What Are the Determinants of Leverage of Nonbank Lenders?

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Abstract

This paper studies the determinants of leverage among Business Development Companies (BDCs), regulated nonbank intermediaries that lend to small and medium-sized enterprises. I build a simple theoretical framework and explore information asymmetry, expected bankruptcy costs, and the supply of bank funding to BDCs as possible determinants of leverage. In the cross-section, I find that BDCs with lower expected bankruptcy costs carry higher leverage. I exploit the 2014 Leveraged Lending Guidance (LLG) as a shock to bank credit supply. I also find that BDCs in areas with greater exposure to LLG-affected banks experience a larger inflow of borrowers. Following LLG, treated BDCs increase leverage by 4.2%, accompanied by a 14% increase in borrowers, and a 32% increase in book assets. The expansion in borrowers is accompanied by a decline in the maturity of originated loans, along with a shift in portfolio composition towards senior loans, indicating stricter underwriting standards. These findings suggest a delegated monitoring role that enables BDCs to lower expected bankruptcy costs, supporting higher leverage. Consistent with this channel, BDCs that lever up draw on both bank and bond market financing, suggesting that the leverage expansion is driven by lower bankruptcy costs rather than increased loans from banks.

Keywords: private credit, private debt, business development companies, financial intermediation, bank regulation, capital structure

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1 Introduction

Since the Global Financial Crisis, nonbank lenders have become an increasingly important source of credit for small and medium-sized enterprises (SMEs) (Chernenko et al. (2022), Gopal and Schnabl (2022)). Each year, nonbank lenders extend nearly $550 billion in new loans to small and middle-market firms in the US, accounting for a significant share of aggregate debt outstanding to small firms (Consumer Financial Protection Bureau (2023)). Recent work by Acharya et al. (2026b) and Chernenko et al. (2025) show that nonbanks rely heavily on bank funding, which has facilitated their rapid expansion. As these nonbanks have grown both in scale and systemic importance, the frictions shaping their capital structure decisions remain poorly understood. Jiang, Matvos, Piskorski, and Seru (2020) document that nonbanks employ significantly lower leverage than traditional banks. What determines leverage choices within nonbank lenders?

To address this question, I examine the determinants of leverage in nonbank lenders by focusing on Business Development Companies (BDCs). BDCs are a class of nonbank lenders that are created as Regulated Investment Companies (RICs) under the Investment Company Act of 1940. BDCs have been among the fastest-growing segments of the private credit market over the past decade and today account for approximately 20% of the assets under management of U.S. private credit funds (Avalos et al. (2025)). Their rapid growth makes them an economically important setting for understanding the capital-structure decisions of nonbank lenders that focus on lending to comparable SMEs.

Which financial frictions affect BDC leverage decisions? Between 2010 and 2025, the average BDC reports a book leverage ratio of roughly 36%, more than that observed among nonfinancial firms (22%). Unlike nonfinancial firms, BDCs derive no tax advantage from debt financing. As RICs, they are required to distribute at least 90% of their taxable income to shareholders, which eliminates corporate-level taxation. At the same time, unlike banks, whose leverage typically exceeds 90%, BDCs lack access to government safety nets, such as deposit insurance or central bank guarantees, since they do not issue deposits (Matvos et al. (2026)). Consequently, conventional explanations based on tax shields or implicit guarantees provide little insight into their persistent reliance on debt.

To motivate the empirical analysis, I employ a theoretical framework grounded in prominent models of bank capital structure (Diamond (1984); Jiang et al. (2020); Diamond (1996)). In this framework, BDCs, like banks, serve as financial intermediaries that raise funds from investors and extend credit to a portfolio of borrowers. In performing this function, they establish lending relationships, monitor borrower performance, and renegotiate loan terms, which reduces BDC bankruptcy costs. This intermediation role makes BDCs close analogs to banks, implying that the same frictions that shape bank capital structure, e.g., information asymmetry and expected distress costs, also influence BDC leverage decisions (Diamond (1984)) (demand-side). In addition

to these intermediation frictions, I model an alternative mechanism that can account for the leverage decisions within BDCs: the funding advantage channel (supply-side). Under this view, some BDCs maintain elevated leverage compared to others because they benefit from access to relatively inexpensive credit provided by banks. This funding advantage may arise for two reasons. First, as argued by Acharya et al. (2026a, 2025, 2026b), in response to stricter bank regulation, banks transform their role by providing senior financing through term loans and credit lines to NBFIs, while retaining the funding advantages associated with deposit franchises and safety nets. This allows banks to avoid bank regulation and creates cheap access to credit for NBFIs. Second, as documented by Chernenko et al. (2025), loans to BDCs are often extended to over-collateralized special-purpose vehicles (SPVs), which carry favorable capital treatment compared to a similarly sized portfolio of C&I loans, which may lower the bank balance sheet costs associated with lending to nonbank entities, further influencing their leverage decisions.

To test the theoretical predictions, I combine cross-sectional evidence with an exogenous regulatory shock affecting the demand for leverage in BDCs. First, I analyze the cross-sectional factors that determine leverage using detailed loan-level data on BDC portfolio investments. Then, to differentiate between competing explanations, I take advantage of the November 2014 clarification of the Leveraged Lending Guidance (LLG), which led to increased regulatory scrutiny of leveraged loans held by banks. Previous research indicates that LLG prompted Office of the Comptroller of the Currency (OCC)-chartered banks to reduce lending to highly leveraged borrowers, who then turned to BDCs for financing (Chernenko et al. (2022)). This increased demand for loans from BDCs results in a rise in borrower inflows, providing a natural setting to study how BDCs adjust their capital structure, debt composition, and underwriting standards in response to this demand for loans. Examining debt composition further allows me to distinguish between demand-side and supply-side explanations for changes in leverage.

The cross-sectional evidence suggests that BDCs facing lower expected bankruptcy costs tend to maintain significantly higher leverage. Although lending to smaller and riskier firms increases asset-side risk, BDCs can mitigate these risks by holding more diversified portfolios, as measured by the Herfindahl–Hirschman Index (HHI) across industries. Specifically, a one-standard-deviation increase in industry diversification is associated with a 10% increase in leverage for traded BDCs and a 7.9% increase for non-traded BDCs. In addition, traded BDCs with greater portfolio opacity, reflecting higher information asymmetry between BDCs and investors, maintain higher leverage. Overall, the cross-sectional evidence supports the view that information asymmetry and expected bankruptcy costs are key intermediation frictions shaping BDC leverage decisions (Townsend (1979); Diamond (1984)).

The regulatory evidence yields three main findings. First, BDCs with greater exposure to banks impacted by the Leveraged Lending Guidance (LLG) experience a significant increase in borrower inflows following the clarification. These BDCs expand their lending to new borrowers by 14%

increasing diversification, while simultaneously increasing leverage by 4.2%.

Second, I investigate why leverage increases following the regulatory shock. A class of models (Diamond (1996), Townsend (1979)) suggests that information asymmetry and expected bankruptcy costs determine leverage among intermediaries. According to Diamond (1996), BDCs may choose higher leverage due to diversification of delegation costs. Diversification may make BDCs' monitoring of borrowers incentive compatible and lower the BDC's expected bankruptcy costs. Supporting the theory of delegated monitoring, I find that the BDCs affected by the regulation tend to increase diversification. This increase in diversification is accompanied by materially more conservative loan underwriting: value-weighted loan maturity at origination declines by 0.2 years, the share of newly originated senior first-lien loans increases by 7%, and the share of newly originated second-lien and subordinated loans declines by 5%. Treated BDCs also originate loans at higher cost-to-par ratios, a measure of loan entry pricing that captures loan discounts, consistent with lower risk at origination, as assessed by the BDC.[1] These findings suggest that BDCs respond to higher borrower demand by strengthening their monitoring and underwriting processes, making their own liabilities safer and enabling higher leverage.

Finally, I assess whether the funding-advantage channel contributes to BDC leverage. Approximately 46% of BDC debt financing, including term loans and credit lines, comes from banks. From the supply-side perspective, if bank lending to BDCs is merely a pass-through of lending from banks with lower balance-sheet costs, BDCs should borrow more from banks when increasing their leverage. However, I find little evidence that the treated BDCs disproportionately rely on bank borrowing after the regulatory clarification. Instead, the increases in leverage appear to be financed through a combination of both bank debt and unsecured bond issuance.

Taken together, these findings suggest that the pass-through of banks' funding advantage does not solely determine BDC leverage. Instead, BDC leverage decisions also reflect demand-side factors associated with financial intermediation-information asymmetry and expected bankruptcy costs. Following the LLG clarification, treated BDCs become more diversified and adopt more conservative underwriting standards, reducing expected bankruptcy costs. These changes increase debt capacity, allowing BDCs to sustain higher leverage. More broadly, although stricter bank regulation has shifted leverage toward the nonbank sector, the determinants of that leverage suggest that it is supported by safer, rather than riskier underwriting.

[1] The cost-to-par ratio measures a loan's amortized cost in relation to its stated principal (par) amount. The ratio at loan entry captures the difference between the recorded amortized cost and the face value and is used as a proxy for the loan pricing established when the investment entered the portfolio. It captures structural discounts, e.g., original-issue discounts, upfront fee structures, or illiquidity, that represent compensation for risk at origination (Sundqvist and Hamilton (2026)).

2 Related Literature

My paper studies the determinants of capital structure in BDCs and is broadly related to two strands of literature.

The first strand of related work is the broad literature on the non-tax determinants of financial intermediary capital structure (Thakor (2014)). An emerging debate in this literature concerns whether the high leverage of nonbank lenders reflects socially valuable intermediation services or distortions induced by the cheap supply of capital from banks to nonbanks.[2] On one hand, debt is optimal due to verification costs associated with equity in the presence of information asymmetry between investors and the intermediary, or because of a BDC's role as a delegated monitor (Diamond (1984); Williamson (1986)). On the other hand, equity holders may increase leverage in response to cheap bank funding created by a pass-through of bank lending, which results from lower balance sheet costs linked to lending to BDCs (Acharya et al. (2026b, 2025); Chernenko et al. (2025)).

The paper most closely related to mine is Jiang et al. (2020), who document that nonbank mortgage lenders employ roughly twice as much equity as banks. They interpret nonbank mortgage lenders as a "free-market" benchmark, highlighting the role of deposit insurance and government safety nets in sustaining banks' high leverage. My contribution is twofold. First, while prior research emphasizes differences in leverage between banks and nonbanks, little is known about the determinants of capital structure within nonbank lenders themselves. Second, unlike Jiang et al. (2020), who study mortgage lenders that securitize loans predominantly, my setting focuses on lenders that directly extend credit to corporations and actively manage portfolios. Hence, BDCs provide an ideal laboratory to test monitoring-based theories of capital structure (Diamond (1984)). In summary, I utilize cross-sectional variation in BDC balance sheets and a regulatory shock to BDC leverage demand to examine whether leverage variations within intermediaries reflect delegated monitoring frictions or funding-side advantages.

Another related paper is by Matvos, Piskorski, and Seru (2026), which compares the leverage decisions of private debt lenders with those of traditional banks. They document that private credit funds are conservatively financed, relying on significant equity capitalization (65%-80%), long-term funding, limited asset-liability maturity mismatches, and diversified loan portfolios. They conclude that these characteristics make private credit funds substantially less fragile than traditional banks. My paper complements their analysis by shifting the focus from average leverage to the determinants of cross-sectional variation in leverage within a major segment of private credit intermediaries: Business Development Companies (BDCs). Although BDCs are conservatively financed

[2] Traditional theories of bank capital structure emphasize that safety nets for debtholders, such as deposit insurance and government guarantees, induce banks to borrow excessively (Admati et al. (2013, 2018); Calomiris and Jaremski (2016)). Because nonbanks lack explicit safety nets, these theories have limited traction in explaining their leverage choices. However, recent work argues that banks provide implicit guarantees to nonbanks, thereby creating analogous distortions (Acharya et al. (2026b, 2025)).

on average with a mean leverage of 36%, leverage varies considerably across BDCs, with a cross-sectional standard deviation of approximately 18%. I examine the economic factors that explain this variation.

A second strand of research examines the growing role of BDCs in private credit markets. This literature emphasizes several aspects of BDC intermediation. First, BDCs serve as substitutes for banks in supplying credit to middle-market firms. For example, Davydiuk et al. (2024a) show that BDCs expanded lending following the 2009 bank stress tests, replacing bank credit to middle-market borrowers. Second, BDCs' ability to hold both debt and equity claims in portfolio firms strengthens their monitoring ability and governance role in borrowers (Davydiuk et al. (2024); Jang (2024)). Related studies examine the widespread use of Payment-in-Kind (PIK) financing (Robinson and Wallskog (2026); Rintamäki and Steffen (2026)). More recently, Chernenko et al. (2025) and Avalos et al. (2025) show that stricter bank regulation has been an important driver of BDC growth. Finally, Mistopoulou and Steffen (2026) examine the composition of BDC funding from banks and bond markets. In contrast to this literature, my paper focuses on BDCs' capital structure decisions and identifies the intermediation frictions that determine their leverage decisions.

The remainder of the article is organized as follows. Section 3 describes the institutional background. Section 4 provides details on the data and Section 5 develops a two-period model of capital structure. Section 6 outlines the empirical framework, Section 7 presents the regression results and Section 8 concludes.

3 Institutional Setting

3.1 BDC Institutional Details

BDCs are a distinct class of closed-end investment vehicles that provide financing to small and medium-sized firms (SMEs). Small firms are typically defined as those with annual revenues below $10 million, while medium-sized firms have annual revenues between $10 million and $1 billion. Established under the Small Business Investment Incentive Act of 1980, BDCs were designed to increase the flow of capital to SMEs, particularly those underserved by traditional banks. BDCs are primarily subject to three regulatory frameworks. First, they are structured as Regulated Investment Companies (RICs) under the Investment Company Act of 1940. As RICs, BDCs are pass-through entities and must distribute at least 90% of their taxable income to shareholders annually, which eliminates corporate-level taxation. In addition, the 1940 Act mandates that at least 70% of a BDC's portfolio be invested in "eligible portfolio companies," defined as U.S.-based private or thinly traded public firms with market capitalizations below $250 million (Boehm et al. (2004)).

Second, BDCs are subject to SEC registration and oversight, and must comply with disclosure requirements pertaining to their leverage, income, and portfolio holdings. In addition to these detailed quarterly information disclosure requirements, BDCs are also affected by a specific SEC regulation that prohibits any regulated investment company from owning more than 3% of a BDC's outstanding shares without prior SEC approval. This constraint has contributed to the high levels of retail ownership observed among BDCs. By 2019, institutional investors held only about 28% of BDC equity, on average. The predominance of retail ownership has important implications for BDC governance, as the limited presence of institutional investors may reduce external monitoring and shareholder oversight (Burns et al. (2010)).

Third, the Small Business Credit Availability Act (SBCAA) of 2018 amended the statutory leverage limits for BDCs by reducing the minimum required asset coverage ratio (ACR) from 200% to 150%. The ACR is defined as the ratio of total assets minus total liabilities (excluding senior securities) to total senior securities. Before this amendment, BDCs were required to maintain an ACR of at least 200%, and any breach of this threshold triggered significant costs for shareholders, including dividend suspensions and forced deleveraging. During forced deleveraging, a BDC is prohibited from issuing additional senior securities or repurchasing its own shares. The ACR covenant is also widely used by banks and bondholders to impose discipline on BDC leverage (Davydiuk et al. (2024b)). BDCs that experience a material decline in their cushion relative to the ACR limit frequently face credit rating downgrades (DBRS Morningstar (2021)).

3.2 Leverage Lending Guidance Clarification

As a natural experiment, I exploit the Interagency Leveraged Lending Guidance (LLG), which increased supervisory scrutiny of bank lending to highly leveraged borrowers. The LLG was implemented in two stages. The first stage was the issuance of the Interagency Guidance on Leveraged Lending in March 2013 by the Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System (Federal Reserve), and the Federal Deposit Insurance Corporation (FDIC) (collectively, the "Agencies").[3] The guidance instructed banks to strengthen underwriting standards for leveraged loans, particularly those extended to borrowers with negative EBITDA or debt-to-EBITDA ratios exceeding 6x. Because the guidance was issued as supervisory guidance rather than as a formal regulation, banks faced considerable uncertainty regarding its interpretation and enforcement.

To reduce this uncertainty, the Agencies issued a clarification on November 7, 2014.[4] The clarification refined key definitions, including those of "leveraged lending" and "debt," and clarified

[3]The 2013 *Interagency Guidance on Leveraged Lending* is available at https://www.federalreserve.gov/supervisionreg/srletters/sr1303a1.pdf.

[4]The 2014 clarification is available at https://www.federalreserve.gov/frrs/guidance/frequently-asked-questions-for-implementing-interagency-guidance-on-leveraged-lending.htm.

supervisory expectations for loan underwriting, thereby reducing ambiguity surrounding the implementation of the 2013 guidance (Abuzov et al. 2023). Consistent with this interpretation, recent evidence shows that the 2014 clarification had substantially larger effects on bank lending than the initial 2013 guidance (Abuzov et al. 2023; Kim et al. 2017). Accordingly, I use the November 2014 clarification as the primary regulatory shock in the empirical analysis.

The clarification increased the regulatory cost of originating leveraged loans for banks. Agarwal et al. (2014) show that OCC-supervised banks are subject to stricter supervisory standards than state-chartered banks, causing them to classify risky loans more aggressively and maintain higher loan-loss reserves. Building on these institutional differences, Chernenko et al. (2022) show that the clarification disproportionately reduced lending by OCC-supervised banks to middle-market firms with negative EBITDA.

