Democratizing Illiquid Assets: Liquidity Transformation and Performance in Interval Funds*

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ABSTRACT

Interval funds are a rapidly growing semi-liquid investment vehicle that aims to expand retail access to private and illiquid assets by providing periodic liquidity. We study how the performance of these funds varies with asset liquidity and information sensitivity, relative to investable benchmarks. We show that interval funds outperform active and index ETFs in illiquid, information-insensitive markets such as private credit. This outperformance is driven by high distribution yields rather than NAV appreciation. In contrast, interval funds underperform ETFs in liquid, information-sensitive equity markets. This underperformance is concentrated in listed equities and is consistent with weaker flow-based discipline. Our results are robust to multi-factor risk adjustment and to the unsmoothing of returns. Comparisons with semi-liquid vehicles that primarily serve more sophisticated investors, including tender-offer funds and unlisted BDCs and REITs, confirm that interval funds deliver broadly comparable performance across information-insensitive asset classes but underperform in information-sensitive strategies. We also show that interval funds hold substantial shares of highly illiquid assets, far exceeding the limits typically faced by traditional retail-oriented funds. Consistent with our theoretical framework, higher portfolio illiquidity and leverage are associated with stronger performance in information-insensitive markets. Finally, retail investors benefit significantly from co-investing alongside sophisticated investors. This pattern reflects both the role of institutional capital in sustaining managerial incentives and its greater stability, which allows these funds to maintain higher exposure to illiquid assets while continuing to provide periodic liquidity.

Keywords: Interval funds, democratization of alternative assets, retail and institutional investors, private assets, liquidity transformation, performance, market-based incentives

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1 INTRODUCTION

Over the past decade, investors have allocated significantly more capital to private markets and illiquid asset classes, tripling their holdings of managed private assets from $\$5.1$ trillion in 2014 to $\$16.1$ trillion by the end of 2024.[1] Investors traditionally access these assets through unregistered private funds. Because these funds impose long lock-up periods, value assets infrequently, and charge complex fees, regulators have restricted these funds to accredited and qualified investors. As a result, retail investors have been largely excluded from private market opportunities. Recently, however, policymakers and fund managers have democratized access to private markets through regulated semi-liquid funds. With these funds, retail investors gain access to illiquid strategies while retaining regulatory oversight and periodic redemption rights.

Although regulators and asset managers promote semi-liquid funds as a gateway to private markets, researchers have not yet determined whether retail investors capture any performance premium or whether they succumb to high fees and agency frictions. To facilitate redemptions, fund managers must hold cash buffers or liquidate assets, thus diluting performance. However, if fund managers limit redemption opportunities, investors could suffer from steep agency costs. Investors and fund managers must navigate this trade-off across multiple asset classes, from less information-sensitive assets, such as debt, to more information-sensitive ones, such as equity. Moreover, fund managers serve heterogeneous clienteles, ranging from retail investors to sophisticated institutional investors. By overlooking structural interactions between liquidity provision, asset classes, and investor clienteles, researchers cannot provide clear guidance to retail investors seeking to capture the opportunities of a democratized private market while avoiding its risks.

To provide this guidance, we examine interval funds, a regulated semi-liquid vehicle open to both retail and institutional investors. Managers of interval funds invest across a range of asset classes, including private and illiquid assets, while committing to periodic repurchase offers. We document that retail investors obtain superior risk-adjusted returns by investing in private credit and other information-insensitive assets. Conversely, they underperform significantly when they target liquid strategies, especially those that are information-sensitive, such as listed equity. We also show that retail investors earn superior returns only when they co-invest alongside more sophisticated investors, such as institutions or high-net-worth individuals. With these findings, we show that retail investors do not universally benefit from the democratization of alternative strategies; rather, they face distinct trade-offs depending on the liquidity and information sensitivity of the underlying assets and the composition of the fund's clientele.

Interval funds provide a particularly well-suited empirical setting to test our hypotheses, as they combine illiquid portfolio allocation, heterogeneity across asset classes, and broad retail participation. Like other regulated semi-liquid funds, namely Business Development Companies (BDCs), Real Estate Investment Trusts (REITs), and tender-offer funds, interval funds allocate a substantial portion of their portfolios to illiquid private assets, far exceeding the 15% limit that

[1] Pitchbook 2029 Private Market Horizons, May 2025.

regulators impose on open-end funds. Unlike BDCs and REITs, which specialize exclusively in private credit and real estate, respectively, interval funds invest across a wide spectrum of asset classes. And unlike tender-offer funds, which typically serve accredited or qualified investors, interval funds primarily target a retail clientele (see Figure 1). Thus, given their role in expanding retail participation in alternative investment strategies, interval funds provide a natural laboratory to study the benefits and risks of democratizing access to private and illiquid markets.

Uniquely among semi-liquid vehicles, interval funds commit to providing liquidity at regular intervals–typically quarterly. During these redemption opportunities, funds are legally required to offer between 5% and 25% of their Total Net Assets (TNA) for repurchase. While investors face infrequent redemption opportunities, they can purchase shares on a daily basis. Crucially, investors transact directly with the fund at a price equal to the Net Asset Value (NAV) of the fund's shares. Consequently, unlike unregistered private funds, interval funds provide high-frequency, transaction-based NAV and return data that accurately reflect the performance investors actually experience. Attracted by this transparency and liquidity provision, investors have driven the aggregate TNA of interval funds to $158 billion in 2025, a twofold increase from 2021.[2] Moreover, Figure 2 illustrates a consistent expansion of the sector: 168 new interval funds launched between 2016 and 2025, and another 60 are currently awaiting approval from the Securities and Exchange Commission (SEC). For reference, using SEC filings on Edgar, we identify a total of 194 interval funds active from 2010 and 2025.

In this paper, we first document the institutional characteristics of interval funds using SEC filings from 2010 to 2025.[3] Specifically, we identify interval funds as those funds filing form N-23c-3, with which they notify investors of their periodic redemption opportunities. We show that the vast majority of interval funds offer quarterly redemptions for 5% of their TNA. In 15% of the redemption offers, investors tendered more shares than the fund initially offered. Funds often use their discretion to increase the repurchase amount to accommodate this excess demand. However, in 9% of the redemption offers, funds prorated redemptions, limiting investors to redeeming, on average, only 53% of their tendered shares

As for their expenses, interval funds charge an expense ratio of 2.94%. About a third of fund managers employ leverage, which increases costs through direct borrowing or short-sale costs (averaging 0.78%) and through management fees charged on leveraged assets (adding an estimated 0.37 percentage points to annual expenses). Furthermore, fund managers often incur substantial acquired fund fees, averaging 0.44%, by investing in other vehicles, such as unregistered private funds. Beyond standard expenses, 20% of funds charge incentive fees on interest and dividend income, often structuring them with high-water marks or hurdle rates with catch-up provisions.[4]

[2]XA Investments LLC, Monthly Non-Listed CEF Market Update, January 2026: https://xainvestments.com/document/monthly-non-listed-cef-market-update/.

[3]Qualitatively, these institutional features of interval funds resemble those of tender-offer funds, for which we also collect and present data in the Appendix.

[4]By regulation, managers of registered investment companies are not allowed to charge performance-based fees on capital gains or unrealized capital appreciation. However, they are allowed to charge performance-based fees on income components such as interest or dividends. Robinson and Wallskog (2026) documents that BDCs often employ

Finally, fund managers discourage short-term trading by imposing redemption fees on specific share classes, typically when investors exit within a year of their initial purchase.

Next, we assess the performance of interval funds using two distinct approaches. By leveraging monthly return data, we benchmark the returns of interval funds against a variety of investable alternatives. First, we evaluate interval funds against a matched sample of passive and active Exchange-Traded Funds (ETFs) that share the same benchmark indices. We establish this baseline because fund managers are actively developing private-asset ETFs to broaden retail participation in these markets[5] We further contrast interval funds with alternative semi-liquid structures, including BDCs, REITs, and tender-offer funds, for which we observe monthly return data. Thus, with this first approach, we build on Berk and Van Binsbergen (2015), who advise that performance should be compared to investors' next-best investment opportunity. Second, we estimate interval funds' risk-adjusted returns (alphas) using a 12-factor model that spans investable equity and real-estate factors, as well as changes in fixed-income yields. To address the return smoothing inherent in illiquid assets, we estimate these alphas across asset classes using both raw returns and two distinct unsmoothing procedures.

To provide a theoretical framework for our analysis, we hypothesize that, compared to open-end fund investors, interval-fund investors have a comparative advantage in illiquid, information-insensitive strategies, such as private credit, but invest at a disadvantage in liquid, information-sensitive strategies, such as publicly traded equities. On the one hand, because of the restricted redemption schedules, interval fund managers can mitigate costly fire sales and fragility (Shleifer and Vishny, 1997; Gromb and Vayanos, 2002; Chen et al., 2010a; Ma et al., 2022), reduce NAV volatility stemming from forced liquidation (Coval and Stafford, 2007; Greenwood and Thesmar, 2011; Jiang et al., 2022; Dannhauser and Hoseinzade, 2022), and optimize liquidity management (Edelen, 1999; Chernenko and Sunderam, 2016; Choi et al., 2020). Furthermore, fund managers can exploit longer investment horizons to capture liquidity premiums for their shareholders (Amihud and Mendelson, 1986; Pástor and Stambaugh, 2003; Aragon, 2007; Chen et al., 2007; Sadka, 2010; Ang et al., 2013; Choi et al., 2025).

On the other hand, because of the limited redemption pressure, interval fund managers face reduced market-based incentives (Lynch and Musto, 2003; Berk and Green, 2004; Dangl et al., 2008; Wu et al., 2016; Stein, 2005; Berk and DeMarzo, 2026).[6] Consequently, they exert less effort when investing in information-sensitive securities, whose valuations critically depend on the acquisition and processing of public and private information (Myers and Majluf, 1984; Gorton and Pennacchi, 1990; Holmstrom, 2015; Dang et al., 2013, 2020). Thus, while fund managers use structured liquidity to generate value in illiquid markets, they operate with weaker incentives when investing in information-sensitive assets.

performance-based fees.

[5]Wall Street Journal: https://www.wsj.com/finance/investing/wall-street-races-to-bring-private-credit-to-the-masses-8a25b624?mod=livecoverage_web.

[6]By regulation, interval fund managers can charge performance-based fees only on the income component of their returns, not on capital appreciation. Hence, investors cannot write optimal performance-based contracts to align managerial incentives in information-sensitive strategies in which price appreciation is the primary driver of returns.

Using monthly return data from Morningstar, we compare the performance of 289 interval fund share classes (issued by 157 funds) to a matched sample of 1,715 actively managed and 2,917 passively managed ETFs with identical investment styles. We find sharp performance differences across asset classes that align with our theoretical framework. In fixed-income markets, interval funds significantly outperform both passive and active ETFs, particularly in illiquid categories such as private credit. Conversely, in equity markets, they underperform, particularly in liquid categories such as listed equity. We obtain these results after controlling for fund characteristics and benchmark-time fixed effects.

To identify the sources of these performance differences, we decompose fund returns into NAV returns (driven by asset appreciation) and distribution returns (driven by income). In equity, multi-asset, and real estate strategies, fund managers generate lower NAV returns than their ETF counterparts. While they provide higher distribution yields in these sectors, this income fails to offset the capital appreciation shortfall, resulting in negative net excess returns. Conversely, in fixed-income markets, strong distribution returns more than compensate for modest NAV underperformance. These findings suggest that fund managers generate value not by selecting undervalued securities, but by harvesting the premiums associated with high-yield, illiquid assets.

To uncover evidence of the agency frictions described above, we exploit variation in fund clienteles. Interval fund managers frequently structure products with multiple share classes that target retail, institutional, and high-net-worth investors. We argue that the presence of sophisticated investors increases incentives to generate alpha when redemption pressure is limited. Prior work shows that investor sophistication determines sensitivity to fund performance, and that these differences shape managerial effort, costs, and fund outcomes (Guercio and Reuter, 2014). Similarly, funds that attract both retail and institutional capital tend to exhibit improved performance and lower costs, consistent with stronger performance pressure (Evans and Fahlenbrach, 2012). More broadly, costly incentive mechanisms are more likely to be implemented and to be effective when investors are better able to assess managerial skill (Moreno et al., 2018). In our framework, structured liquidity reduces the threat of outflows and may weaken incentives, but a more sophisticated investor base can offset this effect by increasing performance pressure. Consistent with this view, we find that retail investors perform significantly better when they co-invest alongside institutional and high-net-worth investors. Thus, structured liquidity alone does not resolve agency frictions. Instead, its effectiveness depends critically on the investor base: when redemption pressure is limited, the presence of sophisticated investors helps sustain managerial incentives, whereas in their absence the interval structure can lead to weaker performance.

Beyond the ETF comparison, we benchmark interval funds against other semi-liquid structures, namely BDCs, REITs, and tender-offer funds. We find that interval fund managers underperform their semi-liquid peers in illiquid, information-sensitive strategies, such as private equity and real estate. Although these vehicles operate under a similar liquidity and regulatory framework to that of interval funds, they serve different clienteles, primarily targeting institutional or

other qualified investors. These findings further corroborate our hypothesis that agency frictions erode returns in information-sensitive markets and that the presence of sophisticated investors helps mitigate these conflicts.

We confirm that our findings are robust to a multi-factor analysis that corrects for return smoothing. Building on the literature on illiquid assets (Couts et al., 2024; Couts and Gonçalves, 2025; Fung and Hsieh, 2004; Getmansky et al., 2004), we employ a 12-factor model comprising equity indices, fixed-income spreads, and real estate benchmarks. We unsmooth monthly returns using both moving-average and autoregressive techniques to address stale pricing and return autocorrelation.[7] Across a comprehensive set of tests, including fund-level regressions, portfolio sorts, Fama and MacBeth (1973) regressions, and panel regressions, we show that private credit funds consistently generate positive and statistically significant risk-adjusted returns, with annualized alphas averaging over 4% across specifications.[8] While other fixed-income segments generally exhibit positive alphas, the magnitudes and significance vary across specifications. Conversely, but consistent with our theoretical framework, listed equity strategies deliver the worst risk-adjusted performance among all asset classes.

To further evaluate the effectiveness of the interval fund's structure for liquidity transformation and risk taking, we analyze portfolio holdings from N-PORT filings, available from 2019 onward. We find that, across all strategies, funds hold, on average, over 30% of their AUM in assets classified as "Level 3", the most illiquid classification.[9] Furthermore, while regulators cap leverage at 33% of AUM, fund managers actively employ it, particularly in fixed-income strategies where average leverage reaches 16.32%. Consistent with our theoretical prediction that interval funds generate value primarily in illiquid and information-insensitive markets, we find that fixed-income funds outperform when they increase leverage and exposure to illiquid assets. However, fund managers fail to generate excess returns through leverage and portfolio illiquid when they invest in information-sensitive strategies, such as equity, multi-asset, and real estate, where the agency costs of the structure likely outweigh the benefits of illiquidity.

We also find that, because of the structured liquidity of interval funds, investors face fewer opportunities to time the market. Because individual traders tend to time the market poorly (Barber and Odean, 2000; Barber et al., 2009; Odean, 1999; Dichev, 2007), interval fund investors exhibit superior timing performance compared to ETF investors, displaying significantly lower sensitivity to short-term fluctuations. Investors realize these benefits most strongly in illiquid asset classes, where the incentive effects of structured liquidity prevent costly withdrawals during periods of stress.

[7] Overall, interval funds display very limited return autocorrelation, averaging only 20% in real estate, which is the most autocorrelated category. In contrast, Couts et al. (2024) find an average autocorrelation of 45% among private commercial real estate funds.

[8] This is not universally true: Erel et al. (2024) find that traditional private debt drawdown funds do not outperform equity and debt benchmarks after fees, but these funds include substantial amounts of equity as well as debt.

[9] According to FASB ASC 820-10, Fair Value Measurements and Disclosures (https://asc.fasb.org/1943274/2147482311). Level 1 assets are valued using unadjusted quoted prices in active markets; Level 2 assets rely on other observable inputs; and Level 3 assets require unobservable inputs and internally developed valuation methodologies.

Finally, we find that retail investors face a trade-off between fund liquidity, measured by the redemption rights offered by the fund, and the illiquidity of the fund's portfolio. To offer greater liquidity, fund managers must maintain higher levels of portfolio liquidity, thereby sacrificing the premium associated with illiquid assets. However, fund managers can relax this trade-off when institutions invest in the fund. We show that retail investors typically tender shares more frequently and with greater volatility than their institutional counterparts. By co-investing alongside these more stable investors, retail investors benefit from a diversified capital base that allows fund managers to maintain exposure to illiquid assets while offering higher fund liquidity.

Related Literature. Our paper relates to the growing literature on democratizing access to private and illiquid asset investments. Clayton and de Fontenay (2026) argue that this democratization should proceed carefully due to high fees, limited understanding by retail investors, and the possibility of diluting the private capital business model with too much capital. Empirical work in areas such as structured equity and unlisted REITs finds that retail-focused offerings tend to earn low returns and are characterized by limited transparency and high fees (Célérier and Vallée, 2017; Riddiough, 2022; Henderson et al., 2023). In private credit, business development companies (BDCs), many of which are listed on public stock exchanges, offer retail investors access to private credit without offering periodic cash redemptions. Chernenko et al. (2025) show that these are well capitalized, and Davydiuk et al. (2024) find that BDC-funded firms are successful by several metrics. Bates (2025) shows that BDCs' reported returns have improbably low volatilities and that BDCs sold broadly have poor performance relative to BDCs reserved for wealthier investors. Moreover, literature on vehicles that cater to both institutions and retail investors finds that institutional investors outperform retail ones (Evans and Fahlenbrach, 2012; Gómez et al., 2024; Begenau and Siriwardane, 2024).

Balloch et al. (2025) find that individual investors in private equity funds perform similarly to institutions, although the most affluent individuals outperform the least affluent ones. While their study highlights the democratization of traditional private equity funds through lower minimums and capital pooling, these funds remain unregistered and, hence, restricted to accredited individuals. In contrast, we focus on the expanded investment opportunities available to retail investors through fully regulated, registered funds and we evaluate their performance against alternative investable benchmarks.

We contribute to this literature by examining a new asset class that presents promise for improving the returns of retail investors in illiquid assets, because, unlike most of these products, interval funds commit to providing liquidity at regular intervals. In a comprehensive simulation of the return and risk profiles of evergreen funds compared to drawdown funds, Brown and Volckmann (2025) find that the former can offer a better risk-reward trade-off because investor capital is put to work for a greater percentage of the time. Examining such vehicles is increasingly important as these assets become part of more 401(k) retirement plans.

Our paper is also related to the literature studying the optimal tradeoff between the ability

to exploit arbitrage opportunities and liquidity transformation. Giannetti and Kahraman (2018) show that open-end funds are ill-suited to capturing arbitrage opportunities relative to closed-end funds. Chen et al. (2010b) and Goldstein et al. (2017) show that funds with illiquid holdings exhibit stronger sensitivity of outflows to bad past performance than those with liquid holdings. This creates a first-mover advantage in redeeming shares of funds with illiquid assets at the NAV, especially for funds of illiquid assets. Jin et al. (2022) find that swing pricing is a partial solution to this in open-end funds. Jansen (2022) finds that investors with high shadow costs of illiquidity should avoid private markets. Whereas prior literature examines these questions using funds of moderately illiquid securities, such as bond funds, we contribute by examining funds that invest primarily in illiquid assets while still providing liquidity, but that are able to take on leverage over and above inter-fund loans (Agarwal and Zhao (2018)). Maurin et al. (2023) present a model of liquidity in private equity funds. They show that even closed-end private equity fund general partners distort the fund's investment schedule when their limited partners are impatient for liquidity, leading to underperformance.

Lastly, we contribute to the broader literature on governance and agency in delegated portfolio management. One strand of the theoretical literature (Chung et al., 2012; Dangl et al., 2008; Di Tella and Sannikov, 2021; Wu et al., 2016; Pegoraro, 2023; Stein, 2005) shows that fund flows are an effective mechanism for providing managerial incentives. Another strand of the literature argues that limited fund liquidity facilitates investment in high-return but illiquid assets (Cherkes et al., 2008; Chordia, 1996; Nanda et al., 2000). In parallel, the empirical literature in asset management also shows that flows influence managerial incentives (Brown et al., 1996; Chevalier and Ellison, 1997; Chung et al., 2012; Del Guercio and Reuter, 2014; Lewellen and Lewellen, 2022; Lim et al., 2016), and that fund families play a key role in shaping internal incentives and strategic interactions across affiliated products (Evans et al., 2020). An additional body of research, primarily focused on hedge funds, finds a positive relationship between liquidity restrictions, such as lock-up periods, and performance (Agarwal et al., 2009; Aragon, 2007; Liang, 1999). However, hedge funds also charge incentive fees based on their total returns. We contribute to this literature by showing that, in the absence of performance fees based on capital gains, the limited liquidity of interval funds can enhance performance in illiquid, information-insensitive assets such as private credit but leads to underperformance in liquid, information-sensitive assets such as public equity.

2 Background, Liquidity Provision, and Fees

In this section, we examine the institutional features of interval funds and their liquidity provision.[10] Specifically, we discuss their regulatory foundations, fee structure, and redemption opportunities, and present descriptive statistics from the complete universe of regulatory filings.

Data for the empirical patterns described in this section are sourced from EDGAR and represent the complete universe of interval funds. We analyze forms filed between 2010 and December

[10] We also report statistics on analogous institutional features of tender offer funds in the Internet Appendix.

2025. We identify interval funds based on the submission of Form N-23c-3, which is filed solely by interval funds to notify investors of a periodic repurchase offer (see the discussion of the repurchase mechanisms below).

2.1 Institutional Features

Interval funds were introduced in the early 1990s following the adoption of Rule 23c-3 under the Investment Company Act of 1940, which established a new class of closed-end funds offering limited, periodic liquidity to investors.

The Investment Company Act of 1940 governs the structure and operations of registered investment companies. Unlike open-end mutual funds, which are generally restricted from investing more than 15 percent of their assets in illiquid securities under Rule 22e-4, interval funds are not subject to this limitation. The Act imposes requirements such as board oversight, diversification standards, and mandated disclosures, similar to mutual funds. For an interval fund, the Board oversees adherence to a fundamental policy requiring periodic repurchases, typically quarterly.[11]

Clientele. Interval funds are designed for retail access to illiquid assets. In Figure 1, we present the distribution of investor clienteles for interval funds and compare it to tender-offer funds. Data are from Forms N-2, 486APOS, and 486BPOS and their amendments. Based on the language of the forms, we classify the clientele of each share class as *retail*, accredited or qualified (abbreviated as *HNW*, for high net worth), or *institutional*.

Overall, the majority of interval fund share classes are open to retail investors, reflecting the structure's design for broad public distribution. In contrast, most tender offer fund share classes are designed for accredited or qualified investors. The frequency of institutional share classes appears to be higher among interval funds than among tender offer funds, possibly reflecting their more frequent inclusion in pension funds or other delegated investment vehicles.

2.2 Liquidity Provision

Unlike open-end funds, interval funds operate under Rule 23c-3 of the Investment Company Act of 1940, which governs their repurchase offers and provides a rigid framework for periodic share buybacks. Before each repurchase offer, interval funds must file a notice on Form N-23c-3 with the SEC. We use these filings to identify interval funds in EDGAR and to extract data on their repurchase activity.

Repurchase Offers. In interval funds, each repurchase offer follows a timeline anchored by three key dates. Interval funds specify an *offer start date*, a *repurchase request deadline*, and a

[11] In contrast, for a tender offer fund, the Board has the discretion to determine whether and when a tender offer should be made, based on the fund's performance and market conditions.

repurchase pricing date. Investors may submit redemption requests during the window between the start of the offer and its deadline. For standard interval funds (quarterly, semiannual, or annual), shareholders must receive notification between 21 and 42 days prior to the repurchase request deadline. However, funds offering monthly repurchases typically operate under exemptive relief that permits a shorter notification period, often as brief as seven days, to accommodate the higher frequency of offers.

Shares are repurchased at a price equal to the share class's net asset value (NAV) determined on the pricing date. In an interval fund, the repurchase pricing date must occur no later than 14 days after the repurchase request deadline. The funds are then required to pay redeeming investors within seven days of the pricing date.[12]

As for the amount of shares offered for redemption, interval fund repurchase offers must specify the percentage of total net assets (TNA) the fund will offer to repurchase (between 5% and 25% of TNA).

To ensure sufficient liquidity for their mandatory periodic repurchases, interval funds are required to maintain assets that the board reasonably believes can be converted to cash within seven days, in an amount no less than the value offered for repurchase.

Repurchase Data. From the EDGAR database, we obtain data on redemption offers for 157 interval funds covering the period from 2010 to December 2025. Panel A of Table 1 presents summary statistics for these redemption offers.

The median time between consecutive redemption opportunities is 91.00 days, reflecting the quarterly nature of most interval fund repurchases. The mean is 82.02 days, driven by a subset of funds offering monthly liquidity. Figure 3(a) displays the full distributions of redemption frequencies. While the majority of interval funds offer quarterly redemptions, a cluster offers monthly liquidity; conversely, very few utilize semiannual or annual schedules.[13]

Regarding the duration of the offer window, interval funds typically allow approximately one month between the offer start date and the repurchase request deadline (median of 29.00 days). Although some funds do not specify the pricing date in their redemption offers, most interval funds price their shares on or very close to the repurchase request deadline (median of 0.00 days from deadline to pricing).

Finally, most interval funds offer the statutory minimum of 5.00% of TNA for redemption. However, interval funds typically retain the discretion to increase the repurchase amount by up to 2.00% of outstanding shares if requests exceed the initial offer.

Liquidity Provision Over Time. Figure 4 illustrates the liquidity provision of interval funds over time. Figure 4(a) shows that interval funds offer around four redemption opportunities

[12] In contrast, tender-offer funds are subject to the "prompt payment" requirement of Rule 14e-1(c), allowing for significantly longer settlement periods—typically ranging from 30 to 65 days after the expiration date—and may involve the issuance of promissory notes rather than immediate cash settlement.

[13] Table A.1 in the Internet Appendix shows that tender-offer funds show similar redemption frequency on average, despite the discretionary nature of their redemption offers.

each year on average. However, as shown in Figure 4(b), the net provision of liquidity to investors, measured as the percentage of TNA offered for redemption in a year, has varied over time. At the beginning of the sample period, up to 2013, interval funds offered over 50% of their TNA for redemption each year. Since then, average TNA liquidity has been trending down and is currently around 20% of the TNA each year.

OVERSUBSCRIPTION AND PRORATED REDEMPTION. Each year, in their annual shareholder reports (Form N-CSR), interval funds summarize the outcomes of their redemption offers. We use these reports to collect information about redemption outcomes. In particular, we define a redemption as *oversubscribed* if investors tendered more shares than the amount offered by the fund. A redemption is *prorated* if it is oversubscribed and the fund does not fulfill all redemption requests. A fund can increase the offered amount at its discretion to accommodate excess requests. Finally, for prorated offers, we collect information on the *proration*, i.e., the fraction of tendered shares repurchased by the fund.

We collect this information from Edgar and show summary statistics in Panels B and C of Table 1. In panel B, we show fund-level statistics. Over our sample, 15.4% of the redemption offers were oversubscribed, but only 9.00 % resulted in proration. Among prorated offers, the median proration was 44.81%. In panel C, we present share-class-level data. On average, investors in individual share classes tender approximately 4.14 % of the shares outstanding at each redemption event. The median, however, is only 2.20%, indicating the existence of a right tail of large redemption requests.

Figure 4(c) shows the time series of oversubscribed and prorated redemption each year. Overall, the frequency of oversubscriptions and redemptions shows a stable but modest upward trend starting from 2014, with a peak in 2020, when 25% of the redemption offers were oversubscribed, and 15% were prorated.

