquid private credit funds provide liquidity, that is, how they handle redemptions. These questions are economically important for several reasons. First, on the asset side, they shed light on how outflows may affect private credit asset markets. If funds meet redemptions by selling illiquid assets, then investor redemptions can transmit directly to loan markets. Second, on the liability side, they shed light on the liquidity ultimately available to investors. Semi-liquid funds promise periodic liquidity, but this liquidity is not unconditional. Studying how funds actually meet redemptions therefore allows us to assess how "semi" their liquidity is, and what fragility and risks investors may ultimately bear. Finally, and importantly, the asset- and liability-side fragilities may reinforce each other. If the costs of meeting redemptions are not fully internalized by redeeming investors, these costs are imposed on remaining investors, generating strategic complementarity and run incentives that may ultimately lead to systemic risks.

How do semi-liquid private credit funds provide liquidity, and is it challenging to meet 5% quarterly redemptions? We conduct our empirical analyses in several steps to answer this question. First, we show that standard liquidity sources such as cash buffers and investment income are insufficient to meet repeated 5% quarterly outflows. Funds generally hold cash buffers of only about 5% of TNA. Funds generate investment income from coupon payments, but the magnitude of investment income is far below 5% of TNA, and it is almost always fully distributed to investors as dividends, consistent with their pass-through structure. Principal payments from loans maturing within a quarter contribute very little, at less than 1% of TNA. These observations suggest that the 5% cap limits the quantity of redemptions, but does not make semi-liquidity provision costless.

Second, while inflows have historically been large in magnitude, they tend to negatively co-move with outflows, declining further when outflows surge. The time series correlation between aggregate inflows and aggregate outflows (both scaled by TNA) is -0.44. There is a similar negative

co-movement between inflows and outflows in the cross-section of BDCs, where we add additional controls and fixed effects, meaning that funds facing larger redemption pressure tend to be the ones that find it harder to raise new capital. These results suggest that inflows are a fragile source of liquidity, and the reliance on inflows tends to *amplify* BDCs' liquidity shortage when they need it the most.

How do semi-liquid BDCs cope with *net outflows*? Although aggregate net flows have not reached negative territory as of 2026Q1, we can exploit variations in the cross-section, where some BDCs have already experienced net outflows. We find that, in response to net outflows, semi-liquid BDCs liquidate a significant amount of illiquid loans, defined as loans without issuer credit rating, which is not surprising given that more than 80% of BDCs' assets are in unrated loans. Given the scant liquidity for unrated loans, our finding suggests that semi-liquid BDCs incur significant liquidation costs when accommodating redemptions.

Our next, and perhaps more interesting finding is that semi-liquid private credit funds respond to outflows by increasing leverage. They do so through two types of leverage. The first is external debt, such as borrowing from bank credit lines. The second is internal customer debt, in the form of repurchases payable, which arise when BDCs receive eligible repurchase requests but do not immediately make the corresponding cash payments to redeeming investors. In other words, they delay payments. Economically, this is similar to a trade-credit-style liability from investors to the fund: investors have exited economically, but the fund has not yet fully paid them in cash. Both responses are economically large: a one-percentage-point-of-TNA increase in net outflows is associated with a 1.260-percentage-point-of-TNA increase in net debt issuance and a 0.689-percentage-point-of-TNA increase in repurchases payable.

The use of leverage to handle redemptions is economically important and distinguishes semi-liquid private credit funds from banks and open-end mutual funds. First, the effective liquidity provided to investors is more limited than the headline repurchase promises suggest. Even when repurchases are committed, a substantial portion may remain payable rather than immediately paid in cash. Second, the use of new leverage shifts fragility over time. Borrowing and delayed payments may help funds avoid immediate fire sales, but they leave the fund with higher future obligations, less balance-sheet flexibility, and greater vulnerability to subsequent shocks. In this sense, leverage can dampen current redemption pressure while sowing the seeds of future fragility.

Having studied how semi-liquid private credit funds provide liquidity, and the fragility involved on both the asset and liability sides, we next examine run-like amplification in private credit fund flows. Because meeting redemptions requires funds to draw down cash, liquidate assets, increase leverage, or delay payments, redeeming investors impose costs on remaining investors. These costs create strategic complementarity and can amplify outflows. To study this mechanism, we follow Chen, Goldstein, and Jiang (2010) and examine whether investors' flow sensitivity to adverse fundamentals becomes stronger when funds engage in greater liquidity transformation or enter the shock period with weaker balance sheets.

Specifically, we start by examining how inflows and outflows respond to negative fundamental news in the software sector, given semi-liquid BDCs' heavy exposure to this industry. We find that funds with above-median software exposure experience significantly larger outflows after the onset of the software crisis around 2025Q2. Compared with other funds, high-software-exposure BDCs experience a 1.073% of TNA decline in quarterly share issuance and a 1.652% of TNA increase in quarterly share repurchases. Together, these effects imply a 2.726% of TNA decline in quarterly net flows. This result suggests that investor flows respond strongly to adverse fundamentals in the underlying private credit portfolio.

Consistent with the prediction of strategic complementarity, we find that the flow-to-fundamentals sensitivity is much stronger when funds engage in greater liquidity transformation. We find that, for funds with below-median liquid holdings, the effect of software exposure on net outflows is amplified by an additional 4.507% of TNA. The same pattern appears for funds with above-median non-performing loans, which no longer provide a reliable source of liquidity: the effect on net outflows is amplified by an additional 3.172% of TNA. These results are consistent with the idea that liquidity transformation amplifies run-like redemption incentives.

Because semi-liquid private credit funds, unlike open-end mutual funds, uniquely rely on leverage to meet redemptions, we further examine the role of leverage and borrowing costs and find that these costs significantly amplify the flow-to-fundamentals sensitivity of investor flows. Specifically, for funds with higher leverage or higher borrowing rates, the effect of software exposure on net outflows is amplified by an additional 8.215% and 4.407% of TNA, respectively. Combined with our earlier result on liquidity transformation, this result points to a leverage-redemption doom loop: negative fundamentals trigger investor outflows, funds increase leverage to meet these out-

flows without immediately liquidating illiquid assets, higher leverage and borrowing costs then weaken future balance-sheet capacity and make investors' flows even more sensitive to subsequent fundamental shocks.

Finally, we show that dilution costs, that is, the cost of allowing investors to exit at inflated NAV, significantly amplify the sensitivity of outflows to fundamentals. To measure NAV inflation, we use loan prices reported by mutual funds and market prices observed on publicly traded BDC twins. Consistent with the prediction of strategic complementarity, semi-liquid BDCs with higher NAV inflation experience greater outflows in response to the software shock.

1.1 Related literature

Our paper first contributes to the large literature on liquidity transformation by banks and investment funds and the fragility it creates. It is well known that banks transform liquidity and are subject to runs (e.g., Diamond and Dybvig, 1983; Diamond and Rajan, 2001; Goldstein and Pauzner, 2005; Chen, Goldstein, Huang, and Vashishtha, 2024). Modern banks, being heavily regulated, rely largely on deposit insurance and central banks' lending of last resort to deter runs (e.g., Hanson, Shleifer, Stein, and Vishny, 2015; Dávila and Goldstein, 2023). Open-end mutual funds, on the other hand, also increasingly engage in liquidity transformation by investing in illiquid assets such as small-cap stocks, corporate bonds, and syndicated loans while offering daily liquidity to investors. This liquidity transformation exposes unlevered mutual funds to run-like redemption dynamics through investor strategic complementarity (e.g., Chen, Goldstein, and Jiang, 2010; Goldstein, Jiang, and Ng, 2017; Ma, Xiao, and Zeng, 2022, 2025). Lacking deposit insurance or central bank backstops, open-end mutual funds use a variety of mechanisms to cope with large redemptions and mitigate potential fire sales of illiquid assets, including pecking-order liquidation (Choi, Hoseinzade, Shin, and Tehranian, 2020; Jiang, Li, and Wang, 2021; Ma, Xiao, and Zeng, 2022), redemption fees (Chordia, 1996), redemption gates (Li, Li, Macchiavelli, and Zhou, 2021; Huang and Keister, 2024), in-kind redemptions (Agarwal, Ren, Shen, and Zhao, 2023), inter-family lending (Agarwal and Zhao, 2019), and swing pricing (Capponi, Glasserman, and Weber, 2020; Jin, Kacperczyk, Kahraman, and Suntheim, 2022). We contribute to this literature by showing that semi-liquid private credit funds, one of the fastest-growing segments of investment funds, also engage in substantial liquidity transformation with unique liquidity transformation technologies.

Despite offering only periodic liquidity, these funds invest in highly illiquid loans and are subject to similar run-like redemption dynamics.

Using banks and open-end mutual funds as benchmarks, one particular contribution of our paper is to show that semi-liquid private credit funds provide liquidity, or handle redemptions, by significantly increasing leverage. The first form of leverage is new debt, potentially from banks. This mechanism is closely related to the classic insight of Kashyap, Rajan, and Stein (2002) that banks are natural providers of credit lines to non-banks, and to recent evidence that private credit providers rely heavily on such bank credit lines (e.g., Acharya, Gopal, Jager, and Steffen, 2025; Haque, Jang, and Wang, 2025; Acharya, Cetorelli, and Tuckman, 2026a,b). The second form of leverage is repurchases payable, which connects our paper to the literature on trade credit as an important source of short-term liquidity for non-financial firms (e.g., Petersen and Rajan, 1997; Cunat, 2007). This connection arises because semi-liquid private credit funds sit, economically, between liquidity-transforming vehicles such as banks and open-end mutual funds, which provide daily liquidity, and non-financial firms, which provide essentially no liquidity. The use of leverage thus creates a unique interaction between fund leverage and investor strategic complementarity: redemptions induce funds to increase leverage, higher leverage weakens future balance-sheet capacity, and weaker balance sheets can further amplify subsequent redemption incentives. This leverage-redemption feedback loop is a key source of fragility in semi-liquid private credit funds.

Focusing on vehicles that invest in private credit markets, our paper also contributes to the burgeoning literature on private credit and private lending; see Cai and Haque (2024) and Avalos, Doerr, and Pinter (2025) for evidence on the growth of the market and Block, Jang, Kaplan, and Schulze (2024) and Ivashina (2025, 2026) for comprehensive surveys. Most of this literature focuses on the asset side of private credit lenders. Chernenko, Erel, and Prilmeier (2022); Gopal and Schnabl (2022); Davydiuk, Erel, Jiang, and Marchuk (2024); Davydiuk, Marchuk, and Rosen (2024a,b); Aldasoro and Doerr (2025); Haque, Mayer, and Stefanescu (2025); Rintamaki and Steffen (2025); Hinzen, Mondini, Rintamaki, and Steffen (2026); Jang, Kim, Sufi, and Chen (2026) study the lending decisions of private credit lenders, highlighting differences in their screening and monitoring technologies relative to traditional banks and how these technologies may be particularly suited to private credit markets. Erel, Flanagan and Weisbach (2024) find limited risk-adjusted after-fee returns on private credit funds, whereas Pegoraro, Shive and Zambrana (2025) show that fund performance depends on the degree of agency frictions and asset illiquidity, and

Berk and DeMarzo (2026) emphasize how the illiquidity and opacity of private assets shape optimal private-market contracting. On the liability side, Chernenko, Ialenti and Scharfstein (2025) and Matvos, Piskorski and Seru (2026) compare the funding structures of drawdown or closed-end private credit funds and BDCs with those of banks and suggest that these funds pose limited systemic risk because they have limited leverage and ample equity buffers relative to banks. In contrast, Chernenko and Scharfstein (2026) develop a stress-testing framework for all BDCs and quantify how macroeconomic shocks, markdowns, rollover risk, portfolio-firm drawdowns, and redemptions affect BDC leveraging and defaulting. We contribute by providing one of the first analyses of a new, fast-growing class of private credit funds that offer semi-liquidity. We show that semi-liquid private credit funds engage in meaningful liquidity transformation, that investor redemptions can expose the underlying assets to liquidation pressure, and that a redemption-leverage feedback loop can further amplify this fragility.

Finally, we contribute to the debate over whether retail investors should access private credit markets, and at what costs and risks. Robinson and Wallskog (2026) study publicly traded BDCs, where investors obtain liquidity through secondary-market sales rather than direct redemptions at NAV, and they show that retail investors have become the dominant owners of these vehicles and are disproportionately concentrated in higher-fee BDCs with lower risk-adjusted performance. Ewens and Faber (2026) study registered interval and tender-offer funds that exclude BDCs and span several private asset classes, documenting that fees, imperfect replication of institutional returns, and liquidity provision limit the performance delivered through these retail-oriented vehicles. We study a complementary and rapidly growing structure: semi-liquid BDCs that invest predominantly in private loans while offering periodic NAV-based repurchases. We uncover two unique costs of this form of retail access. First, funds may delay cash payments through repurchases payable, making the liquidity provided less immediate than headline repurchase terms suggest. Second, redemptions generate run-like dynamics by imposing liquidation, leverage, and dilution costs on remaining investors. Semi-liquid BDCs may therefore provide limited liquidity to redeeming investors while exposing staying investors to significant externalities from others' redemptions.

2 Institutional Details and Data

2.1 Private credit vehicles

Historically, institutional exposure to private credit and other illiquid private assets, such as private equity, has primarily been organized through private drawdown funds. These funds are not registered as investment companies under the Investment Company Act of 1940 and are typically offered to institutional and other qualified investors, such as pension funds and insurance companies. Investors commit capital as limited partners, and the fund manager draws down this capital over time as investment opportunities arise. Because these vehicles generally do not offer investors regular redemption rights and do not file detailed public portfolio reports, they are opaque by design. Although unregistered drawdown funds account for the majority of the private credit industry (see Matvos, Piskorski, and Seru, 2026, for a comprehensive analysis), they are not covered by our analysis because systematic data on their holdings, liabilities, and investor flows are not publicly available. This traditional drawdown structure is consistent with the theoretical benchmark in Berk and DeMarzo (2026). When underlying assets are illiquid and opaque, they show that investors optimally conduct costly due diligence before committing capital, and that private-market contracting features extended capital commitments and binding limits on fundraising. Semi-liquid BDCs provide a revealing contrast: they retain the illiquid and opaque asset side of traditional private funds while offering a broader investor base periodic NAV-based liquidity. Our analysis shows that this change in liability design creates a new source of fragility, because investor outflows can generate liquidation, leverage, and dilution costs for those who remain.

The vehicles we focus on operate within the framework of the Investment Company Act of 1940 and provide broader investor access to private credit through broker-dealers, registered investment advisers, and wealth-management channels. Business development companies (BDCs) are the most important such vehicles for private credit. A BDC is a closed-end investment company that elects BDC status and is designed to provide capital to eligible portfolio companies, which are typically private or small and middle-market firms. To maintain BDC status, a fund must satisfy an eligible-assets requirement, meaning that at least 70% of its total assets must generally be invested in qualifying assets, including securities of eligible portfolio companies and certain liquid assets. Whereas registered funds are generally subject to a 300% asset-to-debt coverage requirement,

BDCs are subject to a less stringent 200% asset-coverage requirement, which may be reduced to 150% if the required approvals and conditions are satisfied.