As banks reduced the supply of credit to highly leveraged borrowers, these firms increasingly substituted toward nonbank lenders (Chernenko et al. 2022). BDCs were not subject to the leveraged lending guidance but competed directly with banks in the middle-market lending segment, making them natural substitutes for regulated banks. Consequently, the clarification generated an exogenous increase in demand for BDC credit. I exploit this regulation-induced reallocation of borrowers to identify how an increase in loan demand affects BDC capital structure, debt composition, and underwriting standards. The hypotheses and empirical identification strategy are discussed in more detail in Section 6.

4 Data

The analysis combines multiple data sources covering both the asset and liability sides of BDC balance sheets. Figure 1 illustrates the typical balance sheet structure of a BDC. On the asset side, BDCs primarily invest in loans to small and medium-sized firms. On the financing side, they are financed through a combination of equity, bank borrowing, and unsecured bonds and notes. On average, bank borrowing accounts for 16% of total assets, unsecured bonds and notes account for 12%, and equity accounts for 64%.

4.1 Liability Side Data

I construct a quarterly panel of leverage ratios for 176 BDCs covering the period from 2010 to 2025. For the 62 publicly traded BDCs, I obtain financial data from Compustat and merge them with detailed debt composition information from Capital IQ. For the remaining 114 non-traded BDCs, I hand-collect leverage ratios from Form 10-Q filings. Detailed debt composition data for non-traded BDCs are currently available for 17 firms through Capital IQ. Overall, the sample of

176 BDCs represents approximately 80% of total BDC assets under management (AUM). The debt composition sample includes all BDCs currently covered by Capital IQ and will be expanded as additional BDCs become available.

To measure leverage, I focus on book leverage as the primary measure of leverage, following Strebulaev and Yang (2013). Book leverage is defined as the ratio of total debt to total assets, where total debt includes both current and long-term debt, thereby capturing the BDC's active debt decisions. An alternative definition used in the literature is one minus the ratio of book equity to book assets (Gropp and Heider (2010)). I follow Strebulaev and Yang (2013)'s definition, as it reflects the BDC's active debt financing decisions rather than other liability choices, e.g., accounts payable reflected in Gropp and Heider (2010).

Figure 2 illustrates substantial variation in book leverage over the period 2010–2025, with an average leverage ratio of 36% and a standard deviation of 18%. Notably, 6% of the observations report zero leverage. Table 1 presents summary statistics on BDC capital structure and liability composition. On average, 46% of total debt consists of bank borrowings (90% of which is drawn from revolving credit lines), 35% of unsecured bonds and notes, and 12% of secured bonds and notes. In dollar terms, BDCs hold an average of $0.88 billion in total debt against $1.63 billion in total assets. Figure 5(a) complements these summary statistics by illustrating the evolution of BDC debt composition over 2010–2025. Over the sample period, BDCs gradually substitute away from bank credit lines and term loans toward bonds and notes.

4.2 Asset Side Data

I combine data on BDC liabilities with asset-side portfolio investments and borrower identities. Portfolio-level investment data are sourced from Solve, which provides detailed information on BDC–borrower contracts, yielding 762,765 BDC–borrower–quarter observations. Borrower characteristics, including location and public versus private status, are obtained from PitchBook. To match portfolio investments with borrower identities, each borrower name from the Solve dataset is searched and verified on the PitchBook platform. The merged dataset identifies 14,953 unique borrowers out of 21,351 in the original portfolio sample. Observations lacking borrower location data are excluded from the final sample.

Figure 4 shows the coverage of traded and non-traded BDCs. Aggregate AUM increases steadily over the sample period, reaching approximately $400 billion by 2024Q4. Table 2 Panel A presents the cross-sectional composition of BDC portfolios, which are concentrated primarily in senior secured floating-rate loans (63%), followed by equity (23%), subordinated debt (9%), and smaller holdings of short-term investments and structured products. Table 2 Panel B summarizes the characteristics of on balance sheet loans. The average loan spread is 5.91%, the mean loan size is $13.13 million, the average fair value is $11.07 million, and the average maturity is 5.57 years.

Approximately 8% of loans include payment-in-kind provisions, while end-of-term payment features are rare. Figure 5(b) complements these summary statistics by illustrating the evolution of BDC portfolio composition over 2010–2025. Over the sample period, BDCs gradually shift their portfolios toward senior secured loans, particularly first-lien loans, and away from subordinated debt and equity investments.

4.3 Bank Branch Data

To examine the effect of the LLG on BDC capital structure and underwriting standards, I construct a measure of each BDC's geographic exposure to banks affected by the LLG regulation. To do so, I merge the BDC data with the FDIC's Summary of Deposits (SOD), which provides the geographic distribution of bank deposits across counties. Because the SOD is released annually in June, I forward-fill each year's observations to the subsequent four quarters to align them with the quarterly BDC data.

5 Economic Framework

To guide the empirical analysis, I develop a two-period model in which BDCs endogenously choose their leverage and size, combining the frameworks of Diamond (1984) and Jiang et al. (2020). I adapt the model to a partial equilibrium setting and reinterpret key parameters to reflect the institutional features of BDCs. This modified structure allows for a tractable characterization of BDC financing decisions in the presence of intermediation frictions and informs the paper's empirical predictions.

The model generates three main predictions regarding BDC capital structure. First, debt allows BDCs to lower their weighted average cost of capital for two reasons: (i) private information possessed by BDC makes debt the optimal contract due to lower associated verification costs (Townsend (1979)), and (ii) cheap bank supply of capital (Acharya et al. (2026a); Chernenko et al. (2025); Acharya et al. (2026b)). These benefits of debt issuance are offset by higher bankruptcy costs which raise the riskiness of debt and reduce optimal leverage. Second, stronger monitoring and renegotiation capabilities, along with diversification, make debt safer by reducing bankruptcy costs, thereby supporting higher optimal leverage. Third, market power, captured by the BDC's ability to earn monopoly rents enhances the BDCs's profitability, also reducing expected bankruptcy costs and further increasing optimal leverage.

Demand for Debt and Equity

There is a representative BDC i which demands both debt and equity, which I denote by: D_i and E_i, respectively. The total capital raised is used to fund an investment of size a_i.

$$a_i = E_i + D_i \tag{1}$$

and leverage is defined as $l_i = \frac{D_i}{a_i}$.

- **Equity:** In Diamond (1984) and Townsend (1979), equity financing is costly because it requires verification (or monitoring) of the intermediary's performance. The intermediary privately observes project returns, while equityholders receive only the residual cash flows reported after paying off fixed claims. Absent verification (or monitoring), the intermediary can underreport returns, creating moral hazard. To ensure truthful reporting, equityholders incur a per-unit verification cost (ϕ) for each dollar of equity capital. Total verification cost is given by: ϕE_i.
- **Debt:** All intermediaries can raise non-contingent debt D_i, with a corresponding interest rate r_i.

Production Environment

The BDC employs its monitoring skill, denoted by $\lambda_i \in (0,1)$, as an input into the intermediation process. Lending is risky and exhibits decreasing returns to scale.[5] The BDC knows the distribution of possible states of the world but remains uncertain about which specific state will be realized.

There are two states of the world. The good state arises with probability p. In the good state, the gross return on lending is $f(a_i, A)$, with decreasing returns to scale, $f_a(a_i, A) > 0$, $f_{aa}(a_i, A) < 0$. The gross returns depend on the aggregate lending vector A (A=$(a_1, a_2, ...)$). Gross returns decrease as aggregate lending increases. In the bad state, with probability $(1-p)$, loans generate $\lambda_i f(a_i, A)$ where λ_i represents monitoring and renegotiating ability of the BDC (Diamond (1984)). The idea is that differences in ability materialize in bad times. For example, a better intermediary, with a higher λ_i is able to intervene faster when borrowers' performance declines and is therefore able to recover a higher fraction of assets.

The BDC chooses its capital structure and scale to maximize dividends to its shareholders. Specifically, BDC i selects the amount of external equity E_i and debt D_i to raise, resulting in total assets $a_i = E_i + D_i$. In choosing its capital structure, the BDC accounts for how its choice will

[5] While the form of the production function, whether it exhibits increasing or decreasing returns, does not affect the qualitative nature of the leverage decision, I assume decreasing returns to scale for concreteness.

affect the pricing of debt i.e., at higher leverage BDC debt becomes riskier. Equity holders are protected by limited liability, and maximize the expected value of equity, V_i:

$$V_i = \max_{E_i, D_i} p \underbrace{[\max[f(a_i) - D_i(1+r_i), 0]}_{\text{Payoff of equityholders in good state}} + (1-p) \underbrace{\max([\lambda_i f(a_i) - D_i(1+r_i), 0]]}_{\text{Payoff of equityholders in bad state}} - \underbrace{\phi E_i}_{\text{Verification cost}} - E_i \tag{2}$$

Additionally, in equilibrium, BDC debt is risky because the BDC optimally issues enough debt for expected bankruptcy costs to just offset the benefits of leverage. Risky debt means that in the bad state of the world, the BDC may not earn enough to repay its debt, which leads to default and a cost associated with bankruptcy. Specifically, if the cash flow in the bad state, given by $\lambda_i f(a_i, A)$, is less than the required debt payment $D_i(1+r_i)$, the BDC defaults ($f(a_i)\lambda_i < D_i(1+r_i)$). In that case, the firm pays a deadweight cost equal to $\delta \left(\frac{D_i}{a_i} - \lambda_i\right)^2$ which arises because the BDC cannot ex-ante determine which state of the world will be realized. This cost depends on how much debt the BDC has relative to its assets (leverage), and how skilled it is at recovering value during bad times (measured by λ_i). The parameter $\delta > 0$ captures the size of the costs. The functional form is quadratic to reflect that larger shortfalls are more costly: as shortfall increases, the cost of default increases at an increasing rate, because the BDC must start giving up more valuable projects.

Supply of Capital

While I model the BDC's leverage decision in a partial equilibrium setting, I also discuss supply-side frictions that may reduce the cost of debt financing.

Funding is provided by representative investors who are risk-neutral and have an opportunity cost of capital normalized to one. In equilibrium, however, investors are willing to lend to BDCs at rates below this benchmark, giving rise to a funding advantage on BDC debt. I assume that this funding advantage arises from two sources. First, as argued by Acharya et al. (2026a,b, 2025), following the Global Financial Crisis, stricter bank regulation led banks to increasingly fund NBFIs through senior term loans and credit lines rather than directly originating riskier loans. This arrangement allows banks to retain the funding advantages associated with deposit franchises and access to official safety nets while financing NBFIs that originate and hold the junior credit exposures to borrowers. Second, as documented by Chernenko et al. (2025), loans to BDCs are often extended to over-collateralized special-purpose vehicles (SPVs), which carry a 20% risk weight rather than the 100% weight applied to comparably sized portfolio of C&I loans. Both mechanisms allow banks to avoid the consequences of stricter bank regulation and reduce the cost of funding available to BDCs. I capture this funding advantage through the parameter γ_i, which is reflected in the interest rate charged on BDC debt i, as described below. The expected return to debt holders

is given by:

$$D_i(1-\gamma_i) = pD_i(1+r_i) + (1-p)\cdot(\underbrace{\lambda_i f(a_i)}_{\text{Recovery}} - \underbrace{a_i\delta(l_i-\lambda_i)^2}_{\text{Deadweight cost}}) \tag{3}$$

The Equilibrium

In equilibrium, cost of debt accounts for potential distress costs and funding advantage when setting interest rates. As I prove in Appendix, the intermediary chooses enough debt such that BDC debt is risky in equilibrium, $D_i(1+r_i) > f(a_i)\lambda_i$. Then, accounting for equilibrium debt pricing and risk, I can re-write the optimization problem for equity holders of BDC as choosing leverage $l_i \equiv \frac{D_i}{a_i}$ and asset size a_i, which maximizes the total value of claims on the intermediary:

$$V_i = \max_{a_i,l_i}\left[f(a_i)(p+(1-p)\lambda_i) - a_i + a_i l_i\gamma_i - (1-p)a_i\delta(l_i-\lambda_i)^2 - \phi a_i(1-l_i)\right] \tag{4}$$

Proposition 1. *There is a unique combination of equilibrium leverage, l_i, and size of BDC, a_i which are characterized by:*

$$l_i = \frac{\gamma_i+\phi}{2(1-p)\delta} + \lambda_i \tag{5}$$

and

$$f_a(a_i,A)(p+(1-p)\lambda_i) = 1 - \lambda_i\gamma_i + \phi(1-\lambda_i) - \frac{(\gamma_i+\phi)^2}{4(1-p)\delta} \tag{6}$$

Equation (5) presents the closed-form solution for the BDC's optimal leverage ratio, l_i, obtained from the first-order condition of the value function with respect to leverage in equation (4). This expression shows that optimal leverage increases with the BDC's funding advantage γ_i, the verification cost associated with equity (ϕ), and BDCs' monitoring ability λ_i. The economic intuition behind this result is discussed in detail in Propositions 2, 3, and 4.

Equation (6) is derived from the first-order condition with respect to the BDC's size a_i. The left-hand side represents the marginal benefit of one unit of size, captured by the marginal product of capital weighted by expected recovery in each state of the world. The right-hand side reflects the marginal cost, which includes the opportunity cost of capital, the cost of issuing debt, and the expected cost of financial distress. In equilibrium, the BDC chooses its scale such that the marginal benefit of investment equals its marginal cost.

Proposition 2. *Funding advantage γ_i on BDC debt and equity verification cost ϕ would increase*

equilibrium leverage, whereas higher bankruptcy costs would lead to a monotonic decrease in equilibrium leverage.

When debt is risk-free i.e., when $D_i(1+r_i) \leq \lambda_i f(a_i)$, the marginal benefit is $\gamma_i + \phi$. γ_i reflects the funding advantage earned by issuing debt whereas ϕ represents the verification cost saved by issuing debt instead of equity. In this case, the BDC strictly prefers to increase leverage. The reason is straightforward: on the margin, the benefit of issuing an additional dollar of debt is equal to the advantage $\gamma_i + \phi$, while the marginal cost is zero, since there is no risk of default. As a result, the intermediary optimally chooses the highest possible leverage consistent with non-default.

However, once debt becomes risky i.e., $D_i(1+r_i) > \lambda_i f(a_i)$, the intermediary faces a tradeoff. Increasing leverage further allows the BDC to capture the lower cost of debt, but at the cost of incurring expected deadweight losses in default. This tradeoff is formalized in equation (4). An increase in the funding advantage and verification cost $\gamma_i + \phi$ raises the marginal benefit of debt, incentivizing higher leverage. In contrast, an increase in the distress cost parameter δ raises the marginal cost of debt, discouraging additional leverage.

Proposition 3. *Monitoring ability and extent of diversification of the BDC increase optimal leverage by making debt safer.*

When the funding advantage is absent ($\gamma_i = 0$), the marginal cost of leverage is given by $2(1-p)a_i\delta(l_i - \lambda_i) - \phi a_i$. To minimize expected bankruptcy costs, the BDC chooses its leverage ratio such that $l_i = \lambda_i$, ensuring that its debt remains risk-free. In this case, the BDC's monitoring and renegotiation ability, represented by λ_i, serves as an upper limit on the amount of safe leverage it can sustain without default. The underlying mechanism is that stronger intermediation capabilities, through better monitoring and renegotiation, reduce borrower defaults and improve recovery values in adverse states. Hence, more skilled BDCs (those with higher λ_i) face a lower marginal cost of leverage and can safely operate with higher debt levels.

Alternatively, λ can be re-interpreted as the degree of diversification. While greater diversification may not directly increase recovery in bad states, it reduces portfolio volatility and thereby lowers the probability of default of the BDC, thereby lowering expected distress costs.

Both mechanisms imply that a BDC's borrowing costs reflect its aggregate risk profile: intermediaries with stronger monitoring-renegotiation capability and greater diversification face lower effective funding costs due to their reduced exposure to systematic risk.

Proposition 4. *An increase in a BDC's market power raises its optimal leverage by reducing the expected bankruptcy costs through an increase in BDC profitability.*

A key implication of equations (5) and (6) is the central role of market power, $f(a_i, A)$, in shaping the joint determination of size and leverage. Equation (5) characterizes the optimal leverage ratio,

ℓ_i, in times of risky debt. It reveals that leverage does not depend directly on the gross return to lending. Intuitively, this formula only applies in states where debt is risky i.e., when the BDC cannot fully meet its debt obligations,

$$D_i(1 + r_i) > \lambda_i f(a_i, A),$$

which occurs when market power is low. In such cases, leverage is pinned down by the intermediary's ability to monitor and renegotiate loans (λ_i), rather than by the return on lending itself. By contrast, as returns increase ($f(a_i, A)$), optimal leverage increases because higher cash recoveries make the BDC's debt effectively riskless even in adverse states,

$$D_i(1 + r_i) < \lambda_i f(a_i, A).$$

With stronger market power, the intermediary extracts greater surplus from borrowers, which ensures repayment in all states and eliminates expected bankruptcy costs by reducing the probability of distress. Overall, the optimal leverage ratio discontinuously increases to the maximum level as market power increases and debt becomes a riskless claim.

Equation (6) highlights the effect of market power on the scale of the intermediary. Specifically, market power operates through its impact on the gross return function, $f(a_i, A)$, thereby influencing the size of the BDC. Empirically, Davydiuk et al. (2024a) document that BDCs expanded significantly in response to the tightening of capital regulation on traditional banks, consistent with this mechanism. While the impact of bank capital regulation on the growth of nonbank intermediaries is well established, the model delivers a novel implication: market power also affects optimal leverage, not merely intermediary size.