2.3 FUND EXPENSES

Semi-liquid funds are relatively expensive investment products. We collect expense ratios from the annual N-CSR forms filed by interval funds and tender-offer funds between 2010 and 2025. Panel A of Table 2 reports summary statistics for annual expense ratios for interval funds, and Panel A of Table A.2 in the Internet Appendix reports the corresponding statistics for tender-offer funds for comparison.

Over this period, the average net expense ratio across all interval fund share classes was 2.94%, with a median of 2.66%. The reported expense ratios include management fees, borrowing costs, other annual expenses,[14] and incentive fees.

[14]Other annual expenses include, among others, distribution fees, servicing fees, and administrative fees. Some interval funds may also apply fee reductions or caps to limit investor costs.

ANNUAL EXPENSES. Like other investment products available to retail investors, interval funds charge annual management fees. Panel A of Table 2 shows that the average management fee for interval funds is 1.40% of the fund's TNA, with a median of 1.35%. Although management fees are disclosed as a percentage of TNA, they are often calculated based on the fund's assets under management (AUM). As a result, higher leverage tends to increase management fees as a share of TNA. Using those observations for which the statutory fee on the AUM is disclosed, we calculate that, on average, investors' management fees are increased by 37 basis points because of funds' leverage (see "Fee on leverage" row in Panel A).

Furthermore, if an interval fund uses leverage, it may incur interest expenses and other borrowing-related costs. Like other registered investment companies, interval funds are subject to a leverage limit of one-third of their AUM. However, unlike mutual funds, which rarely employ leverage, data from EDGAR filings show that 78% of our share-class-year observations report positive borrowing costs. Among these, borrowing costs average 0.78% of annual TNA, with a median of 0.56%, as shown in Panel A of Table 2.

For those interval funds that invest in other funds, the average acquired fund fees are 0.44%, although the median is only 0.07%, reflecting a distinction between funds of funds that invest primarily in other funds and accumulate large acquired fund fees, and funds that invest only a portion of their portfolio in other funds as part of a broader allocation strategy.

TRANSACTION FEES. Depending on the distribution channel of a given share class, interval funds may also charge front-end sales loads, which can range from 1% to 8%. Transaction fees may apply to redeeming investors as well. Some of these fees take the form of a contingent deferred sales charge (CDSC), which is triggered only if shares are redeemed within a specified period after purchase. Panel A of Table 2 shows that, among interval funds that charge redemption fees, the average (median) redemption fee is 1.65% (2.00%). When fees apply only to early redemptions, the average (median) period during which the fee applies is 1.21 years (1.00 years) from the purchase date (see "Early withdrawal period" row in Panel A).

PERFORMANCE-BASED FEES. Interestingly, as shown in Panel B of Table 2, 20.40% of the interval funds charge incentive fees. These fees are based on Net Investment Income, defined as interest income, dividend income, and other income, less operating expenses such as management fees and fund costs. Although Section 205 of the Investment Advisers Act of 1940 prohibits registered investment advisers from charging fees "on the basis of a share of capital gains upon or capital appreciation of" a fund, performance fees based on income are permitted.

Panel B of Table 2 reports the frequency of contractual features related to performance-based compensation among interval funds. Among interval funds that charge performance-based fees, the median incentive fee rate is 17.50% (see Panel A of Table 2). Of these funds, 62.60% apply a hurdle rate, typically set at 6.00%. Among those with a hurdle, almost all of them include a catch-

up provision.[15] In addition, 16.80% of interval funds with incentive fees include a high-water mark provision. For comparison, Table A.2 in the Internet Appendix reports the corresponding statistics for tender-offer funds.

3 DATA

Our main sample of interval funds is obtained from Morningstar. Over the sample period from January 2010 to December 2025, Morningstar provides monthly return data, daily net asset value (NAV), and daily total net assets (TNA) for a total of 388 share classes issued by 163 interval funds. We also collect time-invariant fund- and share-class-level characteristics from Morningstar, including inception date, minimum investment requirements, share class type, fund advisor, fund-of-funds status, and fund investment style and benchmark. Because Morningstar's coverage of expense ratios contains missing observations, we supplement it with hand-collected data from EDGAR filings to complete the sample and compute gross returns.

3.1 FUND CLASSIFICATION

We classify interval funds into nine mutually exclusive investment categories based on their reported Morningstar category group and category. Our classification consolidates Morningstar's granular fund taxonomy into broader asset-class groupings that reflect the investment strategies most commonly pursued by semi-liquid vehicles. The resulting categories capture meaningful differences in asset liquidity, risk exposure, and portfolio construction across funds.

Specifically, we map funds as follows. *Allocation* includes funds in Morningstar's Allocation category, which typically pursue multi-asset strategies combining equities, fixed income, and alternative exposures. *Bond* comprises funds in the broad Fixed Income category group, excluding bank loan funds and municipal bond strategies, and primarily captures traditional core and credit-oriented fixed income portfolios. *Liquid Alternatives* includes funds classified under Morningstar's Liquid Alternatives and related categories, which generally employ hedge-fund-like strategies implemented through liquid instruments. *Listed Equity* includes funds in the Equity category group and captures portfolios primarily invested in publicly traded equities. *Municipal Bond* includes funds in the Municipal Fixed Income category, which invest predominantly in tax-exempt municipal securities. *Private Allocation* includes funds in the Private Allocation category and reflects diversified portfolios combining multiple private market exposures. *Private Credit* includes funds classified as Private Debt as well as funds in the Fixed Income category group that invest primarily in bank loans, capturing strategies focused on privately originated or less liquid credit instruments. *Private Equity* comprises funds in the Private Equity and Venture Capital categories,

[15] A catch-up provision allows the adviser to receive a greater share of the fund's dividend and interest income (often 100% of such income) once the hurdle is met, until the adviser has received the same share of returns they would have earned had the incentive fee applied from the first dollar. This catch-up phase typically continues until the stated incentive fee rate is met. Beyond that point, the standard incentive fee rate applies to any additional dividend and interest income.

which invest in privately held firms and growth-stage companies. Finally, *Real Assets* includes funds classified as Direct Real Estate or Direct Infrastructure, capturing portfolios with direct exposure to physical real assets and infrastructure investments.

We further classify interval fund share classes into three investor clientele categories based on Morningstar share class type labels and minimum investment requirements. Share classes with retail-oriented labels (e.g., Class A, B, C, D, Investor, No Load, Retirement, and other traditional retail designations) and minimum investments of $25,000 or less are classified as *Retail*. This threshold is consistent with common retail accessibility standards and captures share classes designed for broad public distribution. Share classes with the same retail-oriented labels but higher minimum investments (between $25,000 and $1 million) are classified as *High-Net-Worth Investor* (HNWI), reflecting their targeting of affluent individual investors who may meet accredited or qualified investor criteria. Finally, share classes explicitly labeled as Institutional or requiring minimum investments of $1 million or more are classified as *Institutional*, capturing products designed for pension funds, endowments, financial advisors, and other institutional allocators. Share classes with missing or very low minimum investment requirements (below $2,500) are classified as Retail, as these likely represent share classes with no meaningful barriers to entry for individual investors.

3.2 Interval Fund Trends and Distributions

Figure 5 displays the time series evolution of the number of interval fund products and their aggregate TNA. Panels 5(a) and 5(b) show that interval funds experienced rapid growth in recent years, both in terms of the number of products and assets under management.

Panels 5(c) and 5(d) of Figure 5 plot these time series separately by investment category. While all categories exhibit some degree of expansion, the private credit category stands out as both the largest and fastest-growing segment. The second most prominent category, real estate, also experienced substantial growth over the sample period. Figure 6(a) reports the frequency distribution of asset classes in the sample, showing that private credit accounts for about 50% of all interval fund share classes, followed by real assets and bond (around 10% each).

Turning to trends by investor clientele, Panels 5(e) and 5(f) show that retail share classes are the most common and fastest growing type of share class. However, institutional share classes account for a disproportionate share of aggregate asset growth, attracting the largest inflows in dollar terms. Figure 6(b) reports the overall frequency distribution of clienteles in the sample, which closely matches the distribution inferred from the language of EDGAR filings shown in Figure 1(a). Finally, as expected, Internet Appendix Figure A.6(b) shows that retail share classes charge the highest annual expense ratios.

3.3 Alternative Investment Vehicles

To benchmark the performance and portfolio characteristics of interval funds, we construct comparable samples of liquid and semi-liquid investment vehicles from Morningstar over the same January 2010 to December 2025 period. The benchmark sample includes Active ETFs, Index ETFs, Tender Offer Funds, unlisted Business Development Companies (BDCs), and nontraded Real Estate Investment Trusts (REITs). These benchmark groups allow us to contrast interval funds with two natural alternatives: liquid, retail-oriented ETFs and more institutionally oriented semi-liquid vehicles. To ensure comparability, we restrict the benchmark samples to Morningstar investment categories that are also represented in the interval fund universe. This design enables comparisons across fund structures within similar investment strategies and benchmarks.

Our sample of comparison Active and Index ETFs is restricted to the Allocation, Bond, Liquid Alternatives, Listed Equity, Municipal Bond, and Private Credit categories. Morningstar provides data on 2,595 Active ETFs and 2,966 Index ETFs. Because ETFs do not issue multiple share classes, the number of funds and share classes coincides by construction. These vehicles serve as liquid, retail-oriented benchmarks that track similar Morningstar categories and benchmarks as interval funds while offering daily liquidity and continuous pricing.

For semi-liquid alternatives, the sample includes 118 Tender Offer Fund share classes issued by 60 funds, 52 share classes of 21 BDCs, and 100 share classes of 24 nontraded REITs. Tender Offer Funds span the Bond, Liquid Alternatives, Listed Equity, Private Allocation, Private Credit, Private Equity, and Real Assets categories. BDCs are concentrated exclusively in Private Credit, while REITs operate exclusively in the Real Assets category. While all three structures are nontraded and transact at NAV, they differ in important institutional dimensions. Interval Funds and Tender Offer Funds are subject to a statutory leverage limit of 33.3% of total assets, whereas BDCs are permitted substantially higher leverage and REITs face no binding regulatory leverage cap. In addition, redemption mechanisms differ: Interval Funds conduct repurchases at predetermined intervals with minimum offer sizes, while Tender Offer Funds, BDCs, and REITs rely on discretionary and irregular repurchase programs subject to board approval. Finally, investor eligibility requirements are generally more restrictive for BDCs and REITs, reflecting their orientation toward high-net-worth and institutional investors. These differences allow us to contrast interval funds not only with liquid retail vehicles, but also with more institutionally oriented semi-liquid products operating under distinct regulatory and contractual constraints.

3.4 Summary Statistics

Table 3 reports share-class-level summary statistics for interval funds and their liquid and semi-liquid benchmarks over the period from January 2010 through December 2025. Panel A presents statistics for interval funds, which form the core sample of the analysis. Interval funds manage an average of $304 million in TNA per share class and earn mean annualized net returns of 5.76%. Given their relatively high expense ratios, averaging 2.70% annually, gross returns amount to

8.44%. Interval funds are comparatively young, with a mean age of 4.87 years, and experience positive average monthly net flows of 2.68%. Minimum investment requirements are modest at the median ($2,500) but highly dispersed, with a mean exceeding $960,000, reflecting the coexistence of retail- and institutionally oriented share classes.

Panels B and C report summary statistics for active and passive ETFs, respectively. Active ETFs deliver mean annualized net returns of 7.85% with average expense ratios of 0.65%, while passive ETFs earn 8.29% with expenses of only 0.40%. Both ETF groups are substantially larger and older than interval funds, with passive ETFs in particular managing the largest assets and exhibiting the longest operating histories.

Panels D through F present statistics for other semi-liquid fund structures: tender offer funds, BDCs, and REITs. Tender offer funds are similar to interval funds in terms of size and age, but exhibit slightly higher returns and comparable expense ratios. BDCs have the highest expense ratios in the sample, averaging 3.33%, alongside strong gross returns of 12.69%. REITs are larger than interval funds but show comparable average age. Data on expense ratios for REITs are not available in Morningstar.

4 THEORETICAL FRAMEWORK

We develop a theoretical framework to derive predictions about the relative performance of interval funds and liquid funds, such as ETFs. The framework highlights that, due to the structured liquidity of interval funds, their relative performance depends critically on the information sensitivity and liquidity of the underlying asset.

4.1 SET-UP

We consider a fund F that can be either an interval fund ($F = I$) or an ETF ($F = E$). To isolate the performance implications of fund design and liquidity-transformation properties, we assume that the two funds are identical in all respects except for their liquidity-management practices.

There are three periods indexed by $t \in \{0, 1, 2\}$. Without loss of generality, we normalize the fund's net asset value (NAV) at $t = 0$ to one and set initial assets under management (AUM) to $k_0 = 1$. We assume that the NAV remains equal to one at time $t = 1$.

Investment Opportunities. The fund invests in an initial portfolio that, absent flows, generates the following payoff per dollar invested at $t = 2$:

$$R^F = 1 + \iota v^F + (1 - l^F)\delta - f,$$

where $\iota \in \{0, 1\}$ indicates whether the asset is information-sensitive; v^F is a random variable with cumulative distribution function (c.d.f.) $F(\cdot; e^F)$ that depends on managerial effort $e^F \in \{0, 1\}$; l^F denotes the fraction of assets held in liquid securities; δ is the illiquidity premium; and f is the fund's expense ratio.

We assume the following:

$$v_0 \coloneqq \mathrm{E}[v^F \mid e^F = 0] + \delta < 0, \quad v_1 \coloneqq \mathrm{E}[v^F \mid e^F = 1] + \delta - f > 0, \quad \text{and} \quad (1 - l^F)\delta > f, \tag{1}$$

which ensures that managerial effort is required to achieve positive expected net performance in information-sensitive assets, and that the illiquidity premium in information-insensitive assets is sufficient to cover fund fees.

Managerial Incentives. The manager earns fees based on AUM at $t = 1$[16] and incurs a private cost c^F if she chooses to exert effort. The cost of effort is private information and, ex ante, is drawn from a cumulative distribution function $G(\cdot)$ with support on $[0, \bar{c}]$, where $\bar{c} > 0$.

For any effort level $e \in \{0, 1\}$, the manager's expected payoff is given by

$$f\mathrm{E}[k_0 + \Delta k^F \mid e] - c^F e,$$

where Δk^F denotes the change in AUM at $t = 1$. The manager chooses to exert effort if and only if

$$c^F \leq f\left(\mathrm{E}[\Delta k^F \mid e = 1] - \mathrm{E}[\Delta k^F \mid e = 0]\right). \tag{2}$$

Investors' Information and Redemptions. Fund investors fall into one of three types: informed, liquidity-driven, or sleepy. A fraction η_0 of investors are informed. These investors observe the manager's effort e and can therefore correctly infer expected returns. Given assumption (1), they redeem all their shares after observing $e = 0$, and they maintain their investment in the fund after observing $e = 1$. Information about the asset payoff v^F, and thus about managerial effort e^F, is relevant only when the asset is information-sensitive ($\iota = 1$); if the asset is information-insensitive ($\iota = 0$), effort has no effect on performance.

A fraction η_1 of investors are liquidity-driven. These investors observe a binary random variable $w \in \{0, 1\}$ and submit redemption requests when $w = 1$, remaining inactive otherwise. The variable w represents a liquidity shock, and we assume $z \coloneqq \mathbb{P}(w = 1) > 0$.

The remaining fraction $1 - \eta_0 - \eta_1$ are sleepy investors. They do not trade within the model's time horizon, either due to inattention or a long-term investment horizon.

Redemption requests in period $t = 1$ are therefore given by:

$$O^F = \begin{cases} \iota\eta_0 + \eta_1 & \text{if } e^F = 0 \text{ and } w = 1, \\ \iota\eta_0 & \text{if } e^F = 0 \text{ and } w = 0, \\ \eta_1 & \text{if } e^F = 1 \text{ and } w = 1, \\ 0 & \text{if } e^F = 1 \text{ and } w = 0. \end{cases}$$

Outflows and Liquidity Management. An interval fund can limit the maximum amount of redemption requests it satisfies. We denote the upper limit on outflows in an interval fund by

[16] We could allow the manager to collect fees at $t = 0$ as well. However, since AUM at $t = 0$ is exogenous, such fees are irrelevant for the manager's decision problem. We therefore focus on fees at $t = 1$, which depend on investor flows.

$\bar{\eta} \in (0,1)$. We assume that $\bar{\eta} < \eta_1$, implying that the cap is designed to constrain redemptions from liquidity-driven investors. In contrast, ETFs face no such cap and honor all redemption requests. Accordingly, flows at time 1 are given by $\Delta k^I = -\min\{\bar{\eta}, O^I\}$ for an interval fund and $\Delta k^E = -O^E$ for an ETF.

By regulation, interval funds must maintain liquid assets sufficient to meet their maximum permitted redemptions, while ETFs must remain fully redeemable. We assume that both fund types hold just enough liquid assets to cover their maximum expected redemptions; that is, $l^I = \bar{\eta}$ and $l^E = \iota\eta_0 + \eta_1$.

All outflows are therefore repaid using liquid assets. As a result, the return for investors who hold shares from $t = 1$ to $t = 2$ is given by:

$$R_2^F = 1 + \iota v^F + (1 - l^F - \Delta k^F)\delta - f. \tag{3}$$

4.2 PREDICTIONS

Next, we derive predictions for the relative performance of interval funds and ETFs, beginning with managerial incentives to exert effort. Using equation (2), and noting that $\Delta k^I = \min\{\bar{\eta}, O^F\}$ for an interval fund and $\Delta k^E = O^F$ for an ETF, we find that the manager of an interval fund exerts effort if and only if

$$c^I \leq f(1-z)\min\{\iota\eta_0, \bar{\eta}\},$$

whereas the manager of an ETF exerts effort if and only if

$$c^E \leq f\iota\eta_0.$$

Define the probabilities of exerting effort as

$$\begin{aligned}
\pi^I &\coloneqq P(e^I = 1) = G\big(f(1-z)\min\{\iota\eta_0, \bar{\eta}\}\big), \\
\pi^E &\coloneqq P(e^E = 1) = G(f\iota\eta_0),
\end{aligned}$$

which represent the likelihood that the manager exerts effort in the interval fund and the ETF, respectively. Note that $\pi^I \leq \pi^E$, since $(1-z)\min\{\iota\eta_0, \bar{\eta}\} \leq \iota\eta_0$. This implies that the interval fund manager has weaker incentives to exert effort. Because of the cap on redemptions, the manager faces a smaller penalty from investor outflows when choosing not to exert effort.

Substituting the flow expressions into equation (3), taking expectations, and using $l^I = \bar{\eta}$ and $l^E = \eta_0 + \eta_1$, we obtain the expected return for each fund type:

$$\begin{aligned}
\mathrm{E}[R_2^I] &= \iota\left[\pi^I v_1 + (1-\pi^I)v^0\right] + \delta\left[1 - (1-z)\bar{\eta} + (1-\pi^I)(1-z)\min\{\iota\eta_0, \bar{\eta}\}\right], \\
\mathrm{E}[R_2^E] &= \iota\left[\pi^E v_1 + (1-\pi^E)v^0\right] + \delta\left[1 - (1-z)\eta_1 - \pi^E\iota\eta_0\right].
\end{aligned}$$

These expressions yield predictions for the relative performance of interval funds and ETFs

based on asset characteristics. From the inequality

$$-(1-z)\bar{\eta} + (1-\pi^I)(1-z)\min\{\iota\eta_0, \bar{\eta}\} > -(1-z)\eta_1 - \pi^E\iota\eta_0,$$

we obtain our first prediction.

PREDICTION 1. *If the investment is information-insensitive ($\iota = 0$), interval funds deliver superior performance. Moreover, their excess return over ETFs increases proportionally with the illiquidity premium δ.*

When the asset is information-insensitive ($\iota = 0$), managerial effort does not affect payoffs, and no manager exerts effort in equilibrium. Returns, therefore, depend solely on the ability to capture the illiquidity premium. Because interval funds can restrict redemptions and cap outflows, they are better positioned than ETFs to exploit illiquid investment opportunities and generate higher returns.

According to the literature (Myers and Majluf, 1984; Gorton and Pennacchi, 1990; Holmstrom, 2015; Dang et al., 2013, 2020), non-distressed debt is a canonical example of an information-insensitive security. Debt resembles a short put option on the value of the firm. As long as this put option remains sufficiently out of the money, marginal changes in information about the firm's fundamentals have little impact on the value of the firm's debt.

Based on the same observation and the fact that $\pi^I < \pi^E$ when $\iota > 0$, we obtain the next prediction.

PREDICTION 2. *If the asset is information-sensitive ($\iota = 1$), relative performance depends on the asset's illiquidity. When the asset is liquid ($\delta = 0$), interval funds underperform ETFs. However, if the illiquidity premium δ is sufficiently large, interval funds can outperform ETFs.*

When the asset is information-sensitive ($\iota = 1$), managerial effort affects performance, and ETF investors benefit from stronger performance incentives. Structured liquidity in interval funds reduces the outflow penalty for managers who shirk, thereby weakening their incentives. In the absence of an illiquidity premium ($\delta = 0$), ETF investors are strictly better off. However, as the illiquidity premium increases, the structured liquidity of interval funds reduces redemption pressure and may offset weaker incentives, potentially restoring their performance advantage.

Equity is a canonical example of an information-sensitive security. As the residual claimant on the value of the firm, equity is directly affected by changes in the valuation of the firm's assets. Therefore, marginal changes in information about the firm's fundamentals have a direct, immediate effect on the value of its equity.

5 PERFORMANCE OF INTERVAL FUNDS

As discussed in our theoretical framework, interval funds present a trade-off for investors, particularly retail ones. On the one hand, their structured liquidity enables exposure to high-yield,

illiquid assets. For instance, Choi et al. (2025) show that actively managed bond funds outperform benchmarks, attributing this outperformance to their greater exposure to illiquid securities. On the other hand, investors in interval funds may face greater agency frictions due to weaker managerial incentives. Moreover, concerns have emerged in the media and among investors that retail participants in interval funds may face adverse selection and high fees, potentially leading to underperformance relative to alternative products.[17]

5.1 The Relative Performance of Interval Funds

To evaluate the performance implications of interval fund structure, we compare their returns to those of alternative investment vehicles across multiple asset classes. This analysis addresses fundamental questions about whether the structured liquidity of interval funds enables effective liquidity transformation and whether these products deliver value to investors who bear the illiquidity constraints they impose.

5.1.1 Performance Relative to Exchange-Traded Funds

We begin by comparing interval funds to ETFs, the dominant liquid alternative available to retail investors.[18] Tables 4 and 5 report regression results of annualized net returns at the product level on fund structure indicators and portfolio characteristics. The sample includes both interval funds and ETFs over the period January 2010 to December 2025, with regressions estimated separately for seven investment categories: allocation, bonds, liquid alternatives, listed equity, municipal bonds, private credit, and real assets. These categories are restricted to those available to both fund types to ensure meaningful comparisons.

Specifically, we estimate the following regression for each investment category:

$$R_{it} = \beta_1 \text{Interval Fund}_i + \gamma' X_{it} + \phi_{bt} + \varepsilon_{it}, \tag{4}$$

where R_{it} denotes the annualized net return of fund i in month t, Interval Fund$_i$ is an indicator variable for interval funds (with ETFs as the omitted category), X_{it} is a vector of control variables, and ϕ_{bt} represents benchmark-by-time fixed effects. The control variables include the one-month lag of the logarithm of product total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), product age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures, and one-month lagged net flows. Benchmarks correspond to Morningstar Category Indices, and time is measured at the monthly level. Standard errors are clustered at the month-year level.

[17] Wall Street Journal: https://www.wsj.com/finance/investing/the-fees-on-these-funds-will-leave-you-high-and-dry-4b556475.

[18] While ETFs offer redemption-in-kind, they are also tradable on liquid markets. Moreover, Agarwal et al. (2023) find that redemption-in-kind funds have very similar alphas to non-redemption-in-kind funds. Also, Ben-David et al. (2022) find that broad-based (equity) ETFs have very small negative alphas).

The results reveal striking heterogeneity in relative performance across investment categories, consistent with our theoretical predictions. In the *private credit* category, interval funds significantly outperform both index and active ETFs. Relative to index ETFs, interval funds earn 3.393% more per year ($t = 5.12$, significant at the 1% level), while relative to active ETFs, they earn 1.618% more per year ($t = 3.18$, also significant at the 1% level). This substantial outperformance aligns with our theoretical framework's prediction that interval funds should excel in information-insensitive asset classes where structured liquidity enables managers to capture illiquidity premia without sacrificing returns to poor managerial incentives. These differences are large compared to Giannetti and Kahraman (2018), who find that closed-end funds earn a positive alpha (0.23% per month) whereas open-ends earn a small negative alpha (-0.06% per month), and that hedge funds with stricter redemption limits earn a higher alpha (0.42% per month) than those with looser limits (0.33% per month).

The *bond* category shows a similar pattern. Interval funds outperform index ETFs by 2.202% per year ($t = 1.95$, significant at the 10% level), and outperform active ETFs by 2.031% per year ($t = 2.24$, significant at the 5% level). This result reinforces the view that interval fund structures are well-suited to fixed-income markets, where the primary trade-off involves capturing yield spreads on less liquid securities rather than identifying mispriced information-sensitive assets.

In stark contrast, interval funds underperform in the *listed equity* category. Relative to index ETFs, interval funds earn 7.449% less per year ($t = -3.06$, significant at the 1% level), while relative to active ETFs, they earn 6.116% less per year ($t = -2.95$, also significant at the 1% level). This underperformance is consistent with our model's second prediction: when assets are information-sensitive, the structured liquidity of interval funds weakens market-based discipline on managers. In equity markets, where security selection and market timing are critical to performance, the reduced threat of redemptions following poor outcomes may diminish managerial effort, offsetting any benefits from reduced liquidity constraints, as in Giannetti and Kahraman (2018). The comparable underperformance relative to both active and passive ETFs suggests that this effect is not merely a matter of active management skill, but rather reflects a fundamental structural disadvantage in information-sensitive markets.

The remaining categories present mixed evidence. In the *allocation* category, interval funds appear to underperform both index ETFs (-4.102%, $t = -1.32$) and active ETFs (-7.999%, $t = -2.30$), with the latter being statistically significant at the 5% level. This category combines equity and fixed-income exposures, making predictions ambiguous, though the results suggest the equity component may dominate. The *liquid alternatives*, *municipal bonds*, and *real assets* categories show no statistically significant performance differences between interval funds and ETFs, suggesting that the structural advantage or disadvantage of interval funds may be less pronounced in these contexts.

Importantly, these results hold after controlling for fund size , family size, and age—factors that could independently affect performance through economies of scale or organizational learning.[19]

[19] Wermers (2000), Goldstein et al. (2017), Gómez et al. (2024), for example.

The inclusion of benchmark-by-time fixed effects ensures that our estimates capture relative performance within narrowly defined investment strategies, rather than reflecting differences in style exposure or market timing at the category level.

5.1.2 Performance Relative to Other Semi-Liquid Fund Structures

We next compare interval funds to alternative non-traded semi-liquid structures: tender offer funds, business development companies (BDCs), and real estate investment trusts (REITs). Table 6 presents regression results analogous to those in Tables 4 and 5, estimated separately for seven investment categories available to both interval funds and these alternative structures: bonds, liquid alternatives, listed equity, private allocation, private credit, private equity, and real assets. We estimate equation (4) with alternative semi-liquid funds (tender offer funds, BDCs, and REITs) serving as the omitted category. The same control variables and benchmark-by-time fixed effects are included.

