

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

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## ABSTRACT

Interval funds are a fast-growing investment structure that provides periodic liquidity while allowing investors to access alternative assets that are often illiquid. Using comprehensive U.S. data from the SEC's EDGAR database and Morningstar, we show that equity and fixed income interval funds hold on average 29% and 33% highly illiquid assets, far exceeding the 15% limit for mutual funds and ETFs. We examine whether these funds compensate investors for limited liquidity and achieve efficient liquidity transformation. Consistent with our theoretical framework, interval funds outperform both passive and active ETFs in illiquid and information-insensitive categories, particularly nontraditional bonds and bank loans, even after fees. In contrast, they underperform ETFs in liquid and information-sensitive equity categories, reflecting weaker market-based incentives for managers. Retail funds with institutional share classes outperform retail-only funds, suggesting improved monitoring by sophisticated investors. Consistent with superior selection, flows into institutional share classes also predict higher future returns. Finally, structured liquidity improves investor timing relative to daily tradable ETFs, highlighting the potential benefits of limited liquidity in democratizing access to alternative assets.

**Keywords:** Interval funds, closed-end funds, illiquid assets, private assets, retail investors, institutional investors, alternative assets, liquidity transformation, performance, flows

# 1 Introduction

Private markets have expanded dramatically over the past decade, with global institutionally managed private assets tripling from \$5.1 trillion in 2014 to \$16.1 trillion in 2024.<sup>1</sup> This growth represents a profound shift in global capital allocation (Doidge et al., 2025). However, traditional capital sources such as pensions, endowments, and sovereign wealth funds have recently faced slowing inflows,<sup>2</sup> prompting private capital providers to explore structures that are accessible to high-net-worth and even retail investors.<sup>3</sup>

While private assets can offer an illiquidity premium attractive to long-term investors, retail investors may suffer from adverse selection.<sup>4</sup> Moreover, traditional vehicles, such as private equity and venture capital funds, impose significant barriers for retail participation, including high investment minimums, illiquidity through lengthy lock-up periods, complex subscription procedures, and regulatory restrictions limiting access to accredited investors. Traditional mutual funds provide greater liquidity and accessibility, but regulation limits their investments in illiquid assets to 15% of their portfolios.

Recently, semi-liquid fund structures have emerged to bridge the gap between liquidity provision and increased exposure to private assets. One such structure, interval funds, has experienced significant growth, with assets under management (AUM) increasing at an annual rate of nearly 40% to reach \$95 billion by the end of 2024. Unlike other evergreen structures, interval funds commit to offering investors periodic (typically quarterly) redemptions directly from the fund at net asset value (NAV). Unlike mutual funds, interval funds can allocate a substantial portion of their portfolios to illiquid private

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<sup>1</sup>Pitchbook Global Private Market Fundraising Report, Q1 2025

<sup>2</sup>McKinsey Private Markets report, 2025: <https://www.mckinsey.com/industries/private-capital/our-insights/global-private-markets-report>.

<sup>3</sup>HarbourVest 2025 Market Outlook: <https://www.harbourvest.com/insights-news/insights/market-outlook-why-private-markets-are-positioned-for-growth-in-2025/>.

<sup>4</sup>Orlando Bravo, co-founder of Thoma Bravo, expressed concern that retail investors may end up “saving” companies that private equity firms cannot sell. Financial Times, May 21, 2025. <https://www.ft.com/content/ee303801-82e8-464f-a10f-9e99dcee186b>

assets. Meanwhile, asset managers are actively exploring exchange-traded funds (ETFs) specialized in private assets, reflecting further industry efforts to reconcile liquidity with private-market exposure.<sup>5</sup>

In this paper, we study two interrelated economic questions relevant to investors, regulators, and policymakers: Do interval funds provide investors with adequate compensation for holding semi-illiquid products? Are interval funds effective mechanisms for liquidity transformation, particularly relative to fully liquid products such as ETFs? As we show in the paper, the answer to these questions depends on the information sensitivity of the underlying asset and the fund's clientele.

To frame our analysis, we hypothesize that interval funds' institutional features create a comparative advantage when investing in illiquid and information-insensitive securities, such as private credit, but place them at a disadvantage relative to ETFs for liquid and information-sensitive securities, such as publicly traded equities. Interval funds' structured liquidity should mitigate costly fire sales of illiquid assets 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), optimize liquidity management and transaction costs (Chernenko and Sunderam, 2016; Choi et al., 2020; Edelen, 1999), and enable managers to exploit longer investment horizons to capture liquidity premiums (Amihud and Mendelson, 1986; Pástor and Stambaugh, 2003; Aragon, 2007; Chen et al., 2007; Sadka, 2010; Ang et al., 2013; Choi et al., 2025).

Conversely, ETFs' continuous liquidity aligns closely with the needs of investors seeking exposure to information-sensitive securities, whose valuations critically depend on public and private information (Myers and Majluf, 1984; Gorton and Pennacchi, 1990; Holmstrom, 2015; Dang et al., 2013, 2020). With limited redemption pressure, interval

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<sup>5</sup>Wall Street Journal: [https://www.wsj.com/finance/investing/wall-street-races-to-bring-private-credit-to-the-masses-8a25b624?mod=livecoverage\\_web](https://www.wsj.com/finance/investing/wall-street-races-to-bring-private-credit-to-the-masses-8a25b624?mod=livecoverage_web).

fund managers face reduced market-based incentives (Lynch and Musto, 2003; Berk and Green, 2004; Dangi et al., 2008; Wu et al., 2016; Stein, 2005),<sup>6</sup> potentially exacerbating agency problems in investments where managerial skill and effort are paramount. Thus, while structured liquidity facilitates investments in illiquid assets, it may weaken managerial incentives in information-sensitive contexts.

Moreover, a crucial governance dimension in interval funds arises from their practice of including multiple share classes within the same portfolio, often targeting both institutional and retail investors. For retail investors exposed to private assets, participation in funds alongside more sophisticated investors presents a tradeoff. On the one hand, institutional investors' sophistication may generate positive externalities through enhanced monitoring and governance, aligning managerial incentives more closely with investor interests and benefiting retail investors (Evans and Fahlenbrach, 2012). On the other hand, institutions may exploit their informational advantages through strategic redemption timing, especially in liquidity stress situations, potentially at the expense of retail investors (Capponi et al., 2025). Such informational asymmetries and governance tensions are more pronounced in interval funds due to periodic liquidity, contrasting sharply with ETFs' continuous market transparency and liquidity. Our empirical tests specifically examine these externalities, assessing the implications of institutional investor presence on fund performance and fund flows.

Interval funds and ETFs share critical regulatory and institutional features, including daily NAV calculations, explicit redemption mechanisms anchored to NAV, and rigorous governance frameworks mandated by the Investment Company Act of 1940, making them suitable comparators. Although Business Development Companies (BDCs) also

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<sup>6</sup>While interval funds may charge performance-based fees to improve managerial incentives, regulatory constraints prohibit them from tying such fees to capital gains or unrealized appreciation. As a result, incentive fees are typically linked to income components such as interest or dividends. This limits their effectiveness in aligning managerial incentives for information-sensitive assets, where price appreciation is the primary driver of returns. A detailed discussion of incentive fees in interval funds is provided in section 3.

share the objective of channeling capital into illiquid, privately originated assets, they differ fundamentally in structure and investor experience. Unlike interval funds and ETFs, BDCs do not provide redemption rights, rely entirely on secondary market trading for liquidity, report NAV infrequently, and operate under distinct regulatory provisions tailored to their mandate. These differences introduce substantial heterogeneity, making BDCs unsuitable for direct comparisons with vehicles designed for liquidity transformation.

Based on comprehensive EDGAR filings from 2010 to 2024, we find that most interval funds (92%) offer quarterly redemptions, with the majority limiting repurchases to the regulatory minimum of 5% of total net assets per period. Redemption windows typically last about 30 days. Interval funds also charge substantially higher fees compared to active and passive ETFs. Across all share classes, the average net expense ratio is 2.7% per year, which includes management fees, borrowing costs, administrative expenses, and performance-based incentive fees tied to net investment income in roughly one-third of funds. Many products also impose transaction costs, such as front-end sales loads and redemption penalties, especially for early redemptions. These structural and economic features reflect the dual objective of providing retail access to illiquid strategies while limiting redemption pressure and maintaining portfolio illiquidity.

Interval funds hold substantially greater share of illiquid assets compared to the maximum of 15% that mutual funds and ETFs can hold. Equity and fixed income interval funds hold on average 29% and 33.47% of their portfolios in assets classified as “level 3”, the most illiquid of three levels of fair-value classification.<sup>7</sup>

To evaluate the performance of interval funds relative to ETFs, we construct a sample

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<sup>7</sup>According to FASB ASC 820-10, Fair Value Measurements and Disclosures (<https://asc.fasb.org/1943274/2147482311>) Level 1 assets, the most liquid, can be valued using ‘quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date.’. Level 2 assets can be valued using “Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.” Finally, the most illiquid level 3 assets have to be valued using “unobservable inputs,” which often require institutions to use internally-developed methodologies.

using Morningstar data on 289 share classes issued by 129 interval funds, including weekly total returns, daily NAVs, and daily total net assets (TNA). We also collect information on the fund's inception date, the sponsor or family it belongs to, whether it is a fund of funds, and the minimum investment required. We supplement this with EDGAR filings to obtain data on fund fees, as these variables are not well populated in Morningstar. For comparison, we gather data on 1,715 actively managed and 2,917 passively managed ETFs with matching investment styles. Since interval funds often issue multiple share classes tied to a single portfolio, we define each share class as a *product* and the underlying pool of assets as a *portfolio*.

Our analysis reveals sharp performance differences across asset classes, consistent with our theoretical framework.<sup>8</sup> Among fixed-income products, where assets are typically illiquid and less sensitive to information, interval funds significantly outperform both passive and active ETFs in terms of net and gross returns. This outperformance is especially pronounced in the most illiquid segments, such as bank loans and nontraditional bonds.

A decomposition of returns shows that this excess performance is driven entirely by higher distribution yields rather than NAV appreciation, consistent with the notion that interval funds harvest high yields rather than identify undervalued securities.

In contrast, interval funds show no systematic advantage in equity markets. In highly liquid and information-sensitive categories such as diversified equity, they underperform ETFs, with the underperformance concentrated in NAV returns. Total-return differences are not statistically significant in less liquid equity sectors such as real estate and infrastructure. However, in these categories, interval funds tend to deliver a positive alpha relative to a TNA-weighted index of passive real estate and infrastructure ETFs. These

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<sup>8</sup>In particular, our theoretical framework posits that interval funds have a comparative advantage in illiquid and information-insensitive assets due to their structured liquidity, which reduces redemption pressure and mitigates costly fire sales. However, the same structure weakens market-based incentives for managers, potentially impairing performance in information-sensitive assets where active security selection is essential.

findings support the view that structured liquidity enhances access to illiquid income-generating strategies but may weaken the incentives needed to search for undervalued assets in information-intensive markets.

We further examine performance heterogeneity across investor clienteles by classifying interval fund share classes according to the minimum investment required to invest in them. Share classes with high minimum investment thresholds are presumed to target more sophisticated investors, while those with low minimums are more accessible to retail investors. We find that high-minimum share classes consistently outperform both passive and active ETF benchmarks in the fixed-income space. In contrast, low-minimum share classes do not exhibit any outperformance when issued by funds that cater exclusively to retail investors. However, when low-minimum share classes are offered alongside high-minimum ones within the same fund, they also exhibit improved performance. This pattern suggests that the presence of more sophisticated investors may generate positive externalities that benefit co-investing retail share classes. This finding is consistent with the evidence from Evans and Fahlenbrach (2012), who show that the presence of institutional investors is associated with lower expenses, greater managerial effort, and improved governance, thereby reducing agency conflicts and enhancing performance across all share classes.

We test two competing hypotheses to understand why performance varies across investor clienteles. The first suggests that sophisticated investors enhance fund performance by providing liquidity, for example, by avoiding redemptions when less sophisticated investors demand liquidity. The second posits that performance differences arise from superior selection skill, with sophisticated investors allocating capital to higher-quality funds more effectively.

Our evidence supports the selection channel. Although high- and low-minimum investors respond similarly to past performance and redemption opportunities, their

investment flows have markedly different implications for future returns. Flows into low-minimum products predict lower subsequent performance, suggesting weaker selection ability. In contrast, flows into high-minimum products are associated with higher future returns relative to flows into low-minimum products. This pattern indicates stronger selection skill among more sophisticated investors and suggests that the performance gap across investor clienteles is driven by differences in allocation skill rather than liquidity provision.

Structured liquidity also plays a broader role in shaping investor outcomes. Because interval fund redemptions typically occur only once per quarter, investors have fewer opportunities to time the market. This constraint appears beneficial: interval fund investors exhibit significantly better timing performance than ETF investors, showing lower sensitivity to short-term fund performance. This improvement is observed in both high- and low-minimum share classes, suggesting that limited redemption opportunities help curb reactionary trading and enhance outcomes even for less sophisticated investors.

Our paper relates to the growing literature on democratizing access to private and illiquid asset investments. In areas such as structured equity and unlisted REITs, this literature finds that retail-focused offerings tend to earn low returns and are characterized by limited transparency and high fees (C  lerier and Vall  e, 2017; Riddiough, 2022; Henderson et al., 2023). Moreover, literature on vehicles that cater to both institutions and retail investors finds that institutional investors outperform (Evans and Fahlenbrach, 2012; G  mez et al., 2024; Begenau and Siriwardane, 2024), except Balloch et al. (2025), who find that high-net-worth individuals do not underperform institutional investors. 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 tradeoff 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 efficiency of various vehicles for liquidity transformation. Chen et al. (2010b) show that funds with illiquid holdings exhibit stronger sensitivity of outflows to bad past performance than those with liquid holdings. They, along with Goldstein et al. (2017), show that there is a first-mover advantage in redeeming shares of funds with illiquid assets at the NAV, generating demand for swing pricing (Jin et al., 2021). Jansen (2022) show that investors with high shadow costs of illiquidity should avoid private markets. Whereas prior literature examines liquidity transformation using funds of moderately illiquid securities such as bond funds, we contribute to the literature by examining funds that invest primarily in illiquid assets, but still commit to providing liquidity. Maurin et al. (2023) present a model of liquidity in private equity funds.

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; Dangi 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 Theoretical framework

We develop a theoretical framework to derive predictions about the relative performance of interval funds and 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.

### 2.1 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;  $\delta$  is the illiquidity premium; and  $f$  is the fund's expense ratio.

We assume the following:

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

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  $t = 1$ <sup>9</sup> 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

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

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

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

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<sup>9</sup>We could allow the manager to collect fees at  $t = 0$  as well. However, since AUM at  $t = 0$  are exogenous, such fees are irrelevant for the manager's decision problem. We therefore focus on fees at  $t = 1$ , which depend on investor flows.

**Investors' Information and Redemptions.** Fund investors fall into one of three types: informed, liquidity-driven, or sleepy. A fraction  $\eta_0$  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  $\eta_1$  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  $z := \mathbb{P}(w = 1) > 0$ .

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  $\bar{\eta} \in (0, 1)$ . 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  $l^E = \nu\eta_0 + \eta_1$ .

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:

$$R_2^F = 1 + \nu w^F + (1 - l^F - \Delta k^F)\delta - f. \quad (3)$$

## 2.2 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

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

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

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

Define the probabilities of exerting effort as

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

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:

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

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  $\delta$ .*

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  $\delta$  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 and immediate effect on the value of its equity.

### **3 Institutional features of interval funds**

In this section, we examine the institutional features of interval funds, drawing on their regulatory foundations and descriptive statistics from the universe of interval funds' EDGAR filings. 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. For much of their

early history, interval funds remained a niche product with modest uptake. In recent years, however, they have attracted growing interest from asset managers and retail investors alike.

### **3.1 Regulation and governance**

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. By allowing access to illiquid asset classes within a registered fund structure, interval funds provide retail investors with investment opportunities that were historically available only to institutional or accredited investors. In exchange for limited redemption rights, investors gain exposure to higher-yielding strategies that would be impractical to implement in open-end funds subject to daily liquidity requirements.

The Act imposes requirements such as board oversight, diversification standards, and mandated disclosures. Interval funds are overseen by a board of trustees, the majority of whom must be independent directors. These directors have a fiduciary duty to represent shareholder interests and monitor potential conflicts of interest. The fund also employs service providers, including an investment adviser, fund administrator, transfer agent, and independent auditor.

Shareholders have the right to elect directors, including the initial board and any replacements for vacancies. They may also vote on significant matters, such as changes to the fund's fundamental policies or advisory agreement, although the specific procedures depend on the fund's bylaws. In general, shareholders cannot directly remove the manager without approval from the board of trustees.

### 3.2 Periodic repurchases

Unlike open-end funds and tender-offer funds, interval funds operate under Rule 23c-3 of the Investment Company Act of 1940, which governs their repurchase offers and provides a framework for periodic share buybacks. Before each repurchase offer, interval funds are required to 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.

Among the 152 interval funds operating between 2010 and 2024 identified in EDGAR, the vast majority (140 funds) offer quarterly redemptions. Six funds offer monthly redemptions, and the remaining six offer semi-annual redemptions. Each repurchase offer includes a start date, a request deadline, and a pricing date. Investors may submit redemption requests during the window between the start date and the deadline. Shares are repurchased at a price equal to the share class's net asset value (NAV) on the pricing date. The repurchase payment must be made within seven days of the pricing date.

Repurchase offers also specify the percentage of total net assets (TNA) the fund will offer to repurchase. Under Rule 23c-3, interval funds must offer to repurchase between 5% and 25% of TNA. To ensure sufficient liquidity, 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.

Interval funds may suspend or postpone a repurchase offer under specific conditions. For example, a suspension is permitted if fulfilling the offer would cause the fund to lose its status as a regulated investment company (RIC) under the Internal Revenue Code, if the repurchase would result in delisting of the shares, or if asset valuation or liquidation is impracticable.

Table 1 reports summary statistics on the funds' redemption periods. On average, investors have 23.94 days to submit redemption requests, with a median of 29 days. The average (median) request window is 7.68 days (7 days) for funds offering monthly

redemptions, 31.05 days (30 days) for quarterly redemptions, and 27.15 days (29 days) for semi-annual redemptions. In 89% of redemption offers, the pricing date coincides with the request deadline. However, under regulation, the pricing date may occur up to two weeks after the deadline.