Conventional BDCs are closed-end vehicles. Investors generally cannot redeem shares directly from the fund at net asset value. Instead, investors seeking liquidity must sell their shares to other investors, either on an exchange if the BDC is publicly listed or through more limited secondary-market channels if the BDC is non-traded. In either case, the liquidity available to investors depends on market conditions, and transaction prices may differ substantially from the fund's reported net asset value. Conventional BDCs therefore provide relatively little liquidity transformation: they hold illiquid private credit assets and issue investor claims that are themselves illiquid or whose liquidity depends on secondary-market trading.

In recent years, a new class of "semi-liquid" BDCs has grown rapidly. These vehicles hold private credit assets like conventional BDCs, but they also offer investors periodic opportunities to tender shares back to the fund through repurchase programs or tender offers. A typical semi-liquid BDC conducts quarterly repurchase offers at a price tied to net asset value, often subject to a limit of 5% of shares outstanding. Importantly, it is worth emphasizing that an individual investor can withdraw *all* of her capital, as long as the requested repurchases from all investors are below the 5% limit. If aggregate repurchase requests exceed the 5% limit, accepted repurchases are generally prorated across tendering investors, and the board also has the authority to terminate the program.

Figure A1 provides examples of these repurchase terms. For instance, Blue Owl Technology Income Corp says in its 2025Q3 10-Q that: "The Company has commenced a share repurchase program pursuant to which the Company intends to conduct quarterly repurchase offers to allow its shareholders to tender their shares at a price equal to the net offering price per share for the applicable class of shares on each date of repurchase. ... The Company intends to limit the number of shares to be repurchased in each quarter to no more than 5.00% of its outstanding shares of common stock."

We note that the liquidity offered by semi-liquid BDCs differs from the liquidity offered by banks, traditional open-end mutual funds (MFs), and exchange-traded funds (ETFs). Specifically, bank deposits are generally demandable at par. MF investors can redeem shares at the end-of-day net asset value on a daily basis, and there is no limit on redemption quantities. ETFs provide intraday liquidity through secondary-market trading, although transaction prices can deviate from

net asset value.

While semi-liquid BDCs provide less frequent and quantity-limited liquidity than MFs and ETFs, the assets held by semi-liquid BDCs are much more illiquid than those held by MFs and ETFs, so it is not straightforward to compare the degree of liquidity transformation across these vehicles. Figure A2 illustrates the liquidity transformation across these private credit vehicles. Unregistered drawdown funds and conventional closed-end BDCs hold illiquid private credit on the asset side and issue illiquid shares or LP interests on the liability side, and there is little liquidity transformation. Investors who want to withdraw their capital must sell shares on the secondary market, and the prices they sell at may be well below fair values, depending on market liquidity. Loan MFs hold relatively liquid broadly syndicated loans such as those tracked by LSTA 100 and they issue shares that are redeemable daily at NAV. Semi-liquid BDCs occupy an intermediate but economically important position. On the liability side, their shares are less liquid than MFs' because repurchases are periodic, capped, and discretionary. On the asset side, however, they hold private credit assets that are much less liquid than the loans held by MFs, as we will show in Section 3. As a result, semi-liquid BDCs engage in meaningful liquidity transformation: they offer investors periodic NAV-based liquidity while investing primarily in unrated, narrowly held private loans.[3]

2.2 Data and sample

Our data on BDCs come from the SEC BDC Data Sets and Form 10-K and Form 10-Q filings. The SEC BDC Data Sets provide the universe of BDC Central Index Keys (CIKs), which we use to retrieve all 10-K and 10-Q filings for each BDC directly from EDGAR. These filings provide detailed information on BDCs' financials, including balance sheet items such as total assets and total liabilities, income items such as net investment income and interest expenses, equity changes such as dividends, issuances, reinvestments, repurchases, and repurchases payable, and cash flow items such as net debt issuances. BDCs also report granular loan-level portfolio holdings in 10-K/Q filings, under schedules of investments. For each position, BDCs report the issuer, instrument

[3]Our goal is not to rank the liquidity transformation of semi-liquid BDCs against that of MFs, since quarterly capped liquidity and daily uncapped liquidity are difficult to compare directly. Rather, our goal is to establish that semi-liquid BDCs provide economically meaningful liquidity transformation by combining periodic NAV-based investor liquidity with highly illiquid private credit assets.

type, industry, maturity date, principal amount, and fair value.

Importantly, BDCs' 10-K and 10-Q filings include textual descriptions on share repurchase policies, which allow us to identify the semi-liquid BDCs. We use a two-step approach to determine whether a BDC in a given quarter offers semi-liquidity. First, for each 10-K/Q, we locate sections related to investor liquidity by filtering for "Share Repurchases" or similar keywords in the headings.[4] Then, within these relevant sections, we search for "has commenced a share repurchase program" or similar positive markers.[5] We classify a BDC-quarter as semi-liquid if the filing contains such positive markers, unless the same relevant section contains negative markers such as "we do not intend to engage in quarterly share repurchases."

Figure A1 shows examples of the semi-liquid BDCs we identify. For example, in its 10-K/Q filings prior to 2025Q4, Blue Owl Capital Corp II states that: "In the third quarter of 2017, we began offering, on a quarterly basis, intend to continue offering, to repurchase shares of our common stock..." We label this BDC as a semi-liquid BDC until 2025Q4, when the 10-K states that: "At this time, we do not intend to engage in quarterly share repurchases."

We identify 59 distinct semi-liquid BDCs in total. For our main regression sample, we exclude observations within the first year of the initial SEC filing, because BDCs in the ramp-up phase tend to have atypical flows and portfolio holdings. We also exclude observations in liquidation or wind-down periods, which we identify using filing sections such as "Plan of Liquidation" and related textual markers. We further exclude observations with less than $1 million in total net assets. Because many semi-liquid BDCs were launched recently, and because our main analyses focus on the recent software crisis, we restrict our sample periods to between 2024Q1 and 2026Q1. For descriptive analyses of the growth of semi-liquid BDCs, we use the broader time series of available filings since 2019. Table A1 reports summary statistics for our main regression sample.

We use the SEC Form N-PORT Data Sets to construct a benchmark sample of loan MFs and ETFs. N-PORT filings provide fund-level information such as total assets, as well as granular portfolio holdings, including issuer names and instrument types. We identify loan funds as those

[4]Other keywords include "Tender Offers", "Share Repurchase Program", "Unit Repurchase Program", and "Registrant's Purchases of Equity Securities", including those with indexing prefixes such as "Note 6. Repurchases" or "NOTE G — SHARE REPURCHASES".

[5]Other positive markers include "intend(s/ed) to continue to conduct quarterly tender offers", "has adopted a unit repurchase program", "provide moderate liquidity to our shareholders by offering a quarterly share repurchase program".

whose portfolio weights in loans exceed 50% on average. These funds serve as a benchmark for traditional vehicles that hold more liquid broadly syndicated loans while offering substantially greater investor liquidity.

Issuer credit ratings by S&P, Moody's, and Fitch are downloaded directly from these rating agencies' websites. SEC Rule 17g-7 requires nationally recognized statistical rating organizations (NRSROs) to make their credit ratings publicly available, starting in 2012Q4. We merge these ratings to loan issuers and classify a loan as rated if the issuer carries a rating from at least one of the three major rating agencies. We use issuer ratings as a primary measure of loan liquidity, based on the idea that rated borrowers are typically larger, more transparent, and more widely followed by market participants.

3 Stylized Facts on Semi-Liquid BDCs

We begin by documenting three stylized facts that characterize the rise and liquidity transformation of semi-liquid BDCs. These facts serve two purposes. First, they establish that semi-liquid BDCs have become an economically important segment of the private credit market. Second, they show that these vehicles combine relatively liquid investor claims with highly illiquid private credit assets, creating the core tension studied in the rest of the paper. Specifically, we document their rapid growth, the illiquidity and industry composition of their loan holdings, and the recent surge in gross redemptions relative to inflows.

3.1 Rapid growth

There has been dramatic growth of semi-liquid vehicles in the broad private credit fund sector. Figure 1 shows the total assets of semi-liquid BDCs, compared to loan MFs and ETFs as well as closed-end BDCs as benchmarks. Total assets under loan MFs and ETFs have remained at around $100 billion over the past five years. Total assets under conventional closed-end BDCs have increased visibly, from under $100 billion in 2019 to almost $250 billion in 2025. In comparison, the growth of semi-liquid BDCs has been nearly explosive, with their total assets expanding from around $10 billion in 2019 to more than $300 billion in 2025, overtaking the size of either closed-

end BDCs or loan MFs and ETFs.

The disproportionate growth of semi-liquid BDCs likely reflects both demand and supply forces. On the demand side, retail and wealth-management investors have increasingly sought access to private credit through vehicles offering greater liquidity and transparency than traditional drawdown funds. Consistent with this shift, Robinson and Wallskog (2026) document the growing importance of retail investors in publicly traded BDCs. On the supply side, large private credit managers have responded by creating semi-liquid vehicles that continuously raise capital while offering periodic repurchases at NAV. This development is also closely related to Ewens and Faber (2026), who study registered interval and tender-offer funds as vehicles for expanding retail access to private markets and emphasize the structural costs of packaging illiquid assets into more liquid claims. By focusing on semi-liquid BDCs, which have become the largest semi-liquid private credit vehicles by aggregate assets, we study an important intersection of these two trends: the expansion of retail participation in BDCs and the growth of private-asset wrappers offering periodic liquidity.

3.2 Illiquid holdings

Semi-liquid BDCs invest in highly illiquid assets, much more so than assets held by loan MFs and ETFs. Figure 2 provides a breakdown of assets under management for semi-liquid BDCs, loan MFs, and ETFs. We classify loans into rated and unrated loans based on whether the issuer carries a credit rating from S&P, Moody's, or Fitch. This distinction is useful because rated issuers are typically larger, more transparent, and as a result, their loans are more actively traded by market participants, while unrated issuers are likely to be smaller and more opaque, and their loans are more difficult to trade.[6]

Specifically, Panel A of Figure 2 shows that the rapid growth of semi-liquid BDCs is driven overwhelmingly by the growth of unrated, more illiquid loans. Around 5% of semi-liquid BDC assets are held in cash and cash equivalents, such as money market funds, which is comparable to but slightly below the cash ratio of loan MFs and ETFs. Because of regulatory requirements, most BDC assets are invested in loans, and they hold little in notes, bonds, or other assets. Within

[6]Many loan investors, such as most collateralized loan obligations (CLOs), are designed to participate only in rated loans.

these loan holdings, however, the dominant component is unrated loans. As semi-liquid BDCs expanded from a small segment in 2019 to more than $300 billion in assets by 2025, the increase came disproportionately from loans whose issuers do not carry credit ratings. This pattern suggests that the growth of semi-liquid BDCs has not simply reflected a repackaging of broadly syndicated loans held by traditional loan funds, but rather a large expansion into more opaque and illiquid private credit.

Panel B of Figure 2 shows a sharp contrast with loan MFs and ETFs as benchmarks. These funds also invest primarily in loans, but their loan portfolios are dominated by rated loans throughout the sample period. Unrated loans account for a much smaller share of their assets and, importantly, do not display a comparable upward trend over time. Loan MFs and ETFs also hold a meaningful amount of notes, bonds, CLO tranches, and cash equivalents, reflecting a more liquid asset mix.

Figure 3 further zooms in on the loan holdings and shows that the differences in liquidity transformation across different vehicles are not only about broad asset classes, but also about the liquidity of the loans themselves. Panel A compares loan holdings by issuer credit rating. Loan MFs and ETFs offer much more liquidity to investors and therefore hold predominantly rated loans: more than 75% of their loan portfolios are issued by firms with credit ratings from S&P, Moody's, or Fitch. Closed-end BDCs, by contrast, do not offer investors direct redemptions and naturally hold far more unrated loans. Semi-liquid BDCs look much closer to closed-end BDCs rather than loan MFs and ETFs on the asset side: only 22% of their loan holdings are rated, with the remaining majority issued by unrated borrowers. This comparison thus highlights the significant extent of liquidity transformation by semi-liquid BDCs. Semi-liquid BDCs provide investors with periodic liquidity, but their loan portfolios resemble those of closed-end vehicles much more than those of open-end funds.

Panel B of Figure 3 shows a similar pattern using the number of distinct fund family holders as an alternative measure of loan liquidity. Loans held by loan MFs and ETFs are much more widely held: close to 80% of their loan portfolios are held by 10 or more distinct fund families. Closed-end BDCs, by contrast, hold close to 90% of their portfolios in loans with single-digit numbers of distinct fund family holders, and for over 30% of their loan holdings they are the sole lenders, which is consistent with their closed-end structure and ability to hold illiquid private loans without

offering redemptions. Semi-liquid BDCs are much closer to closed-end BDCs than to loan MFs and ETFs: their loans have a concentrated investor base, with more than 80% held by fewer than 10 distinct fund families.

Taken together, Figures 2 and 3 show that semi-liquid BDCs hold assets that are substantially less liquid than those held by traditional loan MFs and ETFs. Whether measured by broad asset composition, issuer ratings, or the number of distinct fund family holders, semi-liquid BDCs look much closer to closed-end BDCs than to open-end MFs and ETFs. This comparison is central to the liquidity transformation we study: semi-liquid BDCs provide investors with periodic liquidity, yet invest primarily in unrated, narrowly held private loans that are much less likely to trade in liquid secondary markets.

Figure 4 further provides a breakdown of semi-liquid BDCs' loan holdings across industries (Panel A) and maturities (Panel B). Industries are directly reported by each BDC for each position. Panel A of Figure 4 shows that the growth of semi-liquid BDC loan holdings is broad-based across industries, but also highly concentrated in a few sectors. Software is the single largest industry to which semi-liquid BDCs provide credit, accounting for on average about 20% of their portfolios. The dollar amount of software loans has grown sharply alongside the overall expansion of semi-liquid BDCs, making these funds heavily exposed to the recent crisis among software firms due to the automation of AI.

Panel B of Figure 4 shows that semi-liquid BDC loan holdings are also spread across maturities, but with a substantial concentration in medium- to long-maturity loans. In particular, a large share of the portfolio consists of loans with roughly five, six, and seven years to maturity, while loans maturing within the next year account for less than 2% of total holdings. This maturity structure matters for liquidity provision. Even though semi-liquid BDCs offer investors quarterly repurchase opportunities, most of their loan assets do not naturally convert into cash within a quarter. As a result, funds cannot rely much on near-term contractual maturities to meet redemptions.

3.3 Inflows and outflows

Figure 5 shows aggregate flows to semi-liquid BDCs. We separate issuances of new shares, issuances related to dividend reinvestment, and share repurchases. Overall, there have been massive

inflows through new share issuances, giving rise to the dramatic growth of semi-liquid BDCs over the past five years. However, inflows have declined sharply since 2025Q2, following the tariff war and growing concerns over the collapse of software firms. At the same time, outflows through quarterly repurchases have increased substantially. As of 2026Q1, repurchase outflows from semi-liquid BDCs reached $8.4 billion, almost the same magnitude as inflows from issuance and reinvestment combined. This pattern suggests that the historical growth of semi-liquid BDCs relied heavily on a favorable flow environment in which new issuance more than offset repurchases. As issuance weakens and repurchases rise, this offsetting mechanism becomes increasingly fragile. Reinvestment flows also appear too small and stable to absorb large increases in redemption demand. If these trends continue, semi-liquid BDCs may experience aggregate net outflows for the first time in the upcoming quarters. Indeed, press reports indicate that redemption requests seem to have further escalated during 2026Q2.[7]

Compared to most existing studies on banks and open-end mutual funds, we directly observe and analyze gross inflows and outflows of semi-liquid private credit funds. This distinction is essential for studying fragility. Net flows alone can mask two very different economic situations: a fund with low investor activity and a fund that simultaneously raises new capital while facing large redemptions. Existing commercial databases generally do not provide systematic information on gross share issuances, repurchases paid, and repurchases payable for private credit vehicles. By extracting these variables directly from regulatory filings, we can separately study investor demand for entry, investor demand for exit, and the mechanisms through which funds meet redemptions.