6 Empirical Framework

The propositions highlight the key forces that determine BDCs' optimal leverage decisions. To distinguish between competing predictions, I combine cross-sectional and panel evidence with an exogenous regulatory shock that shifts the demand for leverage in BDCs. First, I examine the cross-sectional determinants of leverage and estimate panel regressions using detailed loan-level data on BDC portfolio investments. Second, I exploit the November 2014 clarification of the Leveraged Lending Guidance (LLG), which increased regulatory scrutiny of leveraged lending by banks. The following sections describe each empirical framework and explain how they allow me to distinguish between demand-side and supply-side theories of BDC leverage.

6.1 Cross-sectional and Panel Regression Design

6.1.1 Measurement of Independent Variables

When loan investments are privately observed by the intermediary, residual claims (equity) require continuous and costly verification, while fixed claims (debt) require verification only in states of distress. Consequently, higher information asymmetry (ϕ) between the BDC and its investors makes debt the optimal source of funding. To measure information asymmetry, I follow Sufi (2007) and construct a proxy for portfolio opacity. Specifically, I compute the percentage of portfolio firms that are private (i.e., without SEC filings). This measure captures the extent to which equity investors face difficulty in verifying the BDC's underlying asset values, with higher values indicating greater opacity. Appendix A.1 provides details on the construction of the variables.

BDCs investing in riskier firms are expected to maintain lower leverage due to higher expected bankruptcy costs. I measure the loan risk of portfolio firms using the average loan spread. However, Propositions 3 and 4 highlight two mechanisms that mitigate these costs. First, λ can also be interpreted as portfolio diversification. Greater diversification lowers portfolio volatility, thereby reducing expected bankruptcy costs. I measure diversification using the Herfindahl–Hirschman Index (HHI) across borrower industries, where a lower HHI indicates greater diversification. Second, market power enhances profitability and, in turn, reduces the probability of distress. To proxy for a BDC's market power, I calculate the average number of BDC lenders per borrower in its portfolio. A higher value indicates that the BDC operates in a more competitive borrower market. Ideally, market power would be measured using loan spreads adjusted for borrower credit risk; however, because financial information on private firms is limited, constructing such a measure is not feasible.

6.1.2 Cross-sectional Regression Specification

Below, I outline the ideal cross-sectional regression specification used to examine BDC leverage decisions over the period 2010-2025. Following Chapter 12.3 of Cochrane (2009), I begin with a cross-sectional regression that illustrates the determinants of leverage implied by the theoretical framework. I estimate the specification separately for traded and non-traded BDCs.

$$\begin{aligned} Y_{it} = \alpha &+ \beta_1 Opacity_{i,t-1} + \beta_2 HHI_{i,t-1} + \beta_3 \#Borrower\ relationships_{i,t-1} \\ &+ \beta_4 \text{Borrower Firm Risk} + \beta_5 \text{Loan Risk} + \epsilon_{it} \end{aligned} \tag{7}$$

where Y_{it} denotes leverage, defined following Strebulaev and Yang (2013), i indexes BDCs, and t indexes time. In this ideal specification, each coefficient β_j measures the marginal effect of a particular mechanism on leverage, with $\beta_j = 0$ indicating that the corresponding friction is

irrelevant for capital structure decisions. The expected signs of the coefficients are: $\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 < 0$, $\beta_4 < 0$, $\beta_5 < 0$. Estimating this specification requires controls for both borrower risk and loan risk. I proxy for loan risk using loan spreads and the share of equity investments in the portfolio. However, borrower-level EBITDA data, which are necessary to fully control for borrower risk and saturate the specification, are unavailable. Accordingly, I estimate the following empirical specification:

$$\begin{aligned} Y_{it} = \alpha + \beta_1 Opacity_{i,t-1} + \beta_2 HHI_{i,t-1} + \beta_3 \#Borrower\ relationships_{i,t-1} \\ + \beta_4 \text{Loan Spread at Origination}_{i,t-1} + \beta_5 \text{Share of Equity Investments }_{i,t-1} + \epsilon_{it} \end{aligned} \tag{8}$$

To complement the cross-sectional evidence, I estimate a similar panel specification with BDC and year fixed effects to exploit within-BDC variation over time.

Although the cross-sectional and panel regressions provide evidence on the determinants of leverage, two identification challenges remain. First, the omission of borrower risk introduces a potential omitted-variable bias. In the above regression, the error term captures unobserved borrower risk. Borrower risk affects leverage through its impact on expected bankruptcy costs: riskier borrowers increase the likelihood of financial distress and, consequently, reduce optimal leverage. Therefore, the omission of borrower risk biases the estimated coefficients toward zero. Second, leverage and portfolio composition are jointly determined. BDCs with greater incentives for risk shifting may simultaneously adjust both leverage and asset risk, creating simultaneity bias (Meckling and Jensen (1976)).

To address these concerns, I exploit the 2014 clarification as a plausibly exogenous regulatory shock. The clarification substantially increased supervisory scrutiny of leveraged loans held by regulated banks, causing OCC-supervised banks to reduce lending to highly leveraged borrowers and increasing credit migration toward nonbank lenders such as BDCs (Chernenko et al. (2022)). This research design isolates changes in leverage induced by an external regulatory shock rather than by endogenous differences in BDC characteristics, allowing me to identify the causal effect of borrower inflows on BDC capital structure as discussed in the next section.

6.2 Leverage Lending Guidance Clarification

In this section, I outline tests for the theoretical framework by exploiting the November 2014 clarification as an exogenous shock to the demand for BDC credit. Following the clarification, banks facing higher regulatory costs reduced lending to highly leveraged borrowers (Chernenko et al. (2022)). As a result, many middle-market firms substituted away from regulated banks toward nonbank lenders, including BDCs. The resulting increase in credit demand generates distinct em-

pirical predictions under the competing theories of the theoretical framework, providing a setting to examine the mechanisms underlying BDC leverage decisions. I begin by developing the hypotheses in Section 6.2.1 followed by the identification strategy in Section 6.2.2.

6.2.1 Hypothesis

The empirical strategy exploits geographic variation in BDC exposure to OCC-supervised banks. The intuition is that BDCs operating in counties with greater exposure to affected banks experienced larger inflows of displaced borrowers after the clarification. Agarwal et al. (2014) show that the Office of the Comptroller of the Currency (OCC) applies substantially stricter supervisory standards than state banking regulators, assigning lower CAMELS ratings and classifying loans to financially weak borrowers as "substandard," thereby requiring higher loan-loss reserves. Building on these findings, Chernenko et al. (2022) show that the LLG disproportionately increased the regulatory cost of originating cash-flow loans to middle-market firms with negative EBITDA for OCC-supervised banks. Accordingly, I measure the intensity of the demand shock using each BDC's pre-existing geographic exposure to OCC-supervised banks.

An increase in borrower demand does not, by itself, imply higher leverage. BDCs could expand their balance sheets by issuing either debt or equity while maintaining their existing capital structure. Consequently, the key question is why a positive demand shock would increase the optimal use of debt financing rather than equity issuance. I consider two competing explanations.

The first is a demand-side mechanism view of delegated monitoring. Following Diamond (1984), a larger borrower base would increase the incentive for monitoring as delegation costs get diversified. As BDCs experience a higher demand for loans and increase diversification, BDCs increase the intensity of monitoring. They engage more frequently in monitoring, renegotiation, and restructuring activities, thereby increasing recovery and reducing expected bankruptcy costs. If debt becomes safer because of active monitoring, higher leverage becomes optimal. In addition, banks' withdrawal may increase BDCs' market power in affected lending markets. If borrowers have fewer outside borrowing options, BDCs may obtain stronger bargaining power and earn higher risk-adjusted returns, adjusting for both pricing and non-price loan terms. Higher intermediary profitability increases debt capacity by reducing expected default risk.

The alternative explanation is a funding-advantage mechanism. According to Acharya et al. (2026b) and Chernenko et al. (2025), capital-constrained banks have increased lending to nonbank lenders, such as BDCs. In this sense, banks may pass through their low funding costs arising from the use of deposits. Under this pass-through view, changes in leverage primarily reflect an outward shift in the supply of debt financing to BDCs rather than changes in the optimal capital structure arising from asset-side frictions.

These mechanisms generate distinct empirical predictions. Under the demand-side delegated monitoring hypothesis, the regulatory shock should induce BDCs to expand lending by increasing diversification, strengthening monitoring, and shifting toward safer portfolios, while leaving the composition of debt financing largely unchanged. In contrast, under the funding-advantage hypothesis, leverage should increase because banks supply more debt financing to BDCs, without materially altering portfolio composition, underwriting standards, or monitoring. This mechanism predicts a shift in debt composition toward bank borrowing and away from public bond financing. Accordingly, I examine whether the clarification affected ex-ante underwriting standards, portfolio composition, and the composition of BDC debt to distinguish between these competing mechanisms.

6.2.2 Identification Strategy

The empirical design follows a shift-share framework. Treatment intensity is determined by interacting each BDC's predetermined geographic portfolio allocation before the guidance with the local presence of OCC-supervised banks. Specifically, I define each BDC's exposure as

$$\text{Treatment}_b = \sum_c w_{bc}^{\text{pre}} \times \text{HighOCC}_c, \tag{9}$$

where the portfolio weights are

$$w_{bc}^{\text{pre}} = \frac{\text{Loan principal of BDC } b \text{ in county } c \text{ before the LLG}}{\text{Total loan principal of BDC } b \text{ before the LLG}}. \tag{10}$$

These weights measure the geographic distribution of each BDC's lending portfolio at the time of the start date of the BDC. The sample is restricted to BDCs that were established before the implementation of LLG. I then classify counties according to whether their OCC deposit share exceeds the annual median:

$$\text{HighOCC}_{ct} = \begin{cases} 1, & \text{if OCCExposure}_{ct} > \text{Median}_t, \\ 0, & \text{otherwise.} \end{cases} \tag{11}$$

County-level OCC exposure is measured using the FDIC Summary of Deposits database:

$$\text{OCCExposure}_{ct} = \frac{\text{Deposits of OCC-chartered banks in county } c}{\text{Total bank deposits in county } c}. \tag{12}$$

6.2.3 Difference-in-Differences Specification

The baseline difference-in-differences specification is

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + \varepsilon_{it}, \tag{13}$$

where Treatment_i denotes BDC i's pre-guidance geographic exposure to OCC-supervised banks and Post_t equals one for years following the 2014 clarification of the Leveraged Lending Guidance. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t), with standard errors clustered at the BDC level.

To examine the dynamics of the treatment effect and assess the validity of the parallel-trends assumption, I estimate the following event-study specification:

$$Y_{it} = \sum_{\tau \neq -1} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + \varepsilon_{it}, \tag{14}$$

where $D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, with $\tau = -1$ serving as the omitted reference period.

There are three identifying assumptions. First, absent the November 2014 clarification, BDCs with different levels of pre-guidance exposure to OCC-supervised banks would have followed parallel trends in leverage, portfolio composition, and lending activity. I assess this assumption by examining pre-treatment dynamics in the event-study specification in equation (14). Second, treatment intensity is determined by predetermined geographic portfolio allocations measured before the clarification. Consequently, identification comes from cross-sectional differences in pre-LLG exposure to OCC-supervised banks rather than from BDCs' endogenous portfolio characteristics. Third, I assume that the timing of the clarification was plausibly unanticipated by BDCs, and the regulatory shock is plausibly exogenous to their capital structure decisions.

7 Main Results

7.1 Cross-sectional Tests

Table 3 presents the baseline cross-sectional regression results with standardized independent variables. In Table 3 Panel A, the descriptive statistics are displayed. The mean Herfindahl-Hirschman Index (HHI) with respect to the concentration of BDC portfolios across sectors is 0.13. To mea-

sure market power, I use the number of borrower relationships. On average, a borrower associated with a BDC has 3.15 lending relationships with different lenders. The mean opacity of the portfolios is 94%. Additionally, the spread at origination is 6.32%, and the share of equity investments constitutes 9%.

First, BDCs with a higher proportion of opaque borrowers, such as private firms, exhibit significantly greater leverage among traded BDCs. This aligns with the idea that increased opacity leads to debt being the preferred source of financing. Economically, a one-standard-deviation increase in opacity is associated with a 3.4% increase in book leverage.

Second, consistent with the hypothesis that higher expected bankruptcy costs reduce leverage, BDCs lending to riskier firms, indicated by higher loan spreads, show lower book leverage. The estimated coefficient of -0.05 suggests that a one-standard-deviation increase in loan spread is associated with a 5% decrease in leverage for traded BDCs. However, BDCs can reduce expected bankruptcy costs through portfolio diversification. I measure portfolio diversification using the inverse of the Herfindahl-Hirschman Index (HHI). When comparing the results from Table 3 columns (1) and (2), the sensitivity of leverage to HHI is greater for traded BDCs compared to non-traded BDCs. Economically, a one standard deviation increase in HHI corresponds to a 10% decrease in leverage for traded BDCs and a 7.9% decline for non-traded BDCs. Notably, these results are both economically and statistically stronger in the period after 2018, when BDCs became less constrained following the passage of the SBCAA.

To further analyze the determinants of leverage, I also examine these factors using a panel regression framework. Table 4 presents the determinants of leverage, controlling for BDC fixed effects and year fixed effects (FEs). The results indicate that, within BDCs over time, diversification and loan risk are significant determinants of leverage for both traded and non-traded BDCs, consistent with the findings from the cross-sectional tests.

7.2 Effect of Leverage Lending Guidance Clarification

I begin by examining the distribution of the BDC-level treatment variable of the 2014 clarification. The treatment variable measures each BDC's pre-existing geographic exposure to OCC-supervised banks, which were more strongly affected by the clarification. Figure 6 shows that treatment intensity is continuously distributed across the 36 BDCs in the sample, with a mean of 0.684 and a standard deviation of 0.302. Five BDCs have no exposure to OCC-supervised banks and therefore constitute the least-treated BDCs.

Next, I examine whether the 2014 clarification increased borrower demand for BDC loans. Table 5 reports the DID estimates of the effect of the clarification on the number of borrowers, while Figures 7 and 8 present the corresponding event-study estimates. Table 5 shows that a

one-standard-deviation increase in exposure to OCC-supervised banks increases the number of borrowers by approximately 14% and the number of investments by 19.4%. At the same time, treated BDCs expand their balance sheets substantially, increasing book assets by 32% and the principal amount of originated loans by 59%. These findings indicate that the clarification induced a significant migration of borrowers from regulated banks toward BDCs consistent with Chernenko et al. (2022)

How do BDCs respond on the liability side? Table 6 reports the DID estimates of the effect of the clarification on leverage, while Figure 9 presents the corresponding event-study estimates. A one standard deviation increase in exposure to OCC-supervised banks increases leverage by approximately 4.2%. Figure 9 demonstrates that these effects emerge only after the clarification and become economically larger over time, with the strongest effects occurring four to five years after the regulatory shock. Importantly, the event-study estimates exhibit no evidence of differential pre-treatment trends, supporting the identifying assumption that more and less treated BDCs would have followed similar trajectories absent the clarification. Together, these findings indicate that BDCs respond to the regulatory shock by financing a larger fraction of their balance sheets with debt rather than equity.

The delegated monitoring hypothesis predicts that a larger borrower base should improve diversification, thereby reducing the costs of delegated monitoring (Diamond (1996)). Consistent with this prediction, Table 7 shows that treated BDCs become significantly more diversified following the clarification. Borrower concentration, measured using the Herfindahl-Hirschman Index (HHI), declined by 127 (Table 7 Column (1)), indicating that BDCs became more diversified across borrowers. At the same time, BDCs expand geographically by entering new counties. The number of counties served increases by approximately 16.8% (Table 7 Column (4)). Table 8 shows that BDCs with operations before LLG increase lending specifically in counties with greater exposure to OCC-supervised banks. These results suggest that the growth in borrower demand is concentrated in areas most affected by the regulatory shock rather than reflecting broad expansion unrelated to the LLG clarification.

Greater diversification of delegation costs across borrowers should increase the incentive to monitor borrowers and strengthen underwriting standards. Table 9 and Figures 11 and 12 examine the ex-ante characteristics of newly originated loans. Consistent with the delegated monitoring hypothesis, treated BDCs shorten loan maturity and shift toward senior tranches by originating more first-lien loans and fewer second-lien and subordinated loans. Economically, a one-standard-deviation increase in treatment increases the cost weighted share of first-lien loans to total loans by approximately 7% while reducing the cost weighted share of junior loans by roughly 5% while reducing maturity by 0.2 years.

I next examine loan pricing at origination using both the spread and the cost-to-par ratio of originated loans. The cost-to-par ratio measures a loan's amortized cost relative to its stated

principal (par) amount and serves as a proxy for the loan's entry price (Sundqvist and Hamilton (2026)). It reflects structural discounts, such as original issue discounts, upfront fees, or illiquidity premia. Because the cost-to-par ratio captures the price at which loans enter the lender's portfolio, higher values indicate that loans are originated closer to, or above, par, consistent with stronger underwriting rather than a deterioration in loan quality.

Table 9 shows that loan spreads at origination remain largely unchanged, whereas the clarification increases the cost-to-par ratio. One possible explanation for the insignificant effect on spreads is that two offsetting forces may be at work: the shift toward safer loans lowers spreads, while the increase in BDC market power following the clarification allows lenders to charge higher spreads. However, I find that the clarification leads to an increase in the cost-to-par ratio, indicating lower risk at origination, as assessed by the BDC. Consistent with the proposed mechanism, I also find no evidence of an increase in the use of payment-in-kind (PIK) provisions, which prior research associates with forbearance (Rintamäki and Steffen (2025)). Taken together, these findings provide little evidence that treated BDCs expand by originating riskier loans. Instead, they suggest that treated BDCs maintain stricter underwriting and monitoring standards as the number of borrowers increases, lowering expected bankruptcy costs and supporting higher leverage.