In the *private allocation* category, interval funds significantly underperform alternative semi-liquid structures by 6.532% per year ($t = -2.88$, significant at the 1% level). Similarly, in *private equity*, interval funds underperform by 5.413% per year ($t = -3.41$, significant at the 1% level). These results are consistent with our theoretical framework emphasizing the role of agency frictions and incentives. Unlike interval funds, which primarily target retail investors (see Figure 1), tender offer funds predominantly serve institutional or accredited investors. A more sophisticated investor base may help sustain managerial effort and strengthen performance incentives, thereby mitigating the agency frictions that can arise when redemption discipline is limited. In Section 6, we provide direct evidence for this channel by showing that retail investors in interval funds benefit from co-investment alongside institutional and high-net-worth investors, particularly in fixed-income markets.

By contrast, in the *private credit* category, interval funds show no significant performance difference relative to alternative semi-liquid structures. The coefficient estimate is 0.033% per year, statistically indistinguishable from zero ($t = 0.07$). This stands in contrast to the substantial outperformance of interval funds over ETFs documented in Tables 4 and 5. The lack of a significant difference between interval funds and alternative semi-liquid funds in this category suggests that both structures are effective at capturing illiquidity premia in credit markets, and that the specific redemption rules distinguishing them may matter less than the general ability to limit redemptions. The comparable performance in private credit—an information-insensitive asset class—further supports our hypothesis that incentives and clientele composition matter most when assets require active management and security selection, as is the case in private equity and private allocation strategies.

In the *real assets* category, interval funds underperform alternative semi-liquid structures by 2.564% per year ($t = -1.74$, significant at the 10% level). This suggests that REITs and other semi-liquid vehicles may have advantages in accessing and managing real estate and infrastructure investments, potentially reflecting their specialized expertise and the stronger incentives

associated with more sophisticated investor bases.

In the *listed equity* category, the coefficient on interval funds is positive (3.342%), suggesting interval funds outperform alternative semi-liquid structures, but the estimate is very imprecise ($t = 0.56$) due to the small sample size (680 observations). The lack of statistical significance prevents drawing strong conclusions about relative performance in this category. The *bonds* and *liquid alternatives* categories also show no statistically significant performance differences.

5.1.3 Robustness: Portfolio-Level Performance

To assess whether the observed performance differentials reflect differences in underlying portfolio management rather than variation across share classes, we replicate the analysis using net returns and fund characteristics aggregated at the portfolio level. Returns are computed as TNA-weighted averages across products. Portfolio TNA is obtained by summing TNAs across all linked products, portfolio age corresponds to the inception date of the oldest product, and fund flows are aggregated as net flows across all associated products. Fund-of-funds status and family TNA are portfolio-level attributes and therefore do not vary across share classes. Internet Appendix Table A.3 reports these results.

The qualitative patterns are largely preserved in the portfolio-level net return specifications. Interval funds continue to outperform ETFs in private credit (versus Index ETFs: 3.531%, $t = 5.43$; versus Active ETFs: 1.705%, $t = 3.52$). In listed equity, interval funds continue to underperform (versus Index ETFs: -7.368%, $t = -2.91$; versus Active ETFs: -6.433%, $t = -3.20$). The similarity between share-class and portfolio-level differentials suggests that these relative performance patterns are not driven solely by the unit of analysis, but instead reflect differences in underlying portfolio returns.

Comparisons with alternative semi-liquid funds yield similar conclusions at the portfolio level. Interval funds underperform in private allocation (-9.461%, $t = -3.97$) and private equity (-3.533%, $t = -2.06$), while showing significant outperformance in private credit (1.274%, $t = 2.34$). These results further support the conclusion that interval funds are particularly effective vehicles for private credit exposure relative to liquid alternatives, while performing comparably to other semi-liquid structures in this asset class.

5.2 Risk-Adjusted Returns

Next, we provide an evaluation of interval funds' risk-adjusted returns using a factor model.

5.2.1 Factors

Interval funds engage in investment strategies that partially overlap with those of registered funds, such as mutual funds, and with those of unregistered funds, such as hedge funds and private equity funds. Therefore, to evaluate their performance, we draw from the hedge fund literature (Fung et al., 2008; Fung and Hsieh, 2004) and construct a comprehensive set of factors

spanning multiple systematic risk sources. Our factor model includes seven equity factors and five fixed income factors, designed to capture exposures across asset classes, market capitalizations, investment styles, and credit quality.[20]

To construct our equity and fixed income factor models, we use a combination of equity indexes and fixed income yields. First, we obtain the monthly risk-free rate from Kenneth French's data library.[21] The equity factors include the excess return on the S&P 500 index (Datastream mnemonic SPXT$), a large-cap value-growth spread constructed as the difference between the S&P 500 Value and S&P 500 Growth indexes (SPXV$ minus SPXG$), the excess return on the Russell 2000 index (RU20INTR$), a small-cap value-growth spread constructed as the difference between the Russell 2000 Value and Russell 2000 Growth indexes (R2VLINTR$ minus R2GLINTR$), the excess return on REITs using the FTSE NAREIT All Equity REITs index (FNAREVG$),[22] the excess return on global equities using the FTSE Global Ex US index (FAWXUS$), and the excess return on emerging market equities using the FTSE Emerging index (AWALEG$).

We then consider five fixed-income factors. Like Fung and Hsieh (2004) and Fung et al. (2008), we use a term spread factor and a credit spread factor. The former is the monthly change in the spread between the 10-year Treasury yield (obtained from the Federal Reserve Bank of St. Louis' FRED database, code DGS10) and the risk-free rate. The credit spread factor is the monthly change in the spread between the Moody's Baa yield (FRED, code DBAA) and the 10-year Treasury rate. To evaluate the performance of private credit funds, we also introduce a high-yield factor as the monthly change in the spread between the ICE BofA CCC & Lower US High Yield Index Effective Yield (FRED, code BAMLH0A3HYCEY) and the Moody's Baa yield. To evaluate the performance of municipal bond funds, we introduce a municipal bond factor as the monthly change in the spread between the BVAL Municipal 10 Year Yield (obtained from Bloomberg) and the 10-year Treasury rate. Finally, we also include the change in the risk-free rate as our fifth fixed-income factor.

5.2.2 Unsmoothing Returns

Interval funds frequently invest in illiquid assets whose valuations are based on appraisals or infrequent market transactions rather than continuous market prices. This practice may induce serial correlation in reported returns, a phenomenon known as return smoothing (Getmansky et al., 2004). Thus, we employ two standard unsmoothing procedures (Couts et al., 2024; Geltner, 1991, 1993; Getmansky et al., 2004): the moving average (MA) approach and the autoregressive (AR) approach.

[20] Compared to Fung and Hsieh (2004) and Fung et al. (2008), we do not include trend-following factors built using lookback straddles because interval funds do not typically engage in the type of dynamic trading strategies for which trend-following factors are needed.

[21] Available at https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

[22] This factor was also used by Couts et al. (2024) to evaluate the performance of commercial real estate funds.

MOVING AVERAGE UNSMOOTHING. In the MA approach, the reported returns are modeled as a weighted average of current and past true returns. Specifically, the observed return R_t^o is expressed as:

$$R_t^o = \theta_0 R_t^* + \theta_1 R_{t-1}^* + \theta_2 R_{t-2}^* + \cdots + \theta_N R_{t-N}^*$$

where R_t^* represents the true (unobserved) return at time t, and the weights $\{\theta_j\}$ satisfy $\sum_{j=0}^{N} \theta_j = 1$ and $\theta_j \in [0, 1]$ for all j. As in Couts et al. (2024) and Getmansky et al. (2004), we use an MA(3) model with $N = 3$ lags and follow the methodology in Couts et al. (2024) to compute unsmoothed returns.

AUTOREGRESSIVE UNSMOOTHING. The AR approach provides an alternative perspective on return smoothing by modeling the reported return as a function of its own past values. Under this framework, the observed return follows an autoregressive process:

$$R_t^o - \mu = \phi_1(R_{t-1}^o - \mu) + \phi_2(R_{t-2}^o - \mu) + \cdots + \phi_N(R_{t-N}^o - \mu) + \varepsilon_t$$

where μ is the mean return for the fund, $\{\phi_j\}$ are the AR coefficients, and ε_t represents the true innovation (unsmoothed shock) at time t. We follow Couts et al. (2024) in using an AR(2) process with $N = 2$ lags, and we implement their estimation methodology.

RETURN AUTOCORRELATION Figure 7 shows the one-month autocorrelation of returns for individual funds across various asset classes.[23] Interestingly, raw returns display a surprisingly low level of autocorrelation compared to other investment vehicles, such as hedge funds and private commercial real estate funds (Couts et al., 2024; Couts and Gonçalves, 2025). Any autocorrelation disappears after unsmoothing returns with either the MA model or the AR model.

5.2.3 AVERAGE FUND ALPHA

We estimate share-class level factor regressions of the form

$$R_{it} - r_t = \alpha_i + \beta_i' F_{it} + u_{it}, \tag{5}$$

where R_{it} are annualized returns, r_t is the risk-free rate, and F_{it} is a vector of the factors described in section 5.2.1. We consider three return specifications: raw returns, MA-unsmoothed returns, and AR-unsmoothed returns.

Figure 8 presents average alpha estimates (Panel 8(a)) and the share of funds with significantly positive alphas (Panel 8(b)) by asset class.[24] The results reveal substantial heterogeneity in risk-adjusted performance across interval fund categories. Qualitatively, the findings are insensitive to

[23] Internet Appendix Figure A.7 shows the two-month autocorrelation.

[24] Internet Appendix Figure A.8 presents average t-statistics of alphas (Panel A.8(a)) and the share of funds with significantly negative alphas (Panel A.8(b)).

return unsmoothing, consistent with the limited autocorrelation discussed above, suggesting that potential return smoothing does not materially affect our performance conclusions.

Private credit funds emerge as the strongest performers, with average annualized alphas of approximately 4.40–4.75% across the three return specifications. Importantly, 84% of private credit funds exhibit significantly positive alphas using raw returns (77% and 75% for MA-unsmoothed and AR-unsmoothed returns, respectively)—rates far exceeding the 5% expected under the null hypothesis of zero abnormal performance. Bond funds also deliver consistently positive average alphas of approximately 2.90–3.25%, with approximately 33–43% of funds showing significantly positive alphas. Private equity funds show average alphas of approximately 1.90–3.05%, with 27–36% exhibiting significantly positive performance. Private allocation and real assets funds exhibit more modest positive performance on average, with 16–26% of funds showing statistically significant outperformance.

In stark contrast, listed equity funds display negative average alphas across all specifications (-3.64% to -5.25%). While not statistically significant on average, the consistent underperformance is economically meaningful and suggests that interval funds investing in listed equities fail to deliver value relative to their factor exposures. About 17% of listed equity funds show significantly negative alphas. Muni bond and liquid alternatives funds exhibit near-zero average alphas.

The distribution of significant alphas further illuminates these patterns. Private credit funds exhibit widespread outperformance, with 84% of funds showing significantly positive alphas using raw returns (77% and 75% for MA-unsmoothed and AR-unsmoothed returns, respectively)—rates far exceeding the 5% expected under the null. Moreover, private credit funds exhibit virtually no significantly negative alphas (less than 1%), suggesting structural advantages rather than mere outcome dispersion. Bond funds similarly demonstrate frequent outperformance (33–43%), although about 5–10% of them show significantly negative results. Private equity funds show approximately 27–36% with significantly positive alphas, while private allocation and real assets funds exhibit roughly 16–26% with positive significant results. In contrast, listed equity funds show no funds with significantly positive alphas while exhibiting 17% with significantly negative results, reinforcing that these categories struggle to add value in the interval fund structure. No muni bond or liquid alternatives fund showed statistically significant underperformance.

5.2.4 Aggregate Alpha

We next aggregate fund returns at the asset-class level by forming equal-weighted portfolios for each asset class, then estimating regression (5) for each portfolio. This portfolio-level analysis complements the fund-level results by examining collective performance.

Table 7 reports alpha estimates for equal-weighted portfolios.[25] The table contains three panels corresponding to the three return specifications (raw, MA-unsmoothed, and AR-unsmoothed).

[25]Internet Appendix Tables A.5–A.7 present the full set of alpha and beta estimates for equal-weighted portfolios across all three return specifications.

Equal-weighted portfolios reflect the typical fund's performance.

Private credit funds demonstrate the most robust aggregate performance. Equal-weighted portfolios deliver annualized alphas of 5.01% (raw returns), 4.89% (MA-unsmoothed), and 4.88% (AR-unsmoothed), all statistically significant at the 1% level. The high R-squared values (0.76–0.80) indicate that the factor model explains substantial return variation, making the detected alphas particularly noteworthy.

Private allocation funds also exhibit positive aggregate performance. Equal-weighted portfolios show annualized alphas of 2.92% (raw), 2.86% (MA-unsmoothed), and 2.76% (AR-unsmoothed), with the raw return estimate marginally significant at the 10% level.

Bond funds present consistently positive performance. Equal-weighted portfolios yield annualized alphas of 2.15% (raw), 1.97% (MA-unsmoothed), and 1.89% (AR-unsmoothed), all statistically significant at the 1% or 5% level.

Real assets funds deliver consistently positive alphas. Equal-weighted portfolios show annualized alphas of 2.35% (raw), 2.08% (MA-unsmoothed), and 2.30% (AR-unsmoothed), all statistically significant at the 1%, 5%, or 10% level.

Listed equity funds warrant particular attention. Equal-weighted portfolios exhibit negative alphas of -4.01% (raw), -4.90% (MA-unsmoothed), and -4.98% (AR-unsmoothed), all statistically significant at the 5% level. This pattern suggests that the typical listed equity interval fund underperforms, raising questions about the suitability of interval fund structures for liquid equity strategies.

Muni bond funds show modest positive alphas (0.71% raw, 0.71% MA-unsmoothed, and 0.39% AR-unsmoothed), none statistically significant, while private equity funds display positive and statistically significant alphas using raw returns (3.60%, significant at the 5% level), though the MA-unsmoothed returns (2.65%) and AR-unsmoothed estimate (2.64%) are not statistically significant. The low R-squared for private equity (0.14–0.23) indicates substantial idiosyncratic risk in these strategies.

FACTOR EXPOSURES. The factor exposures of interval fund portfolios, reported in Internet Appendix Tables A.5, A.6, and A.7, reveal the systematic risk profiles underlying these performance patterns. Bond funds load significantly on fixed-income factors, exhibiting negative exposures to changes in the risk-free rate, term spread, and credit spread, consistent with their fixed-income orientation and duration risk. They also display a significant positive exposure to the small-cap value-growth spread. Private credit funds display significant negative loadings on credit spreads and high-yield spreads, reflecting their credit-sensitive strategies. Real assets funds demonstrate strong positive exposure to REIT factors, confirming their real estate orientation. Listed equity funds show significant positive exposures to the S&P 500 and Russell 2000 indexes, along with significant negative exposures to the term spread and high-yield spread, consistent with equity market sensitivity and inverse credit risk exposure. Private allocation and private equity funds generally exhibit modest and mostly insignificant factor exposures, reflecting their diversified

strategies. Muni bond funds display the strongest negative sensitivity to the risk-free rate, the term spread, and the muni spread, reflecting their substantial duration and municipal credit risk.

5.2.5 CROSS-SECTIONAL REGRESSIONS

Our final set of tests employs cross-sectional methodologies to examine performance while accounting for heterogeneity in factor exposures across funds.

Columns (1)–(3) of Table 8 implement Fama and MacBeth (1973) regressions, estimating cross-sectional regressions of fund returns on their factor loadings for each time period and then averaging the coefficients over time. The reported asset class-specific intercepts can be interpreted as the excess return of a zero-beta fund (that is, a fund with no systematic risk exposures) in each asset class, capturing the component of performance that cannot be attributed to systematic factor exposures.

The Fama-MacBeth results strongly corroborate our previous findings. Private credit funds exhibit annualized abnormal returns of 2.33% (raw returns), 1.96% (MA-unsmoothed), and 2.34% (AR-unsmoothed), all statistically significant at the 1% or 5% level. These estimates represent the performance of a hypothetical zero-beta private credit fund and thus isolate the value added beyond any systematic risk exposures. Bond funds also show positive abnormal returns of 0.65% (raw), 0.56% (MA-unsmoothed), and 0.96% (AR-unsmoothed), though none are statistically significant. Private allocation funds demonstrate annualized abnormal returns of 2.43% (raw), 2.71% (MA-unsmoothed), and 3.60% (AR-unsmoothed), all significant at the 5% or 1% level. Real assets funds show positive abnormal returns of 2.73% (raw) and 1.81% (MA-unsmoothed), significant at the 5% and 10% levels respectively, though the AR-unsmoothed estimate (0.94%) is not statistically significant. In contrast, listed equity exhibits negative abnormal returns, none approaching statistical significance.

Columns (4)–(6) present results from panel regressions with the specification:

$$R_{it} - r_t = \alpha_c(i) + \beta_i' F_{it} + u_{it},$$

where $c(i)$ denotes the asset class of fund i. This approach estimates a common alpha for all funds within each asset class while allowing fund-specific factor exposures. Standard errors are double-clustered by fund and month to account for both time-series dependence within funds and cross-sectional correlation across funds in the same time period.

The panel regression results reinforce the Fama-MacBeth findings. Private credit funds again emerge with the strongest and most robust performance: annualized alphas of 4.46% (raw), 4.46% (MA-unsmoothed), and 4.18% (AR-unsmoothed), all statistically significant at the 1% level. These estimates are remarkably consistent with both the Fama-MacBeth results and the aggregate portfolio analysis, providing strong triangulating evidence of genuine outperformance. Whether we examine individual fund alphas averaged across funds, aggregate portfolios, zero-beta funds from cross-sectional regressions, or pooled panel regressions with asset class intercepts, we consistently

find that private credit funds deliver abnormal returns of approximately 2.30–5.00% annualized.

For bond and private allocation funds, the panel regression estimates remain positive but lose statistical significance. Nevertheless, the point estimates remain economically meaningful and directionally consistent with the other methodologies. Real assets funds show small positive alphas that are not statistically significant. Listed equity funds exhibit negative point estimates across all specifications, all statistically significant at the 1% level. For listed equity funds, the consistency of negative estimates across methodologies—combined with the significant negative results at the individual fund level and in the panel regression—suggests genuine underperformance.

6 Performance Patterns

Having established that interval funds exhibit heterogeneous performance across asset classes, with outperformance concentrated in fixed income and underperformance in equity, we now examine the underlying mechanisms. We test two dimensions: the composition of returns between NAV appreciation and distributions, and the relationship between investor clientele and performance.

6.1 NAV and Distribution Returns

To understand the sources of interval fund performance, we decompose total returns into NAV returns, which reflect changes in net asset value, and distribution returns, which capture income distributions. This decomposition distinguishes between returns from asset appreciation, which requires skill in security selection, and returns from yield generation, which reflects the income characteristics of illiquid assets.

Table 9 reports regression results with NAV returns (Columns 1–4) and distribution returns (Columns 5–8) as separate dependent variables. The sample includes interval funds and ETFs, with regressions estimated separately for four asset class groupings: equity (listed equity), fixed income (private credit, bonds, and municipal bonds), multi-assets (allocation and liquid strategies), and real assets. All specifications include the same control variables and benchmark-by-time fixed effects as in our baseline analysis.

In fixed income, interval funds generate significantly higher distribution returns than ETFs—1.65% per year ($t = 2.87$, significant at the 1% level)—while NAV returns show no significant difference (coefficient of -0.13%, $t = -0.17$). Fixed-income interval funds do not outperform in security selection, but they capture higher yields through their exposure to illiquid, income-generating assets. This evidence supports our hypothesis that interval funds generate value by harvesting illiquidity premia rather than through active management skill.

In multi-asset strategies, the results follow a similar pattern: interval funds significantly underperform ETFs in NAV returns (-4.70%, $t = -2.40$, significant at the 5% level) but generate significantly higher distribution returns (3.45%, $t = 2.15$, significant at the 5% level). The higher

distribution yield partially offsets the NAV underperformance, though the net effect remains ambiguous given the magnitudes.

In equity, interval funds have lower NAV returns than ETFs (point estimate of -4.02%), though this difference is not statistically significant ($t = -1.01$). Distribution returns are higher for interval funds (3.29%) but also statistically insignificant ($t = 1.09$). The lack of significant differences in either component is consistent with the view that structured liquidity does not confer advantages in information-sensitive equity markets.

6.2 Performance by Clientele

Interval funds frequently use multiple share classes within a single portfolio, targeting both retail investors and more sophisticated clienteles such as high-net-worth individuals and institutional investors. We examine whether the presence of sophisticated investors is associated with stronger managerial incentives and improved outcomes for retail share classes.

To examine these issues, we analyze performance across investor clienteles, distinguishing between funds that serve a single clientele (single-class funds offering products exclusively to one investor segment) and funds that serve multiple clienteles (multi-class funds offering products to both retail and non-retail share classes within the same portfolio). We classify share classes based on their investor labels and minimum investment requirements. Retail share classes are those explicitly labeled as retail with minimum investments at or below $25,000. Institutional and high-net-worth individual (Inst/HNWI) share classes are defined as those with either a minimum investment requirement above $25,000 or an institutional share class label. We compare interval funds to ETFs, which by construction are single-class and retail-oriented, offering a single share class without minimum investment requirements.

Table 10 reports regression results of annualized net returns at the product level on fund clientele indicators, estimated separately by asset class and clientele structure. The sample is split into single-class funds (Columns 1–4) and multi-class funds (Columns 5–8), with regressions covering equity, fixed income, multi-assets, and real assets. The key independent variables are interactions between interval fund status and clientele type (Inst/HNWI or Retail), with ETFs serving as the omitted comparison group.

Among single-class fixed-income interval funds (Column 2), institutional and high-net-worth share classes significantly outperform comparable ETFs by 2.10% per year ($t = 2.51$, significant at the 5% level). By contrast, retail share classes in single-class fixed-income funds show no significant outperformance relative to ETFs (coefficient of -0.54%, $t = -0.65$, statistically insignificant). Without the discipline imposed by sophisticated investors, retail-oriented interval funds do not deliver superior net returns.

The results differ for multi-class fixed-income interval funds (Column 6). Both investor segments significantly outperform ETFs: institutional and HNWI share classes by 2.61% per year ($t = 3.62$, significant at the 1% level), and retail share classes by 2.12% ($t = 2.95$, significant at the 1% level). Retail investors in multi-class funds outperform ETFs, whereas retail investors in

single-class funds do not, suggesting that sophisticated investors discipline managers, consistent with Evans and Fahlenbrach (2012).

In equity (Columns 1 and 5), none of the clientele categories show significant performance differences relative to ETFs, whether in single-class or multi-class funds, consistent with the view that structured liquidity does not confer advantages in information-sensitive markets.

In multi-assets (Columns 3 and 7), the results are mixed. Single-class funds show no significant differences across different clienteles, while multi-class funds exhibit marginally negative coefficients that do not reach conventional significance levels. The heterogeneity within this category likely reflects the diverse investment strategies it encompasses, making broad inferences difficult.

To provide additional evidence on the role of sophisticated investors in sustaining managerial incentives, Table A.8 in the Internet Appendix extends the clientele analysis by exploiting variation in investor accreditation status obtained from Edgar prospectuses. Some interval funds require investors to be accredited, meaning they meet certain income or net worth thresholds that proxy for financial sophistication. We classify share classes into three categories: accredited investors (non-institutional share classes requiring accreditation), institutional investors (those with an institutional share class label), and retail investors (non-institutional classes without accreditation requirements).

The results reinforce our main findings. In single-class fixed-income funds, accredited investor share classes show positive but insignificant outperformance (1.66%, $t = 1.59$), while institutional share classes show significant outperformance (1.83%, $t = 1.74$, significant at the 10% level). Retail share classes continue to show no significant outperformance. In multi-class fixed-income funds, accredited share classes significantly outperform ETFs by 2.40% ($t = 1.89$, significant at the 10% level), while institutional share classes outperform by 2.36% ($t = 3.35$, significant at the 1% level) and retail share classes by 2.27% ($t = 3.11$, significant at the 1% level). This pattern confirms that the positive spillovers from sophisticated investors extend to retail participants in multi-class funds.

The clientele analysis yields several findings. First, in fixed income, retail investors benefit from co-investment with sophisticated investors, consistent with stronger managerial incentives. Second, single-class retail-only funds do not deliver superior returns, suggesting the interval fund structure alone is insufficient to overcome agency costs. Third, in equity and other information-sensitive asset classes, performance is unrelated to clientele composition. Fourth, interval funds underperform other semi-liquid structures in information-sensitive markets such as private equity.

These findings indicate that retail investors do not universally benefit from a semi-liquid fund design. They face distinct trade-offs depending on the information sensitivity of the underlying assets and the composition of the fund's clientele.

7 FUND AND PORTFOLIO LIQUIDITY

In this section, we investigate the performance implications and the trade-offs of the interval fund's liquidity transformation. Specifically, we evaluate the performance implications of their leverage, portfolio illiquidity, and limited redemption opportunities. We then investigate the trade-off between liquidity provision and portfolio illiquidity across different clienteles.

7.1 LEVERAGE, PORTFOLIO LIQUIDITY, AND RETURNS

We examine whether the performance of interval funds is associated with leverage and asset illiquidity. We begin by documenting the distribution of these characteristics, then assessing their relationship with returns. Table A.9 in the Internet Appendix reports summary statistics on portfolio holdings characteristics for interval funds, based on monthly data from October 2019 through December 2025. The availability of these data is constrained by the relatively recent introduction of Form N-PORT reporting requirements, which became effective for interval funds in 2019.

From form N-PORT, we observe total assets under management, total liabilities, and portfolio composition at a quarterly frequency. Each asset in a fund's portfolio is assigned a fair-value level based on the hierarchy established by FASB ASC 820-10. Level 1 assets are valued using quoted prices in active markets and represent the most liquid holdings. Level 2 assets are valued using observable inputs other than quoted prices, reflecting moderate liquidity. Level 3 assets, the most illiquid, are valued using unobservable inputs and internal models, representing the least liquid holdings.

We then construct two key measures: *leverage*, defined as the ratio of total liabilities to assets under management, and *liquidity*, measured as the sum of level 1 assets and half of level 2 assets. Level 3 assets carry zero weight in this liquidity measure. Related papers (Chen et al., 2010a; Goldstein et al., 2017; Giannetti and Kahraman, 2018; Gómez et al., 2024) use market-based liquidity measures such as the Amihud illiquidity measure or bid-ask spreads, but we are unable to do so here.

The data reveal substantial heterogeneity in portfolio composition across asset classes. Equity funds (Panel A) hold a mean of 54.55% in Level 3 assets, reflecting their focus on private equity and other illiquid holdings, while only 11.45% is in Level 2 assets. Fixed-income funds (Panel B) display a markedly different profile, with 69.42% in Level 2 assets—typically consisting of corporate bonds and loans with observable market inputs—and 38.64% in Level 3 assets, which include private credit positions. Notably, the sum of Level 2 and Level 3 holdings can exceed 100% when leverage is present, as the numerator includes both equity- and debt-financed positions. Multi-asset funds (Panel C) exhibit the most balanced distribution across the fair value hierarchy, with a mean liquidity index of 0.56, the highest among asset classes. Real asset funds (Panel D) appear to operate primarily as funds of funds, as the average portfolio allocation among the three liquidity levels adds up to less than 100%. Holdings evaluated at their NAV (such as other funds)

are not assigned a liquidity level.

Leverage varies considerably, averaging 16.32% in fixed income compared to only 5.80% in real assets, reflecting the greater use of borrowing to enhance returns in credit markets. Regulatory constraints limit interval fund leverage to no more than one-third of assets under management, and the observed leverage ratios indicate that fixed-income funds utilize a substantial portion of this capacity.

Panels E through G reveal meaningful differences across clientele types. Retail-only funds hold substantially more Level 3 assets (55.64%) than institutional and HNWI-only funds (30.54%), yet both groups exhibit similar liquidity indices (0.47 versus 0.44). This pattern suggests that retail-oriented interval funds invest more heavily in hard-to-value assets such as private equity and private credit. Multi-share-class funds, which serve both retail and institutional investors, display the highest leverage (16.81%) and Level 2 holdings (63.84%), consistent with a tilt toward leveraged credit strategies.