4 How Do BDCs Provide Semi-Liquidity?

Having shown the rapid growth and significant liquidity transformation of semi-liquid private credit funds, we next study how these funds provide semi-liquidity and what challenges they face in doing so. This section provides direct evidence that even redemptions capped at 5% can impose significant costs. Specifically, we show that standard liquidity sources, including cash buffers, investment income, and maturing loans, are insufficient to meet repeated 5% quarterly outflows. We then show that inflows from share issuances, while historically large in magnitude, tend to nega-

[7] For example, see https://www.reuters.com/legal/transactional/private-credit-funds-face-renewed-withdrawals-second-quarter-2026-06-04/ and https://www.bloomberg.com/news/articles/2026-06-02/cliffwater-private-credit-fund-stung-by-17-redemption-requests.

tively co-move with redemption pressure and therefore become less reliable precisely when they are most needed. Finally, using cross-sectional variation across funds, we show that net outflows are associated with significant loan sales and increased use of leverage in the form of both external borrowing and repurchases payable.

4.1 Liquidity sources against the 5% cap

Proponents of the semi-liquid structure argue that BDCs typically cap repurchases at only 5% of shares outstanding, and that such outflows can be easily absorbed by cash buffers and regular payments from loan holdings. Is a 5% quarterly outflow economically trivial? For reference, fixed-income mutual funds experienced aggregate net outflows of 4.7% of total net assets during the COVID crisis in 2020Q1, which is widely regarded as an extreme disruption in debt markets (e.g., Falato, Goldstein, and Hortaçsu, 2021; Haddad, Moreira, and Muir, 2021; Ma, Xiao, and Zeng, 2022). With this benchmark in mind, we provide quantitative evidence on whether quarterly outflows at the 5% cap can be easily absorbed by standard liquidity sources.

Figure 6 plots the size of several standard liquidity sources relative to total net assets (TNA), which are also the denominator for the common 5% repurchase cap. First, cash holdings, including cash equivalents such as money market fund shares, are a natural source of liquidity for meeting investor redemptions. However, the blue boxes show that cash holdings average only 5.6% of TNA, implying that repeated 5% quarterly redemptions can quickly exhaust these cash buffers. Indeed, this cash share is similar to what open-end bond mutual funds typically hold (Chernenko and Sunderam, 2016), even though semi-liquid private credit funds hold much more illiquid loans. There are a few reasons why BDCs hold limited cash. BDC status requires at least 70% of assets to be invested in qualifying assets, primarily loans. In addition, cash is a drag on overall portfolio returns, and managers are directly discouraged from holding excess cash through their compensation structure.[8] Indeed, these regulatory and economic forces that keep cash holdings limited may make it difficult for semi-liquid BDCs to meet redemptions without cost, even when repurchases are capped at 5%.

[8]For example, Blue Owl Capital Corp II's 2025Q3 10-Q states that: "The management fee is payable quarterly in arrears at an annual rate of 1.50% of the average value of the Company's gross assets, excluding cash and cash-equivalents but including assets purchased with borrowed amounts at the end of the two most recently completed calendar quarters."

Second, semi-liquid BDCs receive regular interest payments from the loans they invest in, but there is little flexibility for them to use such interest payments to meet redemptions because such income is largely paid out as dividends rather than retained. The red boxes plot net investment income, defined as the difference between interest income received and interest expense paid, for example on credit lines. Net investment income is on average 2.8% of TNA per quarter, which, even if used, cannot support a 5% quarterly redemption.[9] More importantly, net investment income is almost the same size as dividends, shown by the green boxes. This means that semi-liquid BDCs distribute almost all investment income to investors, leaving little retained income available to meet redemptions. This is not surprising, since all registered investment companies, including BDCs, must distribute at least 90% of investment income in order to qualify for pass-through tax treatment.

Third, semi-liquid BDCs also receive very limited cash flows from loans that naturally mature. The yellow boxes plot the size of maturing loans, defined as loans maturing within the next quarter. These maturing loans account for less than 0.5% of TNA on average, and therefore provide very limited liquidity for meeting quarterly redemptions. This result is consistent with Panel B of Figure 4, which shows that very few loans mature within one year. One explanation is that issuers tend to refinance before maturity (Xu, 2018). For lenders, however, cash flows from prepayment are much less certain than contractual repayment at maturity, especially during stress periods when other lenders may also experience outflows. Taken together, Figure 6 shows that standard liquidity sources are not sufficient to make the 5% cap costless. This conclusion is also consistent with Chernenko and Scharfstein (2026), who stress test BDCs and show that even capped 5% quarterly redemptions can contribute to meaningful asset sales or technical defaults of semi-liquid BDCs and significant losses to shareholders.

As another perspective on the liquidity sources available to semi-liquid BDCs facing increasing redemption pressures, Figure 7 plots the magnitude of different components of aggregate cash flows in 2026Q1. Actions that generate cash have positive values, whereas actions that use cash have negative values. We focus on 2026Q1 because this is the quarter in which semi-liquid BDCs experienced their largest repurchase outflows, at 4.9% of TNA.

[9] Investment income includes payment-in-kind (PIK) interest, which is recognized as income even though no cash is received. To the extent our measure includes such income, it overstates the cash liquidity available to meet repurchases and therefore makes our estimate of the liquidity shortfall conservative. Recent evidence on listed BDCs shows that dividend coverage falls materially after excluding PIK income. For example, see https://www.reuters.com/business/finance/private-credit-dividends-look-less-secure-cash-coverage-thins-2026-06-12/.

Panel A of Figure 7 first considers all semi-liquid BDCs. At the aggregate level, new share issuance is the single largest source of cash inflows, at 5.6% of TNA, and is large enough to offset repurchase outflows in that quarter. This aggregate pattern may suggest that semi-liquid BDCs can still meet redemptions without much difficulty as long as new investors continue to come in. However, relying on inflows is a fragile strategy for meeting outflows. Outflows may increase further, issuances may decline further, and net flows may become negative in the near future, as suggested by the trajectory in Figure 5. Indeed, the time-series correlation between aggregate share issuances and aggregate share repurchases, both scaled by TNA, is highly negative at -0.44, suggesting that issuance inflows tend to decline precisely when repurchase outflows rise, making them least reliable when funds need liquidity the most.

Panel B therefore focuses on the subset of BDCs whose share repurchases already exceed share issuances. For these funds, standard liquidity sources are clearly not enough to absorb repurchases. Issuance and reinvestment provide only limited cash inflows, while net investment income is again largely offset by dividends. As a result, these funds rely on other margins. In particular, they sell both liquid and illiquid loans, where a loan is defined as illiquid if it is unrated.[10] They also increase net borrowing. This panel highlights the main challenge of semi-liquidity provision: once inflows are insufficient to offset repurchases, funds cannot rely only on cash, investment income, or maturing loans, and instead must turn to costly margins such as loan sales and leverage.

4.2 Cross-sectional evidence

Having shown at the sector level that standard liquidity sources and inflows may not be sufficient to meet repurchases capped at 5%, we provide more detailed evidence using the cross-section of semi-liquid BDCs. This cross-sectional analysis allows us to study more directly how individual funds provide liquidity when they face stronger redemption pressure. In particular, we exploit variation across BDCs and over time to ask two related questions. First, do funds with larger repurchases also receive enough new issuance to offset them? Second, when inflows are not enough and funds experience net outflows, how do they adjust on the asset and liability sides of their balance sheets?

We first examine the co-movement between inflows and outflows using the following cross-

[10] When measuring net purchases of illiquid loans, we need to account for the fact that loans can switch from unrated to rated. For simplicity, we define illiquid loans as those whose issuers have never been rated over the sample period.

sectional regression:

$$ShareIssuance_{i,t} = \beta ShareRepurchase_{i,t} + \gamma Controls + FE + \epsilon_{i,t}, \tag{4.1}$$

where $ShareIssuance$ denotes issuance of new shares or issuance related to dividend reinvestment, and $ShareRepurchase$ denotes share repurchases, both scaled by lagged total net assets. Controls include dividend yield, change in NAV, log TNA, and leverage. FE includes BDC fixed effects and year-quarter fixed effects.

Table 1 shows the results. When share repurchases increase, both new share issuance and issuance from reinvestment tend to decrease. Specifically, a one-percentage-point-of-TNA increase in share repurchases is associated with a 0.162-percentage-point-of-TNA decline in new share issuance and a 0.010-percentage-point-of-TNA decline in issuance from reinvestment. These results suggest that inflows are a fragile source of liquidity against outflows. Funds facing larger repurchases are precisely those that tend to receive less new capital, making it difficult for inflows to reliably offset redemption pressure.

Since inflows and outflows cannot perfectly offset each other, how do semi-liquid BDCs cope with *net flows*, that is, the difference between share issuances and share repurchases? We run the following regression on the panel of semi-liquid BDCs:

$$Y_{i,t} = \beta_1 NetInflow_{i,t} + \beta_2 NetOutflow_{i,t} + \gamma Controls + FE + \epsilon_{i,t}, \tag{4.2}$$

where Y denotes different cash flow variables. $NetInflow$ captures the positive component of net flows $\max(0, NetFlow)$, and $NetOutflow$ captures the negative component of net flows $\min(0, NetFlow)$. We examine net inflows and net outflows separately because BDCs receiving net inflows may behave very differently from those facing net outflows. Controls include dividend yield, change in NAV, log TNA, and leverage. FE includes BDC fixed effects and year-quarter fixed effects.

Table 2 shows the results. Net investment income positively co-moves with net flows, which tends to amplify the cash-flow shocks faced by BDCs. Specifically, net investment income is higher when funds receive net inflows, but also lower when funds experience net outflows. Dividends co-move strongly with net inflows but much less with net outflows, suggesting that BDCs tend to

maintain dividend payments even when fund-level liquidity conditions deteriorate. This pattern is consistent with the evidence in Figure 6: investment income is economically meaningful, but it is not a flexible source of liquidity because much of it is distributed to investors.

On the asset side, semi-liquid BDCs respond very differently to net inflows and net outflows. When they receive net inflows, BDCs increase cash holdings by 0.149 percentage points of TNA, liquid loans by 0.289 percentage points of TNA, and illiquid loans by 0.172 percentage points of TNA, where credit ratings are used to measure loan liquidity. The increase in cash suggests that BDCs may delay the deployment of new capital, which is natural because sourcing, underwriting, and closing private loan investments take time. When they face net outflows, however, BDCs do not significantly reduce cash holdings, consistent with motives to preserve scarce liquidity for future needs (Morris, Shim and Shin, 2017; Jiang, Li and Wang, 2021). Instead, they sell loans. A one-percentage-point-of-TNA increase in net outflows is associated with sales of liquid loans of 0.311 percentage points of TNA and sales of illiquid loans of 0.872 percentage points of TNA. The latter is especially important because illiquid loans account for the majority of semi-liquid BDC portfolios, as shown in Figure 2. Given that loan markets are costly to trade, with bid-ask spreads estimated by Santos and Shao (2017) to be around 1.5% for average corporate loans and as high as 3% for thinly held loans, these results suggest that semi-liquid BDCs incur meaningful liquidation costs when meeting net outflows.

Loan sales, however, are only one margin of adjustment. A distinctive feature of semi-liquid BDCs, relative to banks and open-end mutual funds, is that they also use leverage to provide liquidity. Banks can rely on deposit insurance and central bank backstops, while open-end mutual funds are generally designed as largely unlevered investment vehicles. Semi-liquid BDCs sit in between: they offer investors periodic liquidity while holding illiquid private loans, and they can expand liabilities when redemption pressure rises. This makes leverage a central part of their liquidity-management technology.

To that end, we find on the liability side that semi-liquid BDCs significantly increase net borrowing and accumulate repurchases payable in response to net outflows. Specifically, a one-percentage-point-of-TNA increase in net outflows is associated with a 1.260-percentage-point-of-TNA increase in net debt issuance. That is, BDCs increase debt and therefore raise their debt-to-equity leverage when they face outflows.

In addition, for each dollar of committed repurchases, semi-liquid BDCs accumulate about \$0.689 of repurchases payable. Repurchases payable arise when funds approve and commit to repurchases but do not immediately make the corresponding cash payments to redeeming investors.[11] Economically, this delayed-payment arrangement represents a form of internal customer debt: redeeming investors have exited economically, but the fund has not yet fully paid them in cash. Such an arrangement is generally unavailable to banks and open-end mutual funds. Bank deposits are demandable liabilities, and open-end mutual funds generally cannot postpone payment of redemption proceeds for more than seven days after tender.[12] Figure 8 shows that a large share of the recent repurchases committed by semi-liquid BDCs were not immediately paid out and instead accumulated as payable.

These findings reveal a distinctive liability-side mechanism through which semi-liquid BDCs provide liquidity compared to banks and open-end mutual funds. Rather than meeting net outflows only through existing cash or asset sales, they increase leverage through both external borrowing and delayed payments to redeeming investors. This mechanism can reduce the need for immediate fire sales, but it does not necessarily reduce the cost of semi-liquidity provision. Instead, it reallocates that mismatch across investors and over time. For redeeming investors, the accumulation of repurchases payable means that the liquidity actually received may be less immediate than the headline quarterly repurchase terms suggest. For investors who remain in the fund, additional borrowing and delayed-payment obligations increase interest expenses, reduce future balance-sheet flexibility, and leave the fund more vulnerable to subsequent shocks. These future costs can in turn strengthen strategic complementarity, because investors have an incentive to redeem before higher leverage and other redemption-related costs are imposed on them. In this sense, leverage

[11] Specifically, semi-liquid BDCs may issue investors a non-interest-bearing promissory note and make the corresponding cash payment later. The precise payment period is fund-specific and sometimes not explicitly specified. For example, the current promissory-note terms of both Blackstone Private Credit Fund and Apollo Debt Solutions BDC provide for payment no later than 30 days after the valuation date, absent unusual legal, regulatory, or market conditions. More generally, although Rule 13e-4 requires prompt payment after the termination of an issuer tender offer, SEC staff correspondence indicates that payment within as much as 65 days after the tender-offer expiration date may satisfy this standard. See 17 C.F.R. §240.13e-4(f)(5); Blackstone Private Credit Fund, Form of Promissory Note for Repurchases of Shares, filed February 2, 2026; Apollo Debt Solutions BDC, Form of Promissory Note for Repurchases of Shares, filed May 15, 2026; and SEC correspondence regarding the interpretation of prompt payment under Rule 13e-4, dated July 28, 2023.