Finally, I examine whether the increase in leverage reflects a funding-advantage channel or improvements in delegated monitoring only. Approximately 46% of BDC debt financing consists of bank loans and revolving credit facilities. If the increase in leverage merely reflects banks passing through their funding advantage to BDCs (Acharya et al. (2026b); Chernenko et al. (2025)), treated BDCs should rely disproportionately on bank borrowing following the clarification. Table 10 and Figure 13 provide little support for this prediction. Although leverage increases significantly, I find little evidence that treated BDCs substitute toward bank debt relative to unsecured bond financing. Instead, balance-sheet expansion is financed through a combination of bank borrowing and public debt issuance.

Overall, the evidence is difficult to reconcile with a pure bank funding-pass-through explanation. Following the LLG clarification, treated BDCs receive more borrowers, become more diversified, strengthen underwriting standards, while financing their expansion through both banks and bond markets. These findings support the view that bank regulation increases BDC leverage primarily by reducing expected bankruptcy costs through delegated monitoring and diversification rather than by relaxing the supply of bank credit to BDCs consistent with the findings of Li et al. (2026).

7.3 Robustness

Why does the LLG leverage effect appear in 2018–2019? Figure 9 shows that the estimated effect of the LLG clarification strengthens over time, with the largest increase in leverage occurring during 2018–2019. A potential concern is that this pattern reflects the implementation of the SBCAA in

2018, which increased the maximum regulatory leverage permitted for BDCs from a 50% to 66% leverage ratio. Specifically, the estimated LLG effect may be driven by BDCs that were already close to their regulatory leverage limit before the LLG clarification and subsequently increased leverage after the SBCAA relaxed the regulatory constraint. To examine this possibility, I divide the sample into constrained and unconstrained BDCs based on the median pre-LLG leverage ratio. Constrained BDCs are those with leverage above the pre-LLG median, while unconstrained BDCs have leverage below the median.

Table 11 Columns (1) and (2) report the estimates for the two subsamples. The treatment effect is positive and marginally significant for constrained BDCs but statistically insignificant for unconstrained BDCs. However, the absence of statistical significance for the unconstrained group does not necessarily imply that the treatment effects differ across groups, particularly given the smaller sample size and the resulting loss of statistical power.

To formally test for heterogeneous treatment effects, I estimate the full-sample specification including an interaction between the constrained indicator and a dummy for Post LLG. As reported in Column (3), the interaction term is statistically significant and negative, indicating that the effect of LLG is smaller for BDCs that were more highly levered prior to the clarification. Consistent with this result, Column (4) directly compares the post-LLG change in leverage across the two groups with a triple interaction term: Post X Treatment X Dummy for high leverage pre-LLG and likewise finds no statistically significant difference. Overall, these findings suggest that the increase in leverage following the LLG clarification is not driven by BDCs that were pre-LLG closer to their regulatory leverage constraint.

Finally, I conduct robustness for the treatment effect in the baseline DID results using alternative sample specifications. Table 12 Column (2) restricts the analysis to a balanced panel and yields a slightly larger coefficient (5.1%) than the baseline estimate (4.2%), remaining statistically significant at the 5% level. Restricting the sample to publicly traded BDCs in Column (3) produces a positive coefficient of similar magnitude (3.9%). Finally, Column (4) shortens the event window to four years before and four years after the LLG clarification and continues to find a positive and statistically significant effect of 3%. Overall, the results indicate that the positive effect of the LLG clarification on BDC leverage is robust to alternative sample specifications and event windows.

7.4 Alternative Mechanism and Limitations

This section discusses an alternative mechanism and a limitation of the empirical results. Following the LLG clarification, BDCs shift their portfolios toward safer first-lien loans, potentially reducing the portfolio's risk-adjusted return. Under the Modigliani-Miller theorem, equity investors can replicate corporate leverage through homemade leverage. However, if investors face borrowing constraints, as in Frazzini and Pedersen (2014), intermediary leverage becomes a cheaper substitute

for homemade leverage. Consequently, as portfolios become safer, equity investors may demand higher intermediary leverage to achieve their target returns.

Under this mechanism, the observed increase in leverage following the LLG clarification would not be driven only by lower expected bankruptcy costs arising from diversification and delegated monitoring. Instead, it would also reflect equity investors' demand to re-lever a safer portfolio in order to maintain their target returns. Because both mechanisms predict higher leverage following a shift toward safer assets, the current evidence cannot fully distinguish the delegated monitoring channel from the re-levering mechanism proposed by Frazzini and Pedersen (2014).

8 Conclusion

This paper provides new evidence on the determinants of capital structure among nonbank lenders using the setting of Business Development Companies (BDCs). BDCs are a class of regulated nonbank intermediaries that elect to operate as Regulated Investment Companies (RICs) under the Investment Company Act of 1940. Between 2010 and 2025, the average BDC reports a book leverage ratio of roughly 36%, more than that observed among nonfinancial firms (22%). Unlike nonfinancial firms, BDCs derive no tax advantage from debt financing. At the same time, unlike banks, whose leverage typically exceeds 90%, BDCs lack access to government safety nets, such as deposit insurance or central bank guarantees, since they do not issue deposits. Consequently, conventional explanations based on tax shields or implicit guarantees provide little insight into their persistent reliance on debt.

I build a simple theoretical framework and explore information asymmetry, expected bankruptcy costs, and the supply of cheap bank funding to BDCs as possible determinants of leverage. Using cross-sectional tests, I demonstrate that BDC leverage is primarily determined by intermediation frictions such as information asymmetry and expected bankruptcy costs. Traded BDCs that face greater information asymmetry tend to maintain higher leverage, which aligns with theories of delegated monitoring. Additionally, BDCs with lower expected bankruptcy costs, due to greater portfolio diversification, sustain higher leverage.

To test the theoretical framework, I take advantage of the clarification of the Leveraged Lending Guidance (LLG) in November 2014, which increased regulatory scrutiny on leveraged lending for banks and prompted highly leveraged borrowers to turn to BDCs. This shift in borrower demand expands BDC portfolios, enhances diversification, and strengthens monitoring incentives, thereby reducing expected financial distress costs and allowing for higher leverage. I also investigate whether the rise in leverage results from a funding-advantage channel from banks to BDCs. My findings indicate that affected BDCs finance their expansion through a combination of bank debt and unsecured bond issuance, rather than relying excessively on bank borrowing. Taken together,

the findings suggest that the pass-through of funding advantage from banks does not solely determine BDC leverage. BDC leverage decisions also reflect demand-side factors, such as information asymmetry and expected bankruptcy costs.

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Model Proof

BDC equilibrium leverage and size

In choosing its capital structure, a BDC accounts for the fact that its choice will affect the pricing of debt. Equity holders are protected by limited liability, and maximize the expected value of equity, V_i:

$$V_i^s = \max_{E_i, D_i} \{p \cdot \max\left(f(a_i) - D_i(1+r_i), 0\right) + (1-p) \cdot \max\left(\lambda_i f(a_i) - D_i(1+r_i), 0\right) - E_i\}$$

where

$$a_i = E_i + D_i$$

and

$$\ell_i \equiv \frac{D_i}{a_i}.$$

Step 1: Assuming debt is risky in equilibrium

In equilibrium, BDC debt is risky:

$$D_i(1+r_i) > \lambda_i f(a_i)$$

This implies:

- In the bad state (probability $1-p$), the equityholder's payoff is:

$$\max\left(\lambda_i f(a_i) - D_i(1+r_i), 0\right) = 0.$$

- In the good state (probability p), the equityholder's payoff is:

$$\max\left(f(a_i) - D_i(1+r_i), 0\right) = f(a_i) - D_i(1+r_i)$$

The equityholder's problem simplifies to:

$$V_i = \max_{E_i, D_i} \{p\left[f(a_i) - D_i(1+r_i)\right] - \phi E_i - E_i\}$$

Step 2: Expressing V_i in terms of a_i and D_i

Since $a_i = E_i + D_i$, we can write $E_i = a_i - D_i$. Substituting:

$$V_i = \max_{E_i, D_i} \{pf(a_i) - pD_i(1 + r_i) - (a_i - D_i)(1 + \phi)\} \tag{15}$$

$$= \max_{a_i, D_i} \{pf(a_i) - a_i(1 + \phi) - pD_i(1 + r_i) + D_i(1 + \phi)\} \tag{16}$$

Step 3: Debt pricing with funding premium

Debt holders' expected return is:

$$p \cdot D_i(1 + r_i) + (1 - p) \cdot \left[\lambda_i f(a_i) - a_i \delta(\ell_i - \lambda_i)^2\right]$$

They are willing to accept:

$$D_i(1 - \gamma_i)$$

Equating both:

$$pD_i(1 + r_i) + (1 - p)\left[\lambda_i f(a_i) - a_i \delta(\ell_i - \lambda_i)^2\right] = D_i(1 - \gamma_i)$$

Step 4: Solving for $-pD_i(1 + r_i) + D_i$

Rewriting:

$$\begin{aligned} pD_i(1 + r_i) &= D_i(1 - \gamma_i) - (1 - p)\left[\lambda_i f(a_i) - a_i \delta(\ell_i - \lambda_i)^2\right] \\ &= D_i(1 - \gamma_i) - (1 - p)\lambda_i f(a_i) + (1 - p)a_i \delta(\ell_i - \lambda_i)^2 \end{aligned}$$

So,

$$\begin{aligned} -pD_i(1 + r_i) + D_i &= -\left[D_i(1 - \gamma_i) - (1 - p)\lambda_i f(a_i) + (1 - p)a_i \delta(\ell_i - \lambda_i)^2\right] + D_i \\ &= -D_i(1 - \gamma_i) + (1 - p)\lambda_i f(a_i) - (1 - p)a_i \delta(\ell_i - \lambda_i)^2 + D_i \\ &= D_i \gamma_i + (1 - p)\lambda_i f(a_i) - (1 - p)a_i \delta(\ell_i - \lambda_i)^2 \end{aligned}$$

Step 5: Plugging into equity value

Substituting $-pD_i(1+r_i)+D_i$ from step 4 in equation (11):

$$\begin{aligned} V_i &= pf(a_i) - a_i + \left[D_i\gamma_i + (1-p)\lambda_i f(a_i) - (1-p)a_i\delta(\ell_i-\lambda_i)^2 - \phi a_i(1-l_i)\right] \\ &= f(a_i)\left[p+(1-p)\lambda_i\right] - a_i + D_i\gamma_i - (1-p)a_i\delta(\ell_i-\lambda_i)^2 - \phi a_i(1-l_i) \end{aligned}$$

Substituting $D_i = \ell_i a_i$:

$$\begin{aligned} V_i &= f(a_i)\left[p+(1-p)\lambda_i\right] - a_i + a_i\ell_i\gamma_i - (1-p)a_i\delta(\ell_i-\lambda_i)^2 - \phi a_i(1-l_i) \\ &= \max_{a_i,\ell_i}\left\{f(a_i)(p+(1-p)\lambda_i) - a_i + a_i\ell_i\gamma_i - (1-p)a_i\delta(\ell_i-\lambda_i)^2 - \phi a_i(1-l_i)\right\} \end{aligned}$$

Step 6: Deriving FOC conditions (Proof of Proposition 1)

$$\begin{aligned} &\text{FOC for } \ell_i: \quad \ell_i = \lambda_i + \frac{\gamma_i+\phi}{2(1-p)\delta} \\ &\text{FOC for } a_i: \quad f'(a_i)\left[p+(1-p)\lambda_i\right] = 1 - \ell_i\gamma_i + \phi(1-l_i) + (1-p)\delta\left(\ell_i-\lambda_i\right)^2 \end{aligned}$$

Figure 1: **BDC Balance Sheet**

This figure illustrates a typical BDC balance sheet. The asset side primarily consists of loans to small and medium-sized borrowers, with an average fair value of $1,681 million across 156 investments (average fair value per loan of $11 million). The financing reports estimates as a share of total assets. The financing side consists of equity capital and debt raised from banks and bond markets: average total debt is $880 million, representing 36% leverage, split between borrowing from banks (16%), unsecured bonds and notes (12%), secured bonds and notes (4%), and other debt (4%), with the remaining 64% financed through equity.

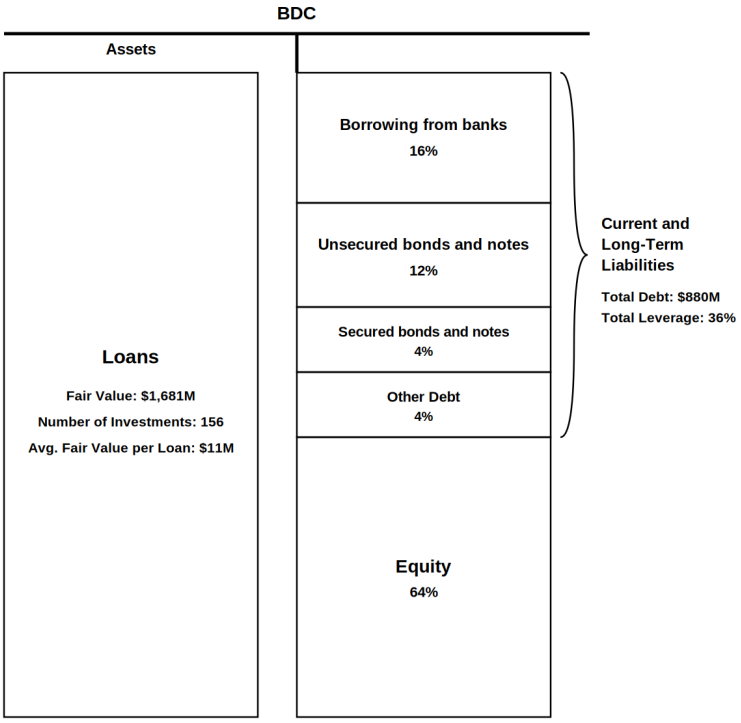
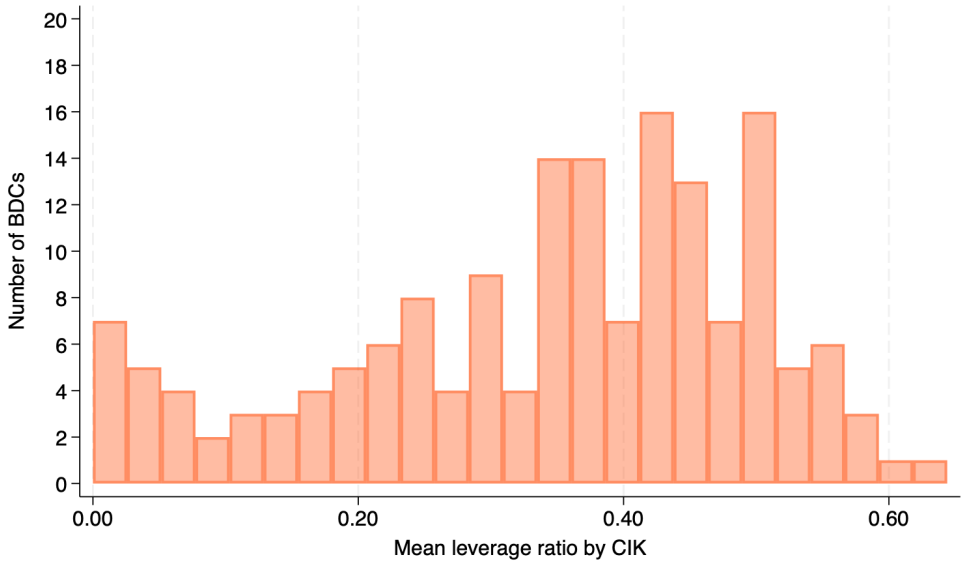


Figure 2: **Distribution of leverage of BDCs**
This figure presents the distribution of leverage of BDCs over the period 2010–2025. The graph shows the distribution of book leverage, following the definition in Strebulaev and Yang (2013).