Figure 2 shows the distribution of the amount offered for repurchase as a percentage of the fund's TNA. Most offers (68.9%) are for the minimum 5%, while 8.5% are at the maximum 25%. The remaining offers are primarily in the 6 to 10% range, accounting for 19.7% of all offers. If total redemption requests exceed the amount offered, 99% of filings indicate that the fund may, at the board's discretion, increase the repurchase amount by up to an additional 2% of TNA. If requests still exceed the revised amount, shares are redeemed on a pro rata basis.

### **3.3 Expenses and fees**

Interval funds are relatively expensive investment products. We collect expense ratios from the annual N-CSR forms filed by interval funds between 2010 and 2024. Over this period, the average net expense ratio across all share classes was 2.77%, with a median of 2.43%. The reported expense ratios include management fees, borrowing costs, other annual expenses,<sup>10</sup> and incentive fees.

Like other investment products available to retail investors, interval funds charge annual management fees. The average management fee is 1.38% of the fund's TNA, with a median of 1.42%. Although management fees are disclosed as a percentage of TNA, they are typically calculated based on the fund's AUM. As a result, higher leverage tends to increase management fees as a share of TNA.

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

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<sup>10</sup>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.

to a leverage limit of one-third of their AUM. However, unlike mutual funds, which rarely employ leverage, data from EDGAR filings show that 51% of our share class-year observations report positive borrowing costs. Among these, borrowing costs average 0.85% of annual TNA, with a median of 0.58%.

Regarding performance-based fees, 51 out of the 152 funds in our sample report charging incentive fees. These fees are based on Net Investment Income (NII), 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.

Table 3 reports the frequency of contractual features related to performance-based compensation among interval funds. Figure 3 presents the distributions of incentive fee rates, hurdle rates, catch-up provisions, and catch-up thresholds. Among funds that charge performance-based fees, the most common incentive fee rate is 20%. Of these funds, 49% apply a hurdle rate, typically set at 6%. Among those with a hurdle, 88% include a catch-up provision.

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. In addition, 35% of funds with incentive fees include a high-water mark provision.

Depending on the distribution channel of a given share class, interval funds may also charge front-end sales loads, which can range from 0% to more than 5%. 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. Among funds that charge redemption fees, the average (median) redemption fee is 1.40% (1.00%). When fees apply only to early redemptions, the average (median) period during which the fee applies is 1.13 years (1.00 year) from the purchase date.

## 4 Data

### 4.1 Sample construction and description

Our main sample of interval funds is from Morningstar. Over our sample period running from 2010 to 2024, Morningstar provides weekly return data, daily NAV, and daily TNA for a total of 289 share classes issued by 129 interval funds. Figure 1 shows the overlap in interval fund coverage between EDGAR and Morningstar. Of the 180 total funds, 120 are common between Morningstar and EDGAR. EDGAR has 61 funds that are not in Morningstar, and Morningstar has 9 funds that do not appear in EDGAR. From Morningstar, we also collect time-invariant characteristics, including inception date, minimum investment, fund advisor, fund-of-fund status, asset class, category, and style. In addition, we collect annual net expense ratios for each share class. Because Morningstar's coverage of expense ratios contains some missing observations, we supplement it with data collected from EDGAR to complete the sample. From Morningstar, we obtain analogous information on active and passive ETFs, which we use as comparison groups. After restricting the sample to ETFs in investment styles available to interval funds, we are left with 1,715 actively managed ETFs and 2,917 passive ETFs.

Based on Morningstar's Global Broad Category Group, we classify funds into four broad *asset classes*: allocation, alternative, equity, and fixed-income. Although in our empirical analyses we focus on equity and fixed-income asset classes, we include allo-

cation and alternative in our descriptive statistics to offer a complete overview of the available interval fund products. Within each asset class, we then classify funds into more granular *categories* based on a combination of Morningstar’s US Category Group and Morningstar Category. Among equity funds, we distinguish three categories: diversified equity, real estate and infrastructure, and other sector equity. Among fixed-income funds, we distinguish four categories: bank loan, municipal bond, nontraditional bond, and traditional taxable bond. Finally, at the highest level of granularity, we classify funds in *styles*, also using a combination of Morningstar’s US Category Group and Morningstar Category. In our analyses, we group funds by asset class and category to describe the performance of various investment products based on their underlying investment. We use styles to construct style-time fixed effects. The complete list of asset classes, categories, styles, and their mapping to Morningstar’s classification system is provided in Table A.1 of the Appendix.

While ETFs typically issue a single share class, interval funds, like mutual funds, often issue multiple share classes. To clarify terminology, we refer to each share class issued by any investment fund as a *product*. We use the term *portfolio* to denote the pool of assets underlying each product. Each interval fund manages a single portfolio and offers one or more products that provide investors with claims on the same portfolio, subject to different investment minimums and fee structures.

## 4.2 Summary statistics and trends

Figure 4 displays the time series of the number of products and their total TNA for interval funds, active ETFs, and passive ETFs over our sample period. Interval funds and active ETFs exhibit exponential growth in recent years, whereas passive ETFs, being more established products, show slower but sustained growth.

Figure 5(a) shows the composition of interval-fund products by investment category,

while Figure 5(b) illustrates their growth within category. Consistent with our theoretical framework, interval funds appear to focus primarily on information-insensitive asset classes, with the majority of the products providing exposure to the fixed-income asset class. Moreover, within each asset class, interval funds tend to specialize in illiquid categories, namely bank loans and nontraditional bonds (which include high-yield bonds and asset-backed securities) within the fixed-income class, and real estate and infrastructure within the equity class. Complementing Figure 5(a), Figure 5(b) presents both the evolution of the number of interval fund portfolios over time and their breakdown by investment category.

Figures 6 and 7 mirror Figure 5 for active and passive ETFs, respectively, showing their specialization across categories and the evolution of each category's TNA over time. In contrast to interval funds, ETFs appear to specialize primarily in the most information-sensitive and liquid category: diversified equity. ETFs also have a footprint in traditional bonds and sector equity. In general, these patterns illustrate that ETFs and interval funds tend to specialize in different assets, consistent with their distinct institutional designs.

Table 4 provides summary statistics at the product level during our sample period. Panel A shows that the average annual net-of-fee return for interval funds is 5.46%, based on annualized weekly returns. We also compute a style-adjusted return by forming a TNA-weighted portfolio of passive ETFs within each investment style and taking the difference between each product's return and the return of the corresponding style-matched passive portfolio. For interval funds, the average style-adjusted return is positive, at 0.62%.

Panel B presents similar statistics for active ETFs. Their average net return is slightly higher, at 5.66%, but the average style-adjusted return is negative, at  $-0.16\%$ . Panel C reports statistics for passive ETFs. These products have the highest average net return, at 7.30%, but also the most negative style-adjusted return, at  $-1.00\%$ . Overall, these results

suggest that, after adjusting for style, interval funds tend to outperform both active and passive ETFs.

Table 5 describes the liquidity level of the funds' holdings and the leverage applied to the funds using weekly data and the most recent quarterly holdings from Form N-PORT. Holdings data are available from October 2019 through October 2024. Holdings are stratified into three liquidity classes. Level 1 assets have quoted prices in active markets and can be sold easily - for example, publicly traded equities. Level 2 assets can be valued based on observable inputs - for example, corporate bonds. Level 3 assets can only be valued using unobservable inputs, such as internal models - for example, private equity fund shares. The proportion of Level 3 assets, in particular, has relevance for regulatory monitoring.<sup>11</sup> Milbradt (2012) shows that institutions will optimally delay trading in level 3 assets if their values drop, in order to report profits as they occur but delay reporting losses.

Panel A of Table 5 focuses on equity funds, and Panel B focuses on fixed income funds. These panels show that there is substantial variation in the proportion of Levels 1, 2, and 3 holdings in both types of interval funds. While the mean proportion of level 3 assets is similar for equity and fixed income funds at 29% and 33.47%, respectively, the medians differ, at 3.95% and 17.23%. Leverage in equity funds averages 5.05%, while leverage in fixed income funds is higher, averaging 16.43%.

Expense ratios are substantially higher for interval funds, averaging 2.30% annually, compared to 0.62% and 0.40% for active and passive ETFs, respectively. Figure 10 shows annual expense ratios for interval funds over time, and Figure 11 shows expenses across investment styles. The plots reveal persistently high fees with limited variation across styles.

Given their positive net style-adjusted performance and high fees, it is unsurprising

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<sup>11</sup>The U.S. Office of Financial Research requires private funds to disclose the proportion of Level 3 assets in confidential form PF, and uses this in their risk monitoring of hedge funds.

that style-adjusted gross returns are particularly high for interval funds compared to ETF products. To formally compare performance across categories, Table 6 reports  $t$ -tests of the difference in returns between products. Interval funds exhibit significantly higher style-adjusted net and gross returns than both ETF categories. For example, their average style-adjusted gross return exceeds that of passive ETFs by 3.344%, a difference that is statistically significant at the 1% level.

In terms of TNA, interval-fund products tend to be smaller (\$228.49 million) than active ETFs (\$425.81 million) and passive ETFs (\$1,840.59 million), and are typically managed by smaller fund families. With an average age of 5.13 years, interval-fund products also tend to be younger than passive ETFs (7.38 years), but older than active ETFs (3.49 years). Moreover, 7% of interval-fund products are structured as funds of funds, compared to 5% and 2% for active and passive ETFs, respectively.

The median minimum investment across the sample of interval-fund products is \$2,500, whereas ETFs do not impose minimum investment requirements. We classify a product as *retail-oriented* if its minimum investment is equal to or below the median of \$2,500, and as *institution-oriented* if it exceeds this threshold. We classify a portfolio as *multiple-clientele* if it issues both retail- and institution-oriented share classes. Among interval funds, 52% of products belong to portfolios classified as multiple-clientele.

For each product  $i$  in week  $t$ , we compute flows as the percentage change in the product's outstanding shares. Unlike active and passive ETFs, which have median flows of zero, interval funds have positive median flows because outflows can only occur in weeks that include redemption dates.

## 5 Fund performance

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 worse agency frictions because of weaker managerial incentives. Moreover, concerns have emerged, both 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.<sup>12</sup>

To evaluate this trade-off, we compare the performance of interval funds and ETFs across the two dominant asset classes: equity and fixed income. These classes offer a clear contrast in terms of liquidity and information sensitivity, which are central to our theoretical predictions. We exclude allocation and alternative asset classes due to limited sample sizes and ambiguous characteristics.<sup>13</sup> We further examine performance across finer investment categories within each asset class, as well as across share classes targeting different investor segments.

## 5.1 Fund design and performance across asset classes

We evaluate the relative performance of interval funds by comparing their weekly style-adjusted net returns to those of two benchmark groups: actively and passively managed ETFs. Specifically, we estimate the following regression:

$$\tilde{R}_{it} = \alpha \text{Interval}_i + \beta' X_{it} + \phi_{s(i)t} + u_{it}, \quad (4)$$

where  $\tilde{R}_{it}$  denotes the weekly excess return of fund  $i$  in week  $t$  over the TNA-weighted average return of passive ETFs with the same investment style. The indicator variable

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<sup>12</sup>Wall Street Journal: <https://www.wsj.com/finance/investing/the-fees-on-these-funds-will-leave-you-high-and-dry-4b556475>.

<sup>13</sup>Allocation funds blend equity and fixed income, often with time-varying proportions. Alternative funds follow heterogeneous strategies, including market-neutral approaches, multistrategy portfolios, and insurance-linked instruments.

Interval<sub>*i*</sub> equals one if fund *i* is an interval fund. The vector  $X_{it}$  includes fund-level controls: total net assets (size), family size, age, and a fund-of-funds indicator.  $\phi_{s(i)t}$  represents style-by-week fixed effects, capturing time-varying differences across investment styles. All weekly returns are annualized. Standard errors are double-clustered at the week and product level.

The coefficient  $\alpha$  measures the average return differential between interval funds and ETFs after accounting for observable characteristics and style-specific returns. A positive (negative)  $\alpha$  indicates that interval funds outperform (underperform) ETFs within the same investment style.

Table 7 reports the results from estimating equation 4 separately for equity and fixed-income asset classes. In the fixed-income category, interval funds exhibit statistically significant outperformance relative to both passive and active ETFs, with annualized net returns higher by 2.474% and 1.655%, respectively. In the equity category, however, the return differences between interval funds and ETFs are not statistically significant.

To assess whether these results are driven purely by differences in fees, we replicate the analysis using gross returns at the portfolio level as the dependent variable. As shown in Table A.2 of the Appendix, the findings are qualitatively unchanged. The magnitude of relative gross returns is larger, consistent with interval funds charging higher fees on average.

While equity and fixed-income assets differ systematically in their information sensitivity, investment categories within each asset class vary in liquidity. To account for this heterogeneity, we extend regression (4) by interacting the Interval<sub>*i*</sub> indicator with dummies for investment categories within each asset class.

Within the equity class, we distinguish three categories: diversified equity, real estate and infrastructure, and other sector equity. Within fixed income, we define four categories: bank loan, municipal bond, nontraditional bond, and traditional taxable bond.

This classification follows Morningstar’s fund categories, as described in Section 4. The detailed mapping between Morningstar classifications and our investment categories is provided in Table A.1 of the Appendix.

Table 8 presents the results and reveals empirical patterns consistent with our theoretical predictions. Within the fixed-income asset class, interval funds generally outperform ETFs across sub-categories, with particularly strong results in the most illiquid segments. In the bank loan category, interval funds outperform active and passive ETFs by 1.133% and 2.719% per year, respectively. In the nontraditional bond category, interval funds exhibit even greater outperformance of 4.199% relative to active ETFs and 4.317% relative to passive ETFs, both statistically significant.

Among more liquid fixed-income categories, interval funds tend to match or slightly outperform ETFs, though the difference is statistically significant only in the case of municipal bonds when compared to passive ETFs.

In contrast, within the equity asset class, interval funds in the diversified equity category significantly underperform both active and passive ETFs by 8.924% and 10.249%, respectively. Interval funds focused on real estate and infrastructure also appear to underperform based on point estimates, though the differences are not statistically significant. For other sector equity funds, point estimates suggest strong outperformance by interval funds, but the results are imprecise and only marginally significant, likely due to higher return volatility and limited sample size in this category.

## **5.2 Alphas and betas**

To test the robustness of these results, we estimate the alphas and betas of interval funds. For each investment style, we construct a factor by taking the TNA-weighted average returns of passive ETFs in the corresponding category. To account for autocorrelation in the returns of illiquid securities and return smoothing, we regress weekly interval fund

returns on the contemporaneous factor and two lags, following Dimson (1979). Betas are smoothed by summing the three estimated coefficients.

Figure 12 shows the distribution of interval fund alphas by investment category. Consistent with our panel regressions, interval funds tend to exhibit positive alphas in the bank loan and nontraditional bond categories, and negative alphas in the diversified equity category. Based on the factor regressions, we also observe a tendency for interval funds to generate positive alphas in the real estate and infrastructure category, as well as in the traditional taxable bond category.

Figure 13 shows the distribution of interval fund Dimson betas by investment category. With the exception of diversified equity and municipal bonds, interval funds generally exhibit betas below one, even after smoothing. This suggests that investors may use these products to reduce portfolio volatility within a given investment category.

For comparison, Figures A.1 and A.2 in the Appendix show the distributions of alphas and Dimson betas for active ETFs. Compared to interval funds, active ETFs display lower alphas in the fixed-income, real estate, and infrastructure categories, but substantially higher alphas in the diversified equity category. With the exception of nontraditional bonds, the Dimson betas of active ETFs are higher and closer to one, suggesting lower potential for diversification benefits within those asset classes.

### **5.3 Distribution and NAV returns**

To assess whether interval fund outperformance reflects yield generation rather than superior asset selection, we decompose total returns into NAV returns, that is, percentage changes in net asset value, and distribution returns. Table 9 presents the results.

Overall, interval funds tend to outperform ETFs through higher distributions, while exhibiting no systematic advantage in NAV returns. Among fixed-income funds, both in aggregate and across sub-categories, any statistically significant outperformance of

interval funds is entirely attributable to distributions. Within the equity asset class, interval funds outperform active ETFs in terms of distributions in the real estate and infrastructure category as well as in other sector equity. By contrast, the substantial underperformance of interval funds in the diversified equity category relative to ETFs is fully driven by lower NAV returns.

These findings are consistent with our hypothesis that the structured liquidity of interval funds is well-suited to investments in illiquid but information-insensitive assets, such as fixed income, where liquidity transformation can be achieved without substantially weakening managerial incentives. In the fixed-income category, interval fund outperformance is positively associated with the yields of the underlying assets, suggesting that investors are able to earn an illiquidity premium.

By contrast, in equity markets, where valuations are more sensitive to information and managerial skill is more critical, the limited redemption opportunities inherent in interval fund structures may weaken market-based incentives. This reduction in incentives may offset any potential advantages in liquidity management, resulting in limited effort to identify undervalued securities and, ultimately, weaker relative performance.

#### **5.4 Investor clienteles**

If retail investors in illiquid assets face excessive fees and adverse selection, co-investment alongside institutional investors may help mitigate these concerns. To explore this possibility, we examine whether interval fund performance varies with investor clientele and whether co-investment affects outcomes.

We classify each interval fund share class based on its minimum investment requirement. Specifically, we use the sample median of \$2,500 as the cutoff, consistent with industry sources that identify \$2,500 as a typical upper bound for retail share class minimums.<sup>14</sup> Share classes with minimum investments at or below \$2,500 are classified as

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<sup>14</sup>See, for example, Morningstar ([https://morningstardirect.morningstar.com/clientcomm/Share\\_](https://morningstardirect.morningstar.com/clientcomm/Share_)

catering to a retail-oriented clientele, while those with higher thresholds are interpreted as targeting more sophisticated or institution-oriented investors.

Table 10 analyzes the relationship between minimum investment thresholds and the net performance of interval fund share classes. The key explanatory variables are interaction terms between the interval fund indicator and indicators for high and low minimum investment levels, using the sample median of \$2,500 as the cutoff. Columns 1 to 4 report results from comparisons with active ETFs, while columns 5 to 8 use passive ETFs as the benchmark. We further distinguish between single-clientele funds, which offer only one type of share class (either high or low minimum investment), and multiple-clientele funds, which offer both types.

Among single-clientele funds, the outperformance of fixed-income interval funds is entirely concentrated in products with high minimum investment requirements. These share classes outperform their active and passive ETF counterparts by 2.047% and 2.865% per year, respectively. In contrast, single-clientele fixed-income funds with low minimum investments do not exhibit any statistically significant outperformance.

For multiple-clientele fixed-income funds, both high- and low-minimum investment share classes outperform both active and passive ETFs. However, the outperformance of low-minimum share classes is smaller in magnitude, consistent with their higher expense ratios.