We next examine whether leverage and illiquidity are associated with higher portfolio returns. Table 11 reports regression results where the dependent variable is annualized returns at the portfolio level. Columns 1–4 examine leverage, while Columns 5–8 examine liquidity, with regressions estimated separately for equity, fixed-income, multi-assets, and real assets.

In fixed income, interval funds generate significantly higher gross returns than ETFs unconditionally (coefficient of 3.16%, $t = 3.72$, significant at the 1% level in Column 2), and leverage is positively associated with performance. The interaction between interval fund status and leverage is positive and highly significant (0.062% per percentage point of leverage, $t = 3.32$, significant at the 1% level). Given the median leverage ratio of 13.33%, this implies approximately 0.83% higher annualized gross returns. The liquidity results are consistent: the interaction between interval fund status and the liquidity index is negative and significant (-1.97%, $t = -2.38$, significant at the 5% level in Column 6), indicating that less liquid portfolios generate higher returns.

By contrast, in equity, leverage is negatively associated with performance. The coefficient on the interaction between interval fund status and leverage is -0.45% per percentage point ($t = -2.64$, significant at the 5% level). The liquidity interaction is positive but statistically insignificant (coefficient of 3.64%, $t = 0.40$), suggesting no systematic relationship between portfolio liquidity and performance in equity.

In summary, leverage and illiquidity are associated with higher returns in fixed income but not in equity, consistent with the view that interval funds generate value in illiquid, information-insensitive markets but not in information-sensitive ones.

7.2 Timing Returns

Investors benefit from the limited liquidity of interval funds by obtaining exposure to illiquid high-yield assets. They may obtain a second benefit as limited liquidity reduces opportunities to actively trade the fund. Prior research shows that investors often incur losses from active trading (Odean, 1999; Barber and Odean, 2000; Dichev, 2007; Barber et al., 2009), though Hayley (2014)

attributes some of this to a hindsight effect. By restricting liquidity for investors, interval funds should improve the net gains experienced by investors as a result of the timing of their flows. Table A.10 in the Internet Appendix shows that, in fact, the interval-fund investors display lower sensitivity of flows to performance compared to ETF investors, thus generating lower inflows (outflows) after a period of good (bad) performance.

To evaluate this channel, we follow the methodology of Dichev (2007). Thanks to this approach, we also quantify the extent to which limited liquidity mitigates the negative effects of poor market timing and enhances investor returns. For each product i and each year y, we compute the product's Buy-and-Hold Return (BHR) and Dollar-Weighted Return (DWR). The BHR is the geometric average return that an investor would have earned by investing in the product at the beginning of the year and holding until the end of the year. The DWR measures the actual experience of the representative investor in the product. The difference between DWR and BHR, which we define as *timing performance*, $\text{TP}_{iy} = \text{DWR}_{iy} - \text{BHR}_{iy}$, quantifies the performance drag (or gain) attributable to investors' timing.

Formally, a product's BHR is computed as the (annualized) cumulative average rate of return of the product over all the months of the year:

$$\text{BHR}_{iy} = 12 \times \left[\sqrt[T_{iy}]{\prod_{t=1}^{T_{iy}} (1 + R_{it})} - 1 \right],$$

where R_{it} is the total return in month t of year y and T_{iy} is the number of months in year y for which we have return observations for product i.

To compute the product's DWR (also known as the internal rate of return, or IRR), we solve for the (annualized) internal rate of return DWR_{iy} that satisfies the equation:

$$\sum_{t=1}^{T_y} \frac{\text{Dollar Flow}_{it}}{(1 + \text{DWR}_{iy}/12)^t} + \frac{\text{TNA}_{iT_{iy}}}{(1 + \text{DWR}_{iy}/12)^{T_{iy}}} = \text{TNA}_{i0},$$

where $\text{Dollar Flow}_{it} \coloneqq \text{TNA}_{it} - R_{it}\text{TNA}_{it-1}$ denotes the net dollar contribution during month t, and TNA_{it} denotes the product's net asset value at the end of the t-th month of the year.

In Table 12, we estimate regressions similar to equation (4), using the timing performance TP_{iy} of the representative investor in product i during year y as the dependent variable. Observations are at the product-year level.

The results indicate that the structured liquidity of interval funds helps mitigate the losses typically associated with poor market timing, especially among the most illiquid asset classes, namely bonds, private credit, and real assets. For example, in private credit, interval-fund investors experience an annual 1.05% increase in timing performance when investing through interval funds rather than liquid ETFs. These differences are both economically and statistically significant.

Overall, these findings indicate that, beyond facilitating access to high-yield illiquid assets, the structured liquidity of interval funds helps mitigate losses from market timing.

7.3 Clienteles and Liquidity Transformation

Next, we argue that, by including institutions and more sophisticated clients in their investor base, interval funds can improve their liquidity transformation and ultimately benefit retail investors as well. To our knowledge, no other study has found that retail investors enjoy improved outcomes when investing alongside insititutions.

To examine whether different clienteles show different demand for liquidity, we report redemption outcomes at the share-class level for the sample of interval funds in Morningstar. Table 13 summarizes redemption data at the fund level, with a separate breakdown for retail and institutional or HNWI share classes. Retail and non-retail share classes receive similar redemption opportunities in terms of offered amounts (6.17% versus 6.42%), potential increases (1.69% versus 1.65%), and days from offer start to deadline (30.57 versus 29.42 days). However, retail share classes tender substantially more (6.96% versus 2.94%) and are more likely to be oversubscribed (22.3% versus 14.9%) and prorated (66.2% versus 56.0%). Retail investors also exhibit higher volatility in the amount of shares tendered, with a standard deviation of 14.6% compared to 5.19% for institutional share classes. Table A.11 in the Internet Appendix shows a regression analysis of share tendering and redemption outcomes. Given the limited sample size, these results should be interpreted with caution, but they nonetheless reveal suggestive patterns. Even in a regression test, retail share classes appear to tender more shares and experience more proration.

We then examine the trade-off between illiquid assets and liquidity provision in interval funds and investigate whether this trade-off varies across different clienteles. In Table 14, we show the relation between interval funds' liquidity provision and their leverage and asset liquidity choices. We measure the fund's liquidity provision using the latest percentage of TNA offered for redemption. Because the offered TNA tends to be highly persistent and subject to occasional adjustments, the latest repurchase offer provides a good proxy for the current redemption policy of the fund.

Among retail-only funds, those that offer more liquidity to investors tend to take less leverage and invest in more liquid assets, reflecting a trade-off between liquidity provision and investments in illiquid assets and risk-taking.

However, we find no evidence of such a trade-off among institutional-oriented or multi-clientele funds. Based on the statistics in Table 13, institutional investors tender fewer shares on average and display a less volatile redemption behavior. As a result, they can improve funding stability for interval funds, which thus face a less steep trade-off between liquidity provision and allocation to illiquid assets.

8 Conclusions

In this paper, we examine whether asset managers effectively democratize access to private markets through the semi-liquid structure provided by interval funds or instead expose retail investors to additional costs and risks. We show that fund managers successfully use the flexibility of this structure to harvest illiquidity premia in information-insensitive markets such as private credit, where they generate significant alpha primarily through high distribution yields. However, they fail to replicate this advantage in liquid, information-sensitive markets such as listed equities. In these investment categories, reduced redemption pressure weakens performance incentives, leading to underperformance consistent with higher agency frictions.

We further document that the investor base plays a critical role. Retail investors realize superior returns only when they co-invest alongside large and more sophisticated investors. The presence of these investors strengthens managerial incentives and sustains effort in settings where infrequent redemptions would otherwise weaken performance pressure.

Our findings carry important implications for the democratization of finance. The semi-liquid fund structure creates value when investing in assets that genuinely require illiquidity protection, such as private credit, but destroys value when applied to liquid equity strategies. More broadly, our results highlight that democratization without a sufficiently sophisticated investor base can expose retail investors to substantial agency frictions. When redemption-based discipline is limited, the absence of sophisticated co-investors reduces performance pressure and erodes the theoretical benefits of semi-liquid investing.

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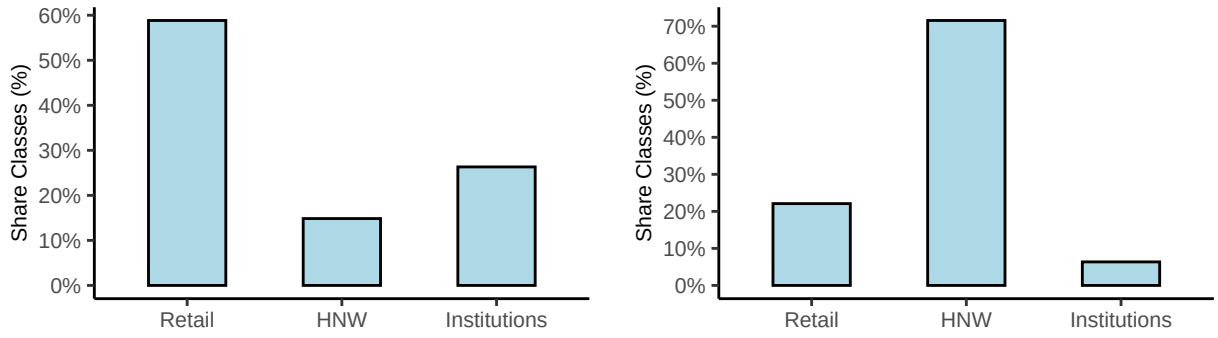
FIGURES AND TABLES



(a) Clientele - interval funds

(b) Clientele - tender offer funds

Figure 1: Distribution of clienteles in interval funds and tender-offer funds. Based on the description in funds' prospectuses and amendments, share classes are classified as open for retail investors, qualified or accredited investors (abbreviated as NHW, for high net worth), or institutional investors. Data are from forms 486BPOS, 486APOS, N-2 available on Edgar from 2010 to 2025.

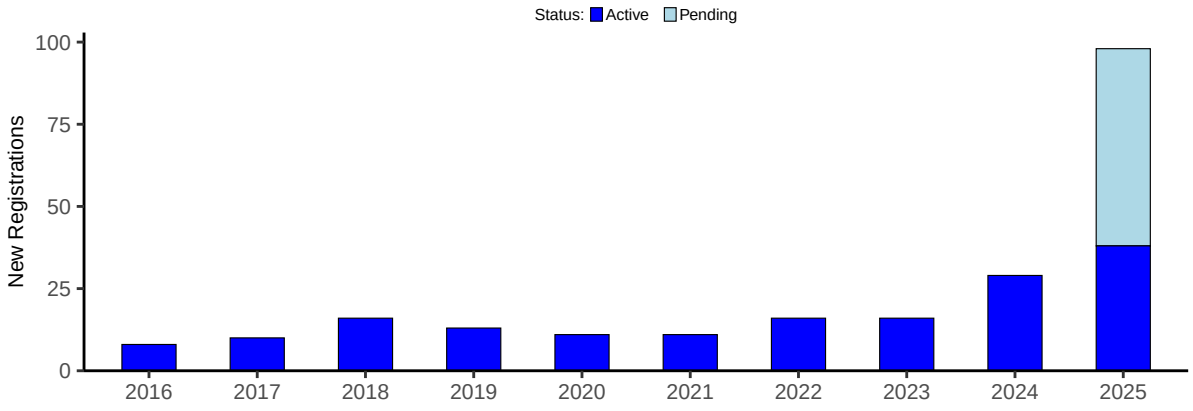
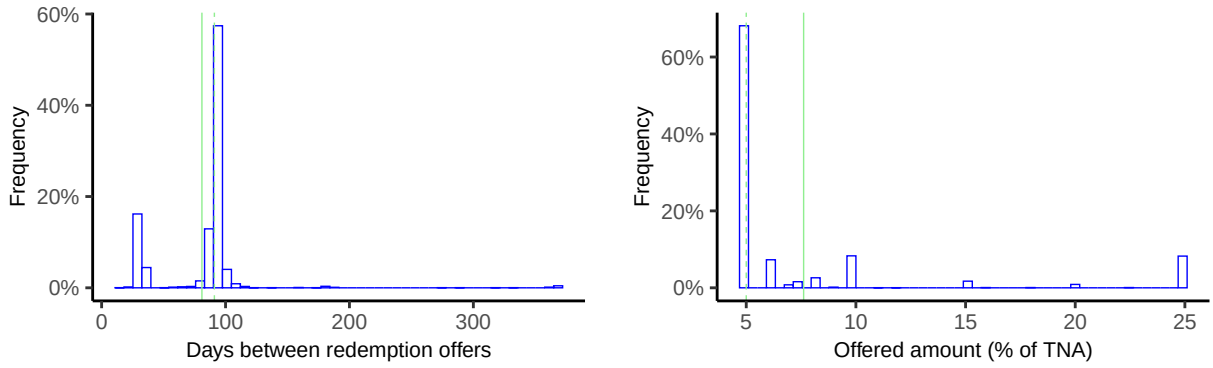


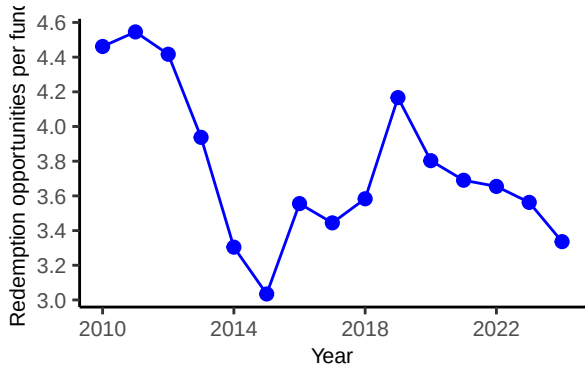
Figure 2: Active interval funds and pending interval fund registrations. The table shows the number of active interval funds every year and the number of pending interval fund registrations as of the end of 20205. Data are from publicly filed initial N-2 forms and are available at https://intervalfundtracker.com/.



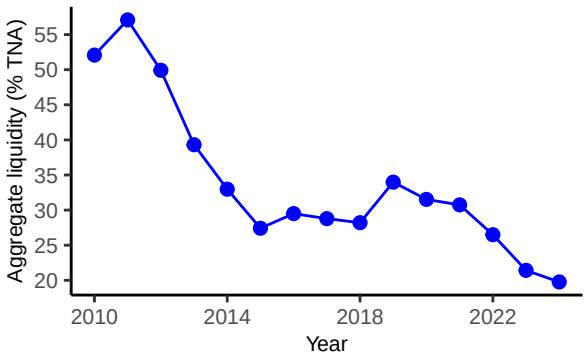
(a) Days between redemption offers

(b) Offered amount

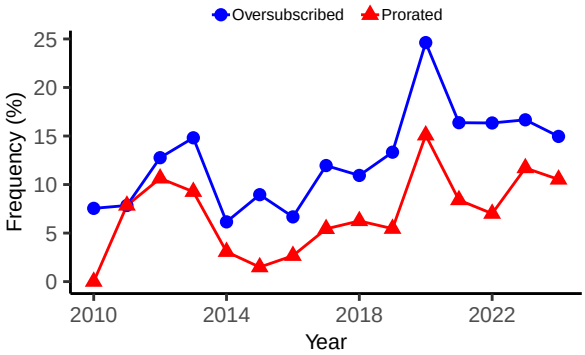
Figure 3: Distribution of redemption offer characteristics among interval funds. Panel (a) shows the distribution of days between consecutive redemption offers for interval funds. Panel (b) shows the distribution of offered amounts (as a percentage of TNA). The solid vertical line marks the average. The dashed vertical line marks the median. Data are from forms N-23c-3 available on Edgar from 2010 to 2025.



(a) Redemption opportunities per fund

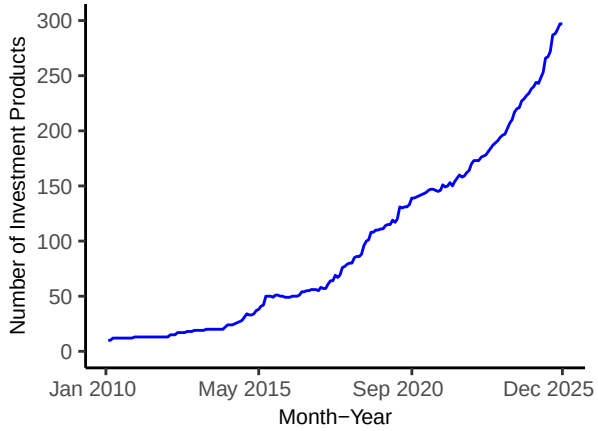


(b) Aggregate liquidity provision per fund

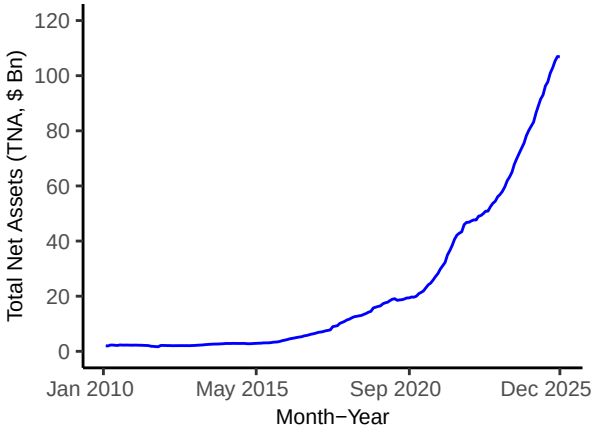


(c) Oversubscribed Redemptions

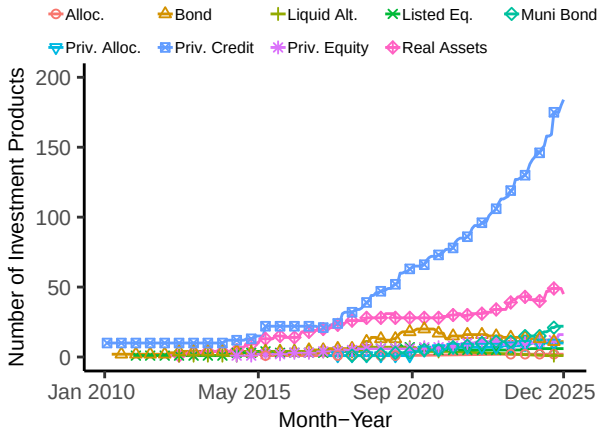
Figure 4: Liquidity provision over time. Panel (a) shows the average number of redemption opportunities per fund per year for interval funds from 2010 through 2024. Redemption opportunities are computed as the total number of redemption offers in a given year divided by the number of funds filing N-CSR reports in that year. Panel (b) shows the aggregate amount of TNA made available for redemption per fund per year. Aggregate liquidity is computed as the sum of all offered amounts (as a percentage of TNA) in a given year divided by the number of funds filing N-CSR reports in that year. Panel (c) shows the fraction of redemption offers that were oversubscribed and prorated each year. A redemption offer is oversubscribed if redemption requests exceed the offered amount. A redemption offer is prorated if it is oversubscribed and the fund does not increase the amount offered to accommodate the excess redemption requests. Data are from forms N-23c-3 and N-CSR available on Edgar.



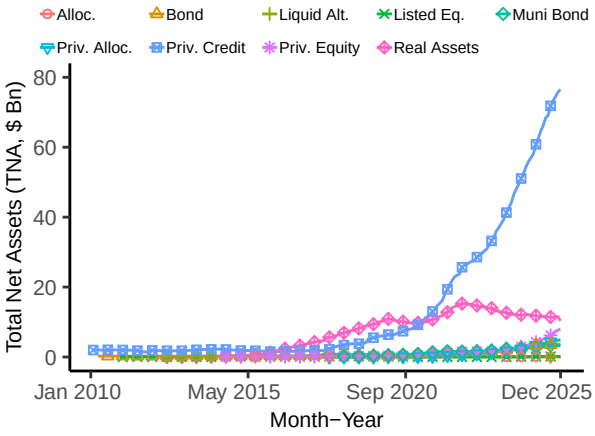
(a) Number of Products



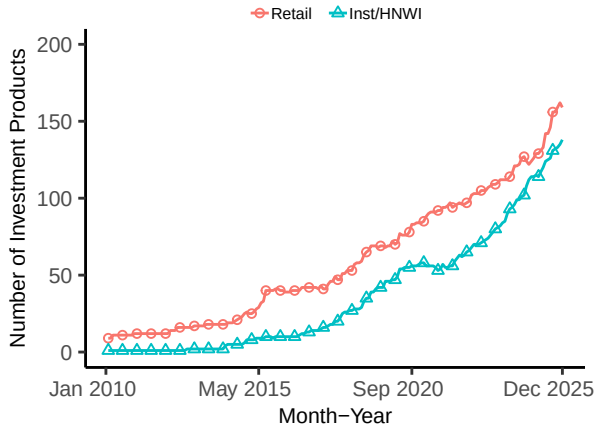
(b) Total Net Assets



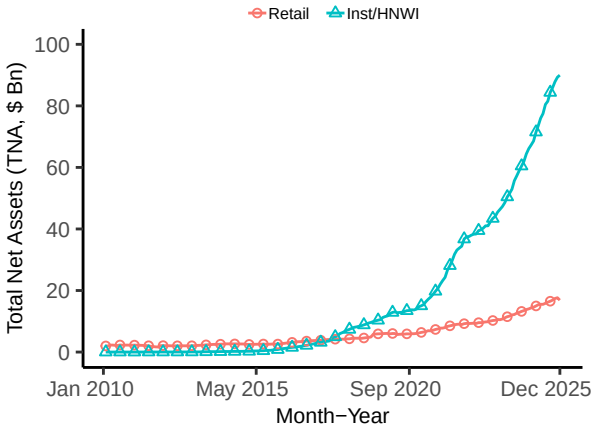
(c) Number of Products by Asset Class



(d) Total Net Assets by Asset Class

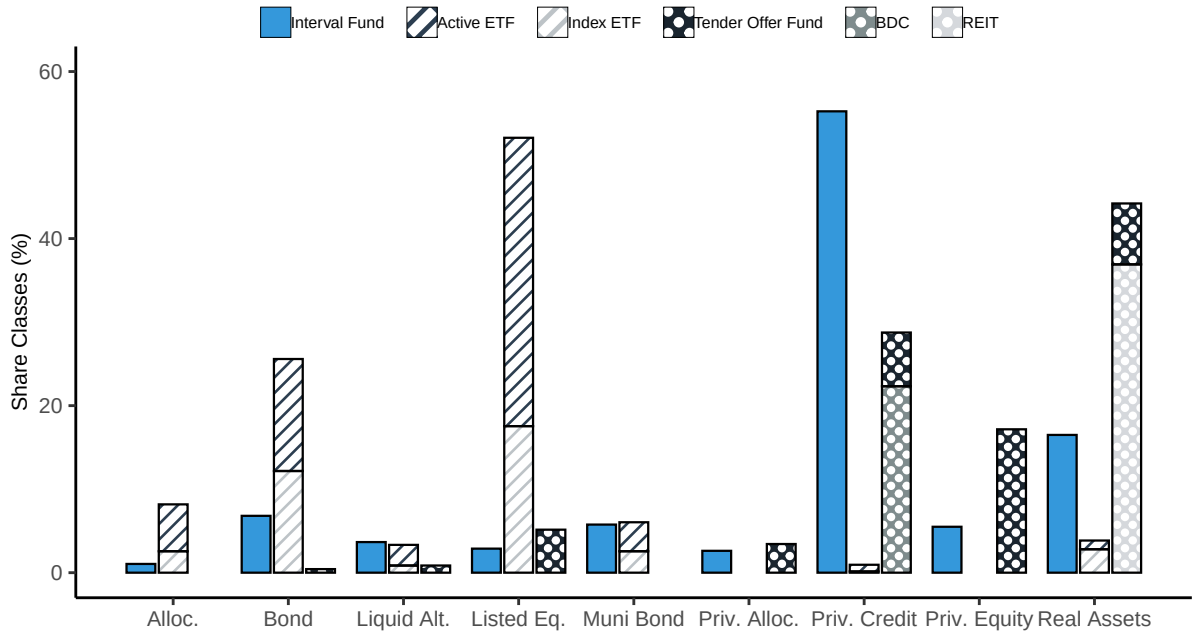


(e) Number of Products by Clientele

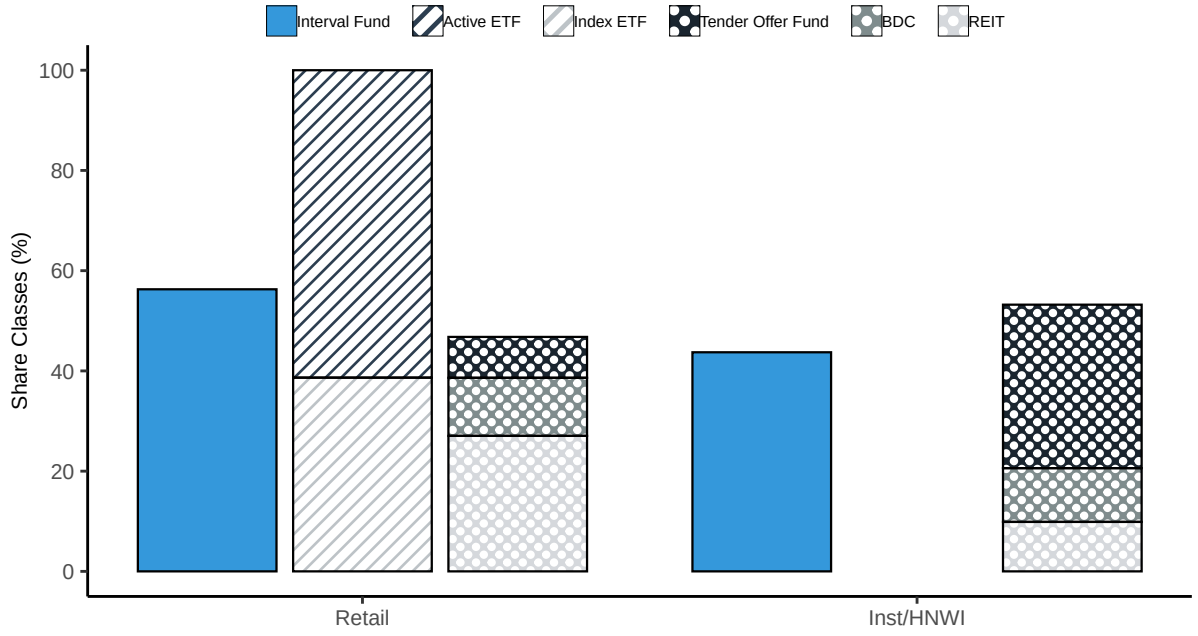


(f) Total Net Assets by Clientele

Figure 5: The figures show the number of investment products and their total net assets for Interval Funds from 2010 to 2025 in the Morningstar sample. Panels (a) and (b) present the overall trends. Panels (c) and (d) show trends by investment category. Panels (e) and (f) show trends by clientele type (High Net Worth Retail, Institutional, and Retail).



(a) Frequency by Asset Class



(b) Frequency by Clientele

Figure 6: The figures display the frequency distribution of asset classes and clienteles among the sample of Morningstar funds from 2010 to 2025.