Book Leverage:

$$Book\ Leverage = \frac{Long\ term\ debt + Debt\ in\ current\ liabilities}{Assets}$$



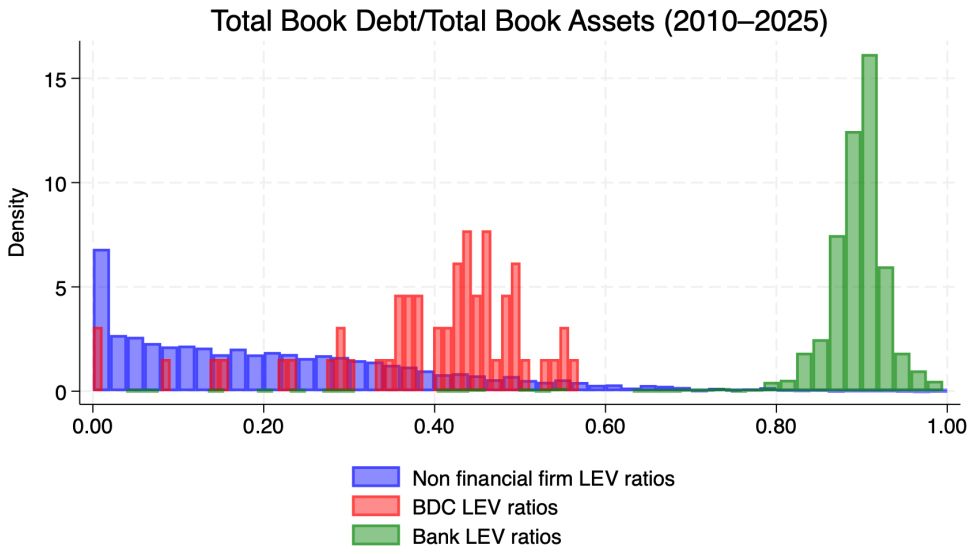
(a) Distribution of book leverage (2010-2025)

Figure 3: **Comparison of leverage of BDCs with non financial firms and banks**
This figure compares book leverage of BDCs with non financial firms and banks (2010-2025). Non financial firms are firms with sic code from 2000-4000 in Compustat excluding firms with negative equity. Book leverage of BDCs and non financial firms is defined as total book debt divided by total book assets as shown below (following Strebulaev and Yang (2013)):

$$Book\ Leverage = \frac{Long\ term\ debt + Debt\ in\ current\ liabilities}{Assets}$$

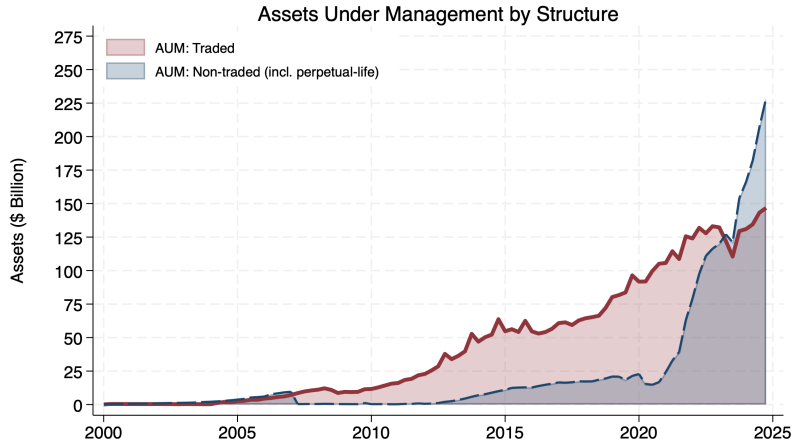
Book leverage of banks is defined as 1 minus book value of equity divided by book value of assets (following Gropp and Heider (2010)):

$$Book\ Leverage = 1 - \frac{Book\ equity}{Assets}$$

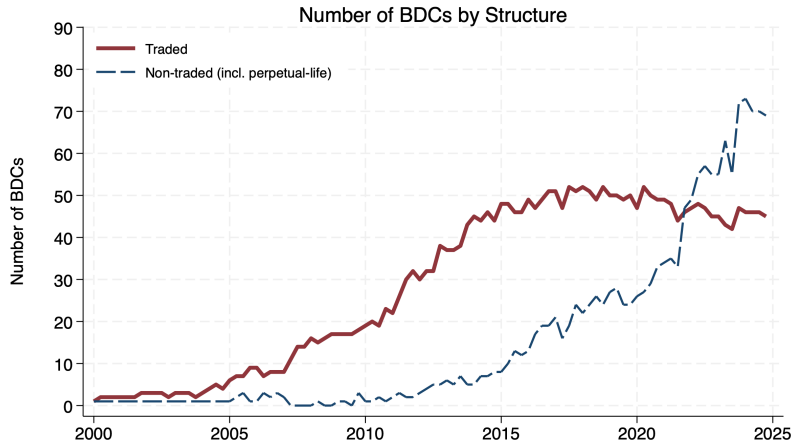


(a) Distribution of book leverage of BDCs, manufacturing firms and banks

Figure 4: **Sample coverage**
This figure displays the evolution of assets under management (AUM) together with the number of traded and non-traded BDCs, over the sample period 2010–2025.

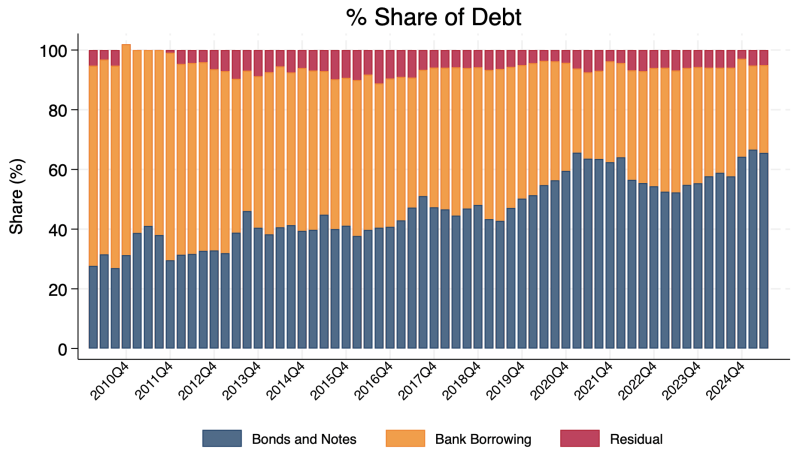


(a) Sample coverage: AUM

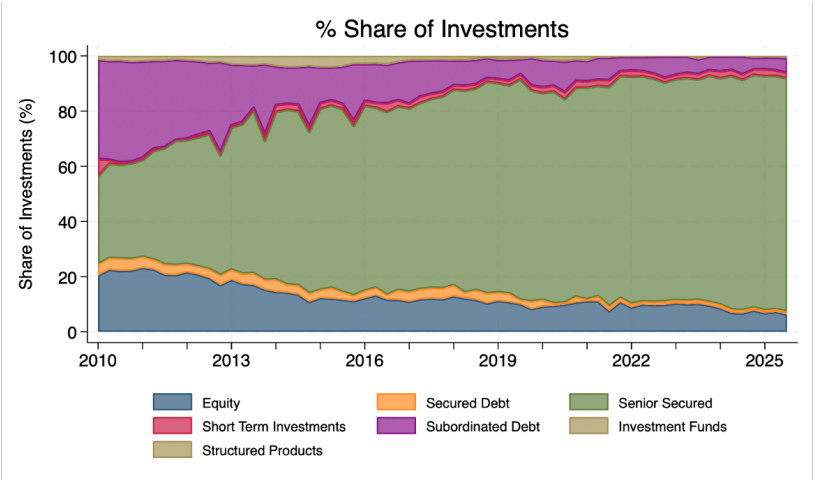


(b) Sample coverage: Count of BDCs

Figure 5: **Composition of asset side and liability side**
This figure illustrates the composition of both assets and liabilities of BDCs over the sample period 2010–2025. On the liability side, Figure a) shows the breakdown of financing sources, including bank borrowing, bonds, notes, etc. On the asset side, Figure b) displays the relative shares of major portfolio investment categories (senior secured debt, subordinated debt, and equity investments, etc).



(a) Liability side composition (2010-2025)



(b) Asset side composition (2010-2025)

TABLE 1: **Descriptive statistics: Liability side**

This table reports descriptive statistics for BDCs at the quarterly level. Panel A presents measures of capital structure. Panel B summarizes the composition of total debt, and Panel C further summarizes the composition of bank-sourced debt.

Panel A: Capital Structure							
	N	Mean	SD	P25	Median	P75	Max
Total Assets ($ billion)	4395	1.63	3.86	0.24	0.60	1.51	67.80
Book Leverage	3956	0.36	0.18	0.27	0.40	0.49	0.72
No. of BDCs	176						
Panel B: Debt Composition							
Total Debt ($ billion)	2942	0.88	2.03	0.12	0.31	0.85	27.06
Bank borrowing \%	2894	0.46	0.34	0.16	0.44	0.70	1.00
Subordinated Bonds and Notes %	2894	0.02	0.09	0.00	0.00	0.00	0.79
Unsecured Bonds and Notes %	2894	0.35	0.33	0.00	0.33	0.59	1.00
Secured Bonds and Notes %	2894	0.12	0.23	0.00	0.00	0.18	1.00
Securitized borrowing %	2894	0.06	0.16	0.00	0.00	0.00	1.00
Capital Leases %	2894	0.00	0.05	0.00	0.00	0.00	1.00
Other %	2894	0.04	0.15	0.00	0.00	0.00	1.00
No. of BDCs	77						
Panel C: Composition of Bank Borrowing							
Bank borrowing (Revolvers) %	2521	0.88	0.27	1.00	1.00	1.00	1.00
Bank borrowing (Term loans) %	2521	0.12	0.27	0.00	0.00	0.00	1.00
No. of BDCs	77						

TABLE 2: **Descriptive statistics: Asset side**

This table presents descriptive statistics for the quarterly panel of BDCs and their borrower-level contracts. Panel A reports BDC portfolio composition, expressed in terms of fair value and the number of investments, with allocations across major investment classes. Panel B summarizes contract-level characteristics at the BDC–borrower–quarter level, including loan spreads, principal amounts, maturities, and other contract terms.

Panel A: Asset Composition (BDC-Qtr)								
	N	Mean	SD	Min	P25	Median	P75	Max
FAIR_VAL (in $ million)	4886	1,681.02	4,531.47	0	228.08	536.43	1,486.20	81,500.00
% Equity/Other	4886	0.13	0.20	0.00	0.00	0.05	0.15	1.00
% Investment Funds & Vehicles	4886	0.00	0.02	0.00	0.00	0.00	0.00	0.44
% Secured Debt	4886	0.02	0.09	0.00	0.00	0.00	0.00	1.00
% Senior Secured	4886	0.68	0.32	0.00	0.51	0.80	0.94	1.00
% Short Term Investments	4886	0.05	0.14	0.00	0.00	0.00	0.03	1.00
% Structured Products	4886	0.01	0.04	0.00	0.00	0.00	0.00	0.45
% Subordinated Debt	4886	0.10	0.18	0.00	0.00	0.01	0.12	1.00
Total # Investments	4886	156.11	183.62	1	51	97	199	1711
% Equity/Other	4886	0.23	0.24	0.00	0.03	0.16	0.39	1.00
% Investment Funds & Vehicles	4886	0.00	0.01	0.00	0.00	0.00	0.00	0.33
% Secured Debt	4886	0.02	0.08	0.00	0.00	0.00	0.00	1.00
% Senior Secured	4886	0.63	0.31	0.00	0.42	0.69	0.90	1.00
% Short Term Investments	4886	0.02	0.09	0.00	0.00	0.00	0.01	1.00
% Structured Products	4886	0.01	0.05	0.00	0.00	0.00	0.00	0.62
% Subordinated Debt	4886	0.09	0.14	0.00	0.00	0.02	0.12	1.00
Panel B: Contract Terms (BDC-borrower-Qtr)								
Spread %	472421	5.91	1.62	2.25	5.00	5.75	6.75	11.00
Loan Amt ($ million)	564546	13.13	23.81	0.02	1.44	4.98	13.79	156.07
Fair Value ($ million)	666188	11.07	20.55	0.007	0.905	3.83	11.59	133.26
Share of contracts with PIK	762765	0.08	0.27	0.00	0.00	0.00	0.00	1.00
Average Maturity	456409	5.57	1.69	1.10	4.75	5.83	6.85	11.00

TABLE 3: **Determinants of leverage: descriptive statistics and cross-sectional regressions**

Panel A reports descriptive statistics of the determinants of leverage in the cross-section analysis, including market power (average number of relationships of the borrowers of a BDC), portfolio concentration (HHI), opacity (measured as the share of private firms), loan spreads at origination and % equity investments. Panel B reports cross-sectional regression results for the determinants of book leverage. Independent variables are standardized. p-values are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Descriptive statistics

Panel A: Descriptive statistics	N	Mean	SD	Min	P25	Median	P75	Max
# Borrower relationships	159	3.15	2.02	1.00	1.75	2.46	4.00	9.58
HHI	159	0.13	0.13	0.00	0.06	0.08	0.14	1.00
Opacity (share of private firms)	159	0.94	0.06	0.64	0.93	0.96	0.98	1.00
Spread (at origination)	139	6.32	1.14	2.37	5.65	6.04	7.09	9.55
% Equity	159	0.09	0.18	0.00	0.01	0.03	0.10	1.00

Panel B: Cross-sectional determinants of book leverage

VARIABLES	LEV_lead	LEV_lead	LEV_lead	LEV_lead	LEV_lead	LEV_lead
	Traded	Non traded	Traded	Non traded	Traded	Non traded
	(2010-2025)		(2010-2018)		(2018-2025)	
	(1)	(2)	(3)	(4)	(5)	(6)
# Borrower relationships	-0.044	0.053***	-0.059***	-0.032	-0.023	0.053***
	(0.157)	(0.003)	(0.003)	(0.440)	(0.407)	(0.003)
HHI	-0.099***	-0.079**	-0.070**	-0.033	-0.097***	-0.080***
	(0.001)	(0.018)	(0.050)	(0.581)	(0.003)	(0.008)
Opacity (% private firms)	0.034*	0.016	0.033	0.037	0.030**	0.013
	(0.064)	(0.401)	(0.249)	(0.417)	(0.049)	(0.492)
Spread	-0.048***	0.002	-0.041***	-0.065	-0.028*	0.028
	(0.000)	(0.931)	(0.004)	(0.198)	(0.097)	(0.190)
% Equity	-0.032	0.039	-0.039	0.155	-0.013	0.001
	(0.235)	(0.470)	(0.203)	(0.489)	(0.539)	(0.988)
Observations	51	83	42	19	50	79
R-squared	0.473	0.206	0.399	0.267	0.412	0.201

TABLE 4: **Determinants of leverage: Panel regressions**

Table reports panel regressions of the determinants of leverage with independent variables including market power (average number of relationships of the borrowers of a BDC), portfolio concentration (HHI), opacity (measured as the share of private firms), loan spreads at origination, and % equity investments. Independent variables are standardized. p-values are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

VARIABLES	LEV_lead All BDCs	LEV_lead Traded (2010-2025)	LEV_lead Non traded	LEV_lead All BDCs	LEV_lead Traded (2010-2018)	LEV_lead Non traded	LEV_lead All BDCs	LEV_lead Traded (2018-2025)	LEV_lead Non traded
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
# Borrower relationships	0.004	-0.005	0.011	0.006	0.004	0.003	0.002	-0.010	0.013
	(0.711)	(0.649)	(0.676)	(0.748)	(0.854)	(0.902)	(0.889)	(0.362)	(0.601)
HHI	-0.032***	-0.026***	-0.041***	-0.005	-0.010*	0.027*	-0.033***	-0.034**	-0.034**
	(0.000)	(0.002)	(0.004)	(0.239)	(0.052)	(0.085)	(0.004)	(0.011)	(0.048)
Opacity (% private firms)	-0.001	0.011	-0.012	-0.005	-0.008	0.014	-0.000	0.020**	-0.010
	(0.861)	(0.240)	(0.214)	(0.676)	(0.581)	(0.663)	(0.999)	(0.025)	(0.311)
Spread	-0.033***	-0.024***	-0.065**	-0.030**	-0.031**	-0.033	-0.036***	-0.014	-0.071**
	(0.002)	(0.006)	(0.013)	(0.015)	(0.011)	(0.546)	(0.004)	(0.152)	(0.017)
% Equity	-0.007	-0.006	-0.013	-0.002	-0.004	0.070	-0.004	-0.000	-0.024
	(0.506)	(0.518)	(0.595)	(0.904)	(0.793)	(0.266)	(0.682)	(0.951)	(0.377)
BDC FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC	BDC	BDC	BDC
Observations	2,519	1,589	920	746	653	83	1,766	932	834
R-squared	0.774	0.718	0.778	0.775	0.670	0.870	0.822	0.804	0.792

Figure 6: **Definition of Treatment: BDC Exposure to OCC Chartered banks**
This figure presents the histogram of the measure of treatment at the BDC level. Treatment$_i$ is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. The below graph plots 36 BDCs with mean exposure of 0.684 and standard deviation of 0.302.