To assess whether performance differences are driven by underlying portfolio returns rather than fee structures, we replicate the analysis using gross returns instead of net returns. As shown in Table A.3 of the Appendix, the results are qualitatively unchanged, indicating that interval funds with high-minimum investment share classes pursue more effective investment strategies.

Overall, these findings suggest that retail investors do not benefit from the structured

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Class\_Types.pdf), the Investment Company Institute ([https://www.ici.org/viewpoints/view\\_15\\_imf\\_gfsr\\_05](https://www.ici.org/viewpoints/view_15_imf_gfsr_05)), and Investopedia (<https://www.investopedia.com/articles/mutualfund/05/shareclass.asp>).

liquidity of interval funds unless they co-invest alongside more sophisticated investors. This is consistent with the existence of positive externalities from institutional participation, as previously documented in the mutual fund setting (Evans and Fahlenbrach, 2012).

## **6 Flows and liquidity transformation**

Next, we use fund flows to investigate potential explanations for the heterogeneous performance across investor clienteles. One hypothesis is that more sophisticated investors, such as institutions, enable interval funds to manage liquidity more effectively. Specifically, sophisticated investors may be less prone to redeem (or purchase) shares at the same time as less sophisticated investors. In doing so, they provide liquidity to the fund during periods of net redemptions, allowing it to harvest liquidity premia more effectively and minimize trading costs. A second hypothesis is that sophisticated investors possess superior skill in selecting asset managers. In this case, co-investing with them allows less sophisticated investors to benefit from their selection ability.

We find evidence in support of the second hypothesis. Specifically, investors in high- and low-minimum investment share classes respond similarly to past performance and redemption opportunities, suggesting comparable trading behavior. However, flows into high-minimum share classes have greater predictive power for future fund performance than flows into low-minimum share classes. This pattern indicates superior selection ability by investors in high-minimum products.

Our analysis also highlights an additional benefit of structured liquidity relative to ETFs. By restricting investors' ability to time the market, interval funds mitigate the performance losses that investors typically incur when trading in and out of funds.

## 6.1 Timing returns

Prior research shows that investors often incur losses from active trading (Barber and Odean, 2000; Barber et al., 2009; Odean, 1999; Dichev, 2007). If more sophisticated investors provide liquidity to less sophisticated traders, we should observe differences in their timing returns; that is, the incremental net gains generated by the timing of capital flows into and out of investment products.

To evaluate this channel, we follow the methodology of Dichev (2007) to estimate the net gains generated by the timing of flows. 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*,  $TP_{iy} = DWR_{iy} - BHR_{iy}$ , 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 weeks of the year:

$$BHR_{iy} = 52 \times \left[ \sqrt[T_y]{\prod_{t=1}^{T_y} (1 + R_{it})} - 1 \right],$$

where  $R_{it}$  is the total return in week  $t$  of year  $y$  and  $T_y$  is the number of weeks in year  $y$ .

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:

$$\sum_{t=1}^{T_y} \frac{\text{Dollar Flow}_{it}}{(1 + DWR_{iy}/52)^t} + \frac{TNA_{iT_y}}{(1 + DWR_{iy}/52)^{T_y}} = TNA_{i0},$$

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

In Panel A of Table 11, 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. In the equity asset class, interval fund investors' timing performance exceeds that of active and passive ETFs by 1.035% and 0.876% per year, respectively. In the fixed-income asset class, the corresponding outperformance is 0.326% and 0.841% per year. These differences are both economically and statistically significant.

In Panel B of Table 11, we divide the sample of interval funds by investor clientele. Investors in both single- and multiple-clientele funds appear to benefit from the structured liquidity of interval funds, achieving better timing performance relative to ETF investors.

In the even-numbered columns of the panel, we test whether high-minimum products exhibit superior timing performance compared to low-minimum products. We find no evidence of such heterogeneity. The incremental timing performance of high-minimum products is both economically and statistically insignificant relative to low-minimum products. This suggests that investors in high-minimum share classes do not time flows to exploit temporary market dislocations.

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

timing. However, this benefit accrues to both high- and low-minimum investment products, suggesting that more sophisticated investors do not necessarily provide additional liquidity to the fund.

## 6.2 Money flows

As an additional test of the liquidity-provision hypothesis, we examine whether flows into or out of high- and low-minimum investment products respond differently to past performance and redemption opportunities. Using weekly flow data, we estimate the following regression:

$$\begin{aligned}
 \text{Flows}_{it} = & \gamma_0 \text{Interval}_i + \gamma_1 \text{Interval}_i \times \text{High Min Inv}_i + \gamma_2 \text{Past Performance}_{it-1} \\
 & + \gamma_3 \text{Interval}_i \times \text{Past Performance}_{it-1} \\
 & + \gamma_4 \text{Interval}_i \times \text{High Min Inv}_i \times \text{Past Performance}_{it-1} \\
 & + \beta_0 \text{Past Flows}_{it-1} + \beta' X_{it} + \phi_{s(i)t} + \phi_i + u_{it}.
 \end{aligned} \tag{5}$$

The dependent variable,  $\text{Flows}_{it}$ , is the net inflow into product  $i$  during week  $t$  as a percentage of the product's TNA at the end of week  $t-1$ , and is calculated using the percentage change in the number of shares.  $\text{Past Performance}_{it-1}$  denotes the average style-adjusted net return over the four weeks up to and including week  $t-1$ .  $\text{Past Flows}_{it-1}$ , included as a control, is the cumulative net inflow over the same four-week period, expressed as a percentage of TNA at the end of week  $t-5$ . The vector  $X_{it}$  includes additional controls: fund size, family size, age, and a fund-of-funds indicator.  $\phi_{s(i)t}$  are style-by-week fixed effects, and in some specifications we also include product fixed effects  $\phi_i$ .

The coefficient  $\gamma_0$  captures the average incremental inflows into interval funds relative to ETFs. The coefficient  $\gamma_1$  measures the additional average flows to high-minimum investment products among interval funds. The coefficient  $\gamma_2$  reflects the flow-performance

sensitivity in ETFs, while  $\gamma_3$  captures the incremental sensitivity of interval fund flows to past performance.

Our primary interest lies in  $\gamma_4$ , which indicates whether investors in high-minimum products respond more or less strongly to past performance than those in low-minimum products.

The results are reported in Table 12. Over the sample period, interval funds exhibit higher average net flows than ETFs, as indicated by a positive and statistically significant  $\gamma_0$ . However, we find no significant difference in average flows between high- and low-minimum share classes.

Consistent with an established literature in asset management (Chevalier and Ellison, 1997; Del Guercio and Tkac, 2002; Franzoni and Schmalz, 2017; Huang et al., 2007; Ippolito, 1992; Sirri and Tufano, 1998; Spiegel and Zhang, 2013; Zheng, 1999), flows respond positively to past performance, as reflected in the positive coefficient  $\gamma_2$ . Moreover, as expected, the sensitivity of interval fund flows to past performance is lower than that of ETFs, as shown by the negative coefficient on  $\gamma_3$ , in line with their limited liquidity and restricted redemption structure.

Crucially, we find no systematic difference in how flows to high- versus low-minimum investment products respond to past performance. These results are robust to the inclusion of product fixed effects, as shown in the even-numbered columns of the table.

Next, we investigate whether investors in high- and low-minimum investment products respond differently to redemption opportunities. Even if they exhibit similar flow-performance sensitivity overall, more sophisticated investors may still provide liquidity

during redemption periods. To test this, we estimate the following regression:

$$\begin{aligned} \text{Flows}_{it} = & \delta_0 \text{Interval}_i + \delta_1 \text{Interval}_i \times \text{High Min Inv}_i + \delta_2 \text{Interval}_i \times \text{Pricing Week}_{it} \\ & + \delta_3 \text{Interval}_i \times \text{High Min Inv}_i \times \text{Pricing Week}_{it} \\ & + \beta_0 \text{Past Performance}_{it-1} + \beta_1 \text{Interval}_i \times \text{Past Performance}_{it-1} \\ & + \beta_2 \text{Past Flows}_{it-1} + \beta' X_{it} + \phi_{s(i)t} + \phi_i + u_{it}. \end{aligned}$$

All variables and fixed effects are defined as in equation (5). The additional variable  $\text{Pricing Week}_{it}$  is an indicator equal to one if week  $t$  contains a pricing date. As discussed in Section 3, redeemed shares are priced at the NAV on the pricing date, and this is also when redemptions are executed and outflows realized.

We include controls for past performance and its interaction with the interval fund indicator, as well as past flows, to account for momentum and flow autocorrelation.

Our coefficients of interest are  $\delta_2$  and  $\delta_3$ , which measure, respectively, the incremental outflows experienced by interval funds during a pricing week, that is, following a redemption period, and the difference in those outflows between high- and low-minimum investment products.

Table 13 presents the results. Interval funds experience significantly larger outflows following redemption periods, as indicated by the negative and statistically significant coefficient  $\delta_2$  across all specifications. These additional outflows range from 1.192% to 1.309% per redemption period (flows are not annualized).

However, we find no systematic difference in redemption-related outflows between high- and low-minimum investment products, as evidenced by the economically small and statistically insignificant coefficient  $\delta_3$ .

Taken together, these results suggest that investors in interval funds exhibit similar sensitivity to past performance and redemption opportunities, regardless of their level of sophistication, as proxied by the product's minimum investment. It is therefore unlikely

that the superior performance of high-minimum products or multiple-clientele funds is driven by the liquidity provision of more sophisticated investors. In the next section, we show instead that their superior performance stems from superior selection skill.

### 6.3 Flows and future performance

Although flows from different investor clienteles respond similarly to past performance and redemption opportunities, they may differ in their ability to predict *future* performance. If so, the cross-sectional performance patterns among different investor clienteles discussed in Section 5.4 may reflect differences in selection skill.

To test this, we estimate the following regression:

$$\begin{aligned}\tilde{R}_{it+n} = & \kappa_0 \text{Past Flows}_{it} + \kappa_1 \text{Interval}_i \times \text{Past Flows}_{it} \\ & + \kappa_2 \text{Interval}_i \times \text{High Min Inv}_i \times \text{Past Flows}_{it} \\ & + \beta_0 \text{Past Performance}_{it-1} + \beta' X_{it} + \phi_{s(i)t} + \phi_i + u_{it},\end{aligned}$$

where all variables are defined as in equations (4) and (5). We examine future performance over the subsequent four weeks, so that  $n = 1, 2, 3, 4$ . Our primary coefficients of interest are  $\kappa_1$  and  $\kappa_2$ , which capture the predictive power of fund flows from different investor clienteles.

Given the illiquidity of the underlying assets, we include  $\text{Past Performance}_{it-1}$  to control for potential autocorrelation in returns. To address concerns that flows may mechanically affect the NAV in the very short term because of price pressure on funds' underlying securities, we evaluate future performance across multiple weekly horizons.

The results are presented in Table 14. Across all horizons  $n = 1, 2, 3, 4$ , the coefficient  $\kappa_1$  is negative and statistically significant, indicating that flows into low-minimum investment products predict lower future performance, even after controlling for product fixed effects. By contrast, the coefficient  $\kappa_2$  is positive and statistically significant, show-

ing that flows into high-minimum products predict *incremental* performance relative to flows into low-minimum products. Interestingly, the net predictive power of flows into high-minimum products is close to zero, consistent with informational efficiency in that segment.

Nevertheless, the estimated values of  $\kappa_1$  and  $\kappa_2$  reveal substantial heterogeneity in the selection skill of different investor clienteles, with less sophisticated investors tending to allocate capital to lower-quality products.

In Table A.4 of the Appendix, we conduct similar tests separately for the equity and fixed-income asset classes. Consistent with the findings in Section 5.4, heterogeneity in selection skill appears exclusively within fixed-income products.

These results suggest that less sophisticated investors lack the ability to identify interval funds capable of delivering superior future performance. However, by co-investing alongside more sophisticated investors, they may benefit from the latter's superior selection skill.

## 7 Conclusions

This paper investigates the role of interval funds in providing retail access to illiquid private-market strategies and examines whether their structured liquidity compensates investors for bearing liquidity risk. We find that interval funds hold substantially more illiquid (level 3) assets compared to ETFs, which are capped at 15%. Interval funds outperform ETFs in fixed-income categories, particularly those with lower liquidity. This outperformance is primarily driven by distribution yields rather than capital appreciation. In contrast, interval funds do not outperform in equity categories, where information sensitivity is higher and incentives to search for undervalued assets may be weaker.

Performance also varies across investor clienteles. Share classes with high minimum

investment requirements, which target more sophisticated investors, exhibit superior outcomes, while those limited to low-minimum shares do not. Importantly, this performance gap is not explained by differences in liquidity provision, but rather by differences in selection skill across investor types. While interval funds restrict short-term trading, this structure appears beneficial: investors in interval funds demonstrate better timing performance than ETF investors, regardless of their level of sophistication.

These findings have several implications. For the asset management industry, they suggest that interval funds are a viable structure for delivering illiquid credit exposure, particularly to investors willing to commit to longer holding periods. For regulators, the results emphasize the importance of aligning fund structure with asset liquidity, information sensitivity, and investor capabilities. For retail investors, the evidence cautions against investing in isolation and highlights the potential benefits of co-investing alongside more sophisticated investors. Future research could explore how different fund structures affect systemic risk during periods of market stress, whether similar dynamics apply to other semi-liquid vehicles such as tender-offer funds, and how these vehicles influence household portfolio choices in the expanding universe of alternative investments.

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# Figures and Tables

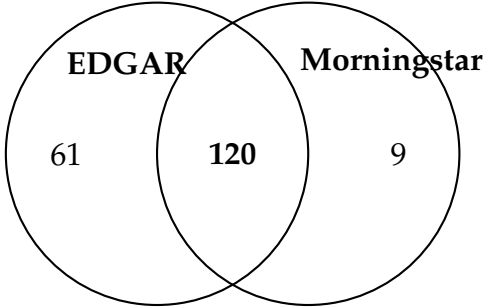


Figure 1: Sample with number of funds in EDGAR and Morningstar

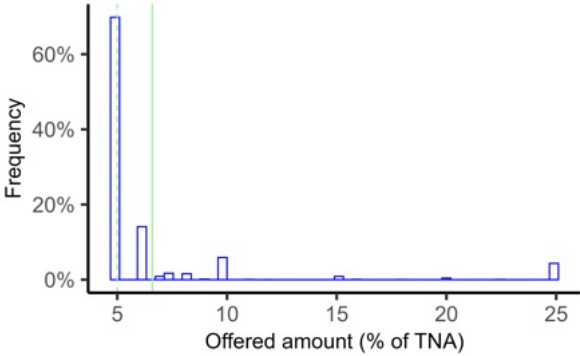
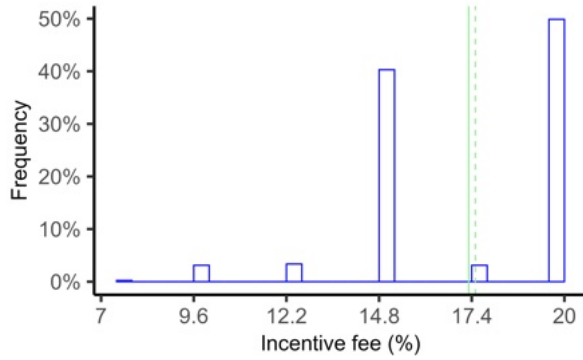
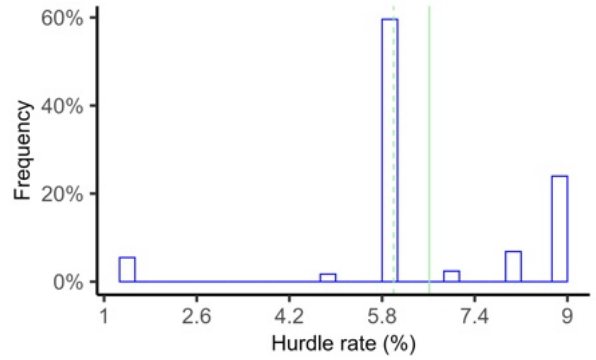


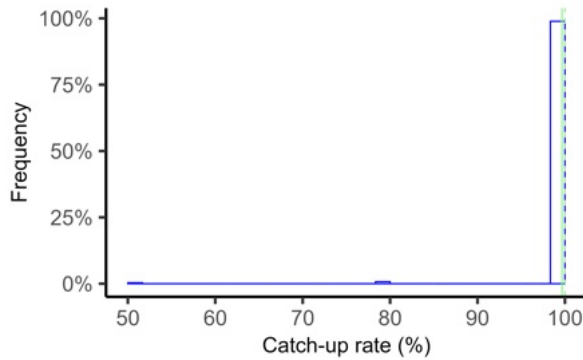
Figure 2: Distribution of amounts offered for redemption during redemption periods among interval-fund share classes from 2010 to 2024. The solid vertical line marks the average. The dashed vertical line marks the median. Data are from forms N-23c-3 available on Edgar.



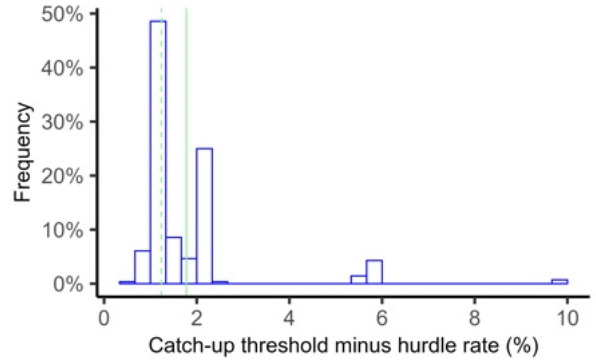
(a) Incentive fees



(b) Hurdle rates

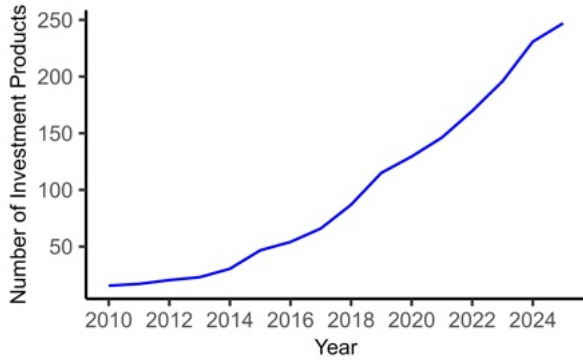


(c) Catch-up rates

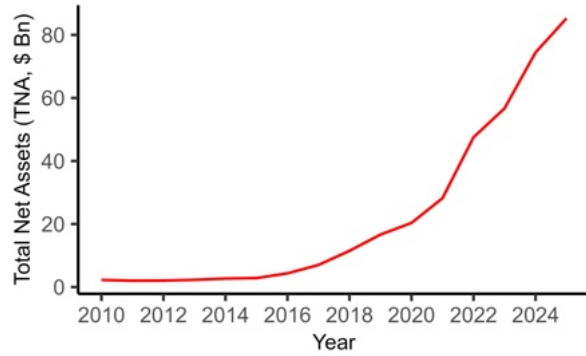


(d) Catch-up threshold minus hurdle rate

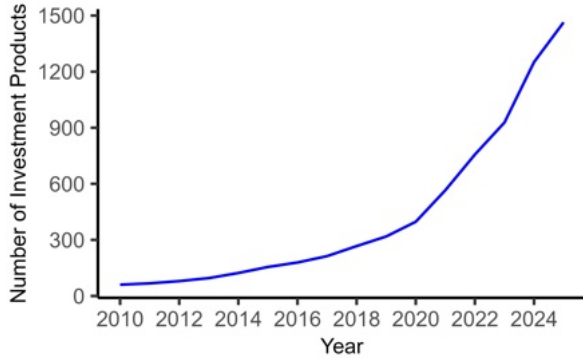
**Figure 3:** Distribution of contractual features related to incentive fees among interval-fund share classes in Edgar from 2010 to 2024. Figure 3(a) shows the distribution of performance-based fees as a percentage of the fund’s interest and dividend income. Figure 3(b) shows the distribution of hurdle rates among interval-fund share classes that feature a hurdle rate for the payment of incentive fees. Figure 3(c) shows the distribution of catch-up rates among interval-fund share classes that feature one. Figure 3(d) shows the difference between the catch-up threshold up to which the catch-up rate applies and the hurdle rate among the funds that feature a hurdle rate. 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, and N-2 available on Edgar.