[12] Demand deposits are generally demandable liabilities of depository institutions, although regulatory definitions may allow banks to reserve notice rights in some cases. See 12 C.F.R. §204.2. Section 22(e) of the Investment Company Act of 1940 generally prohibits open-end funds from suspending redemption rights or postponing payment of redemption proceeds for more than seven days after the redemption request. See Section 22(e) of the Investment Company Act of 1940, 15 U.S.C. §80a-22(e).

can dampen current redemption pressure while sowing the seeds of future fragility.

The increasing use of delayed payments also suggests that the economic distinction between semi-liquid and closed-end structures may become blurred in stress. A quarterly repurchase program formally offers investors periodic liquidity, but if accepted repurchases are routinely settled with a delay, the effective liquidity provided by the vehicle moves closer to a longer-horizon commitment. This observation highlights the fundamental design trade-off. For highly illiquid private credit assets, reducing promised liquidity transformation, potentially all the way toward a closed-end structure with committed capital, may be more transparent than offering periodic NAV-based liquidity whose provision ultimately requires asset sales, borrowing, or delayed payments.

Semi-liquid BDCs may also rely on sponsors, affiliated investors, or relationships with long-horizon institutional investors to support liquidity.[13] For example, Blackstone and its employees invested additional capital as BCRED accommodated repurchase requests above its usual cap, while Blue Owl sold a $1.4 billion loan portfolio to an affiliated insurance company and three pension funds.[14] These relationship-based liquidity sources can reduce immediate liquidation pressure, but they are discretionary and may be less scalable or less available when stress is broad-based.

To summarize, the cross-sectional evidence shows that standard liquidity sources, such as cash holdings and investment income, play a limited role in meeting repurchase requests, even when redemptions are capped at 5% of TNA. When inflows are insufficient and funds face net outflows, semi-liquid BDCs sell loans, including illiquid loans, increase net borrowing, and delay payments through repurchases payable. These responses reveal that semi-liquidity provision is costly on both sides of the balance sheet: it can transmit stress to private loan markets through asset sales and can weaken future fund balance sheets through new debt borrowing and delayed payment obligations.

[13] See Kirti and Sarin (2024) and Huber, Huber, Shan and Zhu (2026) for growing linkages between private equity sponsors, private credit, and institutional investors such as insurance companies.

[14] See https://www.bloomberg.com/news/articles/2026-03-03/blackstone-senior-staff-opened-wallets-with-bcred-under-pressure and https://www.wsj.com/finance/investing/why-investors-were-right-to-be-wary-of-blue-owls-1-4-billion-deal-6129ea6f.

5 Strategic Complementarity in Semi-Liquid BDC Flows

The previous section shows that providing semi-liquidity, even when redemptions are capped at 5% of TNA, can be costly: funds may deplete cash buffers, sell illiquid loans, or increase leverage. These costs generate strategic complementarity among investors (Chen, Goldstein, and Jiang, 2010): when some investors redeem, they impose negative externalities on the remaining investors through these costs, increasing other investors' incentive to redeem as well. Delayed settlement through repurchases payable further strengthens this strategic complementarity, since liquidation and leverage costs occur after the determination of transacting NAV and are therefore borne by the remaining investors.[15]

In this section, we provide evidence of strategic complementarity as an important driver of the current run-like redemption wave in semi-liquid private credit funds. In the cross-section of semi-liquid BDCs, investor flows strongly co-move with ex-ante exposure to the software industry, and the magnitude of this co-movement is tightly linked to the three costs that govern the degree of strategic complementarity: liquidation costs, leverage costs, and dilution costs.

5.1 Software exposure and BDC flows

The recent software crisis provides a natural laboratory to examine the presence of strategic complementarity in semi-liquid BDC flows. Because of rapid advancements in AI technologies, many software-as-a-service (SaaS) companies face the risk of being replaced by low-cost AI agents, leading to sharp revisions of their probability of default. As shown in Figure 4, semi-liquid BDCs are heavily exposed to software companies and are therefore expected to mark down the values of their loans. A BDC's ex-ante exposure to the software industry can therefore serve as a public signal, on which investors may coordinate ex post (Goldstein and Pauzner, 2005). Specifically, if a BDC held more software loans before the shock, it should experience larger outflows after the software crisis becomes salient.

[15]For example, a tender offer typically specifies that the transacting NAV would be determined as of a specific valuation date. Because of repurchases payable, cash settlement may not occur until several weeks after the valuation date, allowing the fund time to raise cash through loan liquidations or additional borrowing. Costs incurred after the valuation date are not reflected in the NAV and instead borne by investors who remain in the fund, generating a first-mover advantage.

We run the following regression using the panel of semi-liquid BDCs:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i + \gamma Controls + FE + \epsilon_{i,t}, \quad (5.3)$$

where $Flow$ denotes share issuance (including reinvestment), share repurchases, or the difference between the two, all scaled by lagged total net assets. $Post2025Q2$ is an indicator of whether the period is on or after the onset of the software crisis in 2025Q2. $HighSoftwareExposure$ is an indicator of whether the BDC's portfolio weight in software loans is above median as of 2025Q1. Controls include dividend yield, change in NAV, log TNA, and leverage. FE includes BDC fixed effects and time fixed effects. By including BDC fixed effects, the regression compares within-BDC changes in flows from before to after the onset of the software crisis, and time-invariant differences across BDCs are absorbed.

Table 3 shows the results. Compared with other BDCs, high-software-exposure BDCs experience significantly weaker inflows and stronger outflows after the onset of the software crisis. Specifically, high-software-exposure BDCs experience a 1.073-percentage-point-of-TNA decline in quarterly share issuance and a 1.652-percentage-point-of-TNA increase in quarterly share repurchases. In total, high-software-exposure BDCs experience 2.726 percentage points of TNA lower quarterly net flows after the onset of the software crisis. This magnitude is economically large, especially given that aggregate repurchase outflows in 2026Q1 are 4.9% of aggregate TNA.

For control variables, fund size as captured by log TNA is strongly associated with lower inflows through share issuance. This is consistent with the fact that inflows tend to be larger for new BDCs, which also tend to be smaller in size. Dividend yield over the past year is insignificant in driving BDC flows, mainly because we include BDC fixed effects.[16]

The stronger outflows from high-software-exposure BDCs may reflect both the conventional flow-performance relationship and strategic complementarity among investors. The conventional channel is that investors redeem because the underlying portfolio fundamentals deteriorate. The strategic-complementarity channel is that redemptions by some investors impose costs on remaining investors through asset sales, borrowing, delayed payments, or dilution, which then increases other investors' incentives to redeem. To separate these channels more clearly, we next study

[16]When we relax BDC fixed effects, we see a strong positive correlation between share issuance and dividend yield, suggesting that investor flows primarily respond to persistent dividend yield in the cross section.

whether the flow response to software exposure is stronger for funds with higher costs of meeting redemptions. The idea is that, conditional on the same exposure to software, BDCs with higher liquidation costs, borrowing costs, or dilution costs should experience larger outflows if strategic complementarity is an important amplification mechanism.

5.2 Liquidation costs and BDC flows

Section 4 shows that semi-liquid BDCs hold limited cash buffers, receive little liquidity from maturing loans, and rely on loan sales when facing net outflows. This suggests that liquidation costs are a natural source of strategic complementarity among investors. When investors redeem, funds may be forced to sell loans to raise cash. Because loan markets are relatively illiquid, these sales can be costly. According to Santos and Shao (2017), bid-ask spreads average around 1.5% for corporate loans and can reach as high as 3% for thinly held loans. Importantly, these liquidation costs are not fully borne by redeeming investors, but instead are shared by the remaining investors through a less liquid portfolio and lower future fund value. As a result, investors may have stronger incentives to redeem before others do. This mechanism should be particularly important for BDCs with fewer liquid assets or weaker cash flows from their underlying investments.

We first measure liquidation costs using share of liquid holdings, as is common in the literature. Specifically, we augment Regression (5.3) with an additional interaction term:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times LowLiquidHoldings_i + \gamma Controls + FE + \epsilon_{i,t}, \tag{5.4}$$

where $LowLiquidHoldings$ is an indicator of whether the BDC has below-median liquid holdings as of 2025Q1, measured using the portfolio share invested in cash, cash equivalents, notes and bonds, and rated loans. This measure captures the extent to which a BDC can meet redemptions without selling illiquid loans.

Table 4 shows the results focusing on low liquid holdings. The coefficient on the triple interaction term is statistically significant and economically large across all three flow measures. Relative to other high-software-exposure BDCs, high-software-exposure BDCs with below-median liquid holdings experience a further decline in share issuance of 2.677% of TNA, a further increase in share repurchases of 1.830% of TNA, and a further decline in net flows of 4.507% of TNA after

the onset of the software crisis. These magnitudes are economically meaningful. They suggest that, conditional on facing the same software shock, BDCs with fewer liquid assets experience substantially larger investor outflows, consistent with stronger strategic complementarity arising from higher expected liquidation costs.

We next measure liquidation costs using high non-performing holdings, a margin that is especially relevant in the setting of semi-liquid private credit funds. Non-performing loan holdings are, by nature, more illiquid and would incur higher liquidation costs at fire sales. In addition, unlike traditional open-end mutual funds, semi-liquid BDCs hold private loans for which ongoing interest payments are an important source of liquidity. When a larger share of these loans becomes non-performing, the fund receives less cash from its portfolio and therefore has less internal liquidity to meet redemptions. In this sense, non-performing holdings capture liquidation costs indirectly: funds with weaker investment cash flows are more likely to sell loans when redemption pressure rises, and these sales are likely to be costly precisely because the underlying assets are illiquid private credit. Specifically, we estimate the following regression:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times HighNonPerformingHoldings_i + \gamma Controls + FE + \epsilon_{i,t}, \tag{5.5}$$

where $HighNonPerformingHoldings$ is an indicator of whether the BDC has above-median non-performing loan holdings as of 2025Q1. Loans are defined as non-performing if their interest payments are classified as non-accrual or capitalized as principal (i.e., payment-in-kind).

Table 5 shows the results, which are again consistent with liquidation costs amplifying strategic complementarity. Relative to other high-software-exposure BDCs, high-software-exposure BDCs with above-median non-performing loan holdings experience a further decline in share issuance of 2.043% of TNA, a further increase in share repurchases of 1.129% of TNA, and a further decline in net flows of 3.172% of TNA after the onset of the software crisis. Economically, these funds generate less cash from their underlying loan portfolios and are therefore more likely to rely on costly loan sales when redemption pressure rises; selling non-performing loan holdings may also incur even higher liquidation costs. Investors appear to recognize this vulnerability and respond with significantly larger outflows. Taken together, Tables 4 and 5 provide strong evidence that liquidation costs amplify run-like redemption dynamics in semi-liquid BDCs.

5.3 Leverage costs and BDC flows

In addition to liquidating assets, Section 4 shows that semi-liquid BDCs also provide liquidity by increasing leverage, in contrast to banks and open-end mutual funds. This creates a unique source of strategic complementarity. When investors redeem, funds may issue more debt to avoid immediate asset sales. But the costs of this debt are borne by the remaining investors through higher leverage, higher interest expenses, and lower future balance-sheet flexibility. Therefore, strategic complementarity should be stronger when additional borrowing is more costly.

We first measure leverage costs using high leverage. For BDCs with low leverage, issuing additional debt may be a relatively inexpensive way to meet redemptions. For BDCs that are already highly levered, however, additional borrowing can be costly because it further tightens balance-sheet constraints and increases the risk borne by remaining investors. Specifically, we estimate the following regression:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times HighLeverage_i + \gamma Controls + FE + \epsilon_{i,t}, \tag{5.6}$$

where $HighLeverage$ is an indicator of whether the BDC's liability-to-asset ratio is above median as of 2025Q1. This measure captures the extent to which a BDC has limited remaining balance-sheet capacity to absorb redemption pressure through new debt.

Table 6 reports the results on high leverage. The coefficient on the triple interaction term is statistically significant and economically large. Relative to other high-software-exposure BDCs, high-software-exposure BDCs with high leverage experience a further decline in share issuance, a further increase in share repurchases, and a further decline in net flows of 8.215% of TNA after the onset of the software crisis. The effect is especially large for share issuance, suggesting that new investors are particularly sensitive to existing leverage. In other words, when a BDC is already highly levered, new investors may be reluctant to provide capital because future redemptions could require even more borrowing and further increase leverage risk.

We next measure leverage costs using high borrowing rates. This measure captures a different but related dimension of leverage costs. Even if two BDCs have similar leverage capacity, borrowing is more costly for the fund that pays a higher interest rate on its liabilities. Higher borrowing

rates make redemption-induced debt issuance more expensive and reduce future income available to remaining investors. Specifically, we estimate the following regression:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times HighBorrowingRate_i + \gamma Controls + FE + \epsilon_{i,t}, \tag{5.7}$$

where $HighBorrowingRate$ is an indicator of whether the BDC's borrowing rate is above median as of 2025Q1. We measure the borrowing rate as interest expenses relative to total liabilities.

Table 7 shows the results on high borrowing rates. The coefficient on the triple interaction term is again statistically significant and economically large. Relative to other high-software-exposure BDCs, high-software-exposure BDCs with high borrowing rates experience a further decline in net flows of 4.407% of TNA after the onset of the software crisis. These funds also experience weaker share issuance and stronger share repurchases, suggesting that both new and existing investors respond to the higher cost of using debt to meet redemptions. Economically, when borrowing is expensive, redemption-induced debt issuance imposes higher costs on remaining investors, strengthening incentives to redeem early.

Taken together, Tables 6 and 7 show that leverage costs amplify run-like redemption dynamics in semi-liquid BDCs. These results highlight a unique fragility of semi-liquid private credit funds. Unlike open-end mutual funds, which mainly manage redemptions through cash buffers, asset sales, or pricing tools, semi-liquid BDCs also rely on leverage to provide liquidity. This leverage can help funds meet current redemptions, but it also raises future obligations and makes remaining investors more exposed to subsequent shocks, creating a leverage-redemption feedback loop.

5.4 Dilution costs and BDC flows

Another source of strategic complementarity comes from stale pricing and the associated dilution costs. Semi-liquid BDCs hold illiquid private loans whose fair values may adjust slowly to changes in market fundamentals. When reported net asset values (NAVs) are stale and inflated relative to market values, redeeming investors can exit at a price above the economic value of the underlying portfolio. The difference is effectively borne by the remaining investors through dilution. For BDCs whose reported NAVs are close to market values, this dilution cost is small. For BDCs whose reported NAVs are high relative to market values, however, redemptions create a larger

wealth transfer from remaining investors to redeeming investors. This gives investors an incentive to redeem before others do, especially when negative fundamental news makes NAV staleness more salient.

We first measure dilution costs using an estimated NAV premium based on loan prices reported by loan MFs and ETFs. This measure follows Daniel, Fang, and Nini (2026) and uses prices reported by loan MFs and ETFs as proxies for market prices of BDC loans in the same industry. The advantage of this measure is that it can be constructed for a broad set of semi-liquid BDCs and directly uses market-based loan valuations. Specifically, we estimate the following regression:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times EstimatedNAVPremium_{i,t-1} + \gamma Controls + FE + \epsilon_{i,t}, \tag{5.8}$$

where $EstimatedNAVPremium$ is the relative premium of reported net asset value over the estimated market value of semi-liquid BDC shares. The estimated market value is constructed using fair loan prices reported by loan MFs and ETFs.