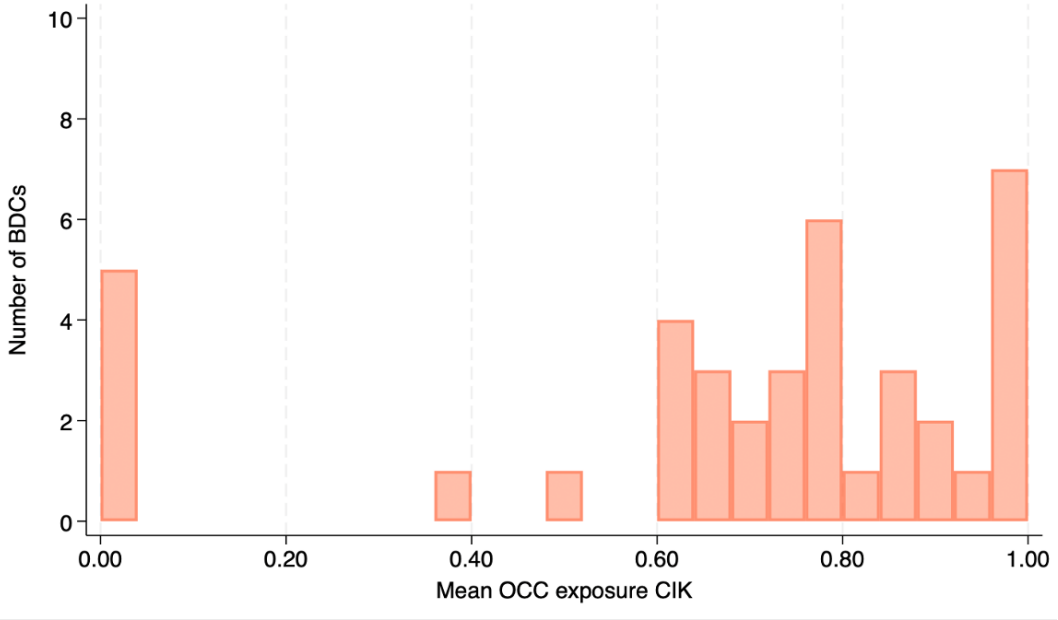
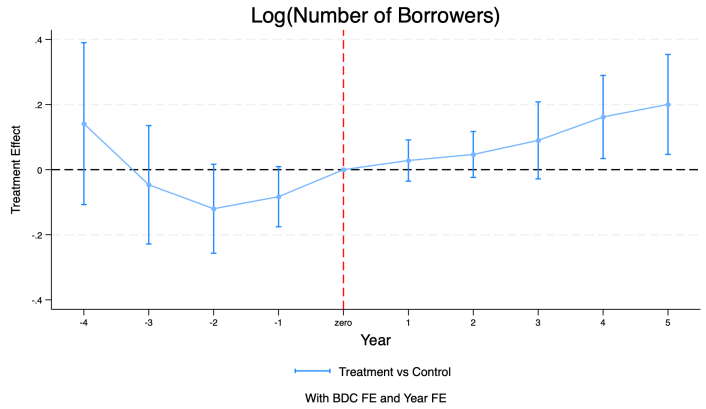


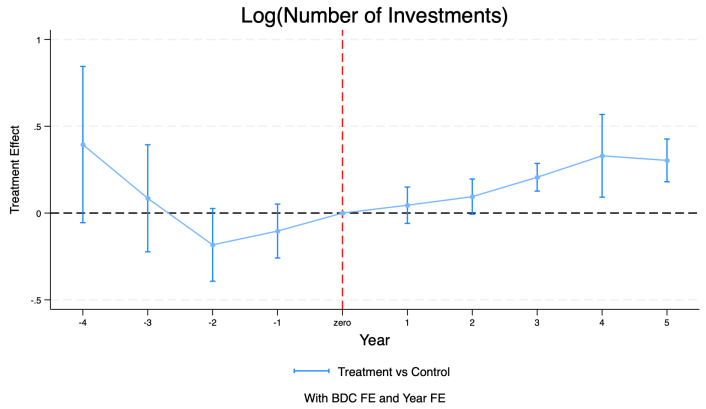
Figure 7: **Number of Borrowers and Investments: Effect of LLG**
The figure plots the evolution of the number of borrowers and number of investments for BDCs around the Leverage lending guidance (Clarification). The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



(a) Log(Number of Borrowers)



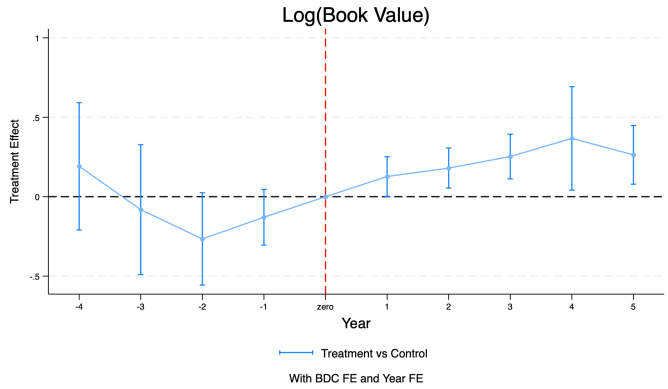
(b) Log(Number of Investments)

Figure 8: **Quantity of Investments: Effect of LLG**

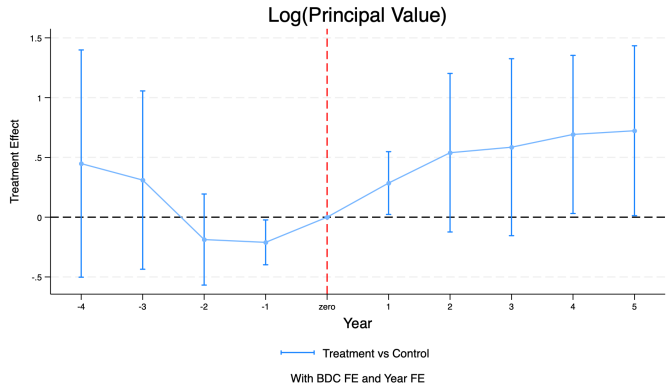
This figure plots the evolution of investment quantities around the leverage lending guidance clarification. Figure a) presents the book value of BDC investments and Figure b) presents the principal amount of investments. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



(a) Book Value of Investments



(b) Principal Value of Investments

TABLE 5: **Effect of LLG on BDC Portfolio Composition: Baseline DID**

This table reports difference-in-differences estimates of the effect of the leverage lending guidance clarification on BDC portfolio composition. The panel is constructed at the BDC-year level. Column (1) reports effects on the log number of borrowers; Column (2) on the log number of investments; Column (3) on the log book value of investments ($ millions); Column (4) on the book value ratio (post/pre-LLG ratio); Column (5) on the log principal value of investments ($ millions); Column (6) on the principal value ratio (post/pre-LLG ratio). Below is the regression specification:

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	Log(Number of Borrowers)	Log(Number of Investments)	Log (Book Value of Investments) ($ million)	Book Value Ratio Post/Pre-LLG	Log (Pricipal Value of Investments) ($ million)	Principal Value Ratio Post/Pre-LLG
	(1)	(2)	(3)	(4)	(5)	(6)
Post X Treatment	0.140***	0.194***	0.325***	0.591**	0.589***	2.565
	(0.008)	(0.009)	(0.001)	(0.012)	(0.010)	(0.263)
BDC FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC
Observations	328	328	323	328	323	328
R-squared	0.809	0.741	0.803	0.629	0.753	0.383

Figure 9: **Leverage Trend: Effect of LLG**

This figure presents the estimated effect of the leverage lending guidance clarification on BDC leverage ratios. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.

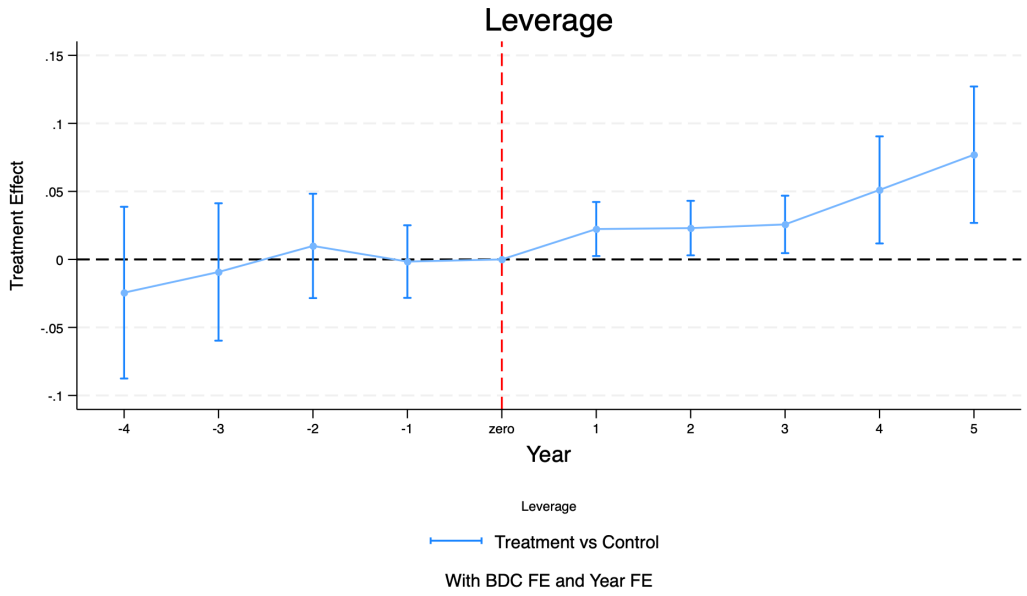


TABLE 6: **Effect of LLG on BDC Leverage: Baseline DID**

This table reports the baseline difference-in-differences estimates of the effect of Leverage lending guidance on BDC leverage (LEV). The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

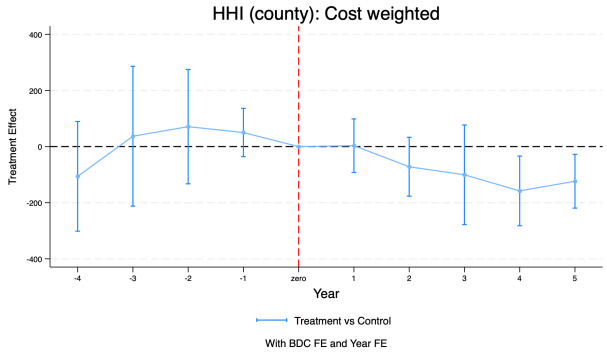
VARIABLES	LEV
	(1)
Post X Treatment	0.042**
	(0.034)
BDC FE	Y
Year FE	Y
Clustering	BDC
Observations	318
No. of BDCs	36
R-squared	0.740

Figure 10: **BDC Diversification: Effect of LLG**

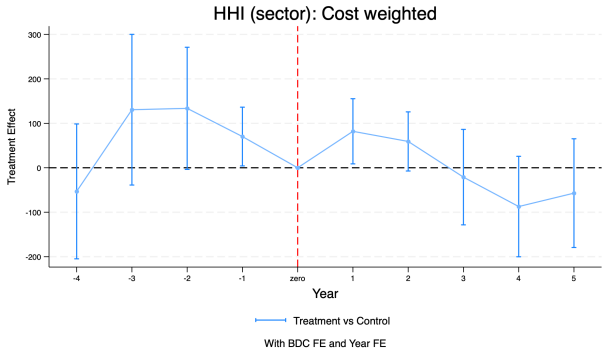
This figure plots the evolution of HHI around the leverage lending guidance clarification. Figure a) presents effects on the Cost weighted HHI across borrower counties; Figure (b) Cost weighted HHI across borrower sectors; Figure (c) on Cost weighted HHI across borrowers identities; Figure (d) Log (Number of Counties with Operations). Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4,\tau\neq-1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i\right) + \mu_i + \rho_t + u_{it}$$

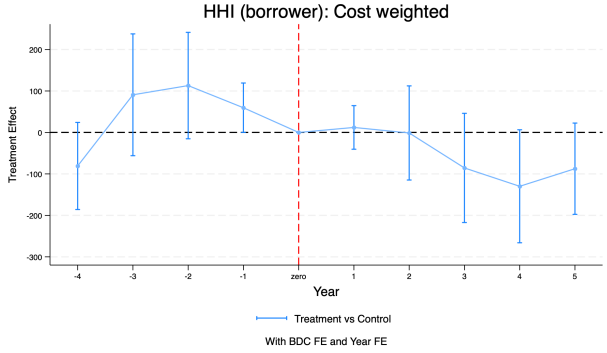
$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



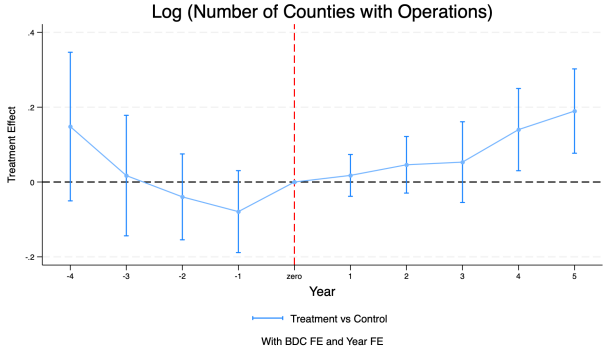
(a) Cost-weighted HHI across borrower counties



(b) Cost-weighted HHI across borrower sectors)



(c) Cost-weighted HHI across borrowers identities



(d) Log (Number of Counties with Operations)

TABLE 7: Effect of LLG on BDC Diversification

This table reports difference-in-differences estimates of the effect of the leverage lending guidance clarification on BDC diversification. The panel is constructed at the BDC-year level. Column (1) presents effects on the Cost weighted HHI across borrower counties; Column (2) Cost weighted HHI across borrower sectors; Column (3) on Cost weighted HHI across borrowers identities; Column (4) Log (Number of Counties with Operations) Below is the regression specification:

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	HHI (borrower) Cost weighted (1)	HHI (sector) Cost weighted (2)	HHI (county) Cost weighted (3)	Log (Number of County with Operations) (4)
Post X Treatment	-126.895**	-89.398	-109.855*	0.168*
	(0.032)	(0.107)	(0.087)	(0.087)
BDC FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC
Observations	323	323	322	312
R-squared	0.406	0.411	0.828	0.547

TABLE 8: **Effect of LLG on BDC lending: County Level DID**

This table reports difference-in-differences estimates of the effect of the leverage lending guidance clarification on BDC lending at the county level. The panel is constructed at the County-year level. Column (1) reports effects on the number of borrowers; Column (2) on the log number of borrowers; Column (3) on the number of investments; Column (4) on the log number of investments; Column (5) on the log book value of investments ($ millions); Column (6) on the book value ratio (post/pre-LLG ratio); Column (7) on the log principal value of investments ($ millions); Column (8) on the principal value ratio (post/pre-LLG ratio); Column (9) on the spread on loans; Column (10) on the spread on loans at origination. Below is the regression specification:

$$Y_{ct} = \beta \left(\text{Post}_t \times \text{High OCC bank presence}_c \right) + \mu_c + \rho_t + u_{ct}$$

Post is a dummy variable equal to 1 for the period after the clarification. High OCC bank presence$_c$ is defined at the County level. High OCC bank presence takes value 1 in counties with above median deposit share of OCC-chartered banks. All specifications include County fixed effects (μ_c) and year fixed effects (ρ_t). Standard errors are clustered at the County level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

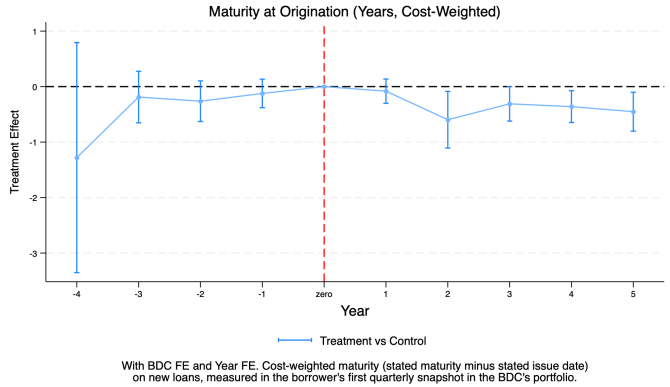
Panel A: Intensive Margin										
VARIABLES	Number of Borrowers	log(Number of Borrowers)	Number of Investments	log(Number of Investments)	Log (Book Value of Investments) ($ million)	Book Value Ratio Post/Pre-LLG	Log (Pricipal Value of Investments) ($ million)	Principal Value Ratio Post/Pre-LLG	Spread (Basis points)	Spread At Origination (Basis points)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post X High OCC bank presence	0.297***	0.122**	1.647***	0.079	0.165	-1.164	0.150	0.305	17.690	55.026*
	(0.000)	(0.039)	(0.000)	(0.352)	(0.246)	(0.518)	(0.294)	(0.584)	(0.482)	(0.058)
County FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Clustering	County	County	County	County	County	County	County	County	County	County
Observations	24,686	3,332	24,686	3,332	3,310	3,047	3,122	2,974	3,133	1,515
R-squared	0.852	0.825	0.809	0.746	0.707	0.459	0.706	0.343	0.675	0.385

Figure 11: **Effect of LLG on BDC ex-ante loan characteristics**

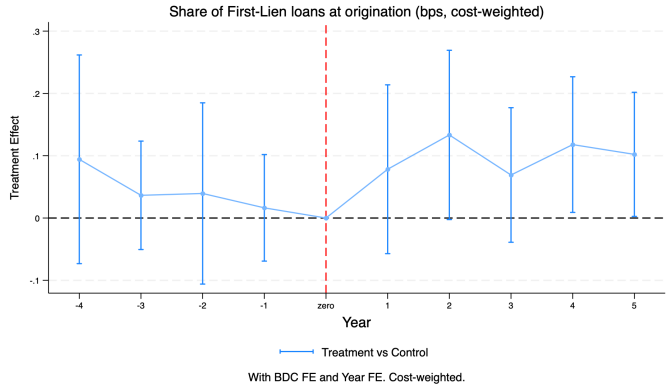
This figure presents the estimated effect of the leverage lending guidance clarification on BDC ex-ante loan characteristics. Figure a) presents effects on the Cost weighted Maturity of newly originated loans; Figure (b) Cost weighted Share of First-Lien loans among newly originated loans; Figure (c) on Cost weighted ratio of Cost/Par of newly originated loans; Figure (d) Cost weighted Share of Junior loans among newly originated loans. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

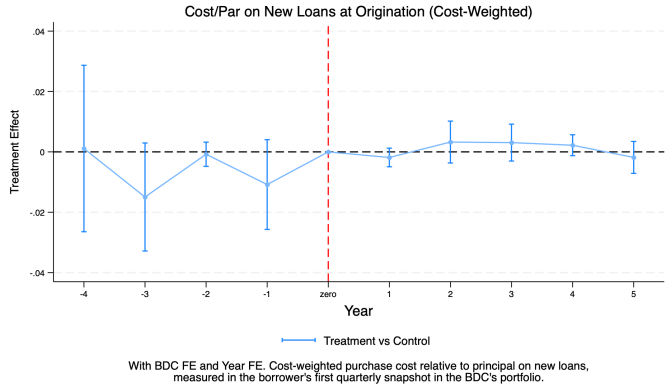
$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