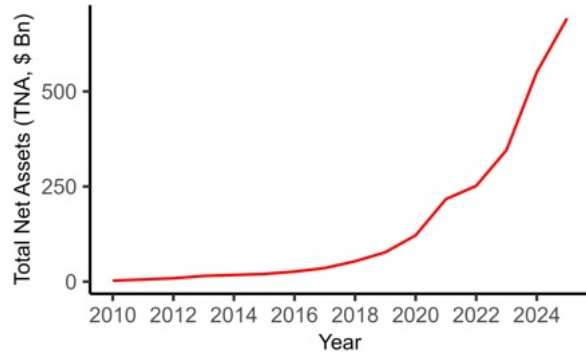
(a) Products: Interval Funds



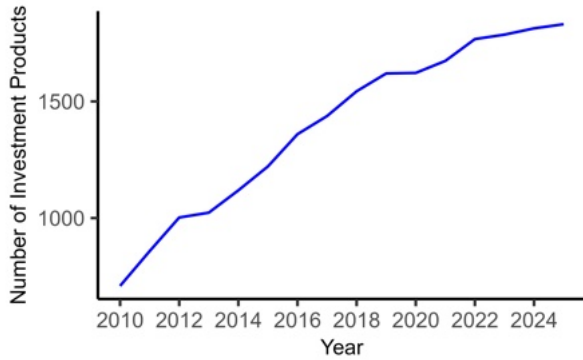
(b) Total Net Assets: Interval Funds



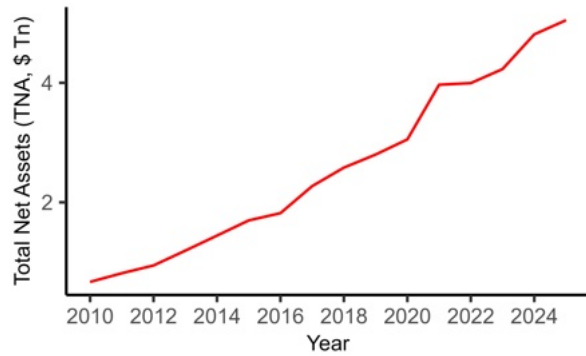
(c) Products: Active ETF



(d) Total Net Assets: Active ETF

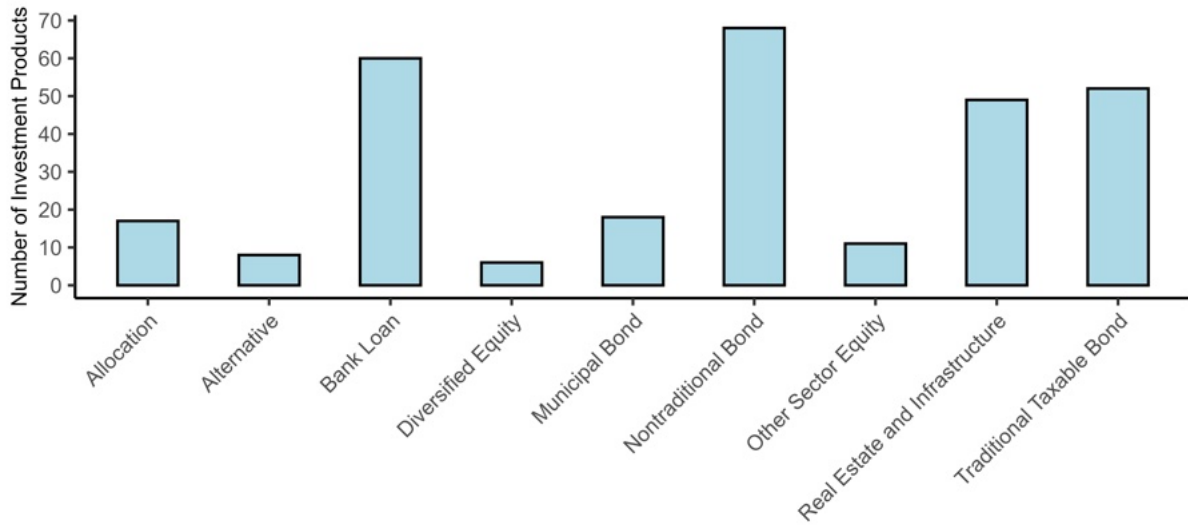


(e) Products: Passive ETFs

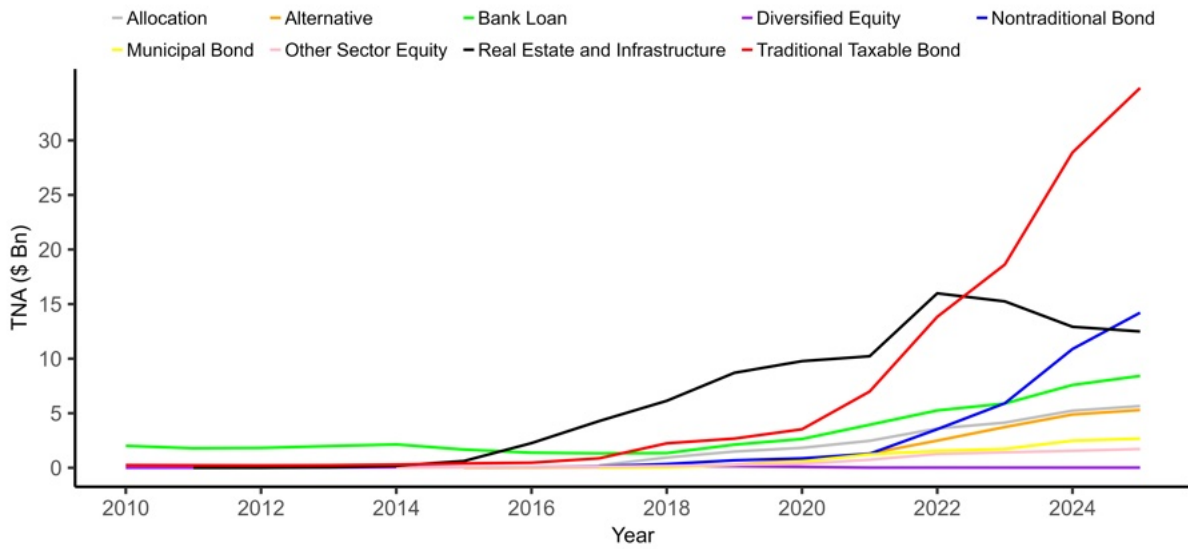


(f) Total Net Assets: Passive ETFs

**Figure 4:** The figures show the number of investment products and their total net assets for Interval Funds, Active ETFs, and Passive ETFs from the first week of 2010 to the first week of 2025. Data are from Morningstar.

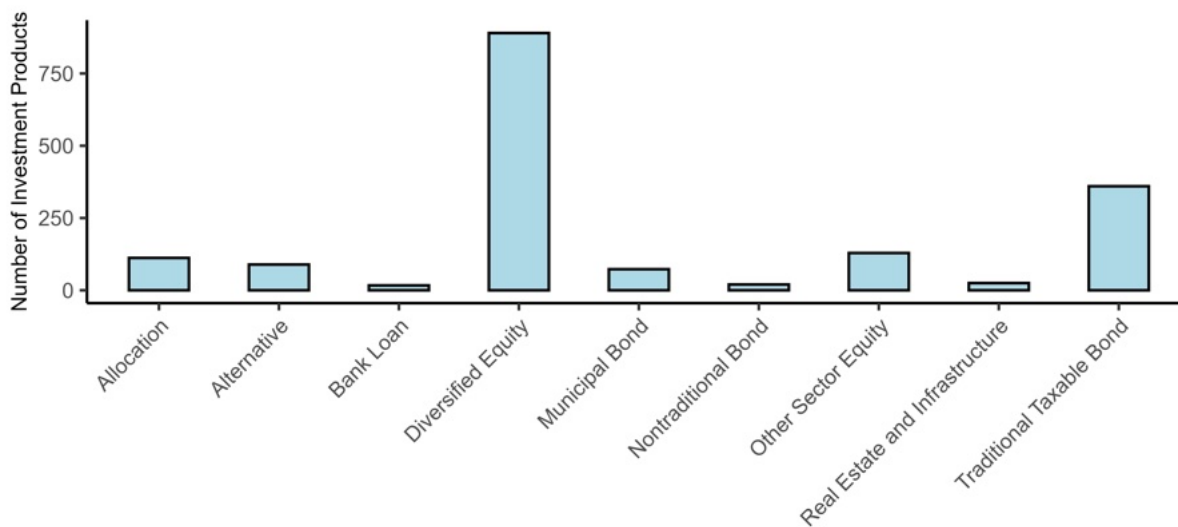


(a) Products by Investment Style: Interval Funds

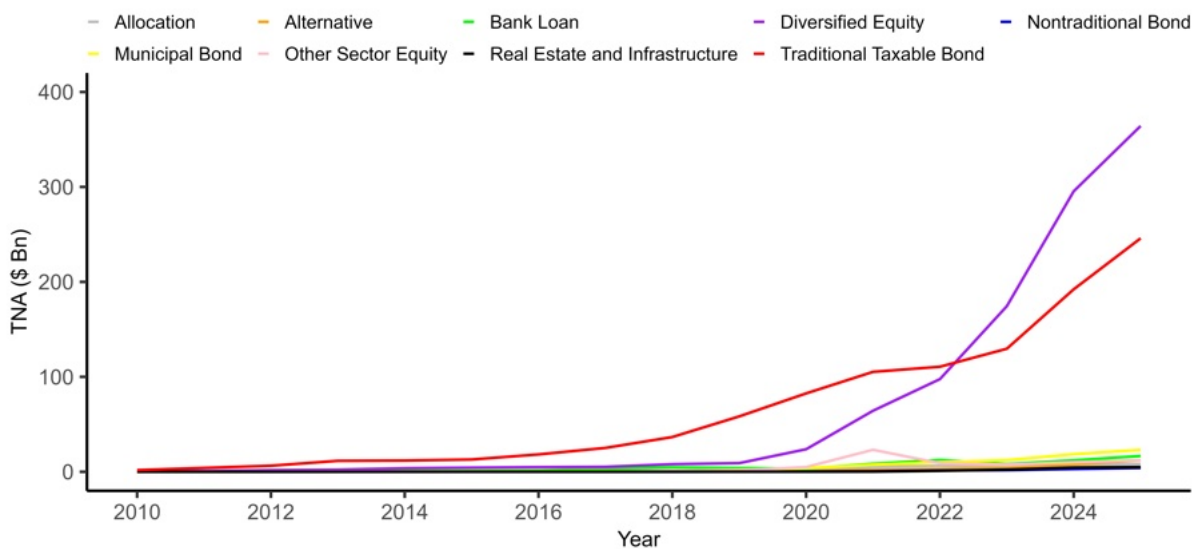


(b) Total Net Assets by Investment Style: Interval Funds

**Figure 5:** The figures display the number of investment products by investment style (a) and the total net assets by year and investment style (b) for interval funds from the first week of 2010 to the first week of 2025. Data are from Morningstar.

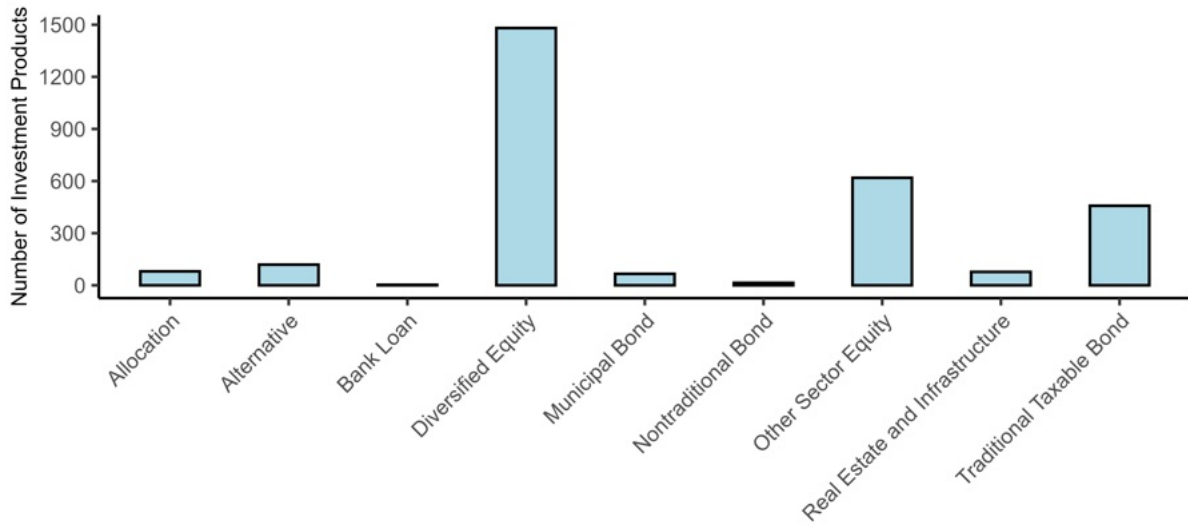


(a) Products by Investment Style: Active ETFs

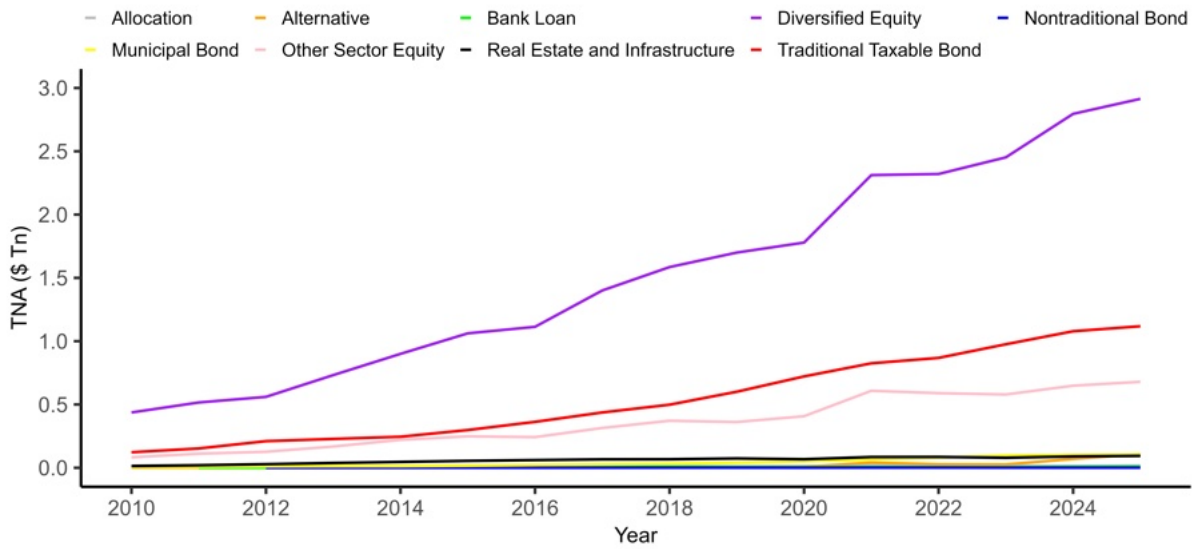


(b) Total Net Assets by Investment Style: Active ETFs

**Figure 6:** The figures display the number of investment products by investment style (a) and the total net assets by year and investment style (b) for active ETFs from the first week of 2010 to the first week of 2025. Data are from Morningstar.