Table 8 reports the results using this estimated NAV premium measure. The evidence is consistent with dilution costs amplifying strategic complementarity. In normal times, flows do not respond strongly to estimated NAV premium. After the onset of the software crisis, however, BDCs with higher estimated NAV premiums experience significantly larger outflows. More importantly, the coefficient on the triple interaction term is positive and statistically significant for share repurchases. This suggests that, conditional on the same exposure to the software shock, BDCs with larger estimated NAV premiums experience stronger redemption pressure. Economically, when investors perceive that reported NAVs may exceed market values, they have stronger incentives to redeem before dilution costs are imposed on them by other investors' redemptions.

We next measure dilution costs using NAV premiums observed from publicly traded BDC twins. For a subset of semi-liquid BDCs, we can identify publicly traded twins managed by the same sponsor and investing in similar assets. For example, Blue Owl Capital Corp II has Blue Owl Capital Corp, which is publicly traded on the NYSE, as a natural twin. The advantage of this measure is that the market value is observed directly from the traded price of the twin, rather than estimated from comparable loan prices. The tradeoff is that this measure is available only for a

smaller subset of funds. Specifically, we estimate the following regression:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times TwinNAVPremium_{i,t-1} + \gamma Controls + FE + \epsilon_{i,t}, \tag{5.9}$$

where $TwinNAVPremium$ is the relative premium of reported net asset value over the market value of the corresponding publicly traded BDC twin. Table A2 shows the publicly traded twins that we identify.

Table 9 shows the results using NAV premiums from publicly traded twins. The results paint a similar picture. NAV premium itself is not strongly associated with outflows before the software crisis. However, after the onset of the software crisis, the combination of high software exposure and high NAV premium is associated with disproportionately large outflows. The triple interaction is economically large, especially for net flows, suggesting that investors are particularly responsive to stale-pricing concerns when the underlying fundamental shock makes dilution costs more salient.

6 Conclusion

In this paper, we study semi-liquid private credit funds, which occupy an important middle ground between closed-end and open-end funds. They do not offer daily liquidity, but they still promise investors periodic liquidity at NAV while holding highly illiquid assets. Using novel regulatory-filing-based data on semi-liquid BDCs, we show that this design can generate fragility even when redemptions are infrequent and quantity-limited. Cash buffers, retained investment income, and maturing loans are not sufficient to make 5% quarterly redemptions costless. Inflows decline when outflows rise, making new capital least reliable when liquidity is most needed. When funds face net outflows, they sell loans, including illiquid loans, increase borrowing, and delay payments through repurchases payable. These responses transmit redemption pressure to private credit asset markets and weaken funds' future balance-sheet capacity. They also create strategic complementarity among investors, as redemptions by some investors impose liquidation, leverage, and dilution costs on those who remain. The central lesson of this paper is that redemption gates and quarterly caps do not eliminate the fundamental trade-offs associated with liquidity transformation. They cap immediate withdrawals, but the costs of meeting those withdrawals may reappear through asset

liquidation, leverage, delayed payments, and dilution borne by remaining investors.

Our findings are informative for the future design of retail access to private markets. Recent proposals to include private credit and other private assets in retirement plans often emphasize the benefits of diversification and expanded access, but they also require mechanisms that provide at least some liquidity to investors. Our evidence suggests that the design of this liquidity is critical. Caps, gates, and periodic repurchase windows can limit immediate withdrawals, but they do not by themselves remove the underlying costs of transforming illiquid private assets into liquid investor claims. As private credit becomes more accessible to retail investors and retirement savers, fund liquidity terms, leverage, valuation practices, and delayed-payment mechanisms should be evaluated jointly. Expanding access to private markets is not only a question of who can invest, but also of how liquidity is promised, priced, and ultimately provided in stress. A related implication is that semi-liquid structures can change who ultimately bears private-credit liquidity risk. Traditional drawdown funds place illiquidity primarily on institutional investors that explicitly commit locked-up capital. By contrast, semi-liquid retail-oriented vehicles package similar illiquid exposures with a more liquid claim, shifting part of the liquidity-design risk to household investors and retirement savers. Even absent widespread loan fire sales or defaults by the funds themselves, this transfer of risk is economically important: retail investors may bear delayed payments and the future costs of leverage used to support earlier redemptions. These risks should be central to the evaluation of retail access to private credit.

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Figures and Tables

Figure 1: **Assets under Management by Different Private Credit Vehicles**. This figure shows aggregate assets under management by loan MFs and ETFs (blue), semi-liquid BDCs (red), and closed-end BDCs (green).

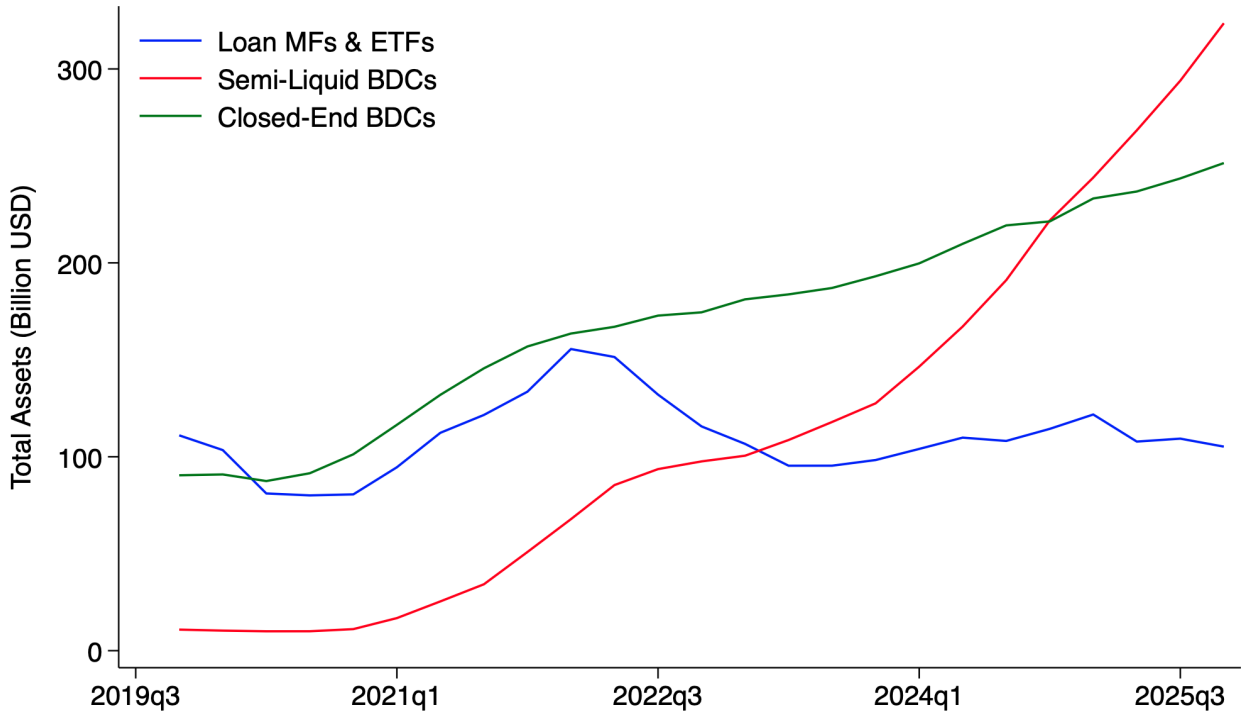
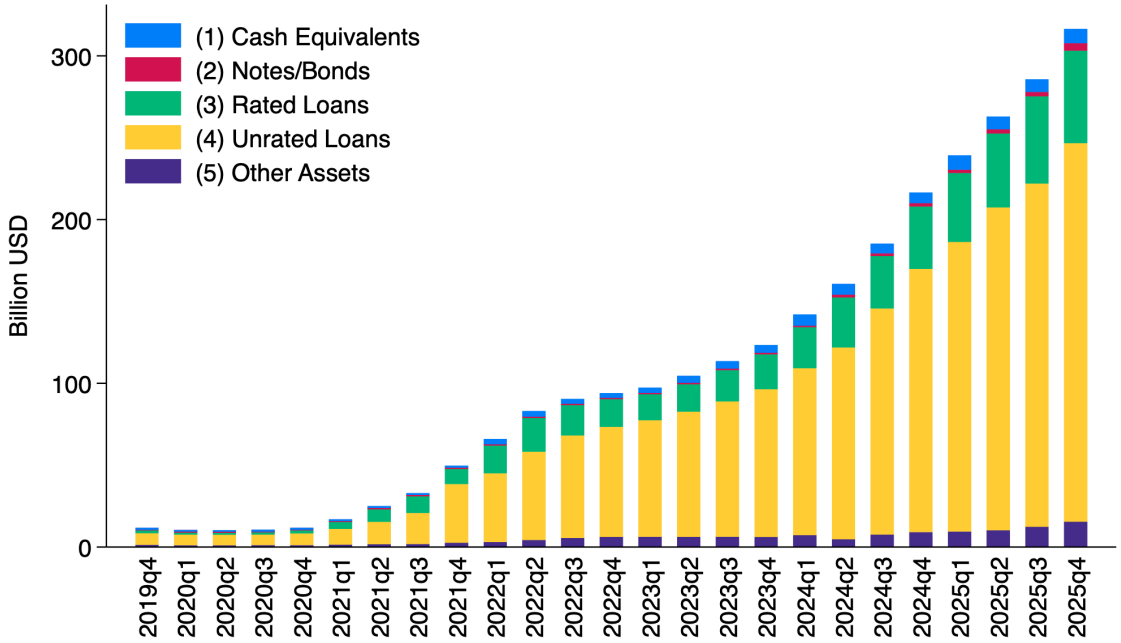


Figure 2: **Breakdown of Assets under Management by Different Private Credit Vehicles**. These figures show the composition of assets under management by semi-liquid BDCs (Panel A) and loan MFs and ETFs (Panel B). A loan is defined as unrated if the issuer does not carry a credit rating from S&P, Moody's, or Fitch.

Panel A: Holdings by Semi-Liquid BDCs



Panel B: Holdings by Loan MFs & ETFs

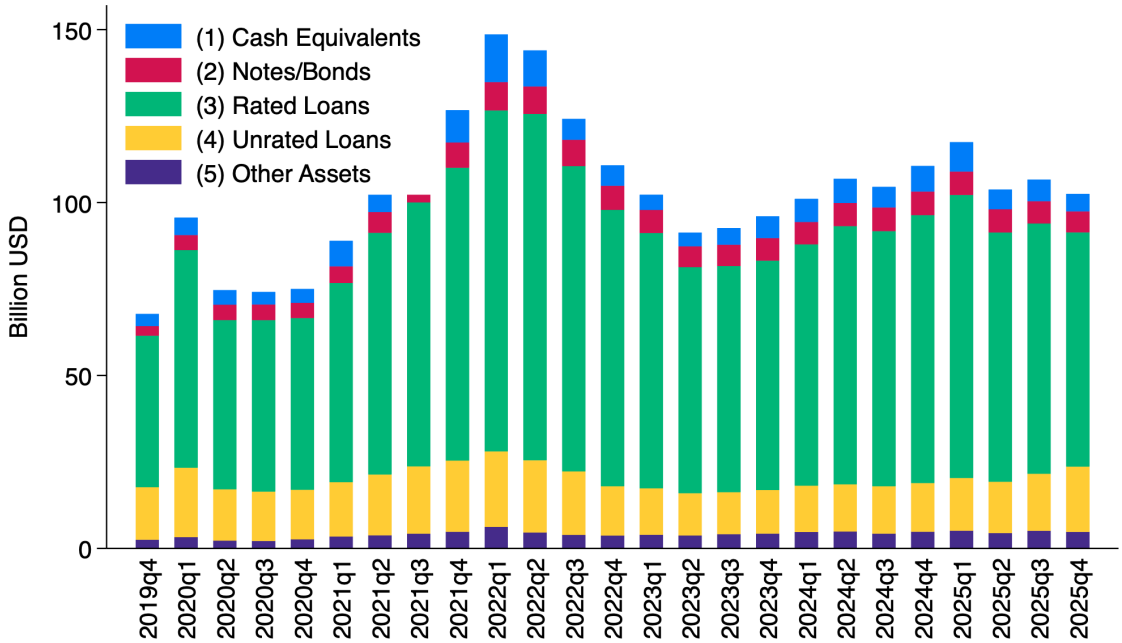
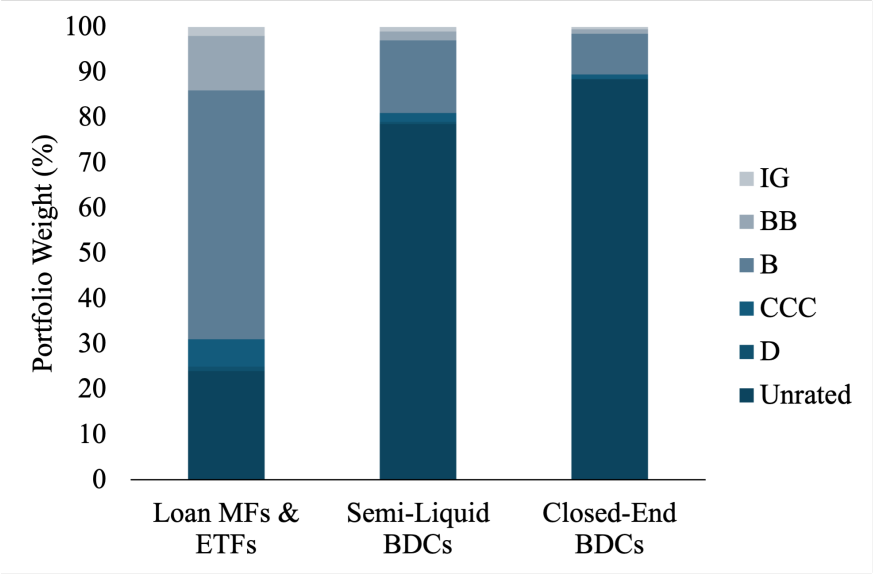


Figure 3: **Characteristics of Loans under Management by Different Private Credit Vehicles**. These figures show the composition of loans under management by different private credit vehicles, averaged over time. Panel A shows the composition of loan holdings by issuer credit rating. Panel B shows the composition of loan holdings by the number of distinct fund family holders. The sample includes holdings of U.S. dollar-denominated loans, excluding notes and bonds.