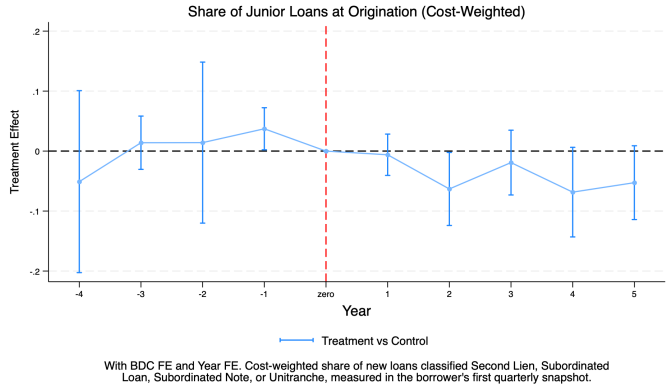
(a) Maturity (Years)



(b) Share of Debt Investments with First Lien loans



(c) Cost/Par



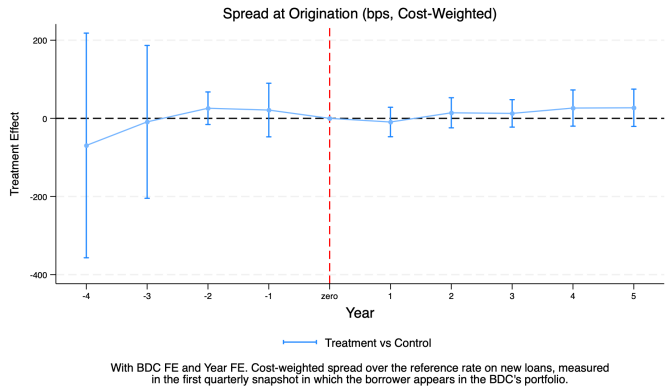
(d) Share of Debt Investments with Junior loans

Figure 12: **Effect of LLG on BDC ex-ante loan characteristics**

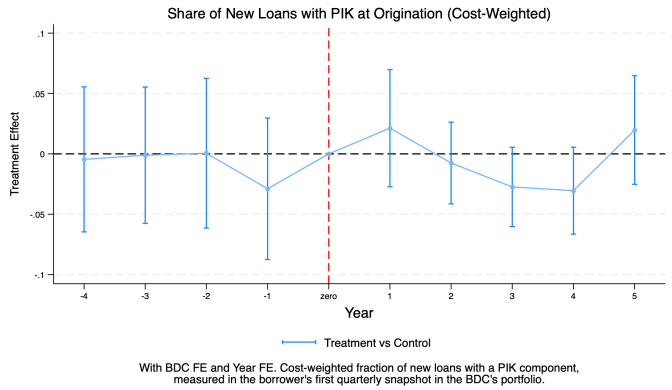
This figure presents the estimated effect of the leverage lending guidance clarification on BDC ex-ante loan characteristics. Figure a) presents effects on the Cost weighted Spread of newly originated loans; Figure (b) Cost weighted Share of loans with PIK among newly originated loans. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



(a) Spread At Origination (Bps)



(b) Share of Debt Investments with PIK

TABLE 9: **Effect of LLG on BDC ex-ante loan characteristics: Baseline DID**

This table reports baseline difference-in-differences estimates of the effect of the leverage lending guidance clarification on BDC ex-ante loan characteristics. Column (1) presents effects on the Cost weighted Spread of newly originated loans; Column (2) on the Cost weighted Maturity of newly originated loans; Column (3) on Cost weighted Share of loans with PIK among newly originated loans; Column (4) on Cost weighted ratio of Cost/Par of newly originated loans; Column (5) on Cost weighted Share of Debt Investments in First-Lien loans among newly originated loans; Column (6) on Cost weighted Share of Junior loans among newly originated loans. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

Panel A: Cost Weighted						
VARIABLES	Spread At Origination (Bps)	Maturity (Years)	Share of Debt Investments with PIK	Cost/Par	Share of Debt Investments with First Lien loans	Share of Debt Investments with Junior loans
	(1)	(2)	(3)	(4)	(5)	(6)
Post X Treatment	7.491	-0.216**	0.002	0.007*	0.073*	-0.050**
	(0.718)	(0.032)	(0.876)	(0.071)	(0.054)	(0.042)
BDC FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC
Observations	231	295	308	303	308	308
R-squared	0.828	0.642	0.605	0.474	0.628	0.689

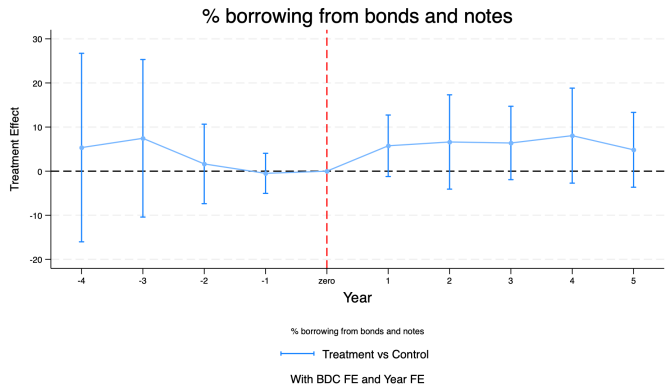
Panel B: Principal weighted						
VARIABLES	Spread At Origination (Bps)	Maturity (Years)	Share of Debt Investments with PIK	Cost/Par	Share of Debt Investments with First Lien loans	Share of Debt Investments with Junior loans
	(1)	(2)	(3)	(4)	(5)	(6)
Post X Treatment	-2.770	-0.208**	0.001	0.004**	0.043**	-0.046**
	(0.912)	(0.037)	(0.940)	(0.043)	(0.048)	(0.029)
BDC FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC
Observations	232	296	306	303	306	306
R-squared	0.821	0.641	0.604	0.505	0.661	0.707

Figure 13: **Liability composition: Effect of LLG**

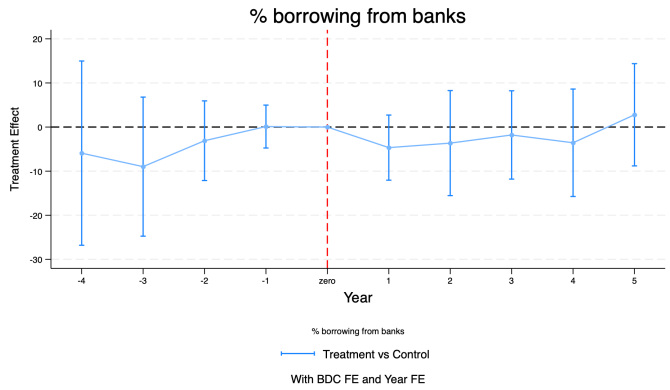
This figure plots the evolution of liability composition around the leverage lending guidance clarification. Figure a) presents the % borrowing from bonds and notes and Figure b) presents the % borrowing from banks and Figure c) presents the % borrowing through securitization . The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

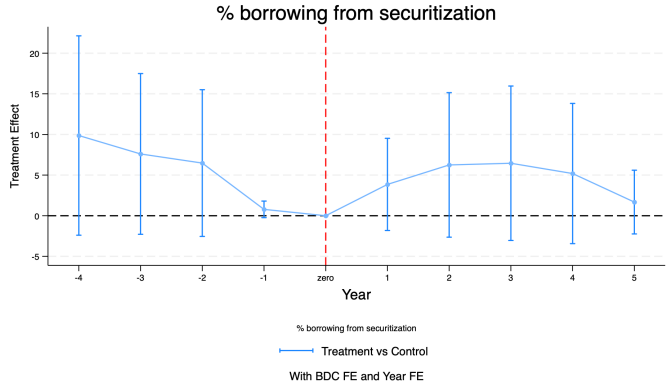
$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



(a) % Borrowing from bonds and notes



(b) % Borrowing from banks



(c) % Borrowing through securitization

TABLE 10: **Liability composition: Effect of LLG**

This table reports differences-in-differences estimates of the effect of the leverage lending guidance clarification on BDC liability composition. Column (1) reports effect on the % borrowing from bonds and notes; Column (2) on the % borrowing from banks. Column (3) on the % borrowing through securitization . The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	% Bond debt (1)	% Bank debt (2)	% Securitzed debt (3)
Treatment X Post	4.587	0.085	1.212
	(0.115)	(0.983)	(0.484)
BDC FE	Y	Y	Y
Year FE	Y	Y	Y
Clustering	BDC	BDC	BDC
Observations	265	265	265
R-squared	0.785	0.729	0.781

TABLE 11: **Effect of LLG on BDC Leverage: Heterogeneity by Pre-LLG Leverage**

This table reports difference-in-differences estimates of the effect of the leverage lending guidance clarification on BDC leverage (LEV), exploring heterogeneity by pre-LLG leverage levels. Columns (1) and (2) restrict the sample to BDCs with above and below median leverage prior to the clarification, respectively. Columns (3) and (4) pool the full sample and interact the treatment with an indicator for high pre-LLG leverage. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \beta_1 \left(\text{Post}_t \times \text{Treatment}_i\right) + \beta_2 \left(\text{Post}_t \times \text{Dummy for High Leverage Pre-LLG}_i\right) + \beta_3 \left(\text{Post}_t \times \text{Treatment}_i \times \text{Dummy for High Leverage Pre-LLG}_i\right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. $\text{Dummy for High Leverage Pre-LLG}_i$ is equal to 1 if the BDC had above median leverage Pre-LLG. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

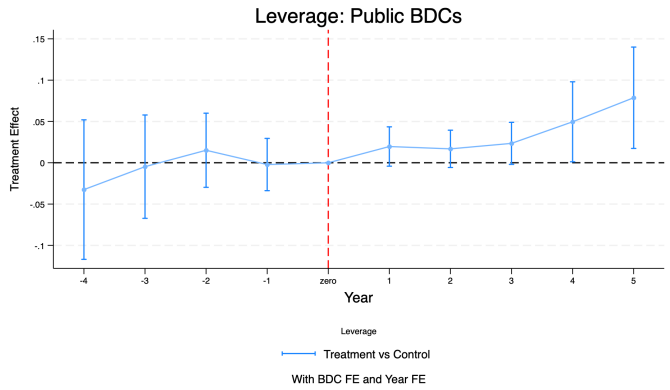
VARIABLES	LEV Only BDCs with High Leverage Pre-LLG (1)	LEV Only BDCs with Low Leverage Pre-LLG (2)	LEV Full Sample (3)	LEV Full Sample (4)
Post X Treatment	0.047*	0.023	0.036*	0.020
	(0.071)	(0.449)	(0.051)	(0.472)
Post X Dummy for High Leverage Pre-LLG			-0.102***	-0.099***
			(0.006)	(0.007)
Post X Treatment X Dummy for High Leverage Pre-LLG				0.029
				(0.434)
BDC FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC
Observations	158	155	313	313
No. of BDCs	18	18	36	36
R-squared	0.452	0.763	0.756	0.758

Figure 14: **Leverage Trend: Effect of LLG (Robustness)**

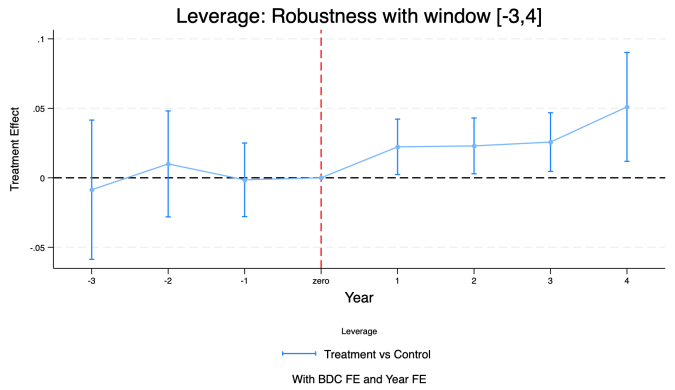
This figure presents the estimated effect of the leverage lending guidance clarification on BDC leverage ratios under additional robustness checks. Figures show effect of LLG on a) Only publicly traded BDCs; b) Using a shorter event window [-3,4]; c) Using a balanced panel of BDCs. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

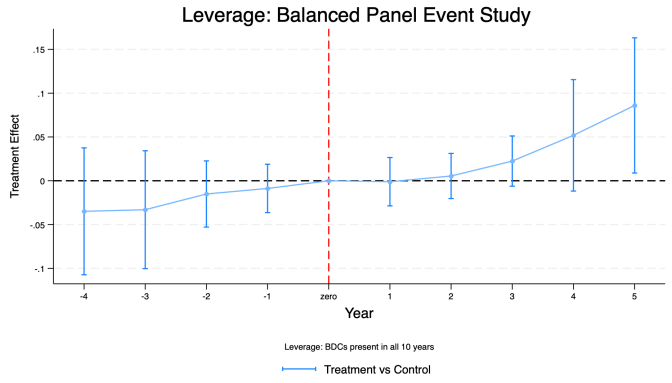
$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. Bars represent 95% confidence intervals.



(a) Leverage Trend (Only Publicly traded BDCs)



(b) Leverage Trend (Using a shorter event window)



(c) Leverage Trend (Balanced Panel)

TABLE 12: **Effect of LLG on BDC Leverage: Baseline DID (Robustness)**

This table reports robustness checks for the baseline difference-in-differences estimates of the effect of the leverage lending guidance clarification on BDC leverage (LEV). Column (1) replicates the baseline result; Column (2) uses a balanced panel; Column (3) restricts to publicly listed BDCs; Column (4) uses a shorter event window of $[-3, 4]$ relative to the clarification year. The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \beta \left(\text{Post}_t \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

Post is a dummy variable equal to 1 for the period after the clarification. Treatment_i is defined at the BDC level based on the BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

	Panel: Robustness of Baseline LEV Results			
VARIABLES	LEV Baseline (1)	LEV Balanced Panel (2)	LEV Public BDCs Only (3)	LEV Shorter Window [-3,4] (4)
Post X Treatment	0.042** (0.034)	0.051** (0.043)	0.039 (0.100)	0.030* (0.065)
BDC FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC
Observations	318	185	263	265
No. of BDCs	36	19	30	36
R-squared	0.740	0.690	0.681	0.754

Contents of Appendix

- A.1: Definition of Leverage
- A.2: Definition of variables in cross-sectional tests
- A.3: Definition of variables in difference-in-difference tests
- B: Data collection and data cleaning
- C: Event study tables for Leverage lending guidance clarification

A Definition of Variables

A.1 Leverage (cross-sectional and DID)

- *Book leverage*: Book leverage is measured as the ratio of total debt (long-term debt current liabilities) to total book assets, following the definition in Strebulaev and Yang (2013). (Data source: Compustat)

$$Book\ Leverage = \frac{Long\ term\ debt + Debt\ in\ current\ liabilities}{Assets} \tag{17}$$

A.2 Definition of Variables in Cross-sectional tests

TABLE A1: Variable Definitions for cross-sectional tests

Variable	**Description**	**Source**
Measures of opaqueness		
Private %	Percentage of borrowers with private status.	Pitchbook
Measures of diversification		
HHI_{sector}	HHI of the loan portfolio of a BDC across sectors.	Solve
Measures of market power		
No. of borrower relationships	Captures the market power of the BDC; proxied by the average number of lending relationships per borrower, defined as the mean number of distinct lenders associated with each borrower.	Solve
Measures of loan risk		
Spread of loans at origination	Captures the average loan risk of loans at origination.	Solve
% Equity	Captures the share of investments in equity.	Solve

A.3 Definition of variables in difference-in-difference tests

TABLE A2: Variable Definitions for DID analysis

Variable	Description	Source
Liability composition		
% Bond debt	Share of total debt financed through bonds and notes.	CapitalIQ
% Bank debt	Share of total debt financed through bank borrowing.	CapitalIQ
% Securitized debt	Share of total debt financed through securitization vehicles.	CapitalIQ
Number of Borrowers and Book value		
log(Number of Borrowers)	Natural logarithm of Number of Borrowers. Number of borrowers is defined as the count of distinct borrowers in a BDC's portfolio in a given year.	SOLVE
log(Number of Investments)	Natural logarithm of Number of Investments. Number of Investments is defined as the count of distinct investment contracts in a BDC's portfolio in a given year.	SOLVE
Log (Book Value of Investments)	Natural logarithm of the total book value ($ million) of a BDC's investments.	SOLVE
Book Value Ratio (Post/Pre-LLG)	Ratio of book value of investments in the post-period to the pre-period value.	SOLVE
Log (Principal Value of Investments)	Natural logarithm of the total principal value ($ million) of investments.	SOLVE
Principal Value Ratio (Post/Pre-LLG)	Ratio of principal value of investments in the post-period to the pre-period value.	SOLVE
Portfolio diversification		
HHI (Borrower Name), Cost-Weighted	Herfindahl–Hirschman Index of the amount invested across individual borrowers.	SOLVE
HHI (Industry of Borrowers), Cost-Weighted	Herfindahl–Hirschman Index of the portfolio across borrower industries/sectors.	SOLVE
HHI (Geographic), Cost-Weighted	Herfindahl–Hirschman Index of borrower counts across counties in which the BDC operates.	SOLVE
Log (Number of Counties with Operations)	Natural logarithm of the count of distinct counties in which a BDC has active investments.	SOLVE
Ex-Ante measures of underwriting quality (Cost and Principal amount weighted)		
Spread (Basis points) at Origination	Value weighted loan spread of newly originated loans.	SOLVE
Maturity (Years)	Value weighted average maturity of newly originated loans.	SOLVE

Continued on next page

TABLE A2 – continued from previous page

Variable	Description	Source
Share of Debt Investments with PIK	Value weighted share of newly originated loans containing a payment-in-kind component.	SOLVE
Cost/Par	Value Weighted average ratio of cost to par (principal) value on newly originated loans.	SOLVE
Share of Debt Investments with First Lien loans	Value Weighted share of newly originated debt investments classified as first-lien.	SOLVE
Share of Debt Investments with Junior loans	Value Weighted share of newly originated debt investments classified as second-lien, subordinated, or unsecured.	SOLVE

B Data collection and data cleaning

1. Downloaded all quarterly consolidated balance sheets for both traded and non-traded BDCs using Bamsec.
2. Retained rows corresponding to keywords:
   (a) *Keywords:* Total Assets, Borrowing, Loan, Debt, credit facility, credit line, SBA, Notes, secured, loan, repurchase agreement, SBIC debentures, due to affiliate, deposits, due to counterparties, financing arrangement, Line of credit, lease obligations, mandatorily preferred stock.
   (b) Excluding deferred liabilities, accounts payable, "due to affiliates" or any "due to counterparty." The amount due to an affiliate could be an incentive fee or a management fee payable by the BDC.
3. Additional cleaning of keywords:
   (a) Corrected cases where "Loan" from the asset side was counted as a loan taken by the BDC.
   (b) Corrected for double-counting of cases where keywords were reading each debt component separately, as well as the total debt.
4. Calculated leverage ratio:

$$\text{LEV} = \frac{\text{Debt in current liabilities} + \text{Long-term debt}}{\text{Total Assets}}$$

Summary of the definitions from Compustat's user guide:

Debt in Current Liabilities (DLCQ)	Long-Term Debt (DLTTQ)
Includes:	**Includes:**
Bank acceptances and overdrafts	Obligations requiring interest payment not specified by type
Brokerage companies' drafts payable	Obligations called "notes" or "debt" (interest-bearing or not)
Commercial paper	Bonds, mortgages, and similar debt
Current portion of long-term debt	Guaranteed preferred beneficial interests in subordinated debentures
Debt in default	Indebtedness to affiliates
Loans payable	Industrial revenue bonds
Line of credit	Line of credit (when classified as non-current)
Notes payable to banks and others	Loans
	Long-term lease obligations (capitalized leases)
	Mandatorily redeemable capital securities of subsidiary trust
	Notes payable due within one year but refinanced as long-term
	Unamortized debt discount
Excludes:	**Excludes:**
Checks outstanding	Accounts payable due after one year
Drafts payable	Accrued interest on long-term debt
Estimated claims under bankruptcy proceedings	Current portion of long-term debt

Verification: I collected data for 187 BDCs. To ensure data quality, I compare the hand-collected sample data on traded BDCs with data from Compustat. Below are the summary statistics. The summary statistics show that only 2% of observations have a deviation of more than 5% when comparing leverage ratios of traded BDCs from Compustat and a hand-collected sample.