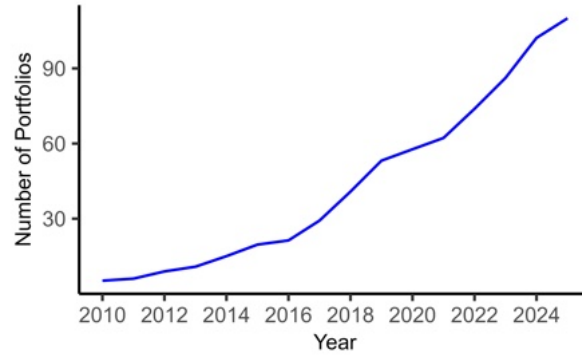


(a) Products by Investment Style: Passive ETFs

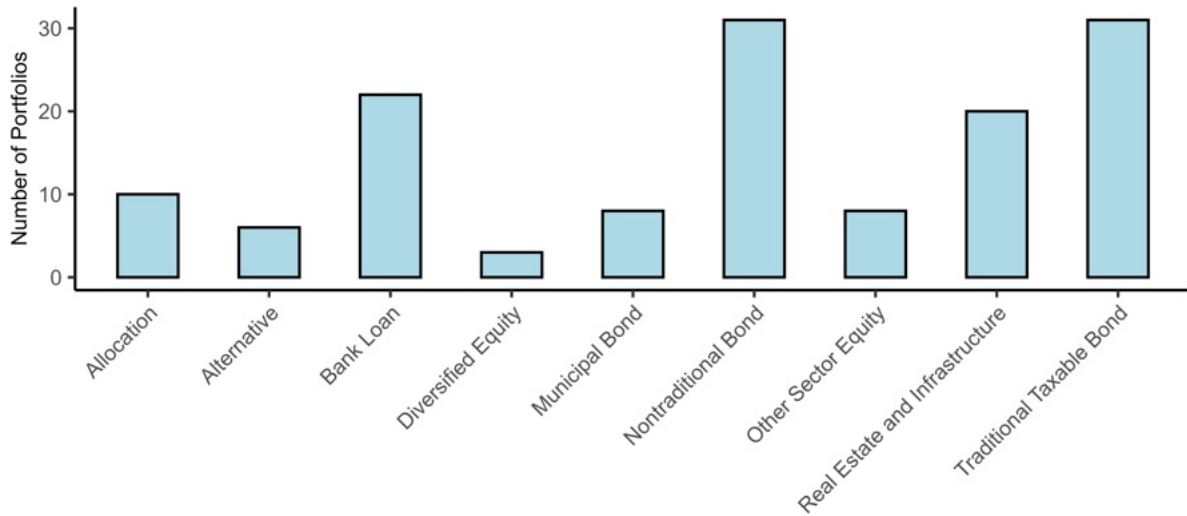


(b) Total Net Assets Investment Style: Passive ETFs

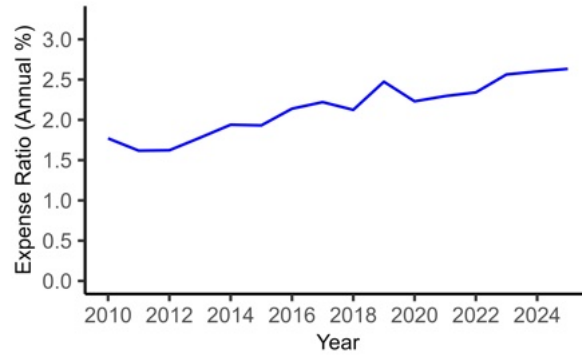
**Figure 7:** The figures display the number of investment products by investment style (a) and the total net assets by year and investment style (b) for passive ETFs from the first week of 2010 to the first week of 2025. Data are from Morningstar.



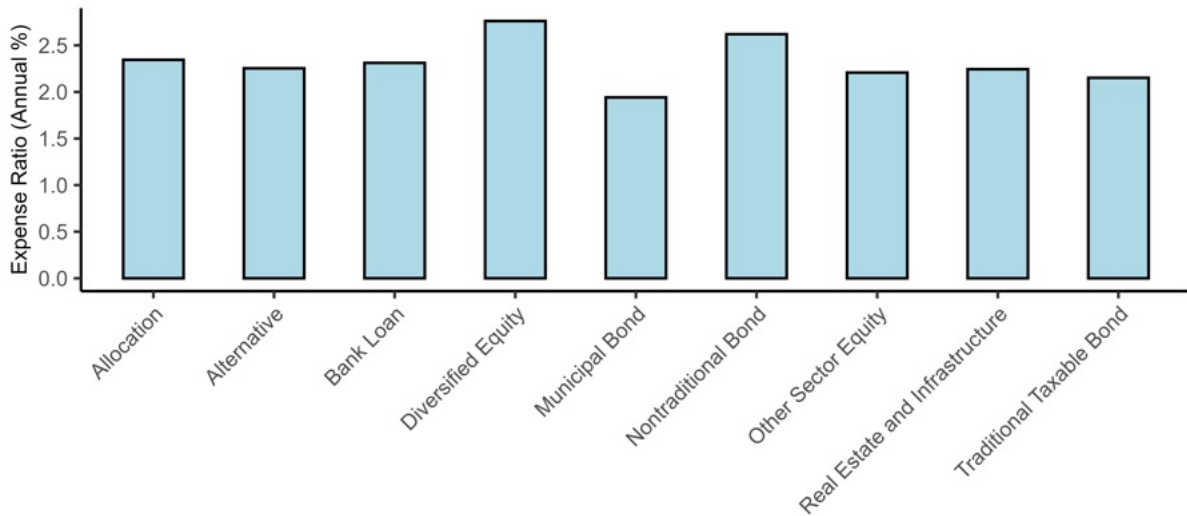
**Figure 8:** Number of interval-fund portfolios over time. Data are from Morningstar.



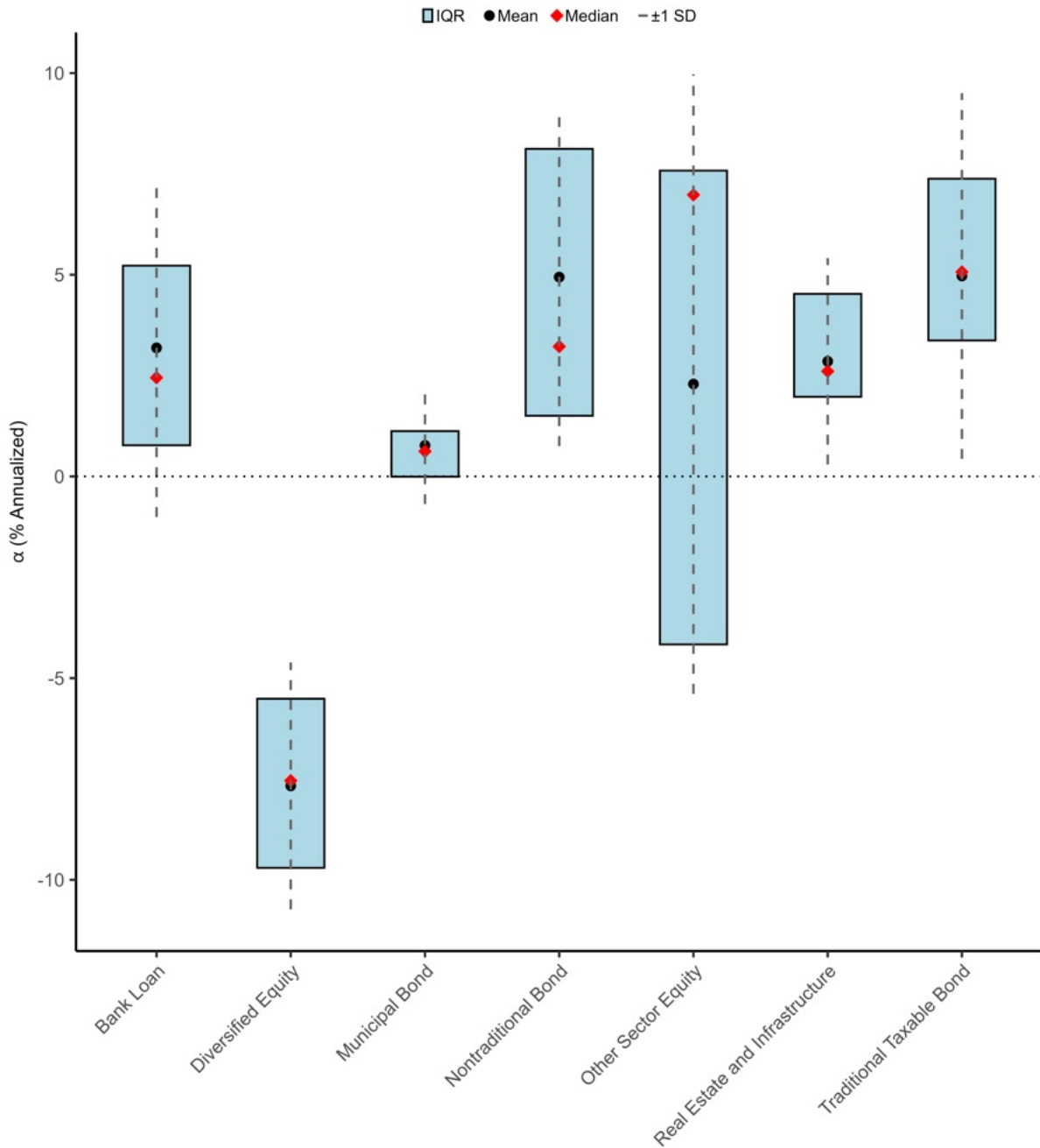
**Figure 9:** Number of interval-fund portfolios by investment category. Data are from Morningstar.



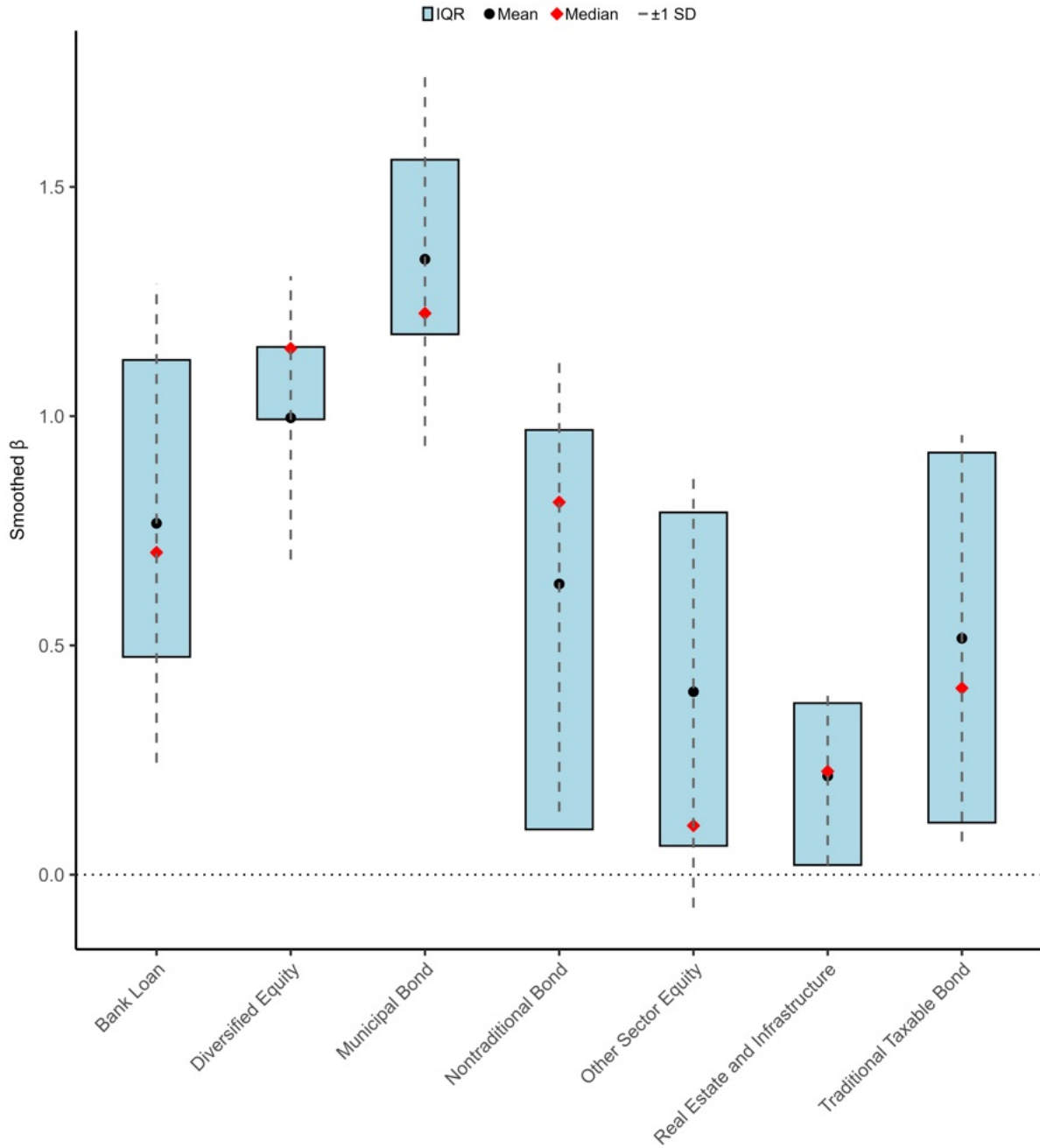
**Figure 10:** Average annual expense ratio over time for interval funds from the first week of 2010 to the first week of 2025. Data are from Morningstar and from forms N-CSR available on Edgar.



**Figure 11:** Average annual expense ratio by investment style for interval funds from the first week of 2010 to the first week of 2025. Data are from Morningstar and from forms N-CSR available on Edgar.



**Figure 12:** Distribution of interval funds alphas. The figure displays the interquartile range (IQR), mean, median, and  $\pm 1$  standard deviation (SD) of alpha estimates from fund-level regressions of weekly returns on the TNA-weighted average return of passive ETFs with the same investment style, including two lags.



**Figure 13:** Distribution of interval funds smoothed betas. The figure displays the interquartile range (IQR), mean, median, and  $\pm 1$  standard deviation (SD) of smoothed beta estimates from fund-level regressions of weekly returns on the TNA-weighted average return of passive ETFs with the same investment style, including two lags. The smoothed beta is obtained by summing the betas on the contemporaneous and lagged factors (Dimson, 1979).

**Table 1: Summary Statistics for Redemption Offers**

This table reports summary statistics on the redemption terms of interval funds. “Days between redemption periods” measures the number of days between the start dates of two consecutive redemption periods. “Days from start to deadline” measures the length of the period during which investors may submit redemption requests. “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. “Offered amount” is the percentage of TNA made available for redemption in each redemption offer. Data are from forms N-23c-3 available on Edgar.

Panel A: All funds (152 funds, 369 share classes)

	Mean	SD	Min	P25	P50	P75	Max	Observations
Days between redemption periods	74.09	30.90	25.00	34.00	91.00	91.00	203.00	6595
Days from start to deadline	23.94	11.76	7.00	9.00	29.00	33.00	42.00	6595
Days from deadline to pricing	0.53	2.44	-1.00	0.00	0.00	0.00	15.00	6595
Offered amount (% TNA)	0.07	0.04	0.05	0.05	0.05	0.06	0.25	6591

Panel B: Funds with monthly redemptions (6 funds, 23 share classes)

	Mean	SD	Min	P25	P50	P75	Max	Observations
Days between redemption periods	30.67	3.61	25.00	28.00	30.00	33.00	63.00	2001
Days from start to deadline	7.68	1.45	7.00	7.00	7.00	7.00	14.00	2001
Days from deadline to pricing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2001
Offered amount (% TNA)	0.06	0.03	0.05	0.05	0.06	0.06	0.25	2001

Panel C: Funds with quarterly redemptions (140 funds, 339 share classes)

	Mean	SD	Min	P25	P50	P75	Max	Observations
Days between redemption periods	92.33	11.26	25.00	91.00	91.00	92.00	203.00	4560
Days from start to deadline	31.05	5.69	7.00	28.00	30.00	35.00	42.00	4560
Days from deadline to pricing	0.75	2.90	-1.00	0.00	0.00	0.00	15.00	4560
Offered amount (% TNA)	0.07	0.05	0.05	0.05	0.05	0.05	0.25	4556

Panel D: Funds with semiannual redemptions (6 funds, 7 share classes)

	Mean	SD	Min	P25	P50	P75	Max	Observations
Days between redemption periods	182.76	5.83	161.00	182.00	182.00	184.75	195.00	34
Days from start to deadline	27.15	5.66	21.00	21.00	29.00	31.00	35.00	34
Days from deadline to pricing	1.32	2.94	0.00	0.00	0.00	0.00	10.00	34
Offered amount (% TNA)	0.05	0.00	0.05	0.05	0.05	0.05	0.05	34

**Table 2: Interval Fund Fees**

This table reports summary statistics for key fee and compensation features of interval-fund products. 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. Redemption costs refer to fees charged for redemptions. 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. Data are annual observations at the share-class level from forms N-CSR, 486BPOS, 486APOS, and N-2 available on Edgar.

Feature	Mean	SD	Min	P25	P50	P75	Max	Observations
Net expense ratio (%)	2.77	1.72	0.00	1.75	2.43	3.34	13.92	1391
Management fees (%)	1.38	0.53	0.00	1.15	1.42	1.60	11.40	1414
Borrowing costs (%)	0.85	0.88	0.01	0.17	0.58	1.22	4.42	722
Redemption costs (%)	1.40	0.62	0.33	1.00	1.00	2.00	3.25	341
Early years (years)	1.13	0.58	0.25	1.00	1.00	1.00	5.00	275
Incentive fees (%)	17.31	2.91	7.50	15.00	17.50	20.00	20.00	417
Hurdle rates (%)	6.62	1.79	1.50	6.00	6.00	8.00	9.00	292
Catch-up thresholds (%)	8.43	1.99	5.56	7.06	7.06	11.25	18.00	280
Catch-up thresholds minus hurdle rates (%)	1.78	1.35	0.56	1.06	1.23	2.25	10.00	280
Catch-up rates (%)	99.67	3.49	50.00	100.00	100.00	100.00	100.00	270

**Table 3: Performance Fee Structure**

This table reports the prevalence of features associated with performance-based fee structures among interval funds. The first row shows the share of all interval 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 486BPOS, 486APOS, and N-2 available on Edgar.

Feature	Frequency	Sample
Has incentive fee	32.3%	All funds (1994 observations)
Has high-water mark	36.1%	Funds with incentive fee (645 observations)
Has hurdle rate	45.3%	Funds with incentive fee (645 observations)
Has both high-water mark and hurdle rate	23.9%	Funds with incentive fee (645 observations)
Has catch-up provision	95.9%	Funds with hurdle rate (292 observations)

**Table 4: Summary statistics**

This table presents share-class-level summary statistics, including the mean, standard deviation, and the 25th, 50th, and 75th percentiles, based on weekly data from the first week of April 2010 through the first week of January 2025. Panel A reports results for interval funds, Panel B for active ETFs, and Panel C for passive ETFs. Variables include net return (annualized weekly total return after fees and expenses), style-adjusted net return (net return in excess of the TNA-weighted average return of passive ETFs within the same style), annual expense ratio, annualized weekly gross return (net return plus expense ratio), style-adjusted gross return, total net assets managed by the fund and by its fund family within the same fund type, fund age (in years since inception), an indicator for whether the fund is a fund of funds, minimum investment required by the share class, an indicator for whether the fund is offered to both retail and high-net-worth investors (multi-clientele), and monthly net flows, computed as the percentage change in the number of shares outstanding over the past four weeks. The number of shares is estimated weekly as the ratio of total net assets (TNA) to the net asset value (NAV) per share. The final column reports the total number of weekly observations for each variable and fund sample. For variables not reported weekly, values are assumed to remain constant between reporting periods.