Panel A: By Issuer Credit Rating



Panel B: By Number of Distinct Holders

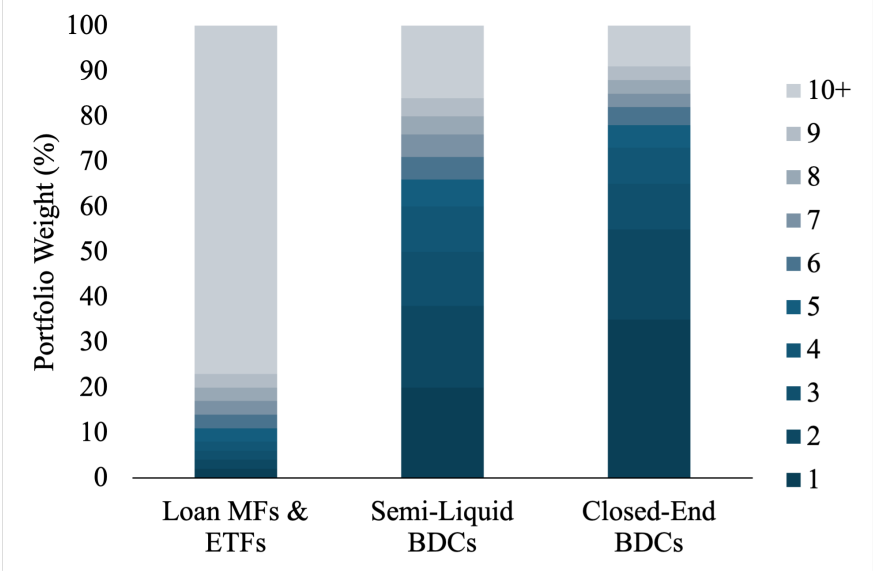
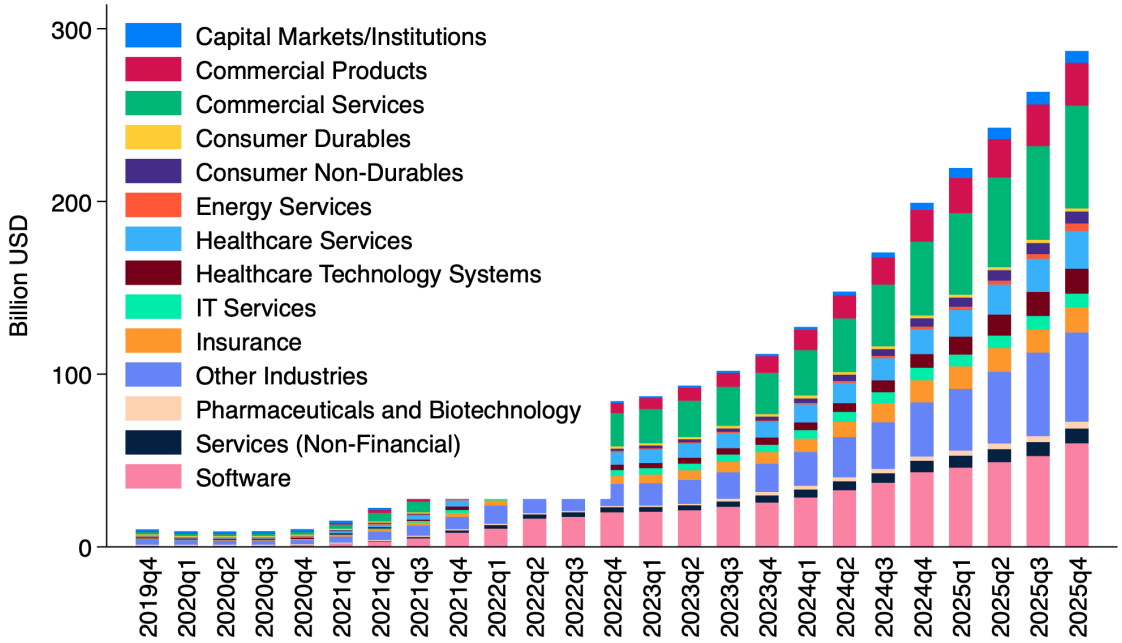


Figure 4: **Loans under Management by Semi-Liquid BDCs**. These figures show the composition of loans under management by semi-liquid BDCs in terms of issuer industry (Panel A) and years to maturity (Panel B). The sample includes holdings of U.S. dollar-denominated loans, excluding notes and bonds.

Panel A: By Issuer Industry



Panel B: By Years to Maturity

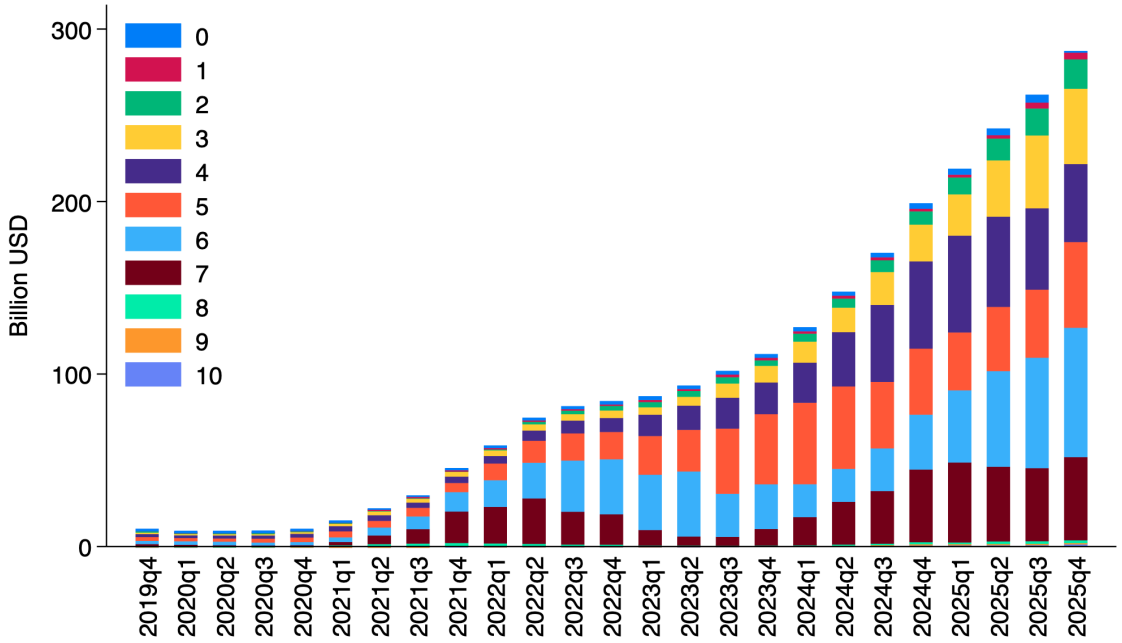


Figure 5: **Aggregate Flows to Semi-Liquid BDCs**. This figure shows aggregate flows to semi-liquid BDCs. The blue bars show inflows from issuances of new shares. The red bars show inflows from issuances of shares associated with reinvestments of dividends. The green bars show outflows from share repurchases, converted to negative values for ease of interpretation.

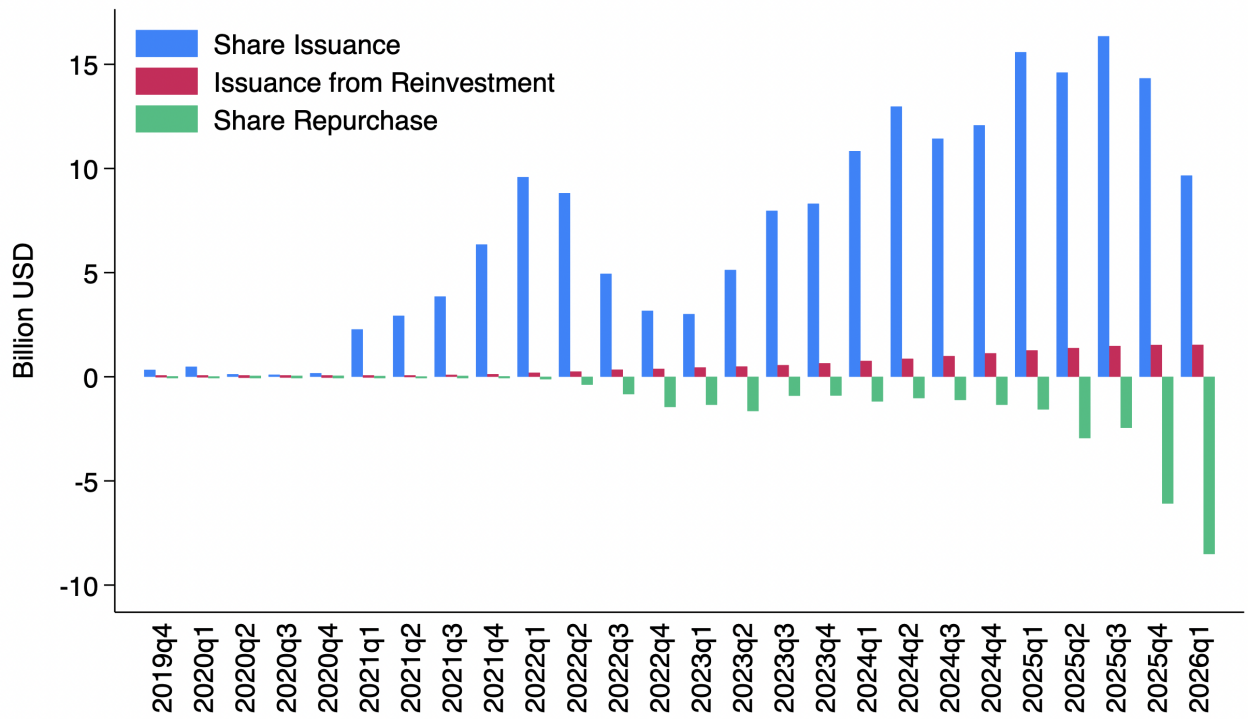


Figure 6: **Liquidity Sources to Meet Redemptions**. This figure plots the distribution of various liquidity sources as a ratio of total net assets for semi-liquid BDCs. The blue box plots cash holdings relative to TNA. The red box plots net investment income relative to TNA. The green box plots dividends relative to TNA. The yellow box plots principal amounts of loans maturing in one quarter or less relative to TNA.

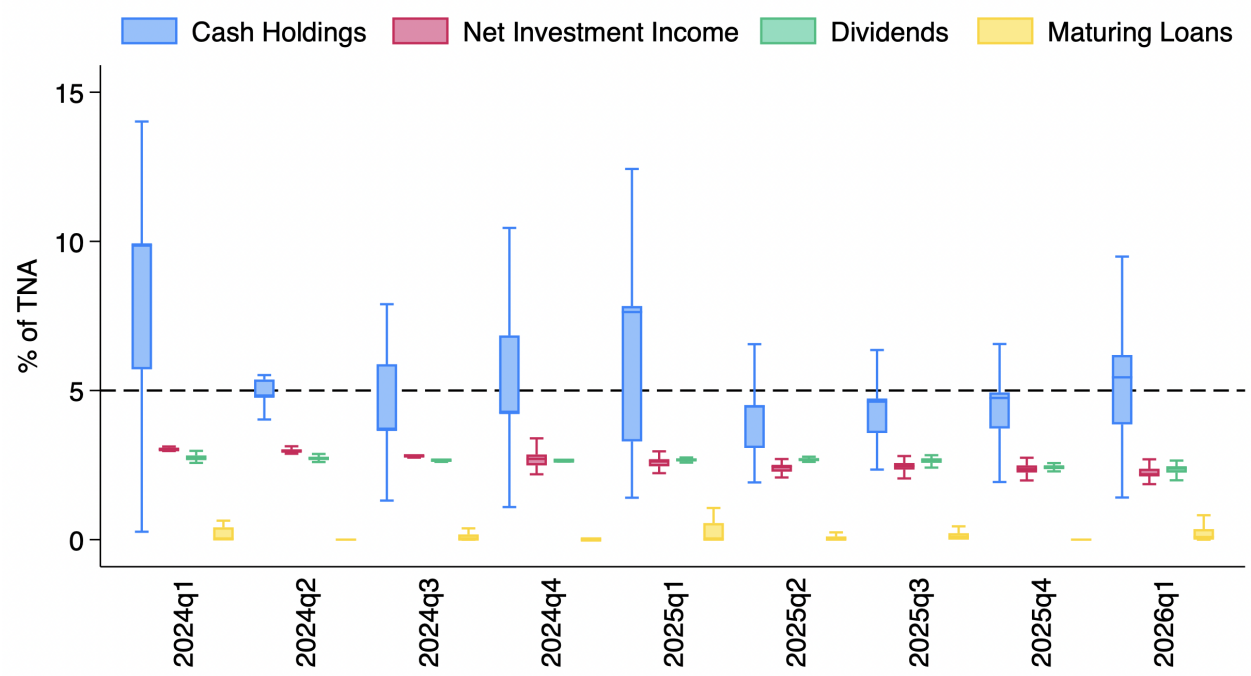
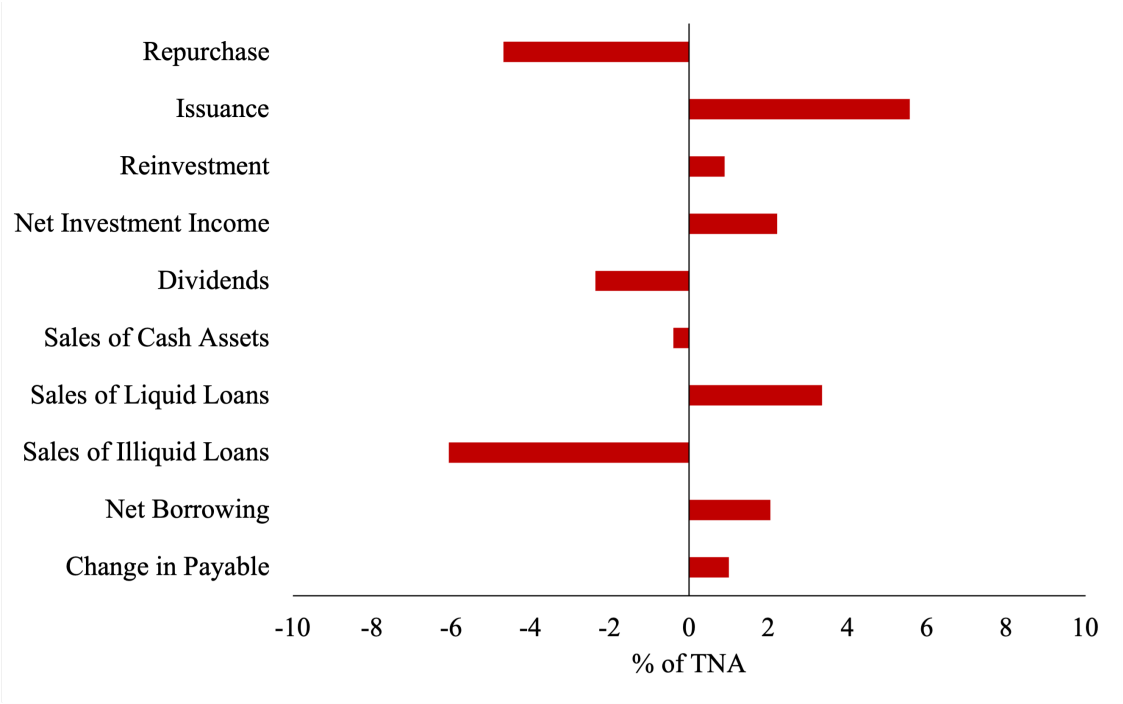


Figure 7: **Aggregate Cash Flows to Semi-Liquid BDCs in 2026Q1**. These figures show aggregate cash flows to all semi-liquid BDCs (Panel A) or semi-liquid BDCs with net outflows (Panel B) in 2026Q1. Positive values mean inflows of cash, i.e. cash received. Negative values mean outflows of cash, i.e. cash spent.