Variable	Obs	Mean	Std. Dev.	Min	Max
LEV data from Compustat	2036	0.398	0.149	0.00	0.77
LEV data from 10-Q (hand collected)	2388	0.396	0.146	0.00	1.03
LEV_Comp − LEV_10q	2036	0.004	0.035	−0.52	0.33
(LEV_Comp − LEV_10q) / LEV_10q	1960	0.016	0.103	0.00	1.47
|LEV_Comp − LEV_10q| / LEV_10q	1960	0.013	0.103	−0.50	1.47
|%Diff| > 0.05	2388	0.022	0.146	0.00	1.00
|%Diff| > 0.1	2388	0.021	0.143	0.00	1.00

C Event study tables for Leverage lending guidance

TABLE A3: **Effect of LLG on BDC Leverage: Event-Study DID**

This table reports the event study estimates of the effect of Leverage lending guidance on BDC leverage (LEV). The panel is constructed at the BDC-Year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4,\tau\neq-1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i\right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	LEV
	(1)
Treatment X Year Dummy [t=-4]	-0.024
	(0.437)
Treatment X Year Dummy [t=-3]	-0.009
	(0.713)
Treatment X Year Dummy [t=-2]	0.010
	(0.604)
Treatment X Year Dummy [t=-1]	-0.002
	(0.904)
Treatment X Year Dummy [t=+1]	0.022**
	(0.029)
Treatment X Year Dummy [t=+2]	0.023**
	(0.026)
Treatment X Year Dummy [t=+3]	0.026**
	(0.018)
Treatment X Year Dummy [t=+4]	0.051**
	(0.012)
Treatment X Year Dummy [t=+5]	0.077***
	(0.004)
BDC FE	Y
Year FE	Y
Clustering	BDC
Observations	318
No. of BDCs	36
R-squared	0.749

TABLE A4: **Effect of LLG on BDC Portfolio Composition: Event-Study DID**

This table reports event-study estimates of the effect of the leveraged lending guidance clarification on BDC portfolio composition. The panel is constructed at the BDC-year level. Column (1) reports effects on the log number of borrowers; Column (2) on the log number of investments; Column (3) on the log book value of investments ($ millions); Column (4) on the book value ratio (post/pre-LLG ratio); Column (5) on the log principal value of investments ($ millions); Column (6) on the principal value ratio (post/pre-LLG ratio). Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4,\tau\neq-1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i\right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	log(Number of Borrowers)	log(Number of Investments)	Log (Book Value of Investments) ($ million)	Book Value Ratio Post/Pre-LLG	Log (Pricipal Value of Investments) ($ million)	Principal Value Ratio Post/Pre-LLG
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment X Year Dummy [t=-4]	0.141	0.394*	0.191	0.237**	0.448	-1.112
	(0.257)	(0.084)	(0.340)	(0.027)	(0.346)	(0.418)
Treatment X Year Dummy [t=-3]	-0.046	0.085	-0.081	-0.033	0.310	-0.347
	(0.608)	(0.580)	(0.689)	(0.816)	(0.405)	(0.480)
Treatment X Year Dummy [t=-2]	-0.120*	-0.183*	-0.266*	-0.125	-0.187	-0.174
	(0.083)	(0.085)	(0.072)	(0.258)	(0.326)	(0.388)
Treatment X Year Dummy [t=-1]	-0.083*	-0.104	-0.129	-0.144	-0.211**	-0.177**
	(0.077)	(0.185)	(0.143)	(0.113)	(0.029)	(0.043)
Treatment X Year Dummy [t=+1]	0.028	0.045	0.127**	0.323*	0.285**	0.368
	(0.375)	(0.390)	(0.047)	(0.098)	(0.034)	(0.138)
Treatment X Year Dummy [t=+2]	0.047	0.094*	0.180***	0.434**	0.539	1.107
	(0.188)	(0.066)	(0.006)	(0.037)	(0.108)	(0.282)
Treatment X Year Dummy [t=+3]	0.090	0.206***	0.253***	0.577***	0.585	2.153
	(0.132)	(0.000)	(0.001)	(0.008)	(0.118)	(0.259)
Treatment X Year Dummy [t=+4]	0.162**	0.330***	0.367**	0.721***	0.692**	3.351
	(0.014)	(0.008)	(0.028)	(0.005)	(0.041)	(0.267)
Treatment X Year Dummy [t=+5]	0.200**	0.303***	0.264***	0.740**	0.723**	5.098
	(0.012)	(0.000)	(0.006)	(0.011)	(0.046)	(0.282)
BDC FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC
Observations	328	328	323	328	323	328
R-squared	0.817	0.763	0.809	0.637	0.763	0.396

TABLE A5: **Effect of LLG on BDC Diversification: Event-Study DID**

This table reports event study estimates of the effect of the leveraged lending guidance clarification on BDC diversification. The panel is constructed at the BDC-Year level. Column (1) presents effects on the Cost weighted HHI across borrower identities; Column (2) on the Cost weighted HHI across borrower sectors; Column (3) on the Cost weighted HHI across borrower counties; Column (4) on Log (Number of Counties with Operations). Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = -1$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	HHI (borrower) Cost weighted (1)	HHI (sector) Cost weighted (2)	HHI (county) Cost weighted (3)	Log (Number of County with Operations) (4)
Treatment X Year Dummy [t=-4]	-80.854	-53.156	-102.673	0.148
	(0.127)	(0.482)	(0.297)	(0.139)
Treatment X Year Dummy [t=-3]	90.763	130.621	39.599	0.017
	(0.219)	(0.127)	(0.749)	(0.830)
Treatment X Year Dummy [t=-2]	113.027*	133.682*	73.405	-0.040
	(0.083)	(0.056)	(0.469)	(0.488)
Treatment X Year Dummy [t=-1]	59.573*	70.240**	54.087	-0.079
	(0.050)	(0.038)	(0.200)	(0.152)
Treatment X Year Dummy [t=+1]	12.097	82.056**	5.468	0.018
	(0.644)	(0.029)	(0.908)	(0.526)
Treatment X Year Dummy [t=+2]	-1.261	59.251*	-69.564	0.046
	(0.982)	(0.079)	(0.182)	(0.225)
Treatment X Year Dummy [t=+3]	-85.587	-21.022	-97.791	0.053
	(0.196)	(0.694)	(0.269)	(0.325)
Treatment X Year Dummy [t=+4]	-129.860*	-87.199	-155.853**	0.140**
	(0.061)	(0.126)	(0.014)	(0.014)
Treatment X Year Dummy [t=+5]	-87.482	-57.078	-120.416**	0.190***
	(0.116)	(0.351)	(0.012)	(0.002)
BDC FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC
Observations	323	323	322	327
R-squared	0.743	0.716	0.851	0.813

TABLE A6: **Effect of LLG on BDC ex-ante portfolio characteristics (cost-weighted): Event Study DID**

This table reports event-study estimates of the effect of the leveraged lending guidance clarification on BDC ex-ante portfolio characteristics. Column (1) presents effects on the Cost weighted Spread of newly originated loans; Column (2) on the Cost weighted Maturity of newly originated loans; Column (3) on Cost weighted Share of loans with PIK among newly originated loans; Column (4) on Cost weighted ratio of Cost/Par of newly originated loans; Column (5) on Cost weighted Share of Debt Investments in First-Lien loans among newly originated loans; Column (6) on Cost weighted Share of Junior loans among newly originated loans. Variables were constructed using value-weighting the contract terms with Cost. The panel is constructed at the BDC-year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. ($***$), ($**$), ($*$) denote significance at 1%, 5%, and 10% levels.

	Panel A: Cost Weighted					
VARIABLES	Spread At Origination (Bps)	Maturity (Years)	Share of Debt Investments with PIK	Cost/Par	Share of Debt Investments with First Lien loans	Share of Debt Investments with Junior loans
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment X Year Dummy [t=-4]	-69.385	-1.280	-0.005	0.001	0.094	-0.051
	(0.626)	(0.219)	(0.879)	(0.935)	(0.261)	(0.500)
Treatment X Year Dummy [t=-3]	-9.001	-0.188	-0.001	-0.015*	0.036	0.014
	(0.926)	(0.417)	(0.970)	(0.099)	(0.401)	(0.528)
Treatment X Year Dummy [t=-2]	25.866	-0.263	0.001	-0.001	0.039	0.014
	(0.215)	(0.154)	(0.986)	(0.694)	(0.586)	(0.832)
Treatment X Year Dummy [t=-1]	21.239	-0.123	-0.029	-0.011	0.016	0.037**
	(0.533)	(0.339)	(0.324)	(0.149)	(0.700)	(0.038)
Treatment X Year Dummy [t=+1]	-9.361	-0.082	0.021	-0.002	0.078	-0.006
	(0.617)	(0.453)	(0.380)	(0.230)	(0.249)	(0.721)
Treatment X Year Dummy [t=+2]	14.188	-0.597**	-0.008	0.003	0.133*	-0.063**
	(0.459)	(0.023)	(0.652)	(0.348)	(0.054)	(0.042)
Treatment X Year Dummy [t=+3]	12.660	-0.310*	-0.027*	0.003	0.069	-0.019
	(0.468)	(0.050)	(0.100)	(0.315)	(0.203)	(0.477)
Treatment X Year Dummy [t=+4]	26.334	-0.360**	-0.030*	0.002	0.118**	-0.068*
	(0.255)	(0.015)	(0.095)	(0.205)	(0.035)	(0.071)
Treatment X Year Dummy [t=+5]	27.071	-0.452**	0.020	-0.002	0.102**	-0.053*
	(0.257)	(0.013)	(0.379)	(0.488)	(0.045)	(0.091)
BDC FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC
Observations	231	295	308	303	308	308
R-squared	0.831	0.659	0.615	0.523	0.634	0.695

TABLE A7: **Effect of LLG on BDC ex-ante portfolio characteristics (par-weighted): Event Study DID**

This table reports event-study estimates of the effect of the leveraged lending guidance clarification on BDC ex-ante portfolio characteristics. Column (1) presents effects on the Par weighted Spread of newly originated loans; Column (2) on the Par weighted Maturity of newly originated loans; Column (3) on Par weighted Share of loans with PIK among newly originated loans; Column (4) on Par weighted ratio of Cost/Par of newly originated loans; Column (5) on Par weighted Share of Debt Investments in First-Lien loans among newly originated loans; Column (6) on Par weighted Share of Junior loans among newly originated loans. Variables were constructed using value-weighting the contract terms with Principal amount (Par). The panel is constructed at the BDC-year level. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4,\tau\neq-1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i\right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = 0$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. $(***)$, $(**)$, $(*)$ denote significance at 1%, 5%, and 10% levels.

	Panel A: Principal Weighted					
VARIABLES	Spread At Origination (Bps)	Maturity (Years)	Share of Debt Investments with PIK	Cost/Par	Share of Debt Investments with First Lien loans	Share of Debt Investments with Junior loans
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment X Year Dummy [t=-4]	-54.409	-1.292	-0.095	0.004	-0.533	0.486
	(0.698)	(0.209)	(0.427)	(0.833)	(0.164)	(0.200)
Treatment X Year Dummy [t=-3]	105.449*	-0.220	0.011	-0.011**	0.012	-0.003
	(0.086)	(0.340)	(0.781)	(0.013)	(0.525)	(0.862)
Treatment X Year Dummy [t=-2]	17.766	-0.258	0.013	-0.002	0.020	-0.014
	(0.378)	(0.162)	(0.721)	(0.248)	(0.735)	(0.821)
Treatment X Year Dummy [t=-1]	20.877	-0.142	-0.024	-0.005*	-0.032**	0.038**
	(0.538)	(0.235)	(0.471)	(0.055)	(0.047)	(0.045)
Treatment X Year Dummy [t=+1]	-12.126	-0.081	0.027	-0.003	0.005	-0.003
	(0.536)	(0.464)	(0.400)	(0.186)	(0.817)	(0.873)
Treatment X Year Dummy [t=+2]	13.429	-0.598**	-0.001	0.001	0.061*	-0.062*
	(0.494)	(0.024)	(0.966)	(0.793)	(0.075)	(0.070)
Treatment X Year Dummy [t=+3]	12.834	-0.317**	-0.022	0.001	0.016	-0.014
	(0.467)	(0.047)	(0.250)	(0.706)	(0.556)	(0.590)
Treatment X Year Dummy [t=+4]	26.362	-0.359**	-0.026	0.000	0.066*	-0.064
	(0.259)	(0.020)	(0.183)	(0.845)	(0.092)	(0.108)
Treatment X Year Dummy [t=+5]	27.341	-0.457**	0.026	-0.002	0.048	-0.046
	(0.256)	(0.012)	(0.354)	(0.409)	(0.133)	(0.166)
BDC FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Clustering	BDC	BDC	BDC	BDC	BDC	BDC
Observations	232	296	306	303	306	306
R-squared	0.828	0.659	0.616	0.525	0.672	0.718

TABLE A8: **Effect of LLG on Liability Composition: Event-Study DID**

This table reports event study estimates of the effect of the leveraged lending guidance clarification on BDC liability composition. The panel is constructed at the BDC-Year level. Column (1) reports the effect on the % borrowing from bonds and notes; Column (2) on the % borrowing from banks; Column (3) on the % borrowing through securitization. Below is the regression specification:

$$Y_{it} = \sum_{\tau=-4, \tau \neq -1}^{5} \beta_\tau \left(D_{\tau,t} \times \text{Treatment}_i \right) + \mu_i + \rho_t + u_{it}$$

$D_{\tau,t}$ denotes event-time indicator variables relative to the 2014 clarification, where $\tau = -1$ is omitted as the reference year. Treatment_i is defined at the BDC level based on each BDC's geographic exposure to OCC-chartered banks. All specifications include BDC fixed effects (μ_i) and year fixed effects (ρ_t). Standard errors are clustered at the BDC level. (***), (**), (*) denote significance at 1%, 5%, and 10% levels.

VARIABLES	% Bond debt	% Bank debt	% Securitzed debt
	(1)	(2)	(3)
Treatment X Year Dummy [t=-4]	5.348	-5.915	9.867
	(0.614)	(0.568)	(0.111)
Treatment X Year Dummy [t=-3]	7.452	-8.975	7.602
	(0.402)	(0.255)	(0.127)
Treatment X Year Dummy [t=-2]	1.639	-3.095	6.478
	(0.714)	(0.490)	(0.153)
Treatment X Year Dummy [t=-1]	-0.496	0.112	0.781
	(0.826)	(0.963)	(0.129)
Treatment X Year Dummy [t=+1]	5.754	-4.664	3.852
	(0.102)	(0.207)	(0.176)
Treatment X Year Dummy [t=+2]	6.615	-3.639	6.250
	(0.217)	(0.538)	(0.162)
Treatment X Year Dummy [t=+3]	6.390	-1.790	6.456
	(0.128)	(0.718)	(0.176)
Treatment X Year Dummy [t=+4]	8.053	-3.563	5.191
	(0.138)	(0.555)	(0.229)
Treatment X Year Dummy [t=+5]	4.839	2.783	1.678
	(0.254)	(0.628)	(0.390)
BDC FE	Y	Y	Y
Year FE	Y	Y	Y
Clustering	BDC	BDC	BDC
Observations	265	265	265
No. of BDCs	33	33	33
R-squared	0.788	0.735	0.796