Panel A: Interval Fund Characteristics

	Mean	SD	P25	P50	P75	Observations
Weekly Net Returns (% Annualized)	5.48	47.62	-4.68	6.24	18.72	50242
Style-adj Weekly Net Returns (% Annualized)	0.57	63.49	-19.12	1.41	21.12	50242
Expense ratio (% Annualized)	2.32	0.94	1.73	2.34	3.00	50242
Weekly Gross Returns (% Annualized)	7.81	47.63	-2.42	8.44	21.15	50242
Style-adj Weekly Gross Returns (% Annualized)	2.46	62.15	-16.81	3.02	22.87	50242
TNA (USD Mln)	243.64	941.30	7.95	50.60	160.24	50242
Family TNA (USD Bln)	1.10	2.00	0.08	0.33	1.09	50242
Age (Years)	4.77	4.64	1.72	3.55	6.17	50242
Fund of Funds (0-1)	0.07	0.26	0.00	0.00	0.00	50242
Minimum Investment (USD Thd)	772.50	4293.68	2.50	2.50	100.00	50242
Multiple-clientele (0-1)	0.49	0.50	0.00	0.00	1.00	50242
Flows (% Monthly)	6.26	168.74	-0.11	0.80	3.65	50242

Panel B: Active ETF Characteristics

	Mean	SD	P25	P50	P75	Observations
Weekly Net Returns (% Annualized)	5.65	100.68	-24.96	5.20	37.96	181705
Style-adj Weekly Net Returns (% Annualized)	-0.21	50.09	-12.82	0.33	13.04	181705
Expense ratio (% Annualized)	0.62	0.32	0.38	0.64	0.79	181705
Weekly Gross Returns (% Annualized)	6.27	100.68	-24.17	5.47	38.75	181705
Style-adj Weekly Gross Returns (% Annualized)	0.18	49.28	-12.67	0.50	13.69	181705
TNA (USD Mln)	442.77	1570.68	19.15	62.73	214.25	181705
Family TNA (USD Bln)	11.37	19.83	0.35	2.16	11.84	181705
Age (Years)	3.61	3.62	1.24	2.54	4.64	181705
Fund of Funds (0-1)	0.05	0.22	0.00	0.00	0.00	181705
Flows (% Monthly)	5.95	172.70	-0.02	0.00	3.96	181705

Panel C: Passive ETF Characteristics

	Mean	SD	P25	P50	P75	Observations
Weekly Net Returns (% Annualized)	7.33	131.89	-48.88	6.76	68.64	771592
Style-adj Weekly Net Returns (% Annualized)	-0.98	54.54	-18.29	-0.05	17.29	771592
Expense ratio (% Annualized)	0.40	0.23	0.20	0.40	0.58	771592
Weekly Gross Returns (% Annualized)	7.73	131.89	-48.48	7.31	69.04	771592
Style-adj Weekly Gross Returns (% Annualized)	-0.85	53.76	-18.12	-0.03	17.32	771592
TNA (USD Mln)	1874.62	5149.16	35.62	189.75	948.84	771592
Family TNA (USD Bln)	376.81	508.96	19.88	121.66	584.92	771592
Age (Years)	7.51	5.64	2.92	6.21	11.03	771592
Fund of Funds (0-1)	0.02	0.14	0.00	0.00	0.00	771592
Flows (% Monthly)	3.09	60.02	-1.08	0.13	2.85	771592

**Table 5: Portfolio Holdings Characteristics: Interval Funds**

This table shows fund-level summary statistics, including the mean, standard deviation, and the 25th, 50th, and 75th percentiles. The statistics are based on weekly data from the first week of October 2019 through the last week of October 2024 for the sample of interval funds. Panel A reports results for equity funds, and Panel B for fixed income funds. Levels 1, 2, and 3 represent the percentage of portfolio holdings in securities classified in each level. Level 1 assets, the most liquid, can be valued using ‘quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date.’. Level 2 assets can be valued using ‘Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.’ Finally, the most illiquid level 3 assets have to be valued using ‘unobservable inputs,’ which often require institutions to use internally-developed methodologies. See FASB ASC 820-10. Leverage is the percentage of liabilities to assets under management. The final column shows the total number of weekly observations for each variable.

## Panel A: Equity

	Mean	SD	P25	P50	P75	Observations
Level 1 (%)	29.99	29.38	7.00	22.30	40.73	3428
Level 2 (%)	16.75	28.49	0.00	1.20	14.97	3428
Level 3 (%)	29.00	37.28	0.00	3.92	58.05	3428
Leverage (%)	5.05	7.11	0.41	2.49	6.13	3428

## Panel A: Fixed Income

	Mean	SD	P25	P50	P75	Observations
Level 1 (%)	10.25	22.94	0.35	3.83	12.63	9341
Level 2 (%)	77.34	52.76	32.09	84.47	106.15	9341
Level 3 (%)	33.47	37.50	1.10	17.23	58.54	9341
Leverage (%)	16.43	14.17	3.34	13.69	26.88	9341

**Table 6: Mean Comparison of Returns Across Fund Types**

This table reports the average net return, gross return, style-adjusted net return, and style-adjusted gross return for interval funds (column 1), active ETFs (column 2), and passive ETFs (column 3), based on weekly data from the first week of April 2010 through the first week of January 2025. The last three columns present pairwise differences in means: interval funds minus active ETFs (1–2), interval funds minus passive ETFs (1–3), and active ETFs minus passive ETFs (2–3). All return measures are annualized from weekly observations. \* denotes significance at the 10% level, \*\* denotes significance at the 5% level and \*\*\* denotes significance at the 1% level.

	Interval Funds (1)	Active ETFs (2)	Passive ETFs (3)	(1-2)	Difference (1-3)	(2-3)
Weekly Net Returns (% Annualized)	5.482	5.647	7.329	-0.164	-1.846**	-1.682***
Weekly Gross Returns (% Annualized)	7.806	6.268	7.731	1.537***	0.074	-1.463***
Style-adj Weekly Net Returns (% Annualized)	0.566	-0.214	-0.985	0.780**	1.550***	0.771***
Style-adj Weekly Gross Returns (% Annualized)	2.459	0.177	-0.853	2.282***	3.312***	1.030***

**Table 7: Net Performance of Interval Funds**

This table reports results from regressions of annualized style-adjusted net returns at the share-class level on fund characteristics, estimated separately for equity and fixed income asset classes. Columns 1 and 2 use active ETFs as the comparison group, while columns 3 and 4 use passive ETFs. The key independent variable is an indicator for whether the fund is an interval fund. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Total Weekly Net Returns (% Annualized)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Interval	0.315 (0.08)	1.655*** (3.64)	-0.318 (-0.09)	2.474*** (2.70)
Log TNA	-0.021 (-0.13)	0.063 (0.95)	0.051 (0.55)	0.057 (0.95)
Log Family TNA	0.071 (0.56)	0.062 (0.60)	0.130** (2.08)	0.102* (1.88)
Log Age	0.583 (1.58)	-0.653** (-2.40)	0.642* (1.71)	-0.422 (-1.47)
Fund of Funds	-0.546 (-0.52)	-0.794 (-1.01)	0.689 (0.64)	0.533 (0.90)
Asset Class	EQ	FI	EQ	FI
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Observations	121379	103301	619611	201374
Adjusted $R^2$	0.427	0.353	0.111	0.156

**Table 8: Net Performance of Interval Funds: Broad Category Group**

This table reports results from regressions of annualized style-adjusted net returns at the share-class level on interaction terms between interval fund status and investment category indicators, estimated separately for equity (EQ) and fixed income (FI) asset classes. Columns 1 and 2 use active ETFs as the comparison group, while columns 3 and 4 use passive ETFs. Interval takes the value of one if the product is an interval fund. This indicator interacts with indicators for each investment category. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Total Weekly Net Returns (% Annualized)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Diversified Equity × Interval	-8.924*** (-2.93)		-10.249*** (-3.66)	
Other Sector Equity × Interval	12.357* (1.70)		4.600 (0.84)	
Real Estate and Infrastructure × Interval	-2.088 (-0.43)		-0.405 (-0.11)	
Bank Loan × Interval		1.133** (2.18)		2.719*** (4.94)
Municipal Bond × Interval		0.391 (0.40)		1.048*** (3.97)
Nontraditional Bond × Interval		4.199** (2.53)		4.317*** (2.79)
Traditional Taxable Bond × Interval		1.556 (1.63)		1.422 (1.15)
Log TNA	-0.087 (-0.61)	0.066 (0.97)	0.043 (0.46)	0.053 (0.89)
Log Family TNA	0.021 (0.18)	0.060 (0.60)	0.120* (1.93)	0.087* (1.73)
Log Age	0.791** (2.17)	-0.666** (-2.47)	0.714* (1.86)	-0.398 (-1.42)
Fund of Funds	-0.860 (-1.11)	-0.630 (-0.84)	0.627 (0.60)	0.362 (0.59)
Asset Class	EQ	FI	EQ	FI
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Observations	121379	103301	619611	201374
Adjusted $R^2$	0.428	0.354	0.111	0.156

**Table 9: Net Performance of Interval Funds: NAV vs Distribution Returns**

This table reports results from regressions of product-level annualized returns, measured using either NAV or distributions, on fund characteristics, estimated separately for equity (EQ) and fixed income (FI) asset classes. Columns 1 to 4 use active ETFs as the comparison group, while columns 5 to 8 use passive ETFs. The key independent variable is an indicator for whether the fund is an interval fund. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

Panel A: All Funds within Asset Class

	Weekly Net Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	NAV (1)	Distribution (2)	NAV (3)	Distribution (4)	NAV (5)	Distribution (6)	NAV (7)	Distribution (8)
Interval	-2.836 (-0.69)	4.192*** (3.49)	-0.294 (-0.46)	1.827*** (4.11)	-1.722 (-0.34)	1.510 (0.84)	0.278 (0.20)	1.933*** (2.62)
Asst Class	EQ	EQ	FI	FI	EQ	EQ	FI	FI
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	121379	121379	103301	103301	619611	619611	201374	201374
Adjusted $R^2$	0.675	0.113	0.429	0.054	0.763	0.303	0.604	0.165

Panel B: Funds by Investment Category

	Weekly Net Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	NAV (1)	Distribution (2)	NAV (3)	Distribution (4)	NAV (5)	Distribution (6)	NAV (7)	Distribution (8)
Diversified Equity × Interval	-13.398*** (-3.79)	3.515 (1.30)			-13.232*** (-3.83)	1.633 (0.60)		
Other Sector Equity × Interval	10.003 (1.26)	7.954** (2.16)			5.831 (0.80)	1.566 (0.77)		
Real Estate and Infrastructure × Interval	-5.065 (-0.93)	2.410*** (3.32)			-2.231 (-0.42)	1.485 (0.72)		
Bank Loan × Interval			-2.193 (-1.37)	3.193** (1.98)			0.959 (0.87)	1.605* (1.78)
Municipal Bond × Interval			-0.259 (-0.23)	0.605 (1.51)			1.070 (0.63)	-0.187 (-0.13)
Nontraditional Bond × Interval			1.745 (0.82)	2.429* (1.77)			1.170 (0.69)	2.501** (2.19)
Traditional Taxable Bond × Interval			-0.060 (-0.06)	1.446** (2.07)			-0.651 (-0.38)	2.015** (2.55)
Asst Class	EQ	EQ	FI	FI	EQ	EQ	FI	FI
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	121379	121379	103301	103301	619611	619611	201374	201374
Adjusted $R^2$	0.675	0.114	0.429	0.054	0.763	0.303	0.604	0.165

**Table 10: Net Performance of Interval Funds: Minimum Investment Requirements**

This table presents results from regressions of annualized style-adjusted net returns at the product level on fund characteristics, estimated separately for equity (EQ) and fixed income (FI) asset classes. Columns 1 to 4 use active ETFs as the benchmark group, while columns 5 to 8 use passive ETFs. Interval takes the value of one if the product is an interval fund. High Min Inv (Low Min Invest) takes the value of one if the minimum investment of the interval-fund product is above (below or equal to) the sample median of \$2,500. Single-clientele funds offer only products with either low or high minimum investment requirements. Multiple-clientele funds offer both types of products with low and high minimum investments. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Total Weekly Net Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	Single-Clientele		Multiple-Clientele		Single-Clientele		Multiple-Clientele	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High Min Inv × Interval	4.431 (0.69)	2.047*** (2.81)	0.562 (0.14)	2.384*** (2.93)	1.030 (0.19)	2.865** (2.26)	-0.849 (-0.24)	4.346*** (3.87)
Low Min Inv × Interval	-3.308 (-0.95)	0.501 (0.59)	1.220 (0.29)	2.177*** (3.15)	-0.264 (-0.09)	1.065 (1.01)	-0.321 (-0.08)	4.121*** (3.71)
Log TNA	-0.110 (-0.63)	0.067 (1.17)	-0.064 (-0.35)	-0.044 (-0.80)	0.056 (0.60)	0.042 (0.82)	0.047 (0.49)	-0.056 (-1.15)
Log Family TNA	0.047 (0.38)	0.065 (0.67)	0.069 (0.53)	-0.049 (-0.68)	0.121* (1.92)	0.084* (1.94)	0.125** (1.99)	-0.004 (-0.14)
Log Age	0.608* (1.66)	-0.599*** (-3.45)	0.629* (1.68)	0.074 (0.43)	0.668* (1.76)	-0.305 (-1.40)	0.687* (1.80)	0.339 (1.44)
Fund of Funds	-0.620 (-0.48)	-0.534 (-0.64)	-1.106 (-1.07)	-1.141 (-1.32)	1.294 (0.97)	0.750 (1.13)	0.590 (0.53)	0.463 (0.71)
Asset Class	EQ	FI	EQ	FI	EQ	FI	EQ	FI
Time × Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	110715	89350	115234	83359	608865	187423	613660	181479
Adjusted <i>R</i> <sup>2</sup>	0.350	0.330	0.392	0.326	0.093	0.113	0.102	0.133

**Table 11: Timing Performance of Interval Funds**

This table reports results from annual regressions of the timing performance on fund characteristics. The 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. In Panel A, regressions are estimated separately for equity (EQ) and fixed income (FI) asset classes. Columns 1 and 2 use active ETFs as the comparison group, while columns 3 and 4 use passive ETFs. In Panel B, regressions are estimated separately for single-clientele and multiple-clientele funds. Single-clientele funds offer only products with either low or high minimum investment requirements. Multiple-clientele funds offer both types of products with low and high minimum investments. Columns 1 and 4 use active ETFs as the comparison group, while columns 5 and 8 use passive ETFs. In both panels, Interval takes the value of one if the product is an interval fund. High Min Inv takes the value of one if the minimum investment for the product is above the sample median of \$2,500. Control variables are measured at the beginning of the year and include the log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to calendar years. *t*-statistics, clustered at the product level, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

Panel A: Funds by Asset Class

	Timing Performance (% Annualized)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Interval	1.035*** (3.05)	0.326** (2.42)	0.876*** (3.84)	0.841** (2.22)
Asset Class	EQ	FI	EQ	FI
Controls	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Observations	3309	2614	13733	4615
Adjusted $R^2$	0.096	0.060	0.124	0.067

Panel B: Funds by Clientele

	Timing Performance (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	Single-Clientele		Multiple-Clientele		Single-Clientele		Multiple-Clientele	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Interval	0.564*** (3.23)	0.656*** (3.27)	0.653*** (3.54)	0.658*** (3.54)	0.861*** (3.95)	0.870*** (4.03)	1.030*** (3.96)	0.999*** (3.84)
Interval × High Min Inv		-0.174 (-0.79)		-0.012 (-0.06)		-0.021 (-0.09)		0.082 (0.39)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5304	5304	5294	5294	17729	17729	17722	17722
Adjusted $R^2$	0.089	0.089	0.092	0.091	0.119	0.119	0.120	0.119

**Table 12: Past Performance and Flows**

This table presents results from regressions of weekly flows at the product level on product characteristics and past performance. Flows are computed as the percentage change in the number of shares outstanding over the week. Columns 1 and 2 use active ETFs as the comparison group, while columns 3 and 4 use active ETFs. Interval takes the value of one if the product is an interval fund. High Min Inv takes the value of one if the minimum investment for the product is above the sample median of \$2,500. Past performance is the average style-adjusted weekly net return of the product over the previous four weeks. Past flows are computed as the percentage change in the number of shares outstanding over the past four weeks. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. Even-numbered columns also include product fixed effects. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Flows (% Weekly)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Interval	0.285*** (3.68)		0.296*** (4.52)	
Interval × High Min Inv	0.029 (0.34)		0.084 (1.03)	
Past Performance	0.006*** (6.58)	0.005*** (5.46)	0.009*** (18.15)	0.009*** (17.65)
Interval × Past Performance	-0.003* (-1.89)	-0.002 (-1.30)	-0.003*** (-2.81)	-0.003*** (-3.12)
Interval × High Min Inv × Past Performance	-0.000 (-0.11)	-0.000 (-0.08)	-0.000 (-0.30)	-0.000 (-0.14)
Past Flows	0.001 (1.45)	0.001 (1.50)	0.001*** (2.70)	0.001*** (2.93)
Controls	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Product Fixed Effects	No	Yes	No	Yes
Observations	224673	224672	820980	820977
Adjusted <i>R</i> <sup>2</sup>	0.032	0.066	0.056	0.070

**Table 13: Redemption Periods and Flows**

This table presents results from regressions of weekly flows at the product level on product characteristics and redemption periods. Flows are computed as the percentage change in the number of shares outstanding over the week. Columns 1 and 2 use active ETFs as the comparison group, while columns 3 and 4 use passive ETFs. Interval takes the value of one if the product is an interval fund. High Min Inv takes the value of one if the minimum investment for the product is above the sample median of \$2,500. Pricing Week takes the value of one if a pricing date falls within the week, thus indicating that redemption requests are satisfied during the week. Past performance is the average style-adjusted weekly net return of the product over the previous four weeks. Past flows are computed as the percentage change in the number of shares outstanding over the past four weeks. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. Even-numbered columns also include product fixed effects. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Flows (% Weekly)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Interval	0.379*** (4.89)		0.386*** (5.74)	
Interval × High Min Inv	0.027 (0.31)		0.075 (0.86)	
Interval × Pricing Week	-1.192*** (-5.95)	-1.266*** (-6.47)	-1.251*** (-6.11)	-1.309*** (-6.43)
Interval × High Min Inv × Pricing Week	0.028 (0.11)	0.153 (0.61)	0.110 (0.42)	0.206 (0.80)
Past Performance	0.006*** (6.58)	0.005*** (5.47)	0.009*** (18.15)	0.009*** (17.64)
Interval × Past Performance	-0.002* (-1.90)	-0.002 (-1.37)	-0.003*** (-3.17)	-0.003*** (-3.51)
Past Flows	0.001 (1.45)	0.001 (1.50)	0.001*** (2.69)	0.001*** (2.92)
Controls	Yes	Yes	Yes	Yes
Time × Style Fixed Effects	Yes	Yes	Yes	Yes
Product Fixed Effects	No	Yes	No	Yes
Observations	224673	224672	820980	820977
Adjusted $R^2$	0.033	0.067	0.057	0.071

**Table 14: Flows and Future Performance**

This table presents results from regressions of future weekly net returns, past money flows, and product characteristics. Columns 1 to 4 use active ETFs as the comparison group, while columns 5 and 8 use active ETFs. We consider returns one week (columns 1 and 5), two weeks (columns 2 and 6), three weeks (columns 3 and 7), and four weeks (columns 4 and 8) after money flows are realized. Interval takes the value of one if the product is an interval fund. Past flows are computed as the percentage change in the number of shares outstanding over the past four weeks. High Min Inv takes the value of one if the minimum investment for the product is above the sample median of \$2,500. Control variables include the one-week lagged log of the product's TNA and log of the fund family's TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates, and product fixed effects. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Future Weekly Net Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	1 Wk (1)	2 Wk (2)	3 Wk (3)	4 Wk (4)	1 Wk (5)	2 Wk (6)	3 Wk (7)	4 Wk (8)
Past Flows	-0.000 (-0.62)	-0.000 (-0.89)	-0.000 (-0.79)	-0.000 (-0.42)	0.001 (0.64)	0.000 (0.39)	0.001 (1.44)	0.001* (1.73)
Interval × Past Flows	-0.003*** (-2.79)	-0.005*** (-3.43)	-0.008*** (-3.81)	-0.010*** (-2.76)	-0.005** (-2.54)	-0.006*** (-3.72)	-0.009*** (-4.78)	-0.013*** (-4.07)
Interval × High Min Inv × Past Flows	0.004*** (3.56)	0.005*** (4.25)	0.009*** (4.29)	0.011*** (2.87)	0.005*** (3.21)	0.006*** (4.45)	0.009*** (5.25)	0.012*** (3.91)
Past Performance	-0.043 (-1.05)	-0.025 (-0.64)	-0.043 (-1.06)	-0.044 (-1.02)	-0.022 (-1.10)	-0.006 (-0.32)	-0.018 (-0.90)	-0.020 (-0.99)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time × Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	224672	223404	222137	220869	820977	818730	816484	814239
Adjusted $R^2$	0.422	0.422	0.422	0.422	0.109	0.109	0.109	0.109

# Online Appendix

**Table A.1: Classification of Funds**

This table lists all fund classifications used in the paper. Funds are classified by asset class, category, and style. The asset class corresponds to Morningstar’s Global Broad Category Group. Within each asset class, funds are further grouped by category, based on a combination of Morningstar’s US Category Group and Morningstar Category. Styles provide a more granular classification within each category, also derived from Morningstar’s US Category Group and Morningstar Category. We use asset class and category classifications for general explanatory and categorization purposes, and style classifications to construct style fixed effects in our regressions.