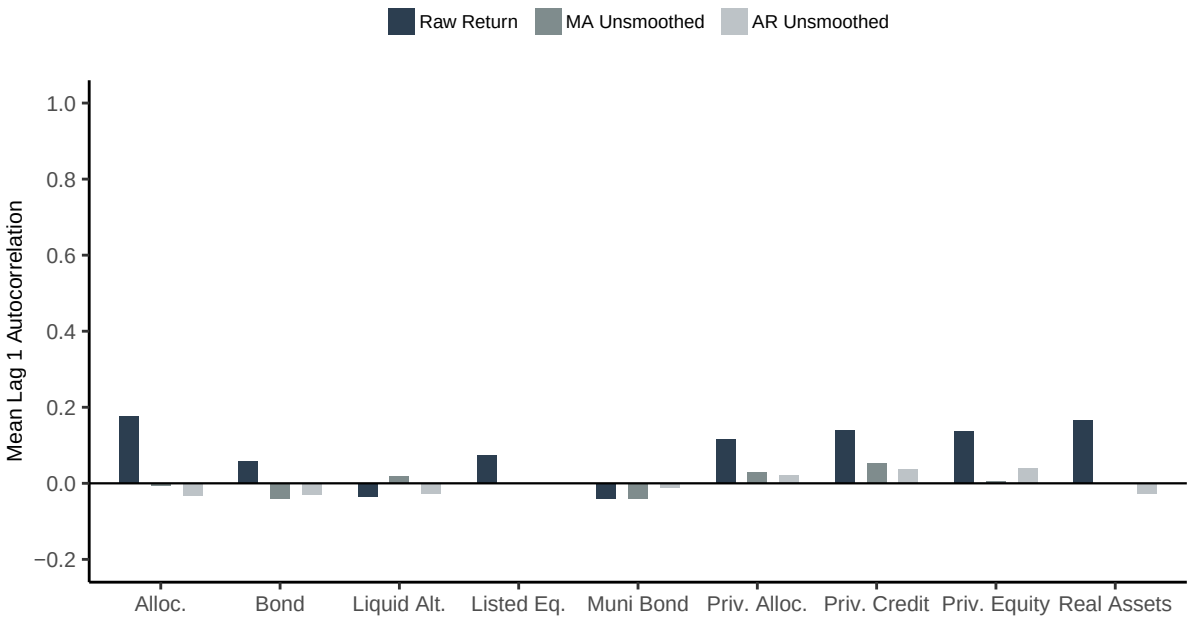
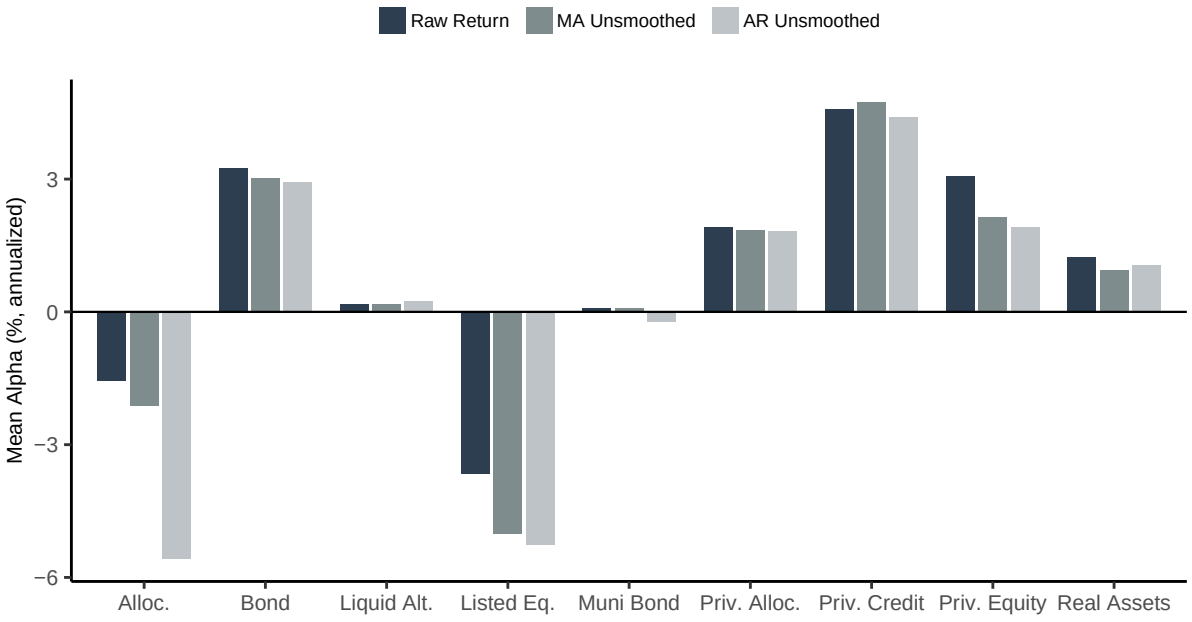
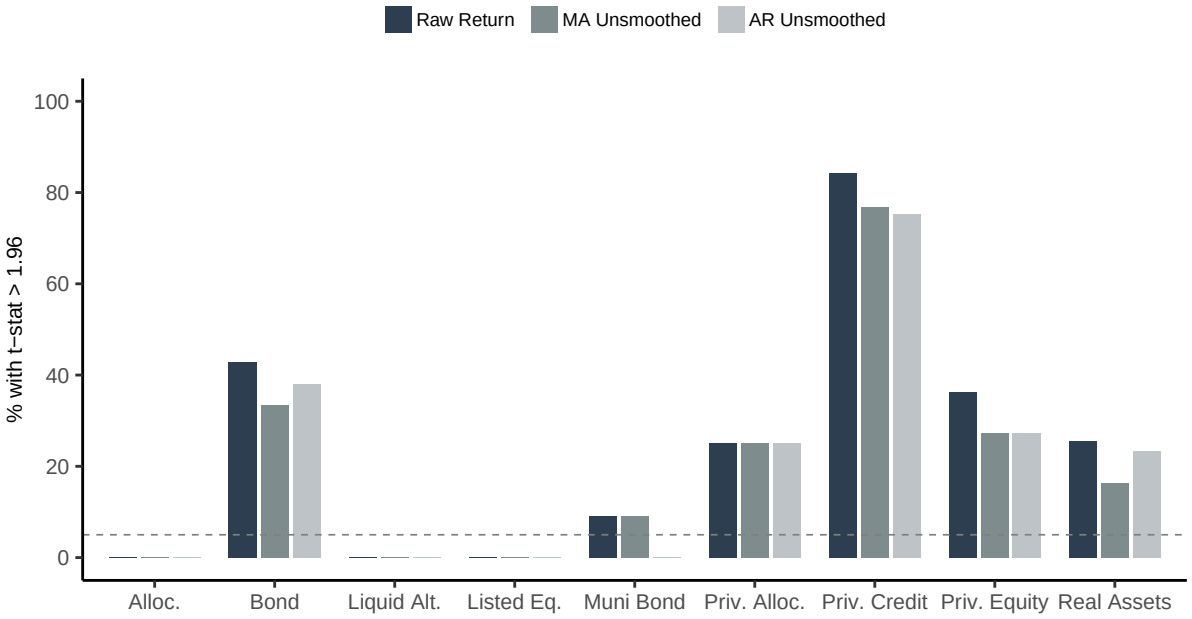


Figure 7: The figure plots average one-month autocorrelations of monthly returns for interval funds across investment categories. We calculate the autocorrelation between returns and their one-month lags for each fund, and then compute the mean autocorrelation within each category. Results are displayed for three return specifications: raw returns (dark grey), MA-unsmoothed returns (medium grey), and AR-unsmoothed returns (light grey).



(a) Average Alpha



(b) Share of Significantly Positive Alphas

Figure 8: The figures plot risk-adjusted performance (alpha) for interval funds across investment categories using multi-factor regressions with equity and fixed-income factors. For each fund, we estimate alpha from a time-series regression of excess returns on equity indexes (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and changes in fixed income rates (Term Spread, Credit Spread, High Yield Spread, Muni Spread, and Risk-Free Rate), with standard errors clustered at the month level. Panel (a) shows mean alpha by category, and Panel (b) shows the percentage with positive significant alphas ($t > 1.96$). Results are displayed for three return specifications: raw returns (dark grey), MA-unsmoothed returns (medium grey), and AR-unsmoothed returns (light grey). Dashed lines in Panel (b) indicate the 5% significance threshold ($t = 1.96$).

Table 1: Redemption Characteristics of Interval Funds

This table reports summary statistics on the redemption terms and outcomes of interval funds. Panel A shows summary statistics for redemption offers. "Days between redemption offers" measures the number of days between the start dates of two consecutive redemption offers, "Days from start to deadline" measures the length of the period during which investors may submit redemption requests, and "Days from deadline to pricing" measures the number of days between the redemption-request deadline and the date on which the NAV is used to price redemptions if a pricing date is specified in the redemption offer. "Offered amount" is the percentage of TNA made available for redemption in each offer. "Potential increase" is the percentage by which the offered amount may be increased at the fund's discretion. Panel B shows summary statistics for redemption outcomes at the fund level. "Oversubscribed" is the percentage of redemption offers in which investor redemption requests exceeded the offered amount. "Prorated" is the percentage of offers in which redemptions were prorated. "Proration" is the percentage of requested shares that were redeemed, conditional on proration occurring. Panel C shows summary statistics for investor transactions at the share-class level. "Percent tendered" is the percentage of outstanding shares submitted for redemption by investors. "Percent repurchased" is the percentage of outstanding shares actually redeemed. Data are from forms N-23c-3 and N-CSR available on Edgar from 2010 to 2025.

Panel A: Fund-Level Redemption Offers

	Mean	SD	Min	P10	P25	P50	P75	P90	Max	N. Obs
Days between redemption offers	82.02	34.86	11.00	30.00	86.00	91.00	91.00	94.00	368.00	2997
Days from start to deadline	25.71	9.83	3.00	7.00	21.00	29.00	32.00	35.00	42.00	3143
Days from deadline to pricing	2.37	5.10	-42.00	0.00	0.00	0.00	0.00	14.00	16.00	2724
Offered amount (% TNA)	7.55	5.84	5.00	5.00	5.00	5.00	6.00	15.00	100.00	3143
Potential increase (% TNA)	1.97	0.23	0.00	2.00	2.00	2.00	2.00	2.00	2.00	3143

Panel B: Fund level Redemption Outcomes

	Mean	SD	Min	P10	P25	P50	P75	P90	Max	N. Obs
Oversubscribed (%)	15.4									2276
Prorated (%)	9.0									2276
Proration (%, conditional on prorated)	53.01	34.12	6.11	12.50	21.73	44.81	95.65	100.00	100.00	203

Panel C: Share Class-Level Redemption Outcomes

	Mean	SD	Min	P10	P25	P50	P75	P90	Max	N. Obs
Percent tendered (% outstanding)	4.14	7.61	0.00	0.00	0.59	2.20	5.00	8.08	81.90	2695
Percent repurchased (% outstanding)	3.04	3.51	0.00	0.00	0.56	2.11	4.92	6.49	27.91	2682

Table 2: Fee Structure of Interval Funds

This table reports summary statistics for key fee and compensation features of interval funds. Panel A shows the distribution of expense items. All values are expressed as percentages, except "Early years," which measures the number of years during which an early redemption fee applies. Net expense ratios include management fees, borrowing costs, and other fund expenses. Management fees refer to the base advisory fee. Borrowing costs include interest and fees on borrowed funds. Acquired fund fees are expenses from investing in other funds. Redemption fees include front-end loads, combined back-end loads, and early redemption fees. Incentive fees apply to a subset of funds and are often subject to hurdle rates and catch-up provisions. "Catch-up thresholds minus hurdle rates" measures the range over which the catch-up provision applies, and "Catch-up rates" denote the share of returns allocated to the advisor during this range. "Fee on leverage" measures the management fee charged on leveraged assets. Panel B shows the prevalence of features associated with performance-based fee structures among interval funds. The first row shows the share of all funds that charge an incentive fee. Subsequent rows report the frequency of additional contractual features (high-water marks, hurdle rates, and catch-up provisions) within the subset of funds that charge incentive fees. The final row shows the frequency of catch-up provisions among funds that apply a hurdle rate. Data are annual observations at the share-class level from forms N-2, 486BPOS, and 486APOS available on Edgar from 2010 to 2025.

Panel A: All expenses

Feature	Mean	SD	Min	P10	P25	P50	P75	P90	Max	N. Obs
Net expense ratio (%)	2.94	1.52	0.25	1.50	2.02	2.68	3.44	4.51	13.91	2016
Management fee (%)	1.40	0.45	0.05	0.90	1.10	1.35	1.68	1.90	4.64	2016
Fee on leverage (%)	0.37	0.28	0.00	0.13	0.22	0.30	0.42	0.66	3.26	597
Borrowing cost (%)	0.78	0.77	0.01	0.08	0.26	0.56	1.11	1.78	5.41	1411
Acquired fund fees (%)	0.44	0.84	0.01	0.01	0.01	0.07	0.60	1.28	9.21	913
Front load (%)	3.92	1.43	1.00	2.50	3.00	3.50	5.75	5.75	8.00	659
Redemption fees (%)	1.65	0.75	0.50	1.00	1.00	2.00	2.00	2.00	6.75	736
Early withdrawal period (years)	1.21	0.81	0.25	1.00	1.00	1.00	1.00	1.50	6.00	696
Incentive fee (%)	16.86	3.60	10.00	10.00	15.00	17.50	20.00	20.00	20.00	328
Hurdle rate (%)	6.34	1.90	1.25	5.00	6.00	6.00	8.00	9.00	9.00	258
Catch-up threshold (%)	7.69	2.45	1.39	5.56	7.06	7.50	9.41	11.25	11.25	254
Catch-up rate (%)	99.36	5.64	50.00	100.00	100.00	100.00	100.00	100.00	100.00	311
Catch-up threshold minus hurdle rate (%)	1.34	0.60	0.14	0.56	1.06	1.27	1.50	2.25	2.57	254

Panel B: Incentive-fee features

Feature	Frequency	Sample
Has incentive fee	20.4%	All funds (2016 observations)
Has high-water mark	16.8%	Funds with incentive fee (412 observations)
Has hurdle rate	62.6%	Funds with incentive fee (412 observations)
Has both high-water mark and hurdle rate	0.2%	Funds with incentive fee (412 observations)
Has catch-up provision	98.4%	Funds with hurdle rate (258 observations)

Table 3: Summary statistics

This table presents share-class-level summary statistics, including the mean, standard deviation, and the 25th, 50th, and 75th percentiles, computed using monthly data from January 2010 through December 2025. Panel A reports results for Interval Funds, Panel B for Active ETFs, Panel C for Passive ETFs, Panel D for Tender Offer Funds, Panel E for Business Development Companies (BDCs), and Panel F for Real Estate Investment Trusts (REITs). Variables are reported in the same order across panels and include total net assets (TNA), fund family TNA within the same fund type, fund age (years since inception), an indicator for fund-of-funds structures, monthly net flows, annualized net returns, annualized gross returns (defined as net returns plus expense ratios), annualized NAV returns, annualized distribution returns, minimum investment requirements at the share-class level, and annual expense ratios. Variables that are not applicable to a given fund structure are omitted from the corresponding panel. The final column reports the total number of monthly observations for each variable and fund sample. For variables not reported monthly, values are assumed to remain constant between reporting periods.

Panel A: Interval Fund

	mean	sd	p25	p50	p75	obs
TNA (MM)	302.68	1299.74	7.29	45.65	165.09	18782
Family TNA (Bn)	1.29	2.93	0.10	0.32	1.19	18782
Age (n years)	4.86	4.80	1.58	3.49	6.44	18782
Fund of Funds	0.07	0.25	0.00	0.00	0.00	18782
Flows (Monthly %)	3.27	13.53	-0.83	0.07	3.06	18782
Net Return (Annual %)	5.83	23.29	-1.20	6.90	14.20	18782
Gross Return (Annual %)	8.43	23.47	1.00	9.39	17.14	18588
Nav Return (Annual %)	-1.04	32.56	-4.04	0.00	5.84	18775
Distribution Return (Annual %)	6.87	25.84	0.00	5.92	11.00	18775
Min Investment ('000)	959.76	5165.93	2.50	2.50	100.00	18782
Expense Ratio (Annual %)	2.67	1.49	1.75	2.39	3.15	18556

Panel B: Active ETF

	mean	sd	p25	p50	p75	obs
TNA (MM)	293.32	905.29	18.80	57.54	187.93	47394
Family TNA (Bn)	7.25	12.52	0.17	1.04	7.88	47394
Age (n years)	3.66	4.06	1.12	2.40	4.57	47394
Fund of Funds	0.13	0.34	0.00	0.00	0.00	47394
Flows (Monthly %)	3.53	16.53	-1.29	0.00	3.74	47394
Net Return (Annual %)	6.90	40.14	-9.01	7.55	23.50	47394
Gross Return (Annual %)	7.49	40.28	-8.59	8.18	24.25	46263
Nav Return (Annual %)	4.53	47.75	-3.81	0.00	18.10	47366
Distribution Return (Annual %)	2.37	37.59	-1.00	0.00	9.01	47366
Expense Ratio (Annual %)	0.71	0.37	0.49	0.75	0.85	43729

Panel C: Passive ETF

	mean	sd	p25	p50	p75	obs
TNA (MM)	1876.30	5392.44	28.52	156.93	837.53	62917
Family TNA (Bn)	98.43	138.47	1.49	30.85	127.80	62917
Age (n years)	6.45	5.13	2.36	5.05	9.41	62917
Fund of Funds	0.07	0.26	0.00	0.00	0.00	62917
Flows (Monthly %)	2.52	12.87	-0.89	0.00	3.42	62917
Net Return (Annual %)	6.43	49.41	-14.28	5.88	28.56	62917
Gross Return (Annual %)	6.82	49.21	-13.70	6.21	28.80	61602
Nav Return (Annual %)	3.31	55.31	-6.37	0.00	17.15	62786
Distribution Return (Annual %)	3.02	40.47	-0.99	1.61	9.90	62786
Expense Ratio (Annual %)	0.40	0.26	0.18	0.40	0.56	61024

Summary statistics (cont.)

Panel D: Tender Offer Fund

	mean	sd	p25	p50	p75	obs
TNA (MM)	666.47	1409.03	18.43	121.94	541.18	2984
Family TNA (Bn)	2.10	3.75	0.14	0.51	1.59	2984
Age (n years)	3.99	3.05	1.58	3.25	5.68	2984
Fund of Funds	0.11	0.31	0.00	0.00	0.00	2984
Flows (Monthly %)	4.33	15.05	-0.41	0.25	3.16	2984
Net Return (Annual %)	9.12	21.94	0.59	7.10	17.53	2984
Gross Return (Annual %)	11.72	22.10	2.95	9.57	19.99	2815
Nav Return (Annual %)	4.09	25.43	-1.03	0.00	11.83	2984
Distribution Return (Annual %)	5.03	17.22	-0.00	0.00	8.49	2984
Min Investment (’000)	2459.23	8945.16	10.00	50.00	1000.00	2984
Expense Ratio (Annual %)	2.64	2.01	1.10	2.36	3.47	2815

Panel E: BDC

	mean	sd	p25	p50	p75	obs
TNA (MM)	1973.53	4199.25	103.98	524.12	1614.72	1424
Family TNA (Bn)	6.56	9.40	0.73	2.62	7.91	1424
Age (n years)	2.04	1.04	1.25	1.92	2.67	1424
Flows (Monthly %)	7.54	19.24	-0.87	-0.50	7.03	1424
Net Return (Annual %)	9.10	7.41	6.69	9.70	12.40	1424
Gross Return (Annual %)	16.55	7.82	13.20	16.73	20.43	976
Nav Return (Annual %)	-0.11	7.93	-2.36	0.00	2.84	1424
Distribution Return (Annual %)	9.20	4.96	8.59	9.43	10.20	1424
Min Investment (’000)	360.10	476.03	2.50	2.50	1000.00	1424
Expense Ratio (Annual %)	7.31	3.21	4.01	8.18	10.30	976

Panel F: REIT

	mean	sd	p25	p50	p75	obs
TNA (MM)	1369.21	4755.02	4.20	77.22	414.22	2987
Family TNA (Bn)	6.03	14.56	0.15	0.59	1.87	2987
Age (n years)	4.97	2.84	2.66	4.50	7.11	2987
Flows (Monthly %)	4.19	17.24	-0.75	-0.39	0.99	2987
Net Return (Annual %)	5.87	13.65	0.63	5.58	9.22	2987
Nav Return (Annual %)	0.93	16.18	-3.92	0.36	4.28	2987
Distribution Return (Annual %)	4.94	7.65	4.24	5.09	5.91	2987
Min Investment (’000)	224.49	413.49	2.50	5.00	10.00	2987

Table 4: Performance across Investment Categories: Interval Funds vs. Index ETFs

This table reports regression results of annualized net returns at the product level on fund characteristics. The sample includes Interval Funds and Index ETFs over the period January 2010 to December 2025, with regressions estimated separately by investment category. Investment categories are restricted to those available to both Interval Funds and Index ETFs, including allocation, bonds, liquid alternatives, listed equity, municipal bonds, private credit, and real assets. The key independent variable is an indicator variable for Interval Funds, with Index ETFs serving as the omitted comparison group. Control variables include the one-month lag of the logarithm of product total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), product age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures (Fund of Funds), and one-month lagged net flows (Past Flows). All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Alloc. (1)	Bond (2)	Liquid Alt. (3)	Listed Eq. (4)	Muni Bond (5)	Priv. Credit (6)	Real Assets (7)
Interval Fund	-4.102	2.202*	0.467	-7.449***	0.202	3.393***	-3.134
	(-1.32)	(1.95)	(0.24)	(-3.06)	(0.23)	(5.12)	(-0.81)
Log TNA	-0.146	0.036	-0.433*	-0.049	0.125	0.104*	0.007
	(-0.47)	(0.44)	(-1.69)	(-0.32)	(1.02)	(1.84)	(0.04)
Log Family TNA	0.238**	0.217***	0.404	0.137	-0.120	0.093	0.078
	(2.18)	(4.69)	(1.62)	(1.46)	(-0.98)	(0.71)	(0.53)
Log Age	0.525	-0.628	-1.321	0.613	-0.160	-0.698***	-0.264
	(0.47)	(-1.58)	(-1.09)	(0.80)	(-0.38)	(-2.78)	(-0.33)
Fund of Funds	1.127	0.162	1.052	1.095	1.233	1.673	-1.048
	(0.96)	(0.36)	(0.80)	(0.58)	(0.67)	(1.18)	(-0.75)
Past Flows	-0.021	-0.004	-0.018	0.007	0.003	0.004	0.023
	(-0.49)	(-0.49)	(-0.54)	(0.31)	(0.20)	(0.37)	(0.80)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3363	20293	2411	29543	4677	10132	9594
Adjusted R^2	0.700	0.736	0.246	0.751	0.752	0.655	0.631

Table 5: Performance across Investment Categories: Interval Funds vs. Active ETFs

This table reports regression results of annualized net returns at the product level on fund characteristics. The sample includes Interval Funds and Active ETFs over the period January 2010 to December 2025, with regressions estimated separately by investment category. Investment categories are restricted to those available to both Interval Funds and Active ETFs, including allocation, bonds, liquid alternatives, listed equity, municipal bonds, private credit, and real assets. The key independent variable is an indicator variable for Interval Funds, with Active ETFs serving as the omitted comparison group. Control variables include the one-month lag of the logarithm of product total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), product age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures (Fund of Funds), and one-month lagged net flows (Past Flows). All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Alloc. (1)	Bond (2)	Liquid Alt. (3)	Listed Eq. (4)	Muni Bond (5)	Priv. Credit (6)	Real Assets (7)
Interval Fund	-7.999**	2.031**	0.075	-6.116***	-0.432	1.618***	-2.193
	(-2.30)	(2.24)	(0.03)	(-2.95)	(-0.38)	(3.18)	(-0.49)
Log TNA	-0.589**	0.060	-0.804	-0.054	-0.012	0.104*	-0.032
	(-2.16)	(0.67)	(-1.34)	(-0.27)	(-0.15)	(1.87)	(-0.24)
Log Family TNA	-0.118	0.170	0.039	-0.070	0.069	0.060	0.108
	(-0.55)	(1.39)	(0.14)	(-0.47)	(0.48)	(0.47)	(0.32)
Log Age	0.795	-0.579***	2.284	0.767*	-0.386	-0.681***	-0.248
	(0.80)	(-2.98)	(1.49)	(1.69)	(-1.32)	(-2.79)	(-0.28)
Fund of Funds	-0.855	-0.831	6.487**	0.472	-0.781	1.660	-0.878
	(-0.95)	(-0.95)	(2.03)	(0.52)	(-0.34)	(1.08)	(-0.63)
Past Flows	-0.021	-0.012	0.089	-0.009	-0.001	0.006	0.022
	(-0.86)	(-0.88)	(1.61)	(-0.67)	(-0.08)	(0.50)	(0.93)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5178	11807	2558	25360	3978	10693	4612
Adjusted R^2	0.626	0.658	0.165	0.680	0.831	0.659	0.483

Table 6: Performance across Investment Categories: Interval Funds vs. Alternative Semi-Liquid Funds

This table reports regression results of annualized net returns at the product level on fund characteristics. The sample includes Interval Funds and alternative nontraded semi-liquid funds over the period January 2010 to December 2025, with regressions estimated separately by investment category. Investment categories are restricted to those available to both Interval Funds and alternative nontraded semi-liquid funds, including bonds, liquid alternatives, listed equity, private allocation, private credit, private equity, and real assets. The key independent variable is an indicator variable for Interval Funds, with Business Development Companies (BDCs), Tender Offer Funds, and Real Estate Investment Trusts (REITs) serving as the omitted comparison group. Control variables include the one-month lag of the logarithm of product total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), product age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures (Fund of Funds), and one-month lagged net flows (Past Flows). All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Bond	Liquid Alt.	Listed Eq.	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Interval Fund	0.440	-2.853	3.342	-6.532***	0.033	-5.413***	-2.564*
	(0.19)	(-1.07)	(0.56)	(-2.88)	(0.07)	(-3.41)	(-1.74)
Log TNA	0.542***	0.024	0.279	0.540***	0.104**	0.086	0.146*
	(2.92)	(0.12)	(0.32)	(2.92)	(2.20)	(0.38)	(1.86)
Log Family TNA	0.380	-0.078	-0.158	0.276	0.139	1.846***	-0.173
	(0.79)	(-0.03)	(-0.08)	(0.38)	(1.08)	(3.37)	(-0.99)
Log Age	-4.340**	-3.998	1.386	-1.770	-0.972***	-8.350***	-2.739***
	(-2.03)	(-1.43)	(0.46)	(-1.08)	(-3.67)	(-5.69)	(-5.29)
Past Flows	0.034	-0.038	0.158	0.018	0.011	0.025	-0.014
	(0.64)	(-1.42)	(1.48)	(0.52)	(1.13)	(0.63)	(-0.98)
Fund of Funds			9.694	3.319	0.610	4.387*	-0.765
			(0.93)	(1.24)	(0.45)	(1.70)	(-0.60)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1187	449	680	758	11810	2057	7479
Adjusted R^2	0.582	0.884	0.935	0.272	0.603	0.216	0.377

Table 7: Interval Fund Alphas: Category Portfolios

This table reports alphas from factor regressions of equal-weighted portfolios of interval funds. Panel A uses annualized raw returns, Panel B uses annualized MA(3)-unsmoothed returns, and Panel C uses annualized AR(2)-unsmoothed returns. Alphas are estimated from time-series regressions on 12 factors, which include excess returns on equity indexes (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and changes in fixed income rates (Term Spread, Credit Spread, High Yield Spread, Muni Spread, and Risk-Free Rate). *t*-statistics, clustered at the monthly level, are reported in parentheses. * denotes significance at the 10% level, ** at the 5% level, and *** at the 1% level.