Panel A: All BDCs



Panel B: BDCs with Net Outflows

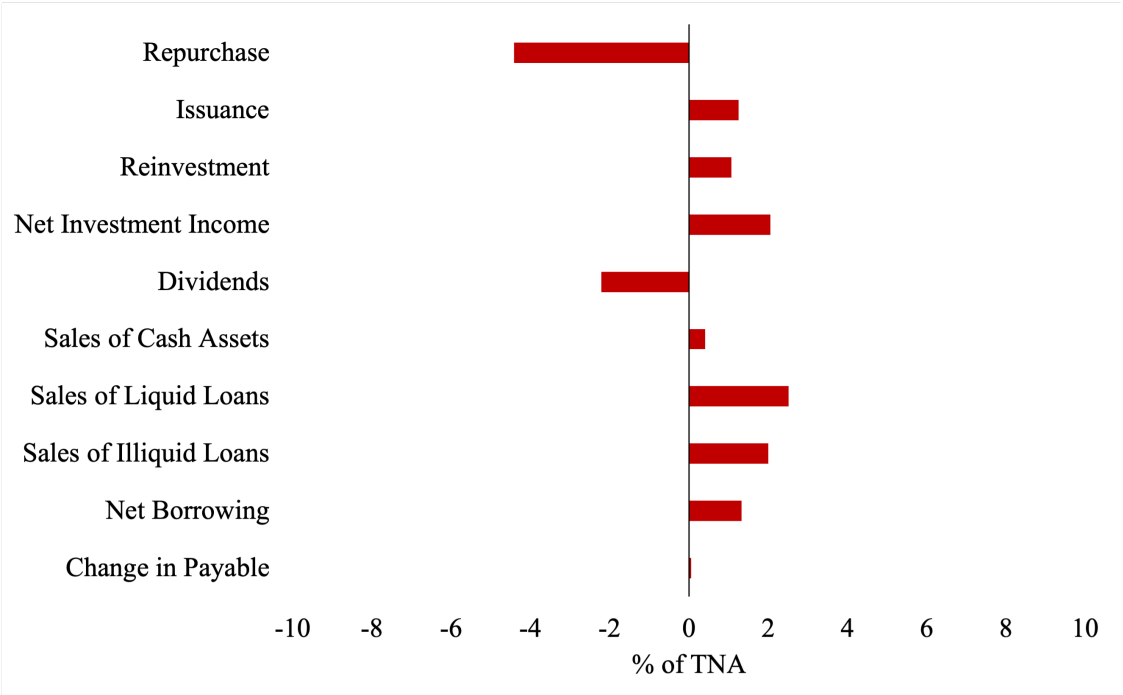


Figure 8: **Decomposition of Aggregate Outflows from Semi-Liquid BDCs**. This figure provides a decomposition of aggregate share repurchases committed by semi-liquid BDCs. The blue bars show cash paid for share repurchases. The red bars show the change in repurchases payable. Both variables are given the opposite sign to denote outflows of capital.

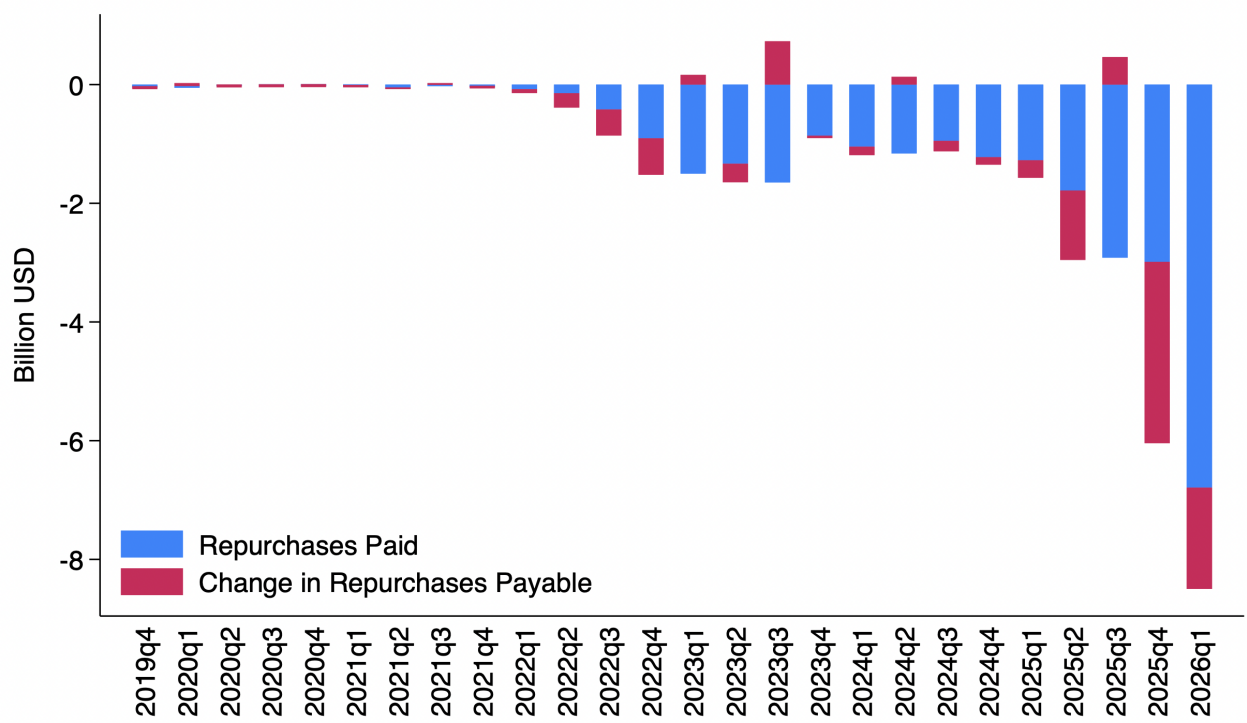


Table 1: **Co-Movement between Share Issuance and Share Repurchases**. This table examines the co-movement between inflows through share issuances and outflows through share repurchases of semi-liquid BDCs, using Regression 4.1:

$$ShareIssuance_{i,t} = \beta ShareRepurchase_{i,t} + \gamma Controls + FE + \epsilon_{i,t}.$$

$ShareIssuance$ denotes issuance of new shares or issuance related to dividend reinvestment, scaled by lagged total net assets. $ShareRepurchase$ denotes share repurchases, scaled by lagged total net assets. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Issuance of New Shares	Issuance from Reinvestment
	(1)	(2)
Share Repurchase (% of TNA)	-0.162	-0.010
	(-1.640)	(-1.508)
Controls	past dividend yield, ΔNAV, log TNA, leverage	
BDC FE	Y	Y
Year-Quarter FE	Y	Y
Standard Errors	twoway-clustered by BDC and by year-quarter	
Observations	364	364
R2	0.772	0.896

Table 2: **Co-Movement between Net Flows and Other Cash Flow Variables**. This table examines the co-movement between net flows, defined as the difference between inflows through issuances and outflows through repurchases, and other cash flow variables of semi-liquid BDCs, using Regression 4.2:

$$Y_{i,t} = \beta_1 NetInflow_{i,t} + \beta_2 NetOutflow_{i,t} + \gamma Controls + FE + \epsilon_{i,t}.$$

Y includes a host of cash flow variables, all scaled by lagged total net assets. $NetInflow$ and $NetOutflow$ are respectively defined as the positive part of net flow $\max(0, NetFlow)$ and the negative part of net flow $\min(0, NetFlow)$, both scaled by lagged total net assets. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Net Investment Income	Dividends	ΔCash	ΔLiquid Loans	ΔIlliquid Loans	Net Debt Issuance	ΔRepurchase Payable
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Net Inflow (% of TNA)	0.007**	0.020***	0.149	0.289***	0.172	-0.094	-0.003
	(2.402)	(4.388)	(1.613)	(3.853)	(1.275)	(-0.662)	(-0.140)
Net Outflow (% of TNA)	0.037**	0.018	-0.014	0.311	0.872**	-1.260*	-0.689***
	(2.077)	(0.715)	(-0.053)	(0.432)	(2.516)	(-1.960)	(-5.161)
Controls	past dividend yield, ΔNAV, log TNA, leverage						
BDC FE	Y	Y	Y	Y	Y	Y	Y
Year-Quarter FE	Y	Y	Y	Y	Y	Y	Y
Standard Errors	twoway-clustered by BDC and by year-quarter						
Observations	356	364	364	352	352	355	364
R2	0.870	0.502	0.166	0.575	0.696	0.542	0.574

Table 3: **Software Exposure and Semi-Liquid BDC Flows**. This table analyzes the cross-section of flows to semi-liquid BDCs in response to the recent software crisis through Regression 5.3:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i + \gamma Controls + FE + \epsilon_{i,t}$$

$Flow$ denotes share issuances (including reinvestments), share repurchases, or the difference between the two, scaled by lagged total net assets. $Post2025Q2$ is an indicator of whether the period is on or after the onset of the software crisis in 2025Q2. $HighSoftwareExposure$ is an indicator of whether the BDC's portfolio weight in software loans is above median as of 2025Q1. t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
1[Post 2025Q2] × 1[High Software Exposure]	-1.073	1.652**	-2.726**
	(-1.048)	(2.490)	(-2.411)
Lagged Dividends (% of TNA)	1.007	-0.126	1.133
	(0.621)	(-0.309)	(0.698)
Change in NAV (%)	-0.094	-0.017	-0.077
	(-0.464)	(-0.357)	(-0.354)
Log TNA	-20.153***	0.229	-20.383***
	(-6.358)	(0.244)	(-6.027)
Leverage	0.056	0.016	0.040
	(0.394)	(1.153)	(0.279)
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	362	362	362
R2	0.771	0.791	0.805

Table 4: **Liquidation Costs and Strategic Complementarity: Low Liquid Holdings**. This table analyzes how liquidation costs amplify strategic complementarity in flows to semi-liquid BDCs, using low liquid holdings as the measure of liquidation cost:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times LowLiquidHoldings_i + \gamma Controls + FE + \epsilon_{i,t}.$$

$LowLiquidHoldings$ is an indicator of whether the BDC's portfolio weight in cash, notes and bonds, and rated loans is below median as of 2025Q1. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
1[Post 2025Q2] × 1[High Software Exposure]	-0.134	0.275	-0.409
	(-0.057)	(0.609)	(-0.428)
1[Post 2025Q2] × 1[Low Liquid Holdings]	1.119	-0.422	1.540
	(1.604)	(-1.004)	(1.383)
1[Post] × 1[High Software] × 1[Low Liquidity]	-2.677*	1.830**	-4.507**
	(-1.907)	(2.574)	(-2.896)
Controls	past dividend yield, ΔNAV, log TNA, leverage		
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	362	362	362
R2	0.775	0.796	0.810

Table 5: **Liquidation Costs and Strategic Complementarity: High Non-Performing Holdings**. This table analyzes how liquidation costs amplify strategic complementarity in flows to semi-liquid BDCs, using high non-performing holdings as the measure of liquidation cost:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times HighNonPerformingHoldings_i + \gamma Controls + FE +$$

$HighNonPerformingHoldings$ is an indicator of whether the BDC's portfolio weight in non-performing loans is above median as of 2025Q1. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
1[Post 2025Q2] × 1[High Software Exposure]	0.875	0.303	0.572
	(0.507)	(0.357)	(0.377)
1[Post 2025Q2] × 1[High Non-Performing Holdings]	-0.401	-0.109	-0.292
	(-0.155)	(-0.212)	(-0.103)
1[Post] × 1[High Software] × 1[High Non-Perform]	-2.043	1.129*	-3.172**
	(-1.668)	(2.149)	(-2.534)
Controls	past dividend yield, ΔNAV, log TNA, leverage		
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	362	362	362
R2	0.773	0.791	0.806

Table 6: **Borrowing Costs and Strategic Complementarity: High Leverage**. This table analyzes how borrowing costs amplify strategic complementarity in flows to semi-liquid BDCs, using high leverage as the measure of borrowing cost:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times HighLeverage_i + \gamma Controls + FE + \epsilon_{i,t}.$$

$HighLeverage$ is an indicator of whether the BDC's liability-to-asset ratio is above median as of 2025Q1. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
1[Post 2025Q2] × 1[High Software Exposure]	-1.385	0.427	-1.812
	(-1.781)	(0.863)	(-1.674)
1[Post 2025Q2] × 1[High Leverage]	3.511**	-0.479	3.989**
	(2.615)	(-1.049)	(2.225)
1[Post] × 1[High Software] × 1[High Leverage]	-6.876**	1.340*	-8.215**
	(-2.771)	(1.944)	(-3.077)
Controls	past dividend yield, ΔNAV, log TNA, leverage		
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	362	362	362
R2	0.780	0.797	0.813

Table 7: **Borrowing Costs and Strategic Complementarity: High Borrowing Rate**. This table analyzes how borrowing costs amplify strategic complementarity in flows to semi-liquid BDCs, using high borrowing rate as the measure of borrowing cost:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times HighBorrowingRate_i + \gamma Controls + FE + \epsilon_{i,t}.$$

$HighBorrowingRate$ is an indicator of whether the BDC's borrowing rate, measured by interest expenses relative to total liabilities, is above median as of 2025Q1. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable: (% of TNA)	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
1[Post 2025Q2] × 1[High Software Exposure]	-0.650	0.134	-0.784
	(-0.158)	(0.205)	(-0.309)
1[Post 2025Q2] × 1[High Borrowing Rate]	1.605	-0.227	1.832
	(0.587)	(-0.410)	(0.710)
1[Post] × 1[High Software] × 1[High Rate]	-2.681	1.726*	-4.407*
	(-0.643)	(2.049)	(-1.925)
Controls	past dividend yield, ΔNAV, log TNA, leverage		
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	362	362	362
R2	0.779	0.792	0.811

Table 8: **Dilution Costs and Strategic Complementarity: Estimated NAV Premium using Loan Prices Reported by MFs & ETFs**. This table analyzes how dilution costs amplify strategic complementarity in flows to semi-liquid BDCs, using NAV premium estimated from fair loan prices reported by loan MFs and ETFs:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times EstimatedNAVPremium_{i,t-1} + \gamma Controls + FE + \epsilon_{i,}$$

$EstimatedNAVPremium$ is the relative premium of reported net asset value over the estimated market value of semi-liquid BDC shares, where market value is estimated using fair loan prices reported by loan MFs and ETFs. t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable:	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
Estimated NAV Premium	-0.494	-0.105	-0.389
	(-1.639)	(-0.704)	(-1.444)
1[High Software Exposure] × Est NAV Premium	0.464	0.030	0.434
	(0.402)	(0.097)	(0.317)
1[Post 2025Q2] × Estimated NAV Premium	-0.173	0.386*	-0.559
	(-0.318)	(1.840)	(-1.211)
1[Post 2025Q2] × 1[High Software Exposure]	-0.172	1.338**	-1.510
	(-0.081)	(2.936)	(-1.663)
1[Post] × 1[High Software] × Est NAV Prem	-1.533	0.463*	-1.996*
	(-1.575)	(1.878)	(-2.173)
Controls	past dividend yield, ΔNAV, log TNA, leverage		
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	335	335	335
R2	0.781	0.804	0.812

Table 9: **Dilution Costs and Strategic Complementarity: NAV Premium on Publicly Traded Twins**. This table analyzes how dilution costs amplify strategic complementarity in flows to semi-liquid BDCs, using NAV premium observed from publicly traded BDC twins:

$$Flow_{i,t} = \beta Post2025Q2_t \times HighSoftwareExposure_i \times TwinNAVPremium_{i,t-1} + \gamma Controls + FE + \epsilon_{i,t}.$$

$TwinNAVPremium$ is the relative premium of reported net asset value over the market value of the corresponding publicly traded BDC twin. The t-statistics are shown in parentheses. *, **, and *** denote p-values less than 0.10, 0.05, and 0.01, respectively.