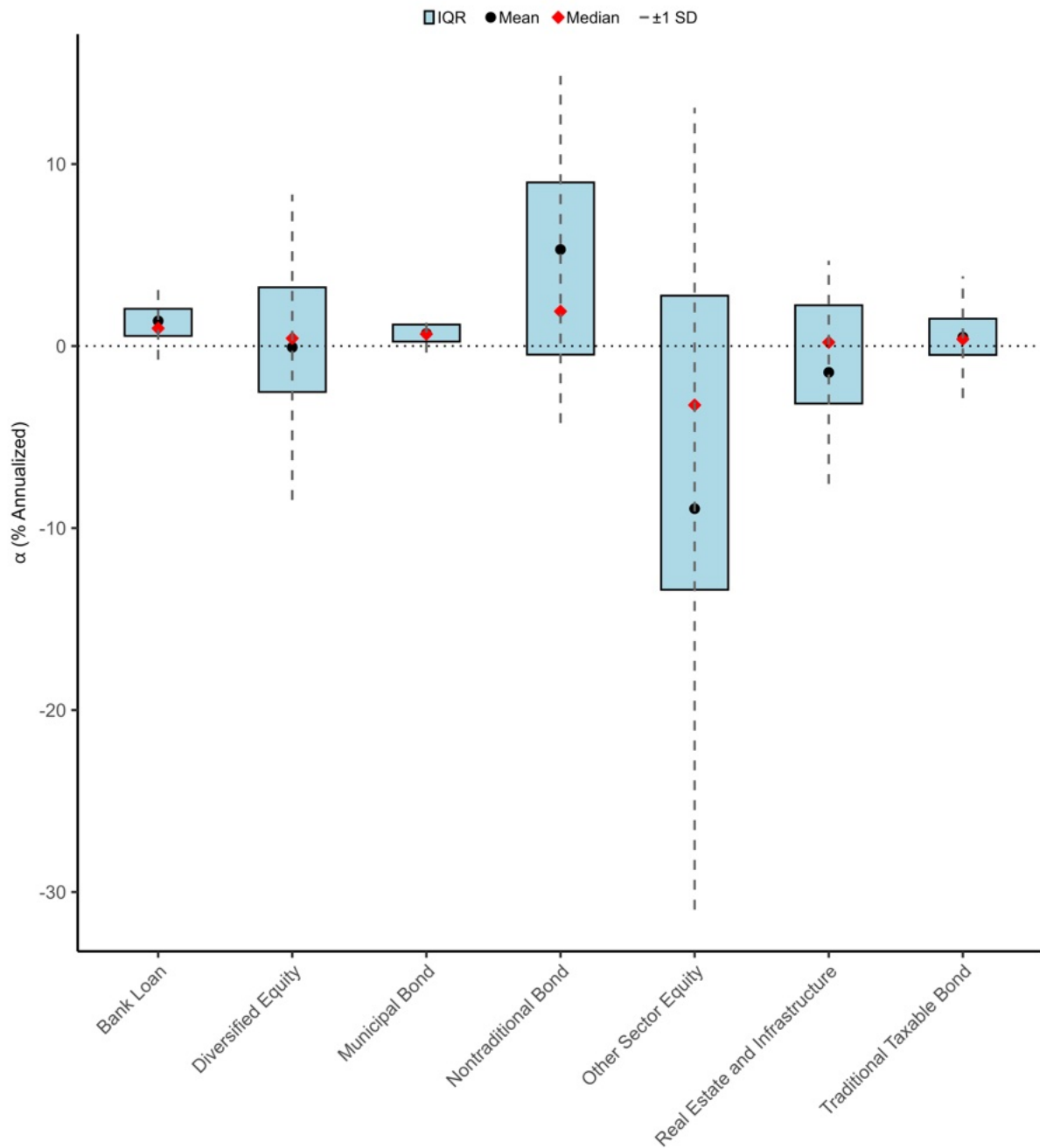
<b>Variable:</b>	<b>Asset Class</b>	<b>Category</b>	<b>Style</b>	<b>US Category Group</b>	<b>Morningstar Category</b>
<i>Source:</i>	<i>Morningstar</i>	<i>Author classification</i>	<i>Author classification</i>	<i>Morningstar</i>	<i>Morningstar</i>
<i>Usage:</i>	<i>Fund classification</i>	<i>Fund classification</i>	<i>Style fixed effects</i>		
1	Allocation	Allocation	Aggressive Allocation	Allocation	US Fund Aggressive Allocation
2	Allocation	Allocation	Allocation	Allocation	US CE Global Allocation
3	Allocation	Allocation	Allocation	Allocation	US CE Moderate Allocation
4	Allocation	Allocation	Allocation	Allocation	US CE Moderately Conservative Allocation
5	Allocation	Allocation	Allocation	Allocation	US Fund Global Allocation
6	Allocation	Allocation	Allocation	Allocation	US Fund Moderate Allocation
7	Allocation	Allocation	Allocation	Allocation	US Fund Moderately Conservative Allocation
8	Allocation	Allocation	Conservative Allocation	Allocation	US Fund Conservative Allocation
9	Allocation	Allocation	Convertibles	Allocation	US Fund Convertibles
10	Allocation	Allocation	Moderately Aggressive Allocation	Allocation	US Fund Moderately Aggressive Allocation
11	Allocation	Allocation	Tactical Allocation	Allocation	US Fund Tactical Allocation
12	Allocation	Allocation	Target-Date 2015	Allocation	US Fund Target-Date 2015
13	Allocation	Allocation	Target-Date 2020	Allocation	US Fund Target-Date 2020
14	Allocation	Allocation	Target-Date 2025	Allocation	US Fund Target-Date 2025
15	Allocation	Allocation	Target-Date 2030	Allocation	US Fund Target-Date 2030
16	Allocation	Allocation	Target-Date 2035	Allocation	US Fund Target-Date 2035
17	Allocation	Allocation	Target-Date 2040	Allocation	US Fund Target-Date 2040
18	Allocation	Allocation	Target-Date 2045	Allocation	US Fund Target-Date 2045
19	Allocation	Allocation	Target-Date 2050	Allocation	US Fund Target-Date 2050
20	Allocation	Allocation	Target-Date 2055	Allocation	US Fund Target-Date 2055
21	Allocation	Allocation	Target-Date 2060	Allocation	US Fund Target-Date 2060
22	Allocation	Allocation	Target-Date 2065+	Allocation	US Fund Target-Date 2065+
23	Allocation	Allocation	Target-Date Retirement	Allocation	US Fund Target-Date Retirement
24	Alternative	Alternative	Bear Market	Alternative	US Fund Bear Market
25	Alternative	Alternative	Digital Assets	Alternative	US Fund Digital Assets
26	Alternative	Alternative	Equity Market Neutral	Alternative	US Fund Equity Market Neutral
27	Alternative	Alternative	Event Driven	Alternative	US Fund Event Driven
28	Alternative	Alternative	Macro Trading	Alternative	US Fund Macro Trading
29	Alternative	Alternative	Market Neutral	Alternative	US Fund Market Neutral
30	Alternative	Alternative	Multialternative	Alternative	US Fund Multialternative
31	Alternative	Alternative	Multicurrency	Alternative	US Fund Multicurrency
32	Alternative	Alternative	Multistrategy	Alternative	US CE Multistrategy
33	Alternative	Alternative	Multistrategy	Alternative	US Fund Multistrategy
34	Alternative	Alternative	Options-based	Alternative	US Fund Options-based
35	Alternative	Alternative	Relative Value Arbitrage	Alternative	US Fund Relative Value Arbitrage
36	Alternative	Alternative	Systematic Trend	Alternative	US Fund Systematic Trend
37	Alternative	Alternative	Volatility	Alternative	US Fund Volatility
38	Equity	Diversified Equity	China Region	International Equity	US Fund China Region
39	Equity	Diversified Equity	Defined Outcome	Nontraditional Equity	US Fund Defined Outcome
40	Equity	Diversified Equity	Derivative Income	Nontraditional Equity	US Fund Derivative Income
41	Equity	Diversified Equity	Diversified Emerging Mkts	International Equity	US CE Diversified Emerging Mkts

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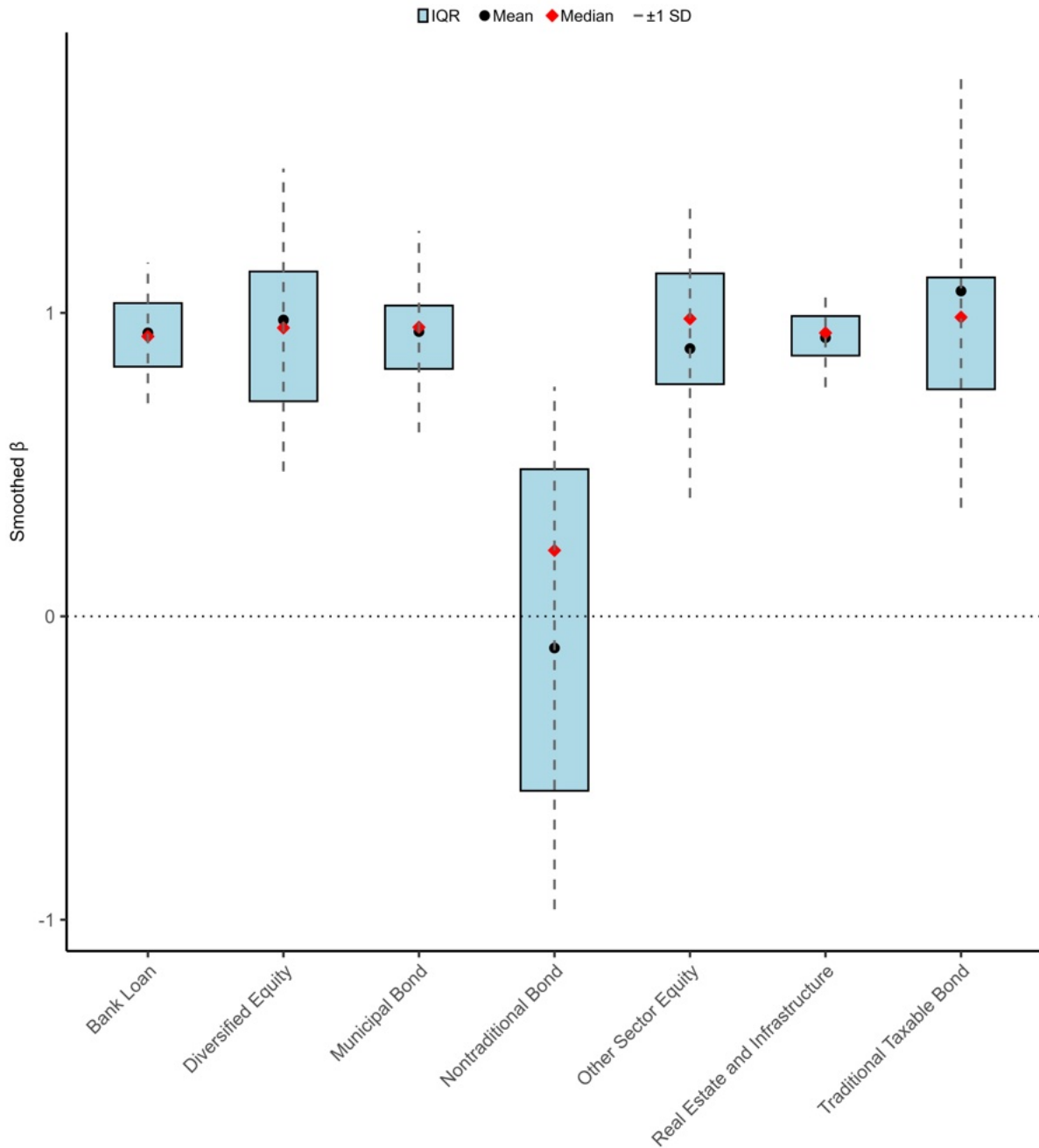
Asset Class	Category	Style	US Category Group	Morningstar Category
42	Equity	Diversified Equity	Diversified Emerging Mkts	International Equity US Fund Diversified Emerging Mkts
43	Equity	Diversified Equity	Diversified Pacific/Asia	International Equity US Fund Diversified Pacific/Asia
44	Equity	Diversified Equity	Equity Hedged	Nontraditional Equity US CE Equity Hedged
45	Equity	Diversified Equity	Equity Hedged	Nontraditional Equity US Fund Equity Hedged
46	Equity	Diversified Equity	Europe Stock	International Equity US Fund Europe Stock
47	Equity	Diversified Equity	Foreign Large Blend	International Equity US Fund Foreign Large Blend
48	Equity	Diversified Equity	Foreign Large Growth	International Equity US Fund Foreign Large Growth
49	Equity	Diversified Equity	Foreign Large Value	International Equity US Fund Foreign Large Value
50	Equity	Diversified Equity	Foreign Small/Mid Blend	International Equity US Fund Foreign Small/Mid Blend
51	Equity	Diversified Equity	Foreign Small/Mid Growth	International Equity US Fund Foreign Small/Mid Growth
52	Equity	Diversified Equity	Foreign Small/Mid Value	International Equity US Fund Foreign Small/Mid Value
53	Equity	Diversified Equity	Global Large-Stock Blend	International Equity US Fund Global Large-Stock Blend
54	Equity	Diversified Equity	Global Large-Stock Growth	International Equity US Fund Global Large-Stock Growth
55	Equity	Diversified Equity	Global Large-Stock Value	International Equity US Fund Global Large-Stock Value
56	Equity	Diversified Equity	Global Small/Mid Stock	International Equity US Fund Global Small/Mid Stock
57	Equity	Diversified Equity	India Equity	International Equity US Fund India Equity
58	Equity	Diversified Equity	Japan Stock	International Equity US Fund Japan Stock
59	Equity	Diversified Equity	Large Blend	U.S. Equity US Fund Large Blend
60	Equity	Diversified Equity	Large Growth	U.S. Equity US CE Large Growth
61	Equity	Diversified Equity	Large Growth	U.S. Equity US Fund Large Growth
62	Equity	Diversified Equity	Large Value	U.S. Equity US Fund Large Value
63	Equity	Diversified Equity	Latin America Stock	International Equity US Fund Latin America Stock
64	Equity	Diversified Equity	Long-Short Equity	Nontraditional Equity US Fund Long-Short Equity
65	Equity	Diversified Equity	Mid-Cap Blend	U.S. Equity US Fund Mid-Cap Blend
66	Equity	Diversified Equity	Mid-Cap Growth	U.S. Equity US Fund Mid-Cap Growth
67	Equity	Diversified Equity	Mid-Cap Value	U.S. Equity US Fund Mid-Cap Value
68	Equity	Diversified Equity	Miscellaneous Region	International Equity US Fund Miscellaneous Region
69	Equity	Diversified Equity	Pacific/Asia ex-Japan Stk	International Equity US Fund Pacific/Asia ex-Japan Stk
70	Equity	Diversified Equity	Small Blend	U.S. Equity US Fund Small Blend
71	Equity	Diversified Equity	Small Growth	U.S. Equity US Fund Small Growth
72	Equity	Diversified Equity	Small Value	U.S. Equity US Fund Small Value
73	Equity	Diversified Equity	World Large Stock	International Equity US Fund World Large Stock
74	Equity	Sector Equity	Communications	Sector Equity US Fund Communications
75	Equity	Sector Equity	Consumer Cyclical	Sector Equity US Fund Consumer Cyclical
76	Equity	Sector Equity	Consumer Defensive	Sector Equity US Fund Consumer Defensive
77	Equity	Sector Equity	Energy Limited Partnership	Sector Equity US Fund Energy Limited Partnership
78	Equity	Sector Equity	Equity Energy	Sector Equity US Fund Equity Energy
79	Equity	Sector Equity	Equity Precious Metals	Sector Equity US Fund Equity Precious Metals
80	Equity	Sector Equity	Financial	Sector Equity US Fund Financial
81	Equity	Sector Equity	Health	Sector Equity US CE Health
82	Equity	Sector Equity	Health	Sector Equity US Fund Health
83	Equity	Sector Equity	Industrials	Sector Equity US Fund Industrials
84	Equity	Sector Equity	Infrastructure	Sector Equity US CE Infrastructure
85	Equity	Sector Equity	Infrastructure	Sector Equity US Fund Infrastructure
86	Equity	Sector Equity	Miscellaneous Sector	Sector Equity US CE Miscellaneous Sector
87	Equity	Sector Equity	Miscellaneous Sector	Sector Equity US Fund Miscellaneous Sector
88	Equity	Sector Equity	Natural Resources	Sector Equity US Fund Natural Resources
89	Equity	Sector Equity	Real Estate	Sector Equity US CE Global Real Estate
90	Equity	Sector Equity	Real Estate	Sector Equity US CE Real Estate
91	Equity	Sector Equity	Real Estate	Sector Equity US Fund Global Real Estate
92	Equity	Sector Equity	Real Estate	Sector Equity US Fund Real Estate
93	Equity	Sector Equity	Technology	Sector Equity US CE Technology
94	Equity	Sector Equity	Technology	Sector Equity US Fund Technology
95	Equity	Sector Equity	Utilities	Sector Equity US Fund Utilities
96	Fixed Income	Bank Loan	Bank Loan	Taxable Bond US CE Bank Loan
97	Fixed Income	Bank Loan	Bank Loan	Taxable Bond US Fund Bank Loan
98	Fixed Income	Multisector Bond	Multisector Bond	Taxable Bond US CE Multisector Bond
99	Fixed Income	Multisector Bond	Multisector Bond	Taxable Bond US Fund Multisector Bond
100	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US CE High Yield Muni
101	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US CE Muni California Intermediate
102	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US CE Muni National Intern
103	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US CE Muni National Long
104	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US Fund High Yield Muni
105	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US Fund Muni California Intermediate
106	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond US Fund Muni National Intern