Panel A: Raw Returns

	Alloc.	Bond	Liquid Alt.	Listed Eq.	Muni Bond	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	−1.814	2.149***	0.933	−4.005**	0.705	2.918*	5.007***	3.596**	2.350***
	(−0.56)	(2.70)	(0.89)	(−2.30)	(0.63)	(1.80)	(7.86)	(2.46)	(2.76)
Obs.	56	189	115	180	90	64	191	138	158
Adj. R^2	0.034	0.435	0.676	0.675	0.832	-0.031	0.787	0.158	0.690

Panel B: MA-Unsmoothed Returns

	Alloc.	Bond	Liquid Alt.	Listed Eq.	Muni Bond	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	−1.334	1.971**	0.847	−4.896**	0.705	2.861*	4.885***	2.652	2.080**
	(−0.27)	(2.33)	(0.77)	(−2.50)	(0.63)	(1.74)	(7.10)	(1.35)	(2.13)
Obs.	56	189	115	180	90	64	191	138	158
Adj. R^2	-0.012	0.433	0.674	0.667	0.832	-0.010	0.770	0.145	0.703

Panel C: AR-Unsmoothed Returns

	Alloc.	Bond	Liquid Alt.	Listed Eq.	Muni Bond	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	0.573	1.894**	1.006	−4.979**	0.392	2.762	4.882***	2.635	2.301*
	(0.05)	(2.38)	(0.96)	(−2.46)	(0.37)	(1.57)	(7.41)	(1.34)	(1.95)
Obs.	56	189	115	180	90	64	191	138	158
Adj. R^2	-0.025	0.451	0.666	0.657	0.823	0.004	0.763	0.143	0.617

Table 8: Interval Fund Performance: Abnormal Return Estimates

This table reports abnormal return estimates by asset class for interval funds. Columns (1)–(3) present Fama and MacBeth (1973) estimates, while columns (4)–(6) present panel regression estimates. Within each method, three return specifications are used: annualized raw returns (columns 1 and 4), annualized MA(3)-unsmoothed returns (columns 2 and 5), and annualized AR(2)-unsmoothed returns (columns 3 and 6). The Fama and MacBeth (1973) estimates represent asset class-specific intercepts from monthly cross-sectional regressions and can be interpreted as the excess return of a zero-beta fund in each asset class. The panel regression estimates represent asset class-specific intercepts from pooled regressions with fund-specific factor loadings and can be interpreted as the average alpha of funds in each asset class. As factors, we use excess returns on equity indexes (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and changes in fixed income rates (Term Spread, Credit Spread, High Yield Spread, Muni Spread, and Risk-Free Rate). *t*-statistics are reported in parentheses. *t*-stats use Newey-West adjustment in columns (1)–(3) and are double-clustered by fund and month in columns (4)–(6). * denotes significance at the 10% level, ** at the 5% level, and *** at the 1% level.

	Fama-MacBeth			Panel Regression		
	Raw Return	MA-Unsmoothed	AR-Unsmoothed	Raw Return	MA-Unsmoothed	AR-Unsmoothed
	(1)	(2)	(3)	(4)	(5)	(6)
Alloc.	−5.723	−3.467	11.459	−3.391	−4.169	−8.944
	(−0.73)	(−0.44)	(0.82)	(−0.65)	(−0.71)	(−0.92)
Bond	0.652	0.564	0.961	2.792	2.633	2.497
	(0.73)	(0.48)	(0.69)	(1.39)	(1.33)	(1.27)
Liquid Alt.	−0.428	−0.674	−2.324	−0.445	−0.484	−0.402
	(−0.25)	(−0.35)	(−1.07)	(−0.82)	(−0.77)	(−0.56)
Listed Eq.	−0.454	−1.101	−2.838	−3.893***	−4.806***	−4.887***
	(−0.16)	(−0.38)	(−0.77)	(−3.37)	(−3.74)	(−3.48)
Muni Bond	0.202	−0.438	−1.805	0.499	0.499	0.248
	(0.09)	(−0.19)	(−0.83)	(0.39)	(0.39)	(0.22)
Priv. Alloc.	2.434**	2.711**	3.599***	2.035	1.982	1.886
	(2.05)	(2.39)	(3.18)	(1.17)	(1.16)	(1.11)
Priv. Credit	2.329***	1.959***	2.339**	4.457***	4.458***	4.180***
	(3.24)	(2.58)	(2.49)	(6.24)	(6.13)	(5.99)
Priv. Equity	3.197*	2.453	3.332	0.764	−0.478	−0.690
	(1.94)	(1.26)	(1.54)	(0.26)	(−0.17)	(−0.24)
Real Assets	2.732**	1.807*	0.941	0.990	0.733	0.723
	(2.44)	(1.67)	(0.86)	(1.00)	(0.66)	(0.55)
Adjusted R^2				0.596	0.560	0.492
Observations				16868	16868	16868

Table 9: Performance across Asset Classes: NAV and Distribution Returns

This table reports regression results of annualized returns at the product level, separately decomposed into net asset value (NAV) returns (Columns 1-4) and distribution returns (Columns 5-8). The sample includes Interval Funds and ETFs over the period January 2010 to December 2025, with regressions estimated separately by asset class. Asset classes are restricted to those available across Interval Funds and ETFs and are grouped into Equity (listed equity), Fixed Income (private credit, bonds, and municipal bonds), Multi Assets (allocation and liquid strategies), and Real Assets. The key independent variable is an indicator variable for Interval Funds, with Index and Active ETFs serving as the omitted comparison group. Control variables include the one-month lag of the logarithm of product total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), product age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures (Fund of Funds), and one-month lagged net flows (Past Flows). All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	NAV Return				Distribution Return			
	Equity	Fixed Income	Multi Assets	Real Assets	Equity	Fixed Income	Multi Assets	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Interval Fund	-4.023	-0.129	-4.700**	-3.626	3.287	1.648***	3.450**	0.826
	(-1.01)	(-0.17)	(-2.40)	(-0.92)	(1.09)	(2.87)	(2.15)	(0.29)
Log TNA	0.025	0.073	-0.378*	0.102	-0.077	-0.031	0.134	-0.111
	(0.19)	(0.64)	(-1.92)	(0.50)	(-0.61)	(-0.27)	(1.03)	(-0.76)
Log Family TNA	0.196**	0.154***	0.200*	0.210	-0.072	-0.041	-0.129	-0.108
	(2.20)	(2.73)	(1.66)	(1.48)	(-1.11)	(-0.66)	(-1.41)	(-0.94)
Log Age	-0.108	-0.204	0.356	-0.484	0.658	-0.195	0.211	0.515
	(-0.17)	(-0.80)	(0.57)	(-0.51)	(1.29)	(-0.76)	(0.47)	(0.78)
Fund of Funds	0.479	-0.393	-0.219	1.194	0.123	0.126	0.865	-2.279**
	(0.47)	(-0.68)	(-0.30)	(0.67)	(0.13)	(0.26)	(1.55)	(-2.00)
Past Flows	0.104***	0.037***	0.074***	0.037	-0.109***	-0.041**	-0.056***	-0.012
	(3.48)	(2.62)	(2.69)	(1.25)	(-3.38)	(-2.42)	(-3.05)	(-0.58)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	55152	49625	13710	10385	55152	49625	13710	10385
Adjusted R^2	0.599	0.569	0.455	0.634	0.538	0.386	0.401	0.586

Table 10: Performance across Asset Classes: Single- vs. Multi-Class

This table reports regression results of annualized net returns at the product level on fund clientele indicators and portfolio characteristics, estimated separately by asset class and clientele specialization. The sample includes Interval Funds and ETFs over the period January 2010 to December 2025. Investment categories are restricted to those available to both Interval Funds and ETFs and are grouped into Equity (listed equity), Fixed Income (private credit, bonds, and municipal bonds), Multi Assets (allocation and liquid strategies), and Real Assets. The Interval Funds sample is further split into single-class (Columns 1-4) and multi-class (Columns 5-8). Single-class funds offer products targeting a single investor segment (i.e., exclusively retail share classes or exclusively non-retail share classes), whereas multi-class funds offer products targeting both retail and HNWI/institutional investors. The key independent variables are indicators for Interval Funds interacted with investor clientele, with ETFs serving as the omitted comparison group. ETFs are, by construction, single-class and retail-oriented, as they offer a single share class and do not impose minimum investment requirements. Clientele are classified using share class type labels and minimum investment requirements. Inst/HNWI share classes are defined as those with either a minimum investment requirement above $25,000 or an institutional share class label. Retail share classes are retail-labeled classes with minimum investment requirements equal to or below $25,000. Control variables are the same as in Table 4 and are omitted for brevity. All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Single-Class				Multi-Class			
	Equity	Fixed Income	Multi Assets	Real Assets	Equity	Fixed Income	Multi Assets	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inst/HNWI × Interval Fund	-2.901	2.101**	-3.668	-3.216	0.503	2.613***	-0.987	-2.471
	(-0.70)	(2.51)	(-0.99)	(-0.69)	(0.15)	(3.62)	(-0.48)	(-0.65)
Retail × Interval Fund	0.441	-0.536	0.911	-2.699	0.084	2.116***	-2.170	-2.771
	(0.11)	(-0.65)	(0.36)	(-0.66)	(0.03)	(2.95)	(-1.06)	(-0.75)
Log TNA	-0.033	0.019	-0.326	0.030	-0.067	-0.034	-0.322	-0.000
	(-0.27)	(0.40)	(-1.65)	(0.15)	(-0.56)	(-0.73)	(-1.51)	(-0.00)
Log Family TNA	0.105	0.102**	0.086	0.126	0.111	0.076*	0.075	0.052
	(1.14)	(2.56)	(0.91)	(1.03)	(1.22)	(1.74)	(0.79)	(0.41)
Log Age	0.605	-0.163	0.719	-0.037	0.676	-0.121	0.659	0.407
	(1.14)	(-1.37)	(1.30)	(-0.07)	(1.37)	(-0.87)	(1.17)	(0.48)
Fund of Funds	0.610	-0.366	0.656	-0.748	0.407	-0.734	0.691	-1.241
	(0.77)	(-0.68)	(0.91)	(-0.23)	(0.48)	(-1.22)	(0.91)	(-0.70)
Past Flows	-0.004	-0.004	0.014	0.002	-0.004	-0.007	0.014	0.040
	(-0.30)	(-0.52)	(0.65)	(0.05)	(-0.29)	(-0.90)	(0.65)	(1.51)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54313	41208	13044	7540	54556	45870	13334	9426
Adjusted R^2	0.714	0.716	0.500	0.771	0.713	0.768	0.500	0.689

Table 11: Performance across Asset Classes: Portfolio Liquidity and Leverage

This table reports regression results of annualized gross returns at the portfolio level on portfolio characteristics, estimated separately by asset class. Gross returns are defined as net returns plus expense ratios. The sample includes Interval Funds and ETFs over the period October 2019 to December 2025. Investment categories are restricted to those available to both Interval Funds and ETFs and are grouped into Equity (listed equity), Fixed Income (private credit, bonds, and municipal bonds), Multi Asset (allocation and liquid strategies), and Real Assets. The main independent variables are indicators for Interval Funds interacted with leverage and liquidity. Leverage is defined as the percentage ratio of total liabilities to assets under management, and liquidity is defined as the portfolio share of Level 1 assets plus 0.5 times the portfolio share of Level 2 assets. Level 1 assets are valued using quoted (unadjusted) prices in active markets for identical assets or liabilities accessible at the measurement date, while Level 2 assets are valued using inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Control variables are included but omitted from the table and include the one-month lag of the logarithm of portfolio total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), portfolio age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures (Fund of Funds), and lagged fund flows (Past Flows). When multiple products or share classes are associated with the same portfolio, observations are aggregated at the portfolio level: returns are computed as TNA-weighted averages across products, portfolio TNA is obtained by summing TNAs across all linked products, portfolio age corresponds to the inception date of the oldest product, fund flows are aggregated as net flows across all associated products, and fund-of-funds status and family TNA are portfolio-level attributes that do not vary across share classes. All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Equity	Fixed Income	Multi Assets	Real Assets	Equity	Fixed Income	Multi Assets	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Interval	3.445	3.156***	1.875	-1.497	-1.251	5.343***	1.347	-3.222
	(0.65)	(3.72)	(0.54)	(-0.27)	(-0.16)	(6.98)	(0.32)	(-0.49)
Leverage	-0.039	0.006	-0.169***	-0.206				
	(-0.72)	(0.52)	(-2.77)	(-1.52)				
Interval × Leverage	-0.445**	0.062***	0.057	0.126				
	(-2.64)	(3.32)	(0.35)	(0.40)				
Liquidity					0.823**	0.153	0.289	0.581
					(2.00)	(0.25)	(0.29)	(0.68)
Interval × Liquidity					3.641	-1.969**	1.207	5.778
					(0.40)	(-2.38)	(0.29)	(1.36)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	31213	23763	7093	4193	31213	23769	7093	4193
Adjusted R^2	0.699	0.750	0.496	0.727	0.699	0.750	0.495	0.727

Table 12: Timing Performance

This table reports annual regressions of timing performance at the product level on fund characteristics. Timing performance is defined as the difference between the dollar-weighted return and the return of a buy-and-hold strategy over a calendar year. The sample includes Interval Funds and ETFs from January 2010 to December 2025, with regressions estimated separately by investment category. Investment categories are restricted to those available to both Interval Funds and ETFs, including allocation, bonds, liquid alternatives, listed equity, municipal bonds, private credit, and real assets. The key independent variable is an indicator for Interval Funds, with ETFs serving as the omitted comparison group. Control variables include the one-month lag of log product total net assets (Log TNA), log fund family total net assets within the same product type (Log Family TNA), log(1 + age) (Log Age), a fund-of-funds indicator, and one-month lagged net flows (Past Flows). All regressions include benchmark-by-time fixed effects, with benchmarks defined by Morningstar Category Indices and time measured annually. *t*-statistics, clustered at the product level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Alloc. (1)	Bond (2)	Liquid Alt. (3)	Listed Eq. (4)	Muni Bond (5)	Priv. Credit (6)	Real Assets (7)
Interval Fund	-0.140	0.870***	0.283	0.261	0.093	1.051***	0.942***
	(-0.34)	(4.70)	(0.98)	(1.14)	(0.43)	(3.30)	(4.34)
Log TNA	0.049	0.067***	-0.223	-0.034	-0.010	0.073*	-0.017
	(0.64)	(3.21)	(-1.64)	(-0.83)	(-0.22)	(1.96)	(-0.44)
Log Family TNA	-0.045	0.037**	0.007	0.057**	0.028	0.212***	0.090
	(-0.91)	(2.48)	(0.12)	(2.16)	(0.96)	(3.20)	(1.61)
Log Age	-0.079	-0.171***	0.642**	0.099	-0.180	-0.565***	-0.039
	(-0.51)	(-2.67)	(2.10)	(0.84)	(-1.40)	(-3.70)	(-0.16)
Fund of Funds	0.075	-0.396**	0.108	-0.106	-0.821***	-0.749*	0.471*
	(0.34)	(-2.28)	(0.29)	(-0.57)	(-3.66)	(-1.68)	(1.82)
Past Flows	-0.001	-0.001	-0.000	-0.010	0.022*	-0.009	-0.012
	(-0.08)	(-0.21)	(-0.01)	(-1.47)	(1.95)	(-0.84)	(-0.37)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	837	2896	439	5127	742	1013	943
Adjusted R^2	0.032	0.115	0.064	0.080	0.178	0.082	0.069

Table 13: Redemption Events

Fund-level summary statistics for the Morningstar sample and for retail and institutional or high net worth share classes separately for funds that have redemption data by share class. Offered Amount is the percentage of shares offered by the fund for redemption. Potential Increase is the additional percentage that may be offered for repurchase before the fund begins to prorate redemptions. Start to Deadline is the number of days from the start of the repurchase offer to the redemption request deadline. Deadline to Pricing is the number of days between the redemption deadline and the pricing date at which the repurchase NAV is determined. Amount Tendered is the percentage of outstanding shares tendered on a given redemption date. Amount Repurchased is the percentage of outstanding shares repurchased on a given redemption date. Oversubscribed is an indicator of whether the number of shares tendered exceeds the number of shares offered for redemption at the fund level. Prorated is an indicator of whether the shares repurchased are fewer than the shares tendered, conditional on the offer being oversubscribed.

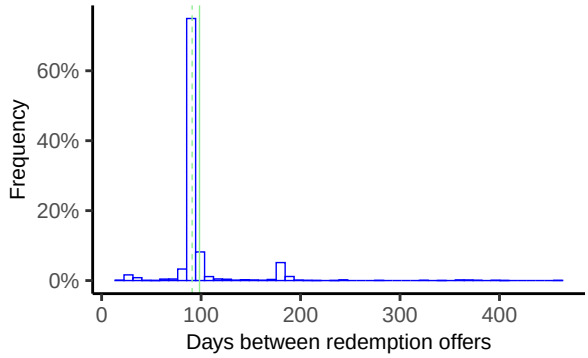
	All Share Classes				Retail Share Classes				Inst./HNWI Share Classes			
	mean	p50	sd	N	mean	p50	sd	N	mean	p50	sd	N
Offered amount (%)	6.16	5.00	3.92	1,787	6.17	5.00	5.36	564	6.42	5.00	3.69	572
Potential increase (%)	1.73	2.00	0.68	1,847	1.69	2.00	0.72	564	1.65	2.00	0.76	572
Start to deadline	26.55	30	9.623	1,155	30.57	31	4.749	319	29.42	30	5.831	374
Deadline to pricing	3.473	0	89.74	1,676	9.213	0	160.2	520	1.816	0	17.11	506
Amount tendered (%)	4.04	1.73	9.12	968	6.96	1.67	14.6	311	2.94	1.65	5.19	324
Amount repurchased (%)	3.05	2.25	4.04	1,631	2.90	2.15	3.96	409	2.75	1.67	3.47	428
Oversubscribed (0-1)	0.158	0	0.365	1,592	0.223	0	0.417	524	0.149	0	0.357	482
Prorated (0-1)	0.567	1	0.498	104	0.662	1	0.477	68	0.560	1	0.507	25

Table 14: Fund Liquidity Offering and Portfolio Holdings Decisions

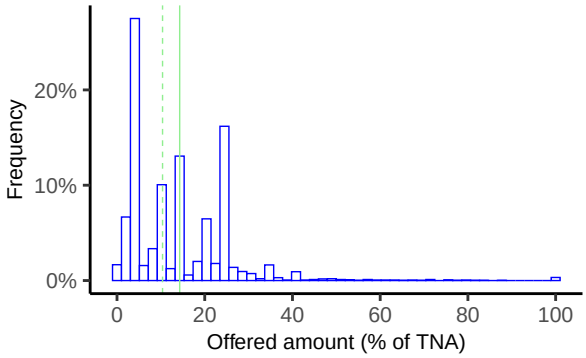
This table reports regression results for Interval Funds examining the relationship between liquidity offered at redemption windows and portfolio holdings decisions using holdings-level data. The sample includes Interval Funds from October 2019 to December 2025 with available portfolio holdings. Columns (1)–(3) report leverage regressions and Columns (4)–(6) report portfolio liquidity regressions, estimated separately for funds with only retail share-classes, only institutional/HNWI share-classes, and multi-class funds. Leverage is defined as the percentage ratio of total liabilities to assets under management. Liquidity is defined as the portfolio share of Level 1 assets plus 0.5 times the portfolio share of Level 2 assets, where Level 1 assets are valued using quoted (unadjusted) prices in active markets and Level 2 assets are valued using observable inputs other than quoted prices. The key independent variable is the percentage of total net assets offered for redemption at a given redemption window (*Offered Amount*). Control variables include the one-month lag of log portfolio total net assets (Log TNA), log fund family total net assets within the same product type (Log Family TNA), log (1 + portfolio age) (Log Age), lagged net flows (Past Flows), and a fund-of-funds indicator. When multiple products or share classes map to the same portfolio, observations are aggregated at the portfolio level: returns are TNA-weighted across products, portfolio TNA is the sum of product TNAs, portfolio age is based on the oldest product, flows are aggregated across products, and fund-of-funds status and family TNA are portfolio-level attributes. All regressions include benchmark-by-time fixed effects, with benchmarks defined by Morningstar Category Indices and time measured monthly. *t*-statistics, two-way clustered at the month-year and portfolio levels, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively

	Leverage			Liquidity		
	Retail	Inst/HNWI	Multi-class	Retail	Inst/HNWI	Multi-class
	(1)	(2)	(3)	(4)	(5)	(6)
Offered Amount	-2.120***	0.168	0.542*	0.111***	0.011	0.012
	(-2.87)	(0.68)	(1.74)	(9.80)	(1.53)	(1.35)
Log TNA	8.054**	2.632	2.151	-0.077	-0.025	-0.024
	(2.09)	(1.54)	(1.01)	(-0.84)	(-0.88)	(-0.90)
Log Family TNA	-5.829	-1.181*	-0.978	0.031	-0.035	-0.032
	(-1.68)	(-1.68)	(-0.64)	(0.45)	(-1.61)	(-1.29)
Log Age	-7.083**	-3.668	1.845	-0.163***	0.044	0.045
	(-2.59)	(-1.46)	(1.43)	(-2.99)	(0.38)	(1.07)
Past Flows	-0.101*	-0.052	-0.056	0.003**	0.004***	-0.000
	(-1.82)	(-1.35)	(-1.56)	(2.42)	(2.80)	(-0.01)
Fund of Funds		-7.272**	-2.914		-0.196**	-0.290***
		(-2.40)	(-0.85)		(-2.50)	(-2.81)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	757	1667	2019	757	1667	2019
Adjusted R^2	0.377	0.048	0.389	0.540	0.155	0.254

Internet Appendix for "Democratizing Illiquid Assets: Liquidity Transformation and Performance in Interval Funds"

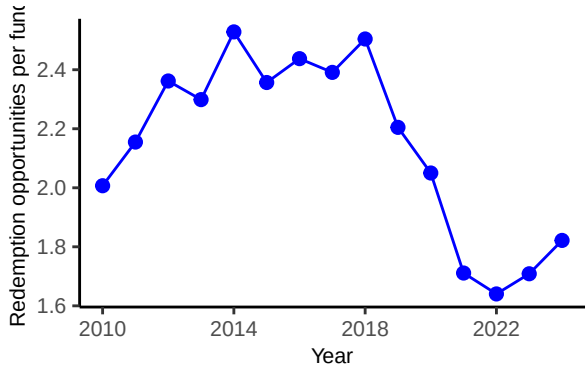


(a) Days between tender offers - tender offer funds

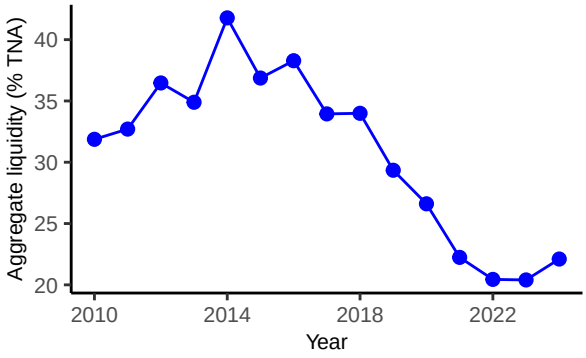


(b) Offered amount - tender offer funds

Figure A.1: Distribution of redemption offer characteristics among tender offer funds. Panel (a) shows the distribution of days between consecutive redemption offers for tender offers for tender offer funds. Panels (b) shows the distribution of offered amounts (as a percentage of TNA) for tender offer funds. The solid vertical line marks the average. The dashed vertical line marks the median. Data are from forms TO-I available on Edgar from 2010 to 2025.

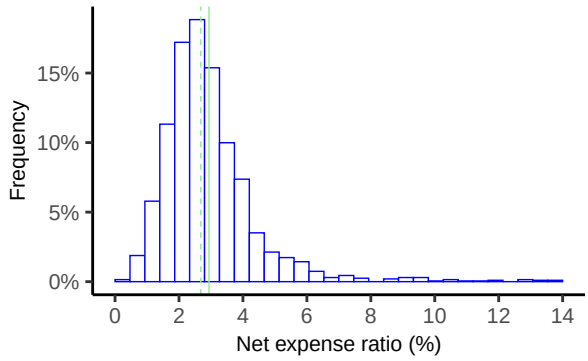


(a) Redemption opportunities per fund

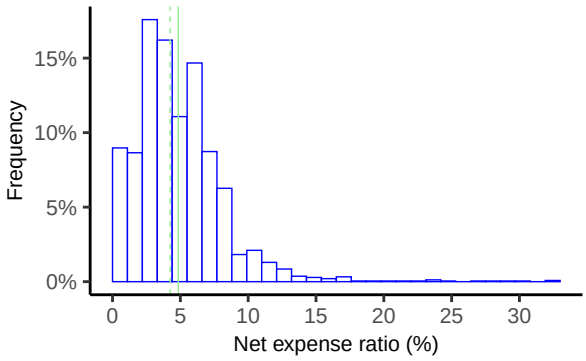


(b) Aggregate liquidity provision per fund

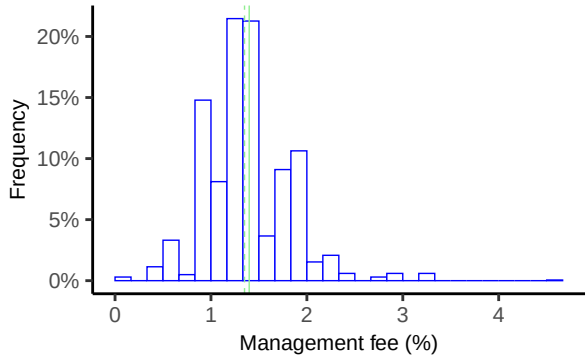
Figure A.2: Tender-offer funds' liquidity provision over time. Panel (a) shows the average number of redemption opportunities per fund per year for interval fundsfrom 2010 through 2024. Redemption opportunities are computed as the total number of redemption offers in a given year divided by the number of funds filing N-CSR reports in that year. Panel (b) shows the aggregate amount of TNA made available for redemption per fund per year. Aggregate liquidity is computed as the sum of all offered amounts (as a percentage of TNA) in a given year divided by the number of funds filing N-CSR reports in that year. Data are from forms N-23c-3 available on Edgar.