Dependent Variable:	Share Issuance	Share Repurchase	Net Flow
	(1)	(2)	(3)
NAV Premium on Public BDC Twin (%)	0.071	0.023	0.048
	(0.544)	(0.939)	(0.363)
1[High Software Exposure] × Twin NAV Premium	-0.152	-0.009	-0.143
	(-1.481)	(-0.481)	(-1.226)
1[Post 2025Q2] × Twin NAV Premium	-0.069	0.069**	-0.138
	(-0.437)	(2.387)	(-0.877)
1[Post 2025Q2] × 1[High Software Exposure]	0.656	1.223	-0.567
	(0.505)	(1.788)	(-0.399)
1[Post] × 1[High Software] × Twin NAV Prem	-0.044	1.051*	-1.095
	(-0.313)	(1.932)	(-1.449)
Controls	past dividend yield, ΔNAV, log TNA, leverage		
BDC FE	Y	Y	Y
Year-Quarter FE	Y	Y	Y
Standard Errors	two-way clustered by BDC and by time		
Observations	168	168	168
R2	0.811	0.862	0.848

Internet Appendix for

The Fragility of Semi-Liquid Private Credit Funds

Chuck Fang Itay Goldstein Yao Zeng

Additional Figures and Tables

Figure A1: **Examples of Semi-Liquid BDC Redemption Policy.**

Blue Owl Capital Corp II, 2025Q3 10-Q

Share Repurchases

In the third quarter of 2017, we began offering, and on a quarterly basis, intend to continue offering, to repurchase shares of our common stock on such terms as may be determined by our Board in its complete discretion. The Board has complete discretion to determine whether we will engage in any share repurchase, and if so, the terms of such repurchase. At the discretion of our Board, we may use cash on hand, cash available from borrowings, and cash from the sale of our investments as of the end of the applicable period to repurchase shares.

All shares purchased by us pursuant to the terms of each offer to repurchase will be retired and thereafter will be authorized and unissued shares.

Any periodic repurchase offers are subject in part to our available cash and compliance with the BDC and RIC qualification and diversification rules promulgated under the 1940 Act and the Code, respectively. While we intend to continue to conduct quarterly tender offers as described above, we are not required to do so and may suspend or terminate the share repurchase program at any time.

Offer Date	Tender Offer Expiration	Tender Offer	Purchase Price per Share	Shares Repurchased
($ in thousands, except share and per share amounts)				
February 28, 2023	March 27, 2023	$ 23,099	$8.90	2,595,339
May 26, 2023	June 26, 2023	$ 36,020	$8.96	4,020,194
August 28, 2023	September 25, 2023	$ 28,144	$9.08	3,099,549
November 27, 2023	December 22, 2023	$ 16,397	$9.03	1,815,787
February 27, 2024	March 25, 2024	$ 60,509	$9.01	6,715,753
May 24, 2024	June 24, 2024	$ 31,358	$9.00	3,484,167
August 26, 2024	September 23, 2024	$ 33,505	$8.85	3,785,909
November 25, 2024	December 23, 2024	$ 38,391	$8.80	4,362,658
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Blue Owl Capital Corp II, 2025Q4 10-K

Net realized gain on investments	—	—	—
Excess (undistributed)	0.01	892	0.8
Total	$ 0.81	$ 109,361	100.0 %

Holders

As of February 26, 2026, there were approximately 10,371 holders of record of our common stock.

Share Repurchases

Prior to the third quarter of 2025, we offered, on a quarterly basis, to repurchase shares of our common stock on such terms as may be determined by the Board in its complete discretion. All shares purchased by us pursuant to the terms of each offer to repurchase were retired and are authorized and unissued shares. At this time, we do not intend to engage in quarterly share repurchases.

The following table presents the shares repurchased during the year ended December 31, 2025:

Offer Date	Tender Offer Expiration	Tender Offer	Purchase Price per Share	Shares Repurchased
($ in thousands, except share and per share amounts)				
February 19, 2025	March 24, 2025	$ 36,805	$ 8.75	4,206,258
May 16, 2025	June 27, 2025	$ 53,838	$ 8.61	6,252,963
August 18, 2025	September 25, 2025	$ 60,324	$ 8.45	7,138,809

Senior Securities

Information about our senior securities is shown in the following table as of the end of the fiscal years ended December 31, 2025, 2024, 2023, 2022,

Blue Owl Technology Income Corp, 2025Q3 10-Q

Share Repurchases

The Board has complete discretion to determine whether the Company will engage in any share repurchase, and if so, the terms of such repurchase. At the discretion of our Board, the Company may use cash on hand, cash available from borrowings, and cash from the sale of our investments as of the end of the applicable period to repurchase shares. The Company has commenced a share repurchase program pursuant to which the Company intends to conduct quarterly repurchase offers to allow its shareholders to tender their shares at a price equal to the net offering price per share for the applicable class of shares on each date of repurchase. All shares purchased by the Company pursuant to the terms of each offer to repurchase will be retired and thereafter will be authorized and unissued shares.

The Company intends to limit the number of shares to be repurchased in each quarter to no more than 5.00% of its outstanding shares of common stock. Any periodic repurchase offers are subject in part to the Company's available cash and compliance with the BDC and RIC qualification and diversification rules promulgated under the 1940 Act and the Code, respectively. While the Company intends to continue to conduct quarterly tender offers as described above, the Company is not required to do so and may suspend or terminate the share repurchase program at any time.

Blue Owl Technology Income Corp, 2025Q4 10-K

Share Repurchases

Pursuant to an offer to purchase (the "Offer") dated November 26, 2025, as amended on December 23, 2025, we offered to purchase up to 65,771,325 shares of our issued and outstanding Class S common stock, Class D common stock and Class I common stock at a price equal to the net offering price per share, as of December 31, 2025, of each share tendered pursuant to the Offer.

The Offer expired at 11:59 P.M., Eastern Time, on January 8, 2026, and approximately 10,327,702 shares of Class S common stock, 988,298 shares of Class D common stock and 40,025,443 shares of Class I common stock were validly tendered and not withdrawn pursuant to the Offer as of such date.

On January 26, 2026, we determined that, as of December 31, 2025, the net offering prices per share of our Class S common stock, Class D common stock and Class I common stock were $10.38 per share, $10.38 per share and $10.38 per share, respectively and we purchased all validly tendered and not withdrawn shares for approximately $107.2 million, $10.3 million and $415.5 million respectively. The aggregate purchase price for all shares repurchased pursuant to the Offer was approximately $533.0 million, which represented the value of 15.6% of the aggregate number of the Company's shares outstanding as of September 30, 2025.

Figure A2: **Illustration of Liquidity Transformation by Different Private Credit Vehicles.**

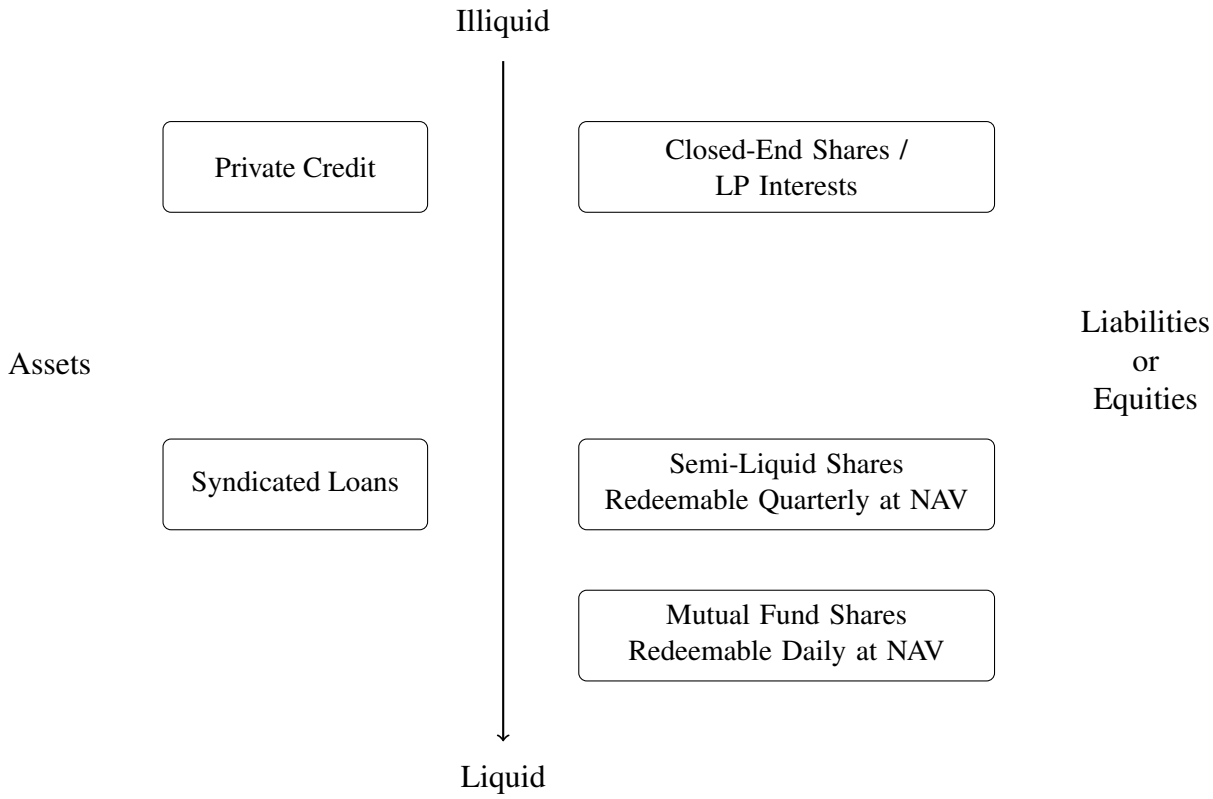


Table A1: **Summary Statistics**. This table provides summary statistics for our main sample, which includes quarterly observations of 59 semi-liquid BDCs from 2024Q1 to 2026Q1.

	N	Mean	SD	P10	P50	P90
Issuance (% of TNA)	366	10.02	7.19	2.78	8.56	18.66
Reinvestment (% of TNA)	366	1.01	0.36	0.55	1.12	1.26
Repurchase (% of TNA)	366	2.42	1.82	0.44	1.79	4.99
Net Investment Income (% of TNA)	358	2.54	0.34	2.16	2.47	3.00
Dividends (% of TNA)	366	2.59	0.33	2.29	2.66	2.78
ΔCash (% of TNA)	366	0.39	3.20	-3.09	0.40	4.18
ΔNotes/Bonds (% of TNA)	355	0.35	1.25	-0.13	0.07	1.62
ΔLiquid Loans (% of TNA)	355	3.66	6.86	-2.88	1.88	13.32
ΔIlliquid Loans (% of TNA)	355	13.18	12.87	1.53	10.27	27.88
Net Debt Issuance (% of TNA)	357	7.35	9.53	-2.04	6.20	20.52
ΔRepurchase Payable (% of TNA)	366	0.58	1.16	-0.49	0.09	2.37
Total Net Assets (bn$)	367	18.08	16.51	1.39	11.72	44.32
Cash (% of TNA)	367	5.63	3.35	3.06	4.63	9.90
Notes/Bonds (% of TNA)	365	1.87	2.43	0.00	1.51	4.15
Liquid Loans (% of TNA)	365	26.83	15.92	12.73	20.70	45.48
Illiquid Loans (% of TNA)	365	143.32	25.88	107.39	148.01	173.44
Total Liabilities (% of TNA)	367	81.72	19.73	62.87	80.61	105.91
1Y Dividend Yield (%)	367	10.81	1.01	10.25	10.72	11.63
1Y Change in NAV (%)	367	-0.23	4.75	-2.50	-0.42	2.96
Age	367	3.76	1.71	2.00	3.75	5.25

Table A2: Semi-Liquid Private Credit Funds and Public BDC Twins

CIK	BDC Name	Twin CIK	Public Twin Name
1521945	Prospect Floating Rate and Alternative Income Fund, Inc.	1287032	PROSPECT CAPITAL CORPORATION
1655887	BLUE OWL CAPITAL CORPORATION II	1655888	BLUE OWL CAPITAL CORPORATION
1702510	Carlyle Credit Solutions, Inc.	1544206	Carlyle Secured Lending, Inc.
1742313	MONROE CAPITAL INCOME PLUS CORPORATION	1512931	MONROE CAPITAL CORPORATION
1803498	Blackstone Private Credit Fund	1736035	Blackstone Secured Lending Fund
1812554	BLUE OWL CREDIT INCOME CORP.	1655888	BLUE OWL CAPITAL CORPORATION
1837532	APOLLO DEBT SOLUTIONS BDC	1278752	MIDCAP FINANCIAL INVESTMENT CORPORATION
1851322	North Haven Private Income Fund LLC	1782524	Morgan Stanley Direct Lending Fund
1859919	Barings Private Credit Corporation	1379785	Barings BDC, Inc.
1869453	BLUE OWL TECHNOLOGY INCOME CORP.	1747777	BLUE OWL TECHNOLOGY FINANCE CORP.
1872371	Oaktree Strategic Credit Fund	1414932	Oaktree Specialty Lending Corporation
1890107	First Eagle Private Credit Fund	1464963	FIRST EAGLE ALTERNATIVE CAPITAL BDC, INC.
1899017	BAIN CAPITAL PRIVATE CREDIT	1655050	BAIN CAPITAL SPECIALTY FINANCE, INC.
1901037	STELLUS PRIVATE CREDIT BDC	1551901	STELLUS CAPITAL INVESTMENT CORPORATION
1902649	BLACKROCK PRIVATE CREDIT FUND	1370755	BLACKROCK TCP CAPITAL CORP.
1911066	NUVEEN CHURCHILL PRIVATE CAPITAL INCOME FUND	1737924	NUVEEN CHURCHILL DIRECT LENDING CORP.
1918712	ARES STRATEGIC INCOME FUND	1287750	ARES CAPITAL CORPORATION
1920145	Goldman Sachs Private Credit Corp.	1572694	Goldman Sachs BDC, Inc.
1930087	Golub Capital Private Credit Fund	1476765	Golub Capital BDC, Inc.
1930679	KKR FS Income Trust	1422183	FS KKR Capital Corp.
1954360	Crescent Private Credit Income Corp.	1633336	Crescent Capital BDC, Inc.
1973476	North Haven Private Income Fund A LLC	1782524	Morgan Stanley Direct Lending Fund
1975736	KKR FS Income Trust Select	1422183	FS KKR Capital Corp.
2037804	New Mountain Private Credit Fund	1496099	New Mountain Finance Corporation
2082557	Golub Capital Private Income Fund S	1476765	Golub Capital BDC, Inc.
2082559	Golub Capital Private Income Fund I	1476765	Golub Capital BDC, Inc.