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	<b>Asset Class</b>	<b>Category</b>	<b>Style</b>	<b>US Category Group</b>	<b>Morningstar Category</b>
107	Fixed Income	Municipal Bond	Muni Bond	Municipal Bond	US Fund Muni National Long
108	Fixed Income	Municipal Bond	Muni California Long	Municipal Bond	US Fund Muni California Long
109	Fixed Income	Municipal Bond	Muni Minnesota	Municipal Bond	US Fund Muni Minnesota
110	Fixed Income	Municipal Bond	Muni National Short	Municipal Bond	US Fund Muni National Short
111	Fixed Income	Municipal Bond	Muni New York Intermediate	Municipal Bond	US Fund Muni New York Intermediate
112	Fixed Income	Municipal Bond	Muni New York Long	Municipal Bond	US Fund Muni New York Long
113	Fixed Income	Municipal Bond	Muni Single State Short	Municipal Bond	US Fund Muni Single State Short
114	Fixed Income	Municipal Bond	Muni Target Maturity	Municipal Bond	US Fund Muni Target Maturity
115	Fixed Income	Nontraditional Bond	Nontraditional Bond	Taxable Bond	US CE Nontraditional Bond
116	Fixed Income	Nontraditional Bond	Nontraditional Bond	Taxable Bond	US Fund Nontraditional Bond
117	Fixed Income	Traditional Taxable Bond	Corporate Bond	Taxable Bond	US Fund Corporate Bond
118	Fixed Income	Traditional Taxable Bond	Emerging Markets Bond	Taxable Bond	US CE Emerging Markets Bond
119	Fixed Income	Traditional Taxable Bond	Emerging Markets Bond	Taxable Bond	US Fund Emerging Markets Bond
120	Fixed Income	Traditional Taxable Bond	Emerging-Markets Local-Currency Bond	Taxable Bond	US Fund Emerging-Markets Local-Currency Bond
121	Fixed Income	Traditional Taxable Bond	Global Bond	Taxable Bond	US Fund Global Bond
122	Fixed Income	Traditional Taxable Bond	Global Bond-USD Hedged	Taxable Bond	US Fund Global Bond-USD Hedged
123	Fixed Income	Traditional Taxable Bond	High Yield Bond	Taxable Bond	US CE High Yield Bond
124	Fixed Income	Traditional Taxable Bond	High Yield Bond	Taxable Bond	US Fund High Yield Bond
125	Fixed Income	Traditional Taxable Bond	Inflation-Protected Bond	Taxable Bond	US Fund Inflation-Protected Bond
126	Fixed Income	Traditional Taxable Bond	Intermediate Bond	Taxable Bond	US CE Intermediate Core Bond
127	Fixed Income	Traditional Taxable Bond	Intermediate Bond	Taxable Bond	US CE Intermediate Core-Plus Bond
128	Fixed Income	Traditional Taxable Bond	Intermediate Bond	Taxable Bond	US CE Intermediate Government
129	Fixed Income	Traditional Taxable Bond	Intermediate Bond	Taxable Bond	US Fund Intermediate Core Bond
130	Fixed Income	Traditional Taxable Bond	Intermediate Bond	Taxable Bond	US Fund Intermediate Core-Plus Bond
131	Fixed Income	Traditional Taxable Bond	Intermediate Bond	Taxable Bond	US Fund Intermediate Government
132	Fixed Income	Traditional Taxable Bond	Long Government	Taxable Bond	US Fund Long Government
133	Fixed Income	Traditional Taxable Bond	Long-Term Bond	Taxable Bond	US CE Long-Term Bond
134	Fixed Income	Traditional Taxable Bond	Long-Term Bond	Taxable Bond	US Fund Long-Term Bond
135	Fixed Income	Traditional Taxable Bond	Nontraditional Bond	Taxable Bond	US CE Miscellaneous Fixed Income
136	Fixed Income	Traditional Taxable Bond	Nontraditional Bond	Taxable Bond	US Fund Miscellaneous Fixed Income
137	Fixed Income	Traditional Taxable Bond	Preferred Stock	Taxable Bond	US Fund Preferred Stock
138	Fixed Income	Traditional Taxable Bond	Short Government	Taxable Bond	US Fund Short Government
139	Fixed Income	Traditional Taxable Bond	Short-Term Bond	Taxable Bond	US Fund Short-Term Bond
140	Fixed Income	Traditional Taxable Bond	Short-Term Inflation-Protected Bond	Taxable Bond	US Fund Short-Term Inflation-Protected Bond
141	Fixed Income	Traditional Taxable Bond	Single Currency	Taxable Bond	US Fund Single Currency
142	Fixed Income	Traditional Taxable Bond	Target Maturity	Taxable Bond	US Fund Target Maturity
143	Fixed Income	Traditional Taxable Bond	Ultrashort Bond	Taxable Bond	US CE Ultrashort Bond
144	Fixed Income	Traditional Taxable Bond	Ultrashort Bond	Taxable Bond	US Fund Ultrashort Bond



**Figure A.1:** Distribution of active ETFs alphas. The figure displays the interquartile range (IQR), mean, median, and  $\pm 1$  standard deviation (SD) of alpha estimates from fund-level regressions of weekly returns on the TNA-weighted average return of passive ETFs with the same investment style, including two lags.



**Figure A.2:** Distribution of active ETFs smoothed betas. The figure displays the interquartile range (IQR), mean, median, and  $\pm 1$  standard deviation (SD) of smoothed beta estimates from fund-level regressions of weekly returns on the TNA-weighted average return of passive ETFs with the same investment style, including two lags. The smoothed beta is obtained by summing the betas on the contemporaneous and lagged factors (Dimson, 1979).

**Table A.2: Gross Performance of Interval Funds: Portfolio-level Analysis**

This table reports results from regressions of annualized style-adjusted gross returns at the portfolio level on interaction terms between interval fund status and investment category indicators, estimated separately for equity (EQ) and fixed income (FI) asset classes. In both panels, columns 1 and 2 use active ETFs as the comparison group, while columns 3 and 4 use passive ETFs. Interval takes the value of one if the product is an interval fund. In Panel B, this indicator is interacted with indicators for each investment category. Control variables include the one-week lagged log of the portfolio's TNA and log of the fund family's TNA (within the same product type), portfolio age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the portfolio is a fund of funds. In cases where multiple products are associated to same portfolio, products are aggregated at the portfolio level. Returns are computed as the TNA-weighted average across products. The portfolios' TNAs are aggregated by summing TNAs across all products linked to the portfolio. Fund age corresponds to the inception date of the oldest product. Fund-of-funds status and family TNA are portfolio-level attributes and do not vary across share classes. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at both the week and portfolio levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

Panel A: Funds by Asset Class

	Total Weekly Gross Returns (% Annualized)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Interval	1.830 (0.46)	2.567*** (3.90)	0.807 (0.24)	3.575*** (3.44)
Asset Class	EQ	FI	EQ	FI
Controls	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Observations	110410	84528	607768	182597
Adjusted $R^2$	0.348	0.324	0.093	0.100

Panel B: Funds by Asset Class and Investment Category

	Total Weekly Gross Returns (% Annualized)			
	Interval Funds vs Active ETFs		Interval Funds vs Passive ETFs	
	(1)	(2)	(3)	(4)
Diversified Equity × Interval	-8.027*** (-3.83)		-8.365*** (-5.78)	
Other Sector Equity × Interval	11.255* (1.69)		5.518 (1.15)	
Real Estate and Infrastructure × Interval	0.259 (0.06)		0.777 (0.21)	
Bank Loan × Interval		2.382*** (4.19)		4.048*** (8.03)
Municipal Bond × Interval		1.154*** (3.40)		1.887*** (4.08)
Nontraditional Bond × Interval		5.289*** (3.10)		5.602*** (3.30)
Traditional Taxable Bond × Interval		2.177* (1.88)		2.731** (2.08)
Asset Class	EQ	FI	EQ	FI
Controls	Yes	Yes	Yes	Yes
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Observations	110410	84528	607768	182597
Adjusted $R^2$	0.348	0.324	0.093	0.101

**Table A.3: Gross Performance of Interval Funds: Portfolio-level Analysis on Single vs Multiple Clientele**

This table presents results from regressions of annualized style-adjusted gross returns at the portfolio level on portfolio characteristics, estimated separately for equity (EQ) and fixed income (FI) asset classes. Columns 1 to 4 use active ETFs as the benchmark group, while columns 5 to 8 use passive ETFs. Interval takes the value of one if the product is an interval fund. High Min Inv (Low Min Invest) takes the value of one if the minimum investment of the interval-fund product is above (below or equal to) the sample median of \$2,500. Single-clientele funds offer only products with either with low or high minimum investment requirements. Multiple-clientele funds offer both types of products with low and high minimum investment. Control variables include the one-week lagged log of the portfolio's TNA and log of the fund family's TNA (within the same product type), portfolio age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the portfolio is a fund of funds. In cases where multiple products are associated to same portfolio, products are aggregated at the portfolio level. Returns are computed as the TNA-weighted average across products. The portfolios' TNAs are aggregated by summing TNAs across all products linked to the portfolio. Fund age corresponds to the inception date of the oldest product. Fund-of-funds status and family TNA are portfolio-level attributes and do not vary across share classes. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at both the week and portfolio levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

	Total Weekly Gross Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	Single-Clientele		Multiple-Clientele		Single-Clientele		Multiple-Clientele	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High Min Inv × Interval	5.279 (0.85)	3.240*** (3.43)			2.187 (0.42)	4.266*** (3.06)		
Low Min Inv × Interval	-2.757 (-0.84)	1.177 (1.02)			0.634 (0.27)	1.875 (1.46)		
Interval			1.742 (0.43)	4.263*** (4.84)			0.217 (0.07)	5.971*** (5.14)
Log TNA	-0.090 (-0.51)	0.193** (2.21)	-0.093 (-0.54)	-0.026 (-0.66)	0.020 (0.22)	0.084 (1.46)	0.015 (0.16)	-0.041 (-0.87)
Log Family TNA	0.022 (0.18)	0.014 (0.16)	0.034 (0.28)	-0.050 (-0.70)	0.097 (1.57)	0.077** (2.01)	0.099 (1.61)	0.004 (0.15)
Log Age	0.596 (1.64)	-0.608*** (-3.34)	0.696* (1.93)	0.041 (0.30)	0.742** (1.99)	-0.390* (-1.78)	0.762** (2.04)	0.230 (1.05)
Fund of Funds	-0.776 (-0.64)	-0.383 (-0.44)	-1.372 (-1.36)	-0.894 (-1.03)	1.100 (0.82)	0.573 (0.84)	0.606 (0.49)	0.335 (0.51)
Asset Class	EQ	FI	EQ	FI	EQ	FI	EQ	FI
Time x Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	106916	80638	107364	72951	604200	178707	604914	170956
Adjusted $R^2$	0.325	0.324	0.334	0.300	0.090	0.091	0.090	0.083

**Table A.4: Flows and Future Performance by Asset Class**

This tables presents results from regressions of future weekly net returns past money flows and product characteristics for equity and fixed-income products. Panel A focuses on equity funds. Panel B focuses on fixed-income funds. Columns 1 to 4 use active ETFs as the comparison group, while columns 5 and 8 use active ETFs. We consider returns one week (columns 1 and 5), two weeks (columns 2 and 6), three weeks (columns 3 and 7), and four weeks (columns 4 and 8) after money flows are realized. Interval takes the value of one if the product is an interval fund. Past flows are computed as the percentage change in the number of shares outstanding over the past four weeks. High Min Inv takes the value of one if the minimum investment for the product is above the sample median of \$2,500. Control variables include the one-week lagged log of the product’s TNA and log of the fund family’s TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates, and product fixed effects. *t*-statistics, clustered at both the week and product levels, are reported in parentheses. \* denotes significance at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

Panel A: Equity

	Future Weekly Net Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	1 Wk (1)	2 Wk (2)	3 Wk (3)	4 Wk (4)	1 Wk (5)	2 Wk (6)	3 Wk (7)	4 Wk (8)
Past Flows	-0.001 (-0.26)	-0.004 (-1.13)	-0.004 (-1.09)	-0.001 (-0.35)	0.001 (0.74)	0.000 (0.33)	0.001 (1.22)	0.001 (1.56)
Interval × Past Flows	0.012 (0.79)	0.013 (0.82)	0.011 (0.94)	-0.000 (-0.00)	0.009 (0.30)	0.014 (0.56)	0.007 (0.36)	-0.012 (-0.67)
Interval × High Min Inv × Past Flows	0.017 (0.58)	0.023 (0.82)	0.011 (0.42)	0.036 (1.19)	0.034 (0.70)	0.031 (0.61)	0.018 (0.37)	0.054 (1.13)
Past Performance	-0.062 (-1.43)	-0.032 (-0.78)	-0.045 (-1.09)	-0.046 (-1.02)	-0.023 (-1.12)	-0.005 (-0.27)	-0.016 (-0.82)	-0.019 (-0.96)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time × Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	121379	120620	119860	119099	619608	617984	616359	614735
Adjusted $R^2$	0.431	0.431	0.431	0.431	0.113	0.113	0.113	0.113

Panel B: Fixed Income

	Future Weekly Net Returns (% Annualized)							
	Interval Funds vs Active ETFs				Interval Funds vs Passive ETFs			
	1 Wk (1)	2 Wk (2)	3 Wk (3)	4 Wk (4)	1 Wk (5)	2 Wk (6)	3 Wk (7)	4 Wk (8)
Past Flows	-0.000 (-0.82)	-0.000 (-0.85)	-0.000 (-0.71)	-0.000 (-0.49)	-0.001 (-0.24)	0.003 (0.76)	0.006** (1.97)	0.004 (1.55)
Interval × Past Flows	-0.004*** (-2.72)	-0.005*** (-3.65)	-0.008*** (-4.29)	-0.010*** (-2.83)	-0.003 (-1.02)	-0.008** (-2.16)	-0.014*** (-4.04)	-0.015*** (-3.59)
Interval × High Min Inv × Past Flows	0.004*** (3.21)	0.005*** (3.84)	0.009*** (4.46)	0.010*** (2.88)	0.004*** (3.23)	0.005*** (4.12)	0.009*** (5.23)	0.011*** (3.49)
Past Performance	0.055 (0.94)	0.015 (0.29)	-0.028 (-0.52)	-0.032 (-0.60)	-0.020 (-0.34)	-0.026 (-0.56)	-0.050 (-0.98)	-0.032 (-0.70)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time × Style Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	103293	102784	102277	101770	201369	200746	200125	199504
Adjusted $R^2$	0.357	0.357	0.358	0.358	0.158	0.158	0.158	0.158

**Table A.5: Performance of Interval Funds: Portfolio-level Analysis on Holdings Characteristics**

This table reports results from regressions of annualized style-adjusted gross and net portfolio returns on portfolio holding characteristics, estimated separately for equity (EQ) and fixed income (FI) asset classes. Columns 1–2 use gross returns as the dependent variable, while Columns 3–4 use net returns. Levels 1, 2, and 3 represent the percentage of portfolio holdings in securities classified in each level. Leverage is reported as the percentage of the portfolio that is levered. Control variables include the one-week lagged log of the product’s TNA, the log of the fund family’s TNA (within the same product type), product age (measured as the natural logarithm of one plus the number of years since inception), and an indicator for whether the product is a fund of funds. All regressions include time-by-style fixed effects, where time refers to weekly dates. *t*-statistics, clustered at the week level, are reported in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	Gross Performance		Net Performance	
	(1)	(2)	(3)	(4)
Leverage	-9.272 (-0.82)	8.578*** (3.93)	-14.340 (-1.23)	6.044*** (2.69)
Level 1	-0.035 (-0.94)	-0.026 (-1.28)	-0.042 (-1.08)	-0.025 (-1.24)
Level 2	-0.027 (-0.69)	-0.013 (-1.21)	-0.028 (-0.71)	-0.008 (-0.79)
Level 3	0.039** (2.52)	-0.018 (-1.15)	0.039** (2.42)	-0.021 (-1.38)
Log TNA	-2.973*** (-2.45)	0.330 (0.92)	-3.339*** (-2.68)	0.055 (0.15)
Log Family TNA	2.833*** (3.26)	0.103 (0.39)	3.041*** (3.40)	0.309 (1.13)
Log Age	-1.772 (-0.97)	-0.901** (-2.23)	-1.399 (-0.74)	-0.942** (-2.35)
Fund of Funds	-1.881 (-1.47)	0.040 (0.02)	-1.466 (-1.12)	0.827 (0.45)
Asset Class	EQ	FI	EQ	FI
Time x Style Fixed Effects	Yes	Yes	Yes	Yes
Observations	2927	8736	2927	8736
Adjusted $R^2$	0.935	0.503	0.935	0.501