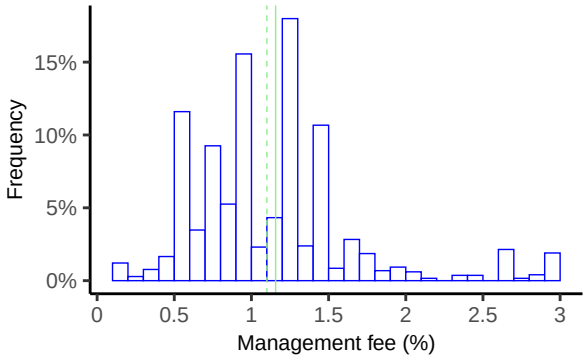
(a) Net expense ratios - interval funds



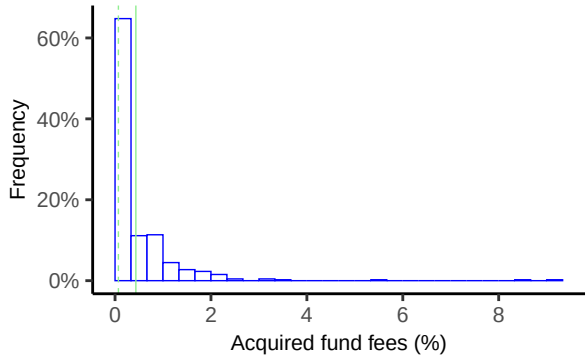
(b) Net expense ratios - tender offer funds



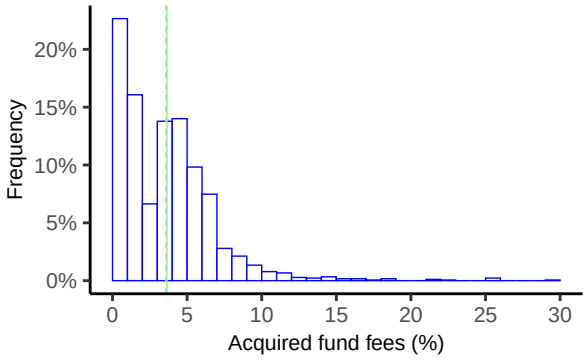
(c) Management fees - interval funds



(d) Management fees - tender offer funds

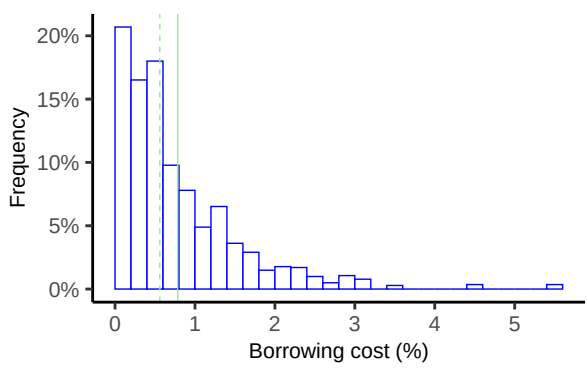


(e) Acquired fund fees - interval funds

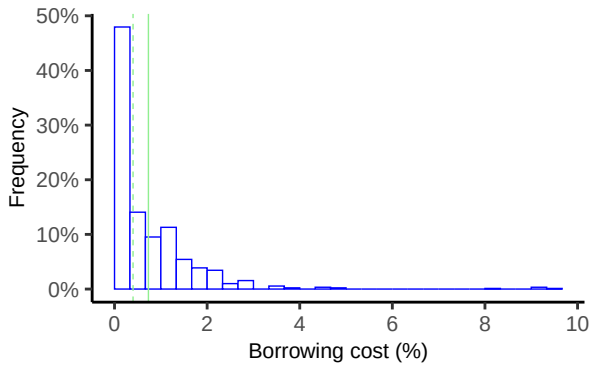


(f) Acquired fund fees - tender offer funds

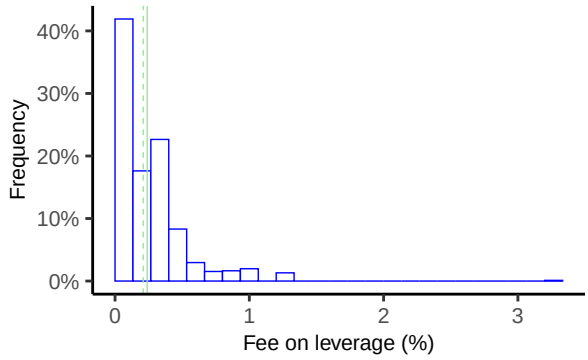
Figure A.3: Distribution of operating fees and expenses. Panels (a) and (b) show the distribution of net expense ratios (as a percentage) for interval funds and tender offer funds, respectively. Panels (c) and (d) show the distribution of management fees. Panels (e) and (f) show the distribution of acquired fund fees among funds that charge them. The solid vertical line marks the average. The dashed vertical line marks the median. Data are annual observations at the share-class level from forms N-CSR, 486BPOS, 486APOS, N-2, and TO-I available on Edgar from 2010 to 2025.



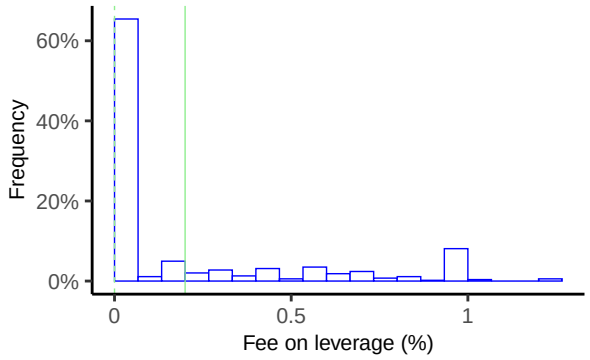
(a) Borrowing costs - interval funds



(b) Borrowing costs - tender offer funds

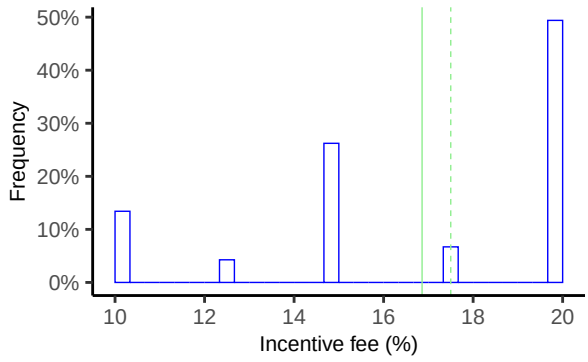


(c) Management fees on leverage - interval funds

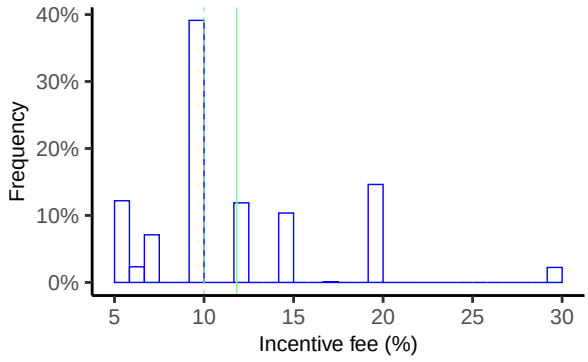


(d) Management fees on leverage - tender offer funds

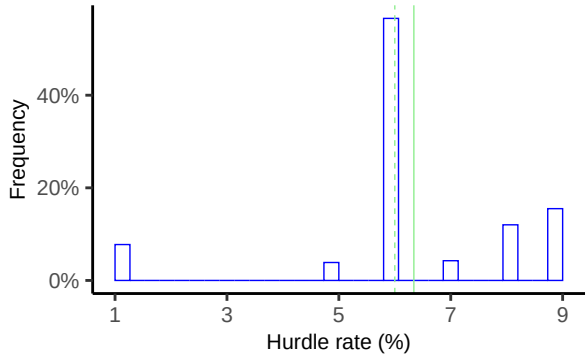
Figure A.4: Distribution of borrowing costs and leverage-related fees. Panels (a) and (b) show the distribution of borrowing costs (interest and fees on borrowed funds, as a percentage) for interval funds and tender offer funds, respectively. Panels (c) and (d) show the distribution of additional management fees charged on leveraged assets among funds that increase management fees with borrowing. The solid vertical line marks the average. The dashed vertical line marks the median. Data are annual observations at the share-class level from forms N-CSR, 486BPOS, 486APOS, N-2, and TO-I available on Edgar from 2010 to 2025.



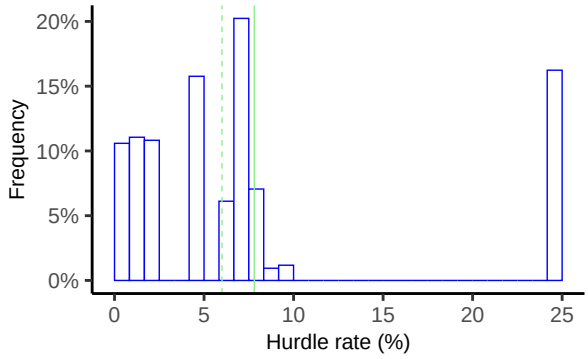
(a) Incentive fees - interval funds



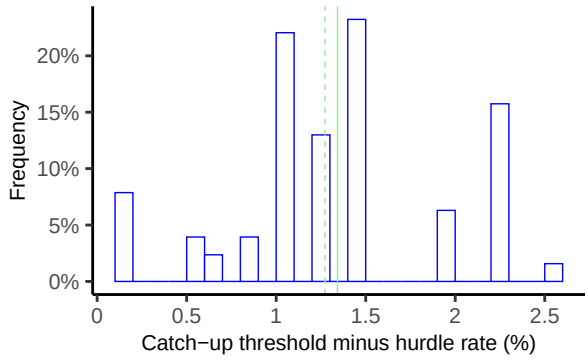
(b) Incentive fees - tender offer funds



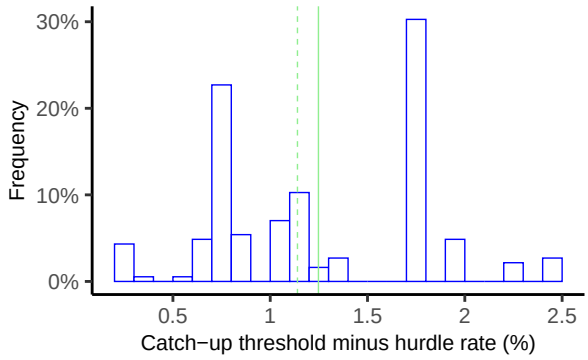
(c) Hurdle rates - interval funds



(d) Hurdle rates - tender offer funds

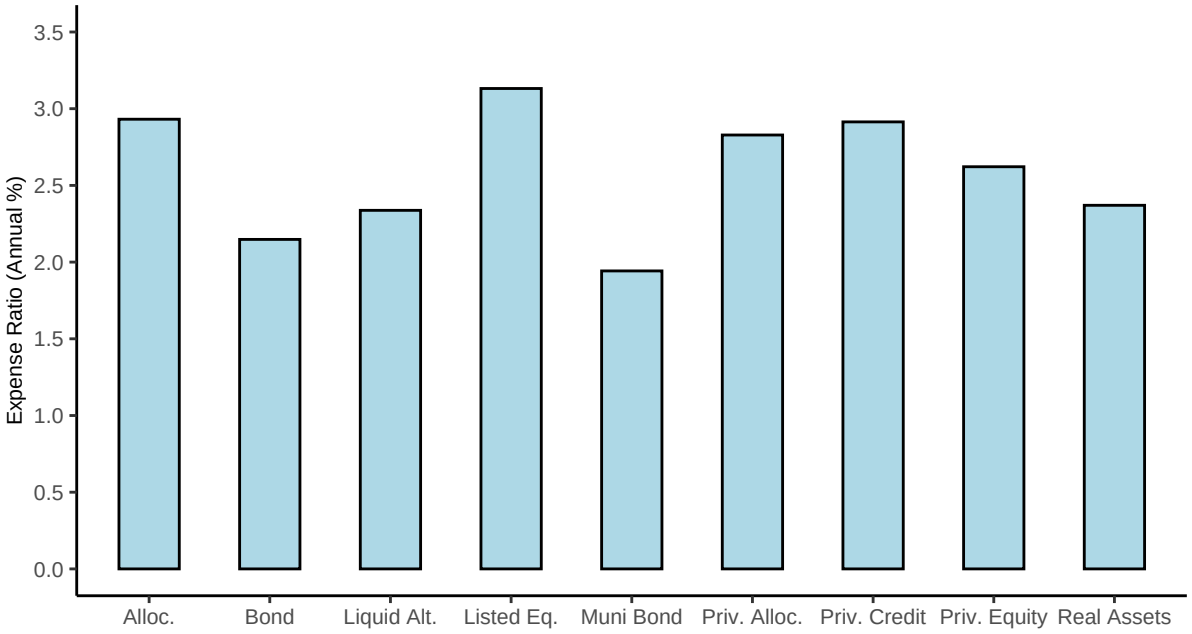


(e) Catch-up threshold over hurdle - interval funds

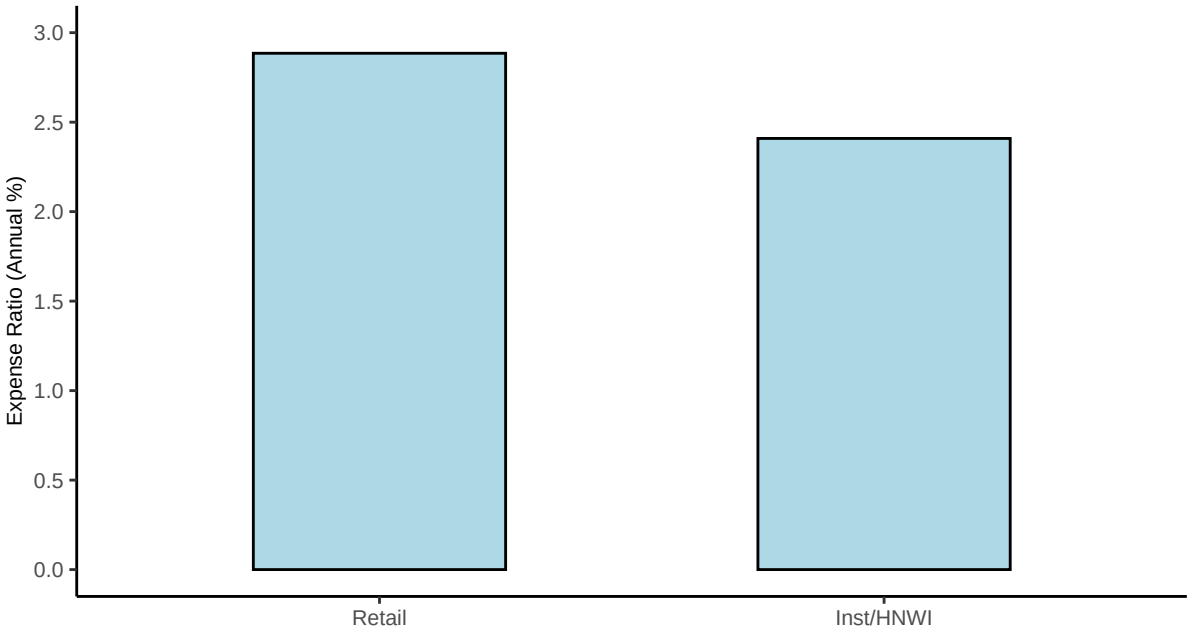


(f) Catch-up threshold over hurdle - tender offer funds

Figure A.5: Distribution of contractual features related to incentive fees. Panels (a) and (b) show the distribution of performance-based fees as a percentage of the fund's interest and dividend income for interval funds and tender offer funds, respectively. Panels (c) and (d) show the distribution of hurdle rates among funds that feature a hurdle rate for the payment of incentive fees. Panels (e) and (f) show the difference between the catch-up threshold up to which the catch-up rate applies and the hurdle rate among the funds that feature both. The solid vertical line marks the average. The dashed vertical line marks the median. Data are annual observations at the share-class level from forms 486BPOS, 486APOS, N-2, and TO-I available on Edgar from 2010 to 2025.



(a) Average Expense Ratios by Asset Class



(b) Average Expense Ratios by Clientele

Figure A.6: Average annual expense ratio by asset class and clientele for interval funds in the Morningstar sample from 2010 to 2025. Missing expense ratios from Morningstar are obtained from forms N-CSR available on Edgar.

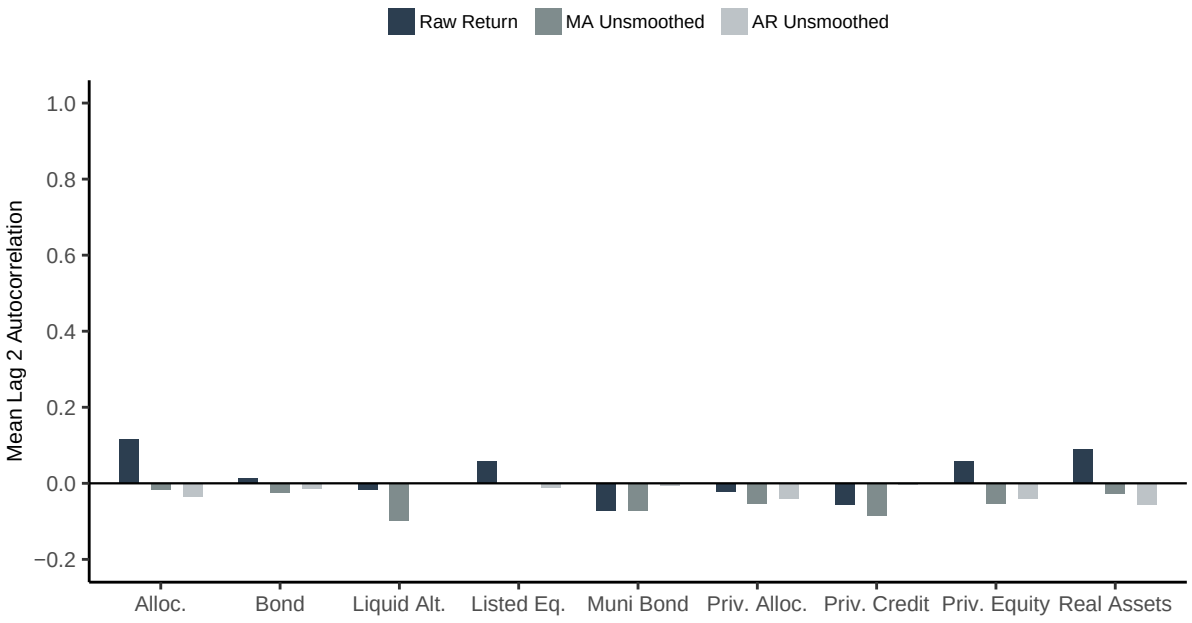
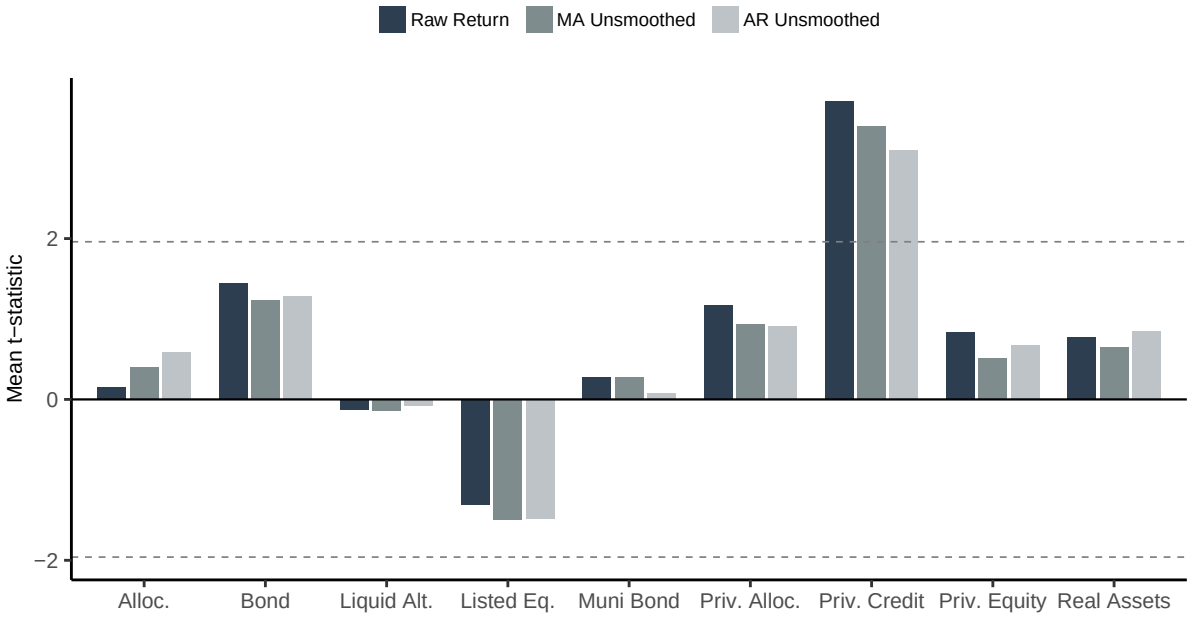
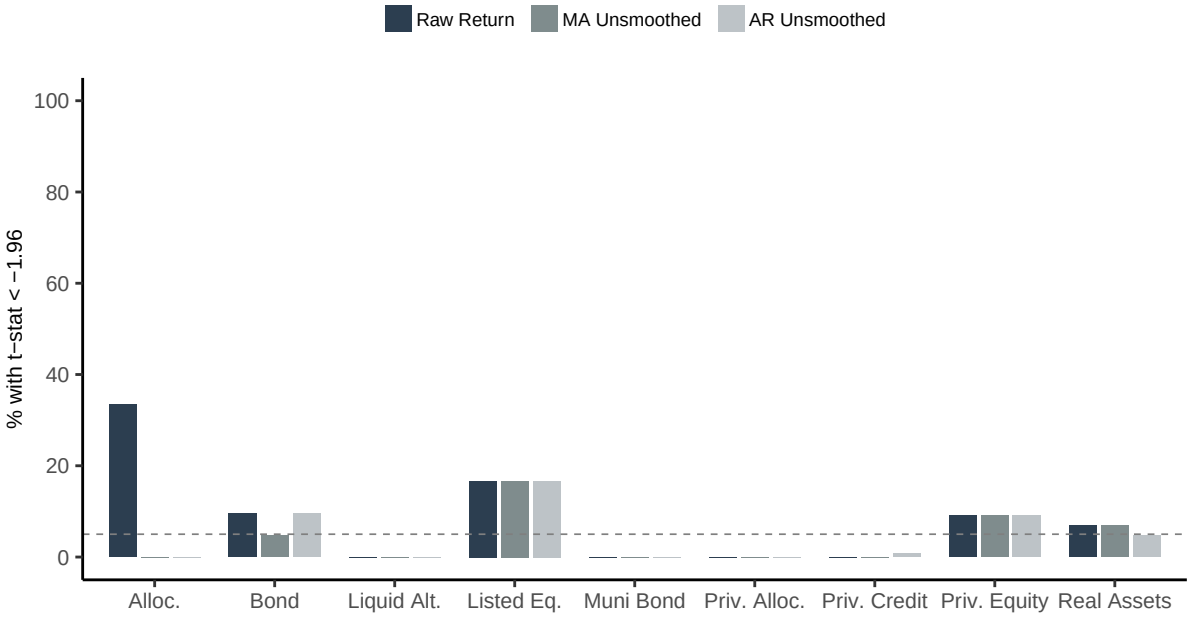


Figure A.7: The figures plot average two-month autocorrelations of monthly returns for interval funds across investment categories. We calculate the autocorrelation between returns and their two-month lags for each fund, and then compute the mean autocorrelation within each category. Results are displayed for three return specifications: raw returns (dark grey), MA-unsmoothed returns (medium grey), and AR-unsmoothed returns (light grey).



(a) Average t-stat of Monthly Alphas



(b) Share of Significantly Negative Alphas

Figure A.8: The figures plot the distribution of significant risk-adjusted performance for interval funds across investment categories using multi-factor regressions. For each fund, we estimate alpha from a time-series regression of excess returns on equity factors (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and fixed income factors (Term Spread, Credit Spread, High Yield Spread, Muni Spread), with standard errors clustered at the month level. We then calculate the percentage of funds with statistically significant alphas within each category. Panel (a) shows mean t-statistics, and Panel (b) shows the percentage with negative significant alphas ($t < -1.96$). Results are displayed for three return specifications: raw returns (dark grey), MA-unsmoothed returns (medium grey), and AR-unsmoothed returns (light grey). Dashed lines indicate the 5% threshold expected under the null hypothesis of no abnormal performance.

Table A.1: Redemption Characteristics by Fund Type of Tender Offer Funds

This table reports summary statistics on the redemption terms of tender offer funds. "Days between tender offers" measures the number of days between the start dates of two consecutive tender offers, "Days from commencement to expiration" measures the length of the tender offer period, and "Days from expiration to valuation" measures the number of days between the tender offer expiration and the valuation date. "Offered amount" is the percentage of TNA made available for redemption in each offer. Data are from forms TO-I available on Edgar from 2010 to 2025.

	Mean	SD	Min	P10	P25	P50	P75	P90	Max	N. Obs
Days between tender offers	98.39	34.36	15.00	87.00	90.00	91.00	93.00	104.00	456.00	4495
Days from commencement to expiration	30.69	6.92	19.00	28.00	28.00	29.00	31.00	34.00	111.00	4673
Days from expiration to valuation	53.61	31.00	-89.00	0.00	33.00	65.00	73.00	95.00	110.00	4673
Offered amount (% TNA)	14.29	11.67	0.00	4.42	5.00	10.38	22.56	25.00	100.00	4634
Rationed redemption (0-1)	0.13	0.34	0.00	0.00	0.00	0.00	0.00	1.00	1.00	3783
Proration if rationed (%)	47.08	35.71	3.00	9.00	14.00	33.00	90.00	96.00	100.00	510

Table A.2: Fee Structure of Tender Offer Funds

This table reports summary statistics for key fee and compensation features of tender offer funds. Panel A shows the distribution of expense items. All values are expressed as percentages, except "Early years," which measures the number of years during which an early redemption fee applies. Net expense ratios include management fees, borrowing costs, and other fund expenses. Management fees refer to the base advisory fee. Borrowing costs include interest and fees on borrowed funds. Acquired fund fees are expenses from investing in other funds. Redemption fees include front-end loads, combined back-end loads, and early redemption fees. Incentive fees apply to a subset of funds and are often subject to hurdle rates and catch-up provisions. "Catch-up thresholds minus hurdle rates" measures the range over which the catch-up provision applies, and "Catch-up rates" denote the share of returns allocated to the advisor during this range. "Fee on leverage" measures the management fee charged on leveraged assets. Panel B shows the prevalence of features associated with performance-based fee structures among tender offer funds. The first row shows the share of all funds that charge an incentive fee. Subsequent rows report the frequency of additional contractual features (high-water marks, hurdle rates, and catch-up provisions) within the subset of funds that charge incentive fees. The final row shows the frequency of catch-up provisions among funds that apply a hurdle rate. Data are annual observations at the share-class level from forms N-2, 486BPOS, and 486APOS available on Edgar from 2010 to 2025.

Panel A: All expenses

Feature	Mean	SD	Min	P10	P25	P50	P75	P90	Max	N. Obs
Net expense ratio (%)	4.84	3.29	0.41	1.25	2.74	4.25	6.34	8.31	33.00	2480
Management fee (%)	1.16	0.53	0.10	0.60	0.75	1.10	1.40	1.67	3.00	2480
Fee on leverage (%)	0.52	0.34	0.04	0.12	0.22	0.50	0.85	1.00	1.25	207
Borrowing cost (%)	0.73	0.99	0.01	0.05	0.09	0.40	1.11	1.76	9.37	903
Acquired fund fees (%)	3.64	3.21	0.01	0.47	1.04	3.57	5.25	6.88	29.94	1796
Front load (%)	2.83	1.50	0.08	1.00	2.00	3.00	3.50	4.75	10.00	1025
Redemption fees (%)	2.36	1.81	0.50	2.00	2.00	2.00	2.00	3.00	20.00	1123
Early withdrawal period (years)	1.08	0.53	0.25	1.00	1.00	1.00	1.00	1.40	10.00	1083
Incentive fee (%)	11.83	5.26	5.00	5.00	10.00	10.00	15.00	20.00	30.00	984
Hurdle rate (%)	7.81	7.99	0.66	0.66	1.78	6.00	8.00	25.00	25.00	425
Catch-up threshold (%)	7.80	2.08	1.47	5.71	6.67	8.75	8.75	9.14	12.50	185
Catch-up rate (%)	100.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	188
Catch-up threshold minus hurdle rate (%)	1.25	0.56	0.22	0.69	0.72	1.14	1.75	1.75	2.50	185

Panel B: Incentive-fee features

Feature	Frequency	Sample
Has incentive fee	44.0%	All funds (2480 observations)
Has high-water mark	67.2%	Funds with incentive fee (1090 observations)
Has hurdle rate	39.0%	Funds with incentive fee (1090 observations)
Has both high-water mark and hurdle rate	7.4%	Funds with incentive fee (1090 observations)
Has catch-up provision	43.5%	Funds with hurdle rate (425 observations)

Table A.3: Performance across Investment Categories: Gross Returns at the Portfolio Level

This table reports regression results of annualized net returns at the portfolio level on fund characteristics, estimated separately by investment category. The sample covers January 2010 through December 2025. Panel A compares Interval Funds with Index ETFs; Panel B compares Interval Funds with Active ETFs; and Panel C compares Interval Funds with alternative semi-liquid funds, including Tender Offer Funds, BDCs, and REITs. The key independent variable is an indicator variable for Interval Funds. Control variables include the one-month lag of the logarithm of portfolio total net assets (Log TNA), the logarithm of fund family total net assets within the same product type (Log Family TNA), portfolio age measured as the natural logarithm of one plus years since inception (Log Age), an indicator for fund-of-funds structures (Fund of Funds), and lagged fund flows (Past Flows). When multiple products or share classes are associated with the same portfolio, observations are aggregated at the portfolio level: returns are computed as TNA-weighted averages across products, portfolio TNA is obtained by summing TNAs across all linked products, portfolio age corresponds to the inception date of the oldest product, fund flows are aggregated as net flows across all associated products, and fund-of-funds status and family TNA are portfolio-level attributes that do not vary across share classes. All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Interval Funds vs Index ETFs

	Alloc. (1)	Bond (2)	Liquid Alt. (3)	Listed Eq. (4)	Muni Bond (5)	Priv. Credit (6)	Real Assets (7)
Interval	-4.721	1.061	2.095	-7.368***	0.210	3.531***	-2.739
	(-1.20)	(1.01)	(1.02)	(-2.91)	(0.21)	(5.43)	(-0.70)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3221	19263	2057	28428	4138	4047	6988
Adjusted R^2	0.710	0.742	0.180	0.751	0.723	0.474	0.714

Panel B: Interval Funds vs Active ETFs

	Alloc. (1)	Bond (2)	Liquid Alt. (3)	Listed Eq. (4)	Muni Bond (5)	Priv. Credit (6)	Real Assets (7)
Interval	-7.928*	1.149	2.620	-6.433***	-0.027	1.705***	-1.343
	(-1.83)	(1.34)	(0.93)	(-3.20)	(-0.03)	(3.52)	(-0.27)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4902	10727	2135	23589	3410	4580	2078
Adjusted R^2	0.626	0.665	0.130	0.683	0.828	0.497	0.490

Panel C: Interval Funds vs Alternative Semi-Liquid Funds

	Bond (1)	Liquid Alt. (2)	Listed Eq. (3)	Priv. Alloc. (4)	Priv. Credit (5)	Priv. Equity (6)	Real Assets (7)
Interval	2.702	5.062	0.383	-9.461***	1.274**	-3.533**	-1.773
	(1.05)	(0.34)	(0.06)	(-3.97)	(2.34)	(-2.06)	(-1.49)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	648	67	119	317	4799	896	2301
Adjusted R^2	0.270	0.805	0.544	0.146	0.414	0.126	0.351

Table A.4: Unsmoothed Returns: Summary Statistics

This table presents share-class-level summary statistics for returns of interval funds used in the factor analysis, including the mean, standard deviation, and the 25th, 50th, and 75th percentiles, based on monthly data from January 2010 through December 2025. Variables include monthly net return, MA(3)-unsmoothed monthly net return, and AR(2) unsmoothed monthly net return. All monthly returns are annualized. This is a restricted sample of interval funds with at least 24 months of data to allow for estimation of the factor regression.

	Mean	SD	P25	P50	P75	Observations
Raw Returns (%, Annualized)	5.63	24.31	-1.53	6.73	14.53	16872
MA-Unsmoothed Returns (%, Annualized)	5.63	26.75	-2.64	6.85	15.57	16872
AR-Unsmoothed Returns (%, Annualized)	5.63	27.27	-2.24	6.88	15.32	16872

Table A.5: Interval Fund Raw Alpha and Betas: Category Portfolios

This table reports alphas and betas from factor regressions of equal-weighted portfolios of interval funds using annualized raw returns. As factors, we use excess returns on equity indexes (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and changes in fixed income rates (Term Spread, Credit Spread, High Yield Spread, Muni Spread, and Risk-Free Rate). *t*-statistics, clustered at the monthly level, are reported in parentheses. * denotes significance at the 10% level, ** at the 5% level, and *** at the 1% level.

	Alloc.	Bond	Liquid Alt.	Listed Eq.	Muni Bond	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	−1.814	2.149***	0.933	−4.005**	0.705	2.918*	5.007***	3.596**	2.350***
	(−0.56)	(2.70)	(0.89)	(−2.30)	(0.63)	(1.80)	(7.86)	(2.46)	(2.76)
SP500	−0.034	−0.023	−0.074	0.240**	−0.018	−0.045	−0.060	−0.047	−0.023
	(−0.23)	(−0.43)	(−1.08)	(2.41)	(−0.26)	(−0.60)	(−1.48)	(−0.46)	(−0.52)
Large HML	−0.038	−0.049	0.076	−0.209**	−0.114**	−0.058	−0.020	−0.026	−0.005
	(−0.37)	(−1.32)	(1.13)	(−2.47)	(−2.20)	(−1.11)	(−0.71)	(−0.44)	(−0.17)
Russell 2000	0.100	0.037	0.017	0.150***	0.014	0.029	0.027	0.088*	0.021
	(1.04)	(1.16)	(0.37)	(2.78)	(0.38)	(0.75)	(1.30)	(1.69)	(0.85)
Small HML	−0.068	0.124***	−0.051	0.097	0.174***	0.061	0.001	−0.008	0.042
	(−0.36)	(3.01)	(−1.01)	(1.20)	(3.56)	(1.13)	(0.03)	(−0.13)	(1.04)
REIT	0.098	−0.009	0.219***	0.036	−0.016	0.047	0.043*	0.027	0.229***
	(0.88)	(−0.36)	(4.58)	(0.64)	(−0.40)	(1.10)	(1.83)	(0.73)	(8.61)
Global	0.022	−0.024	0.096	−0.029	−0.057	0.040	0.018	0.043	−0.001
	(0.14)	(−0.41)	(1.17)	(−0.28)	(−0.84)	(0.40)	(0.52)	(0.46)	(−0.02)
Emerging	−0.047	−0.006	−0.040	0.082	0.039	−0.016	−0.023	0.064	−0.009
	(−0.34)	(−0.15)	(−0.83)	(1.44)	(0.86)	(−0.24)	(−0.94)	(1.21)	(−0.31)
Risk Free Rate	0.148	−0.272***	−0.055	−0.345***	−0.881***	0.057	−0.054	0.076	0.077
	(0.76)	(−5.02)	(−0.43)	(−2.80)	(−11.36)	(0.77)	(−0.96)	(0.98)	(1.29)
Term Spread	0.106	−0.303***	−0.098	−0.374***	−0.882***	0.054	−0.068	0.109	0.084
	(0.51)	(−6.42)	(−0.79)	(−3.24)	(−13.05)	(0.76)	(−1.28)	(1.60)	(1.38)
Credit Spread	−0.248	−0.336***	−0.248*	−0.035	−0.092	−0.081	−0.351***	0.090	−0.049
	(−0.51)	(−3.39)	(−1.93)	(−0.29)	(−0.77)	(−0.62)	(−3.27)	(1.03)	(−0.65)
High Yield Spread	0.023	−0.035	−0.044**	−0.069***	−0.080**	0.008	−0.105***	0.007	−0.007
	(0.25)	(−1.56)	(−2.35)	(−2.70)	(−2.62)	(0.22)	(−7.44)	(0.36)	(−0.68)
Muni Spread	−0.196	−0.099*	0.149*	−0.074	−0.647***	0.063	0.047	−0.009	0.017
	(−1.61)	(−1.66)	(1.70)	(−0.67)	(−6.32)	(0.94)	(0.87)	(−0.09)	(0.27)
Observations	56	189	115	180	90	64	191	138	158
R^2	0.245	0.471	0.710	0.697	0.855	0.165	0.801	0.232	0.714
Adjusted R^2	0.034	0.435	0.676	0.675	0.832	-0.031	0.787	0.158	0.690

Table A.6: Interval Fund MA-Unsmoothed Alpha and Betas: Category Portfolios

This table reports alphas and betas from factor regressions of equal-weighted portfolios of interval funds using annualized MA(3)-unsmoothed returns. As factors, we use excess returns on equity indexes (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and changes in fixed income rates (Term Spread, Credit Spread, High Yield Spread, Muni Spread, and Risk-Free Rate). *t*-statistics, clustered at the monthly level, are reported in parentheses. * denotes significance at the 10% level, ** at the 5% level, and *** at the 1% level.

	Alloc.	Bond	Liquid Alt.	Listed Eq.	Muni Bond	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	−1.334	1.971**	0.847	−4.896**	0.705	2.861*	4.885***	2.652	2.080**
	(−0.27)	(2.33)	(0.77)	(−2.50)	(0.63)	(1.74)	(7.10)	(1.35)	(2.13)
SP500	−0.117	−0.012	−0.072	0.284**	−0.018	−0.045	−0.062	−0.046	−0.041
	(−0.63)	(−0.20)	(−0.98)	(2.46)	(−0.26)	(−0.58)	(−1.44)	(−0.33)	(−0.84)
Large HML	0.016	−0.055	0.093	−0.237**	−0.114**	−0.053	−0.018	−0.050	−0.019
	(0.12)	(−1.33)	(1.29)	(−2.38)	(−2.20)	(−0.98)	(−0.61)	(−0.64)	(−0.61)
Russell 2000	0.200	0.043	0.011	0.147**	0.014	0.027	0.038*	0.116	0.033
	(1.44)	(1.19)	(0.21)	(2.29)	(0.38)	(0.67)	(1.71)	(1.62)	(1.18)
Small HML	−0.133	0.139***	−0.062	0.096	0.174***	0.051	0.005	−0.011	0.041
	(−0.74)	(3.15)	(−1.16)	(1.06)	(3.56)	(0.91)	(0.15)	(−0.13)	(1.00)
REIT	0.114	−0.012	0.215***	0.048	−0.016	0.055	0.041	0.028	0.266***
	(0.67)	(−0.44)	(4.10)	(0.82)	(−0.40)	(1.24)	(1.54)	(0.51)	(9.36)
Global	0.030	−0.025	0.135	−0.013	−0.057	0.042	0.026	0.069	0.008
	(0.15)	(−0.38)	(1.46)	(−0.11)	(−0.84)	(0.41)	(0.71)	(0.55)	(0.17)
Emerging	−0.025	−0.010	−0.065	0.088	0.039	−0.015	−0.026	0.082	−0.010
	(−0.13)	(−0.25)	(−1.20)	(1.32)	(0.86)	(−0.21)	(−1.02)	(1.11)	(−0.32)
Risk Free Rate	0.359	−0.303***	−0.093	−0.383***	−0.881***	0.072	−0.069	0.111	0.097
	(1.40)	(−5.17)	(−0.68)	(−2.76)	(−11.36)	(0.92)	(−1.11)	(1.12)	(1.42)
Term Spread	0.332	−0.340***	−0.135	−0.407***	−0.882***	0.065	−0.084	0.139	0.102
	(1.28)	(−6.82)	(−0.99)	(−3.18)	(−13.05)	(0.88)	(−1.41)	(1.52)	(1.48)
Credit Spread	−0.193	−0.348***	−0.242*	−0.047	−0.092	−0.071	−0.396***	0.052	−0.037
	(−0.22)	(−3.31)	(−1.86)	(−0.34)	(−0.77)	(−0.53)	(−3.52)	(0.46)	(−0.42)
High Yield Spread	0.070	−0.035	−0.055**	−0.055*	−0.080**	0.005	−0.101***	0.033	−0.004
	(0.54)	(−1.32)	(−2.55)	(−1.92)	(−2.62)	(0.14)	(−6.53)	(1.24)	(−0.36)
Muni Spread	−0.300	−0.112*	0.118	−0.116	−0.647***	0.062	0.070	−0.014	0.027
	(−1.27)	(−1.76)	(1.36)	(−0.91)	(−6.32)	(0.92)	(1.20)	(−0.11)	(0.40)
Observations	56	189	115	180	90	64	191	138	158
R^2	0.209	0.470	0.709	0.689	0.855	0.183	0.785	0.220	0.726
Adjusted R^2	-0.012	0.433	0.674	0.667	0.832	-0.010	0.770	0.145	0.703

Table A.7: Interval Fund AR-Unsmoothed Alpha and Betas: Category Portfolios

This table reports alphas and betas from factor regressions of equal-weighted portfolios of interval funds using annualized AR(2)-unsmoothed returns. As factors, we use excess returns on equity indexes (S&P 500, Large HML, Russell 2000, Small HML, REIT, Global, Emerging) and changes in fixed income rates (Term Spread, Credit Spread, High Yield Spread, Muni Spread, and Risk-Free Rate). *t*-statistics, clustered at the monthly level, are reported in parentheses. * denotes significance at the 10% level, ** at the 5% level, and *** at the 1% level.

	Alloc.	Bond	Liquid Alt.	Listed Eq.	Muni Bond	Priv. Alloc.	Priv. Credit	Priv. Equity	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	0.573	1.894**	1.006	−4.979**	0.392	2.762	4.882***	2.635	2.301*
	(0.05)	(2.38)	(0.96)	(−2.46)	(0.37)	(1.57)	(7.41)	(1.34)	(1.95)
SP500	−0.498	−0.002	−0.056	0.293**	0.022	−0.037	−0.049	−0.020	−0.040
	(−1.05)	(−0.04)	(−0.82)	(2.43)	(0.33)	(−0.46)	(−1.22)	(−0.14)	(−0.69)
Large HML	0.443	−0.047	0.091	−0.241**	−0.098*	−0.049	−0.023	−0.034	−0.034
	(1.28)	(−1.21)	(1.29)	(−2.32)	(−1.99)	(−0.86)	(−0.82)	(−0.43)	(−0.97)
Russell 2000	0.504	0.043	−0.002	0.136**	0.015	0.022	0.034	0.101	0.001
	(1.35)	(1.32)	(−0.03)	(2.01)	(0.44)	(0.53)	(1.59)	(1.38)	(0.02)
Small HML	−0.980	0.131***	−0.045	0.077	0.173***	0.048	0.026	−0.013	0.030
	(−1.67)	(3.17)	(−0.86)	(0.82)	(3.35)	(0.79)	(0.82)	(−0.17)	(0.68)
REIT	0.331	−0.015	0.209***	0.046	−0.034	0.063	0.043	0.013	0.293***
	(0.70)	(−0.58)	(4.32)	(0.79)	(−0.82)	(1.38)	(1.57)	(0.22)	(9.40)
Global	−0.138	−0.019	0.122	−0.001	−0.074	0.034	0.025	0.070	0.012
	(−0.29)	(−0.32)	(1.45)	(−0.01)	(−1.18)	(0.31)	(0.70)	(0.54)	(0.20)
Emerging	0.194	−0.013	−0.050	0.083	0.049	−0.007	−0.024	0.100	−0.025
	(0.43)	(−0.35)	(−0.99)	(1.20)	(1.11)	(−0.10)	(−0.94)	(1.32)	(−0.67)
Risk Free Rate	1.262*	−0.288***	−0.079	−0.392***	−0.801***	0.093	−0.071	0.132	0.138*
	(1.73)	(−5.30)	(−0.60)	(−2.72)	(−10.59)	(1.14)	(−1.13)	(1.28)	(1.74)
Term Spread	1.232*	−0.318***	−0.111	−0.419***	−0.814***	0.077	−0.074	0.180**	0.153**
	(1.73)	(−6.85)	(−0.88)	(−3.16)	(−11.57)	(1.02)	(−1.24)	(1.99)	(2.01)
Credit Spread	−0.281	−0.336***	−0.228*	−0.038	−0.066	−0.046	−0.396***	0.074	−0.025
	(−0.11)	(−3.32)	(−1.84)	(−0.26)	(−0.59)	(−0.33)	(−3.46)	(0.63)	(−0.25)
High Yield Spread	0.219	−0.031	−0.049**	−0.055*	−0.072***	0.000	−0.089***	0.035	−0.014
	(0.83)	(−1.40)	(−2.44)	(−1.87)	(−2.67)	(0.01)	(−6.35)	(1.29)	(−0.99)
Muni Spread	−0.785	−0.099*	0.176*	−0.134	−0.531***	0.062	0.106**	−0.010	0.102
	(−1.06)	(−1.70)	(1.98)	(−0.98)	(−5.55)	(0.87)	(1.99)	(−0.07)	(1.35)
Observations	56	189	115	180	90	64	191	138	158
R^2	0.199	0.486	0.701	0.680	0.847	0.193	0.778	0.218	0.646
Adjusted R^2	-0.025	0.451	0.666	0.657	0.823	0.004	0.763	0.143	0.617

Table A.8: Performance across Asset Classes: Single- vs. Multi-class and Accredited Investors

This table reports regression results of annualized net returns at the product level on fund clientele indicators and portfolio characteristics, estimated separately by asset class and clientele specialization. The sample includes Interval Funds and ETFs over the period January 2010 to December 2025. Investment categories are restricted to those available to both Interval Funds and ETFs and are grouped into Equity (listed equity), Fixed Income (private credit, bonds, and municipal bonds), Multi Assets (allocation and liquid strategies), and Real Assets. The Interval Funds sample is further split into single-class (Columns 1-4) and multi-class (Columns 5-8). Single-class funds offer products targeting a single investor segment (i.e., exclusively retail share classes or exclusively non-retail share classes), whereas multi-class funds offer products targeting both retail and HNWI/institutional investors. The key independent variables are indicators for Interval Funds interacted with investor clientele, with ETFs serving as the omitted comparison group. ETFs are, by construction, single-class and retail-oriented, as they offer a single share class and do not impose minimum investment requirements. Clientele are classified using share class type labels and accreditation. Inst share classes are defined as those with an institutional share class label. Clientele variable is further split into Retail and Accredited based on whether investors need to be accredited or not. Control variables are the same as in Table 4 and are omitted for brevity. All regressions include benchmark-by-time fixed effects, with benchmarks corresponding to Morningstar Category Indices and time measured at the monthly level. *t*-statistics, clustered at the month-year level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Single-Class				Multi-Class			
	Equity	Fixed Income	Multi Assets	Real Assets	Equity	Fixed Income	Multi Assets	Real Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Accredited × Interval Fund	-2.934	1.656	5.187***	-1.471		2.400*	3.573**	0.474
	(-0.69)	(1.59)	(6.65)	(-0.20)		(1.89)	(2.52)	(0.12)
Inst × Interval Fund	-2.874	1.827*	-2.772	-3.871	0.503	2.356***	-0.032	-3.046
	(-0.54)	(1.74)	(-0.77)	(-0.81)	(0.15)	(3.35)	(-0.02)	(-0.90)
Retail × Interval Fund	0.441	-0.066	0.021	-2.806	0.084	2.265***	-2.232	-2.902
	(0.11)	(-0.08)	(0.01)	(-0.77)	(0.03)	(3.11)	(-1.01)	(-0.76)
Log TNA	-0.033	0.021	-0.301	0.051	-0.067	-0.022	-0.314	0.001
	(-0.27)	(0.43)	(-1.49)	(0.25)	(-0.56)	(-0.47)	(-1.48)	(0.00)
Log Family TNA	0.105	0.107***	0.076	0.117	0.111	0.073*	0.072	0.067
	(1.14)	(2.70)	(0.80)	(0.96)	(1.22)	(1.67)	(0.76)	(0.53)
Log Age	0.605	-0.230*	0.731	-0.042	0.676	-0.145	0.664	0.403
	(1.14)	(-1.83)	(1.31)	(-0.08)	(1.37)	(-1.07)	(1.19)	(0.50)
Fund of Funds	0.609	-0.337	0.580	-0.343	0.407	-0.722	0.680	-0.868
	(0.78)	(-0.62)	(0.80)	(-0.12)	(0.48)	(-1.20)	(0.91)	(-0.48)
Past Flows	-0.004	-0.005	0.015	0.002	-0.004	-0.007	0.015	0.041
	(-0.30)	(-0.56)	(0.68)	(0.05)	(-0.29)	(-0.93)	(0.66)	(1.53)
Benchmark x Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54313	40986	13044	7540	54556	45870	13334	9426
Adjusted R^2	0.714	0.719	0.500	0.770	0.713	0.768	0.500	0.689

Table A.9: Portfolio Holdings Characteristics of Interval Funds

This table reports fund-level summary statistics for the sample of Interval Funds, including the mean, standard deviation, and the 25th, 50th, and 75th percentiles. The statistics are computed using monthly data from October 2019 through December 2025 and are presented separately by asset class. Asset classes are grouped into Panel A: Equity (listed equity and private equity), Panel B: Fixed Income (private credit, bonds, and municipal bonds), Panel C: Multi-Assets (allocation, liquid strategies, real assets, and private allocation), and Panel D: Real Assets. We further split the sample into retail-only funds (Panel E), Institutional and HNWI-only funds (Panel F), and multi-share class funds (Panel G). Levels 1, 2, and 3 report the percentage of portfolio holdings classified under the fair value hierarchy. Level 1 assets, the most liquid, are valued using quoted prices (unadjusted) in active markets for identical assets or liabilities accessible at the measurement date. Level 2 assets are valued using inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 assets, the least liquid, are valued using unobservable inputs that typically rely on internally developed valuation methodologies. See FASB ASC 820-10 for further details. Liquidity is a liquidity index defined as (Level 1 + 0.5 x Level 2) / 100. Leverage is defined as the percentage ratio of total liabilities to assets under management. The final column reports the total number of monthly observations for each variable.

Panel A: Equity

	mean	sd	p25	p50	p75	obs
Level 1	37.76	34.72	9.20	24.75	70.82	550
Level 2	11.45	26.12	0.00	0.15	5.14	550
Level 3	54.55	54.82	0.52	48.65	86.56	550
Liquidity	0.43	0.35	0.13	0.32	0.73	550
Leverage	8.61	12.60	0.86	2.88	7.43	550

Panel B: Fixed Income

	mean	sd	p25	p50	p75	obs
Level 1	10.60	21.81	0.19	3.79	12.22	3777
Level 2	69.42	54.28	17.52	76.09	101.23	3777
Level 3	38.64	42.96	0.45	20.28	72.80	3777
Liquidity	0.45	0.32	0.19	0.48	0.62	3777
Leverage	16.32	14.43	3.21	13.33	26.78	3777

Panel C: Multi-Assets

	mean	sd	p25	p50	p75	obs
Level 1	42.82	39.13	6.10	30.05	78.03	320
Level 2	27.32	23.97	0.40	28.62	43.26	320
Level 3	31.17	30.68	0.00	24.60	49.98	320
Liquidity	0.56	0.37	0.30	0.49	0.92	320
Leverage	5.85	7.84	0.38	1.15	13.10	320

Panel D: Real Assets

	mean	sd	p25	p50	p75	obs
Level 1	30.35	24.69	9.88	26.06	40.73	898
Level 2	11.37	15.49	0.00	5.86	17.03	898
Level 3	19.31	30.59	0.00	0.02	36.51	898
Liquidity	0.36	0.26	0.15	0.31	0.52	898
Leverage	5.80	6.73	0.74	3.43	9.12	898

Table A.9: Portfolio Holdings Characteristics of Interval Funds (Continued)

Panel E: Retail

	mean	sd	p25	p50	p75	obs
Level 1	31.74	36.82	3.48	14.43	54.84	1050
Level 2	29.66	40.80	0.00	2.64	43.70	1050
Level 3	55.64	49.16	0.28	55.15	93.07	1050
Liquidity	0.47	0.43	0.10	0.33	0.75	1050
Leverage	14.15	17.33	1.12	6.16	23.50	1050

Panel F: Inst/HNWI

	mean	sd	p25	p50	p75	obs
Level 1	19.36	27.18	2.04	9.74	26.83	2020
Level 2	48.68	55.51	0.00	23.22	92.58	2020
Level 3	30.54	42.79	0.00	7.02	51.60	2020
Liquidity	0.44	0.33	0.17	0.42	0.62	2020
Leverage	8.40	10.68	0.75	3.95	12.39	2020

Panel G: Multi-Class

	mean	sd	p25	p50	p75	obs
Level 1	11.84	20.51	0.51	4.24	14.94	2475
Level 2	63.84	52.30	7.94	61.94	100.24	2475
Level 3	33.60	37.72	0.71	16.93	60.81	2475
Liquidity	0.44	0.26	0.23	0.46	0.60	2475
Leverage	16.81	13.07	4.77	14.96	27.21	2475

Table A.10: Flow-Performance Sensitivity

This table reports regression results of monthly product-level flows on past fund returns and portfolio characteristics, estimated by clientele specialization. The sample includes Interval Funds and ETFs from January 2010 to December 2025, restricted to investment categories common to both vehicles: listed equity, private credit, bonds, municipal bonds, allocation, liquid strategies, and real assets. The Interval Funds sample is split into retail share classes (Column 1), institutional/HNWI share classes (Column 2), and multi-class funds (Column 3), where multi-class refers to products offered by funds that offer both retail and institutional/HNWI share classes. Clientele are classified using share class labels and minimum investment requirements: institutional/HNWI share classes have either a minimum investment above $25,000 or an institutional label, while retail share classes are retail-labeled with minimum investments at or below $25,000. The key independent variable is an indicator for Interval Funds interacted with cumulative past 12-month returns, with ETFs as the omitted comparison group; ETFs are, by construction, single-class and retail-oriented. Control variables include lagged log product total net assets (Log TNA), log family total net assets within the same product type (Log Family TNA), log(1 + age) (Log Age), lagged net flows (Past Flows), and the lagged annual expense ratio (Expense Ratio). All regressions include benchmark-by-time and product fixed effects, with benchmarks defined by Morningstar Category Indices and time measured monthly; *t*-statistics are two-way clustered at the month-year and product levels, and *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Retail (1)	Inst/HNWI (2)	Multi-Class (3)
Interval Fund × Past 12m Return	-0.076***	-0.078***	-0.063**
	(-2.74)	(-2.98)	(-2.23)
Past 12m Return	0.141***	0.143***	0.141***
	(9.58)	(9.37)	(9.43)
Log TNA	-2.712***	-2.771***	-2.698***
	(-14.80)	(-14.82)	(-14.85)
Log Family TNA	0.719***	0.728***	0.676***
	(3.76)	(3.93)	(3.52)
Log Age	-2.888***	-2.328***	-2.727***
	(-5.88)	(-4.52)	(-5.52)
Past Flows	0.086***	0.082***	0.089***
	(9.21)	(9.01)	(9.62)
Expense ratio t-1 (Annual %)	-0.572**	0.294	-0.409
	(-2.24)	(0.82)	(-1.39)
Time x Style Fixed Effects	Yes	Yes	Yes
Product Fixed Effects	Yes	Yes	Yes
Observations	97309	93280	98576
Adjusted R^2	0.105	0.098	0.107

Table A.11: Redemption Outcomes and Clienteles: Multivariate Analysis.

The table shows a multivariate analysis of redemption outcomes and fund clienteles. Percent Tendered is at the share-class level, and Oversubscribed and Prorated indicators are at the fund level. Column (2) restricts the sample to redemption offers where the pricing date is at least five business days after the redemption deadline (P-D>5). Weekly NAV Return is the cumulative NAV return in the five business days leading up to and including the pricing date. Past 3 Week NAV Return is the cumulative NAV return in the three weeks prior to the pricing week. Log TNA is the log of TNA at the share-class level for columns (1)–(2) and at the fund level for columns (3)–(4). Retail Share Class is an indicator for a retail share class. Retail Only Fund is an indicator for a retail-only fund. Multi-Class Fund is an indicator for a multi-class fund. *t*-statistics are two-way clustered at the quarter-year and product levels, and *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	%Tendered (1)	%Tendered (P-D>5) (2)	Oversubscribed (3)	Prorated (4)
Retail share class	0.0491**	0.118		
	(2.13)	(1.35)		
Retail only fund			0.0912	0.741**
			(1.23)	(2.55)
Multi-class fund			0.108	0.0592
			(1.29)	(0.12)
Weekly NAV return	-0.666*	-0.490	0.369	26.47
	(-1.93)	(-1.00)	(0.22)	(0.96)
Past 3 Week NAV Return	-0.0626	0.383	-0.571	24.32***
	(-0.10)	(0.35)	(-0.30)	(3.70)
Log TNA	0.00862***	0.0313	0.0176	0.0804
	(3.00)	(1.20)	(1.38)	(0.70)
Quarter Fixed Effects	Yes	Yes	Yes	Yes
Observations	614	107	632	47
R^2	0.168	0.561	0.119	0.891