An Inside Look at Securities Lending

An additional source of return (and risk) for fundholders.

Morningstar Manager Research
August 2023

Contents

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Executive Summary

The contribution of securities-lending programs to performance has come into sharper focus recently. As differentiators like fund fees and technologies converge, minor advantages like securities-lending revenue become increasingly important. The practice has evolved to mutually benefit fundholders and fund sponsors. The additional income generated from securities-lending programs can modestly improve fund returns and offset expenses for investors.

Securities lending carries risk, but the risk entailed today is less than in the past. Increased regulation has reduced the risk of losses for mutual fund and exchange-traded fund investors. We believe the benefits of securities lending outweigh the risks for fundholders. That said, fund fees and portfolio construction usually have a far greater influence on investment performance than securities-lending income.

Key Takeaways

- Securities-lending income can offset a meaningful portion of a fund's expense ratio. Of the fund sponsors in this study, Vanguard offset the largest proportion—about 16% on average—of its funds' fees with revenue generated via securities loans from 2018 through 2022.
- U.S. small-cap funds generated the most lending revenue in this study and passed along an average of 3 basis points of securities-lending income to investors per year from 2018 through 2022. High-yield bond funds fared the best among the fixed-income Morningstar Categories, passing along almost 2 basis points per year.
- Fund sponsors' approaches to securities lending and the strategy's investment risk are key to the amount of lending revenue the fund generates for its investors. Sponsors' lending programs run the gamut from conservative to aggressive, and risky strategies usually earn higher securities-lending income than safer strategies.

Introduction

Securities lending is a little-talked-about but important aspect of fund management. Most open-end funds and ETFs lend portfolio securities to third parties to generate additional income that can moderately enhance returns.

Securities lending has evolved into a mutually beneficial and low-risk practice for both investors and fund sponsors. Investors stand to benefit from the additional income that can offset fund fees, while fund sponsors can use securities lending to improve peer-relative performance. Asset managers that employ affiliated entities as their lending agents can also use their share of lending income to supplement firm revenue. Currently, four of the five largest asset managers use an affiliated entity as their most common lending agent.

Enhanced transparency and data quality empower investors to better understand how fund sponsors approach securities lending and its potential impact on the funds they hold. Through examining the securities-lending practices of the 10 largest asset managers, as well as the utilization and performance of funds' securities lending across 17 categories, this paper will:

- Provide an overview of the mechanics of the securities-lending market;
- Shed light on the securities-lending programs of the largest fund sponsors; and
- Quantify the risks and benefits of securities lending to fundholders.

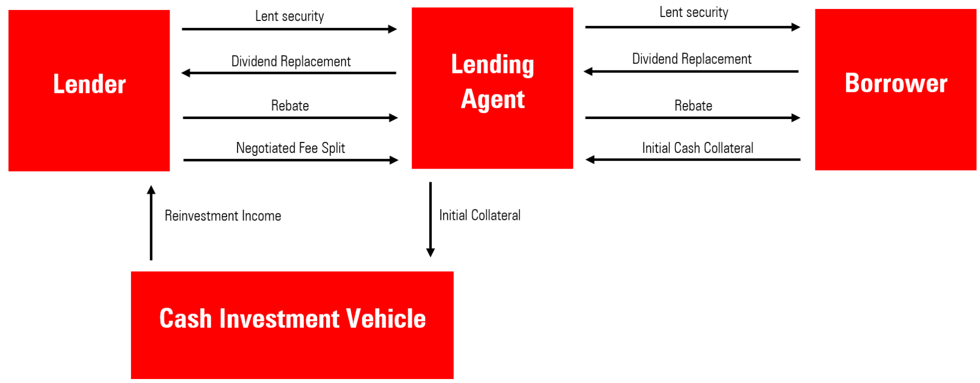
Mechanics of Securities Lending

Securities lending entails a fund lending out portfolio securities (such as stocks or bonds) to an interested party and collecting a tidy fee in the process. It's a common practice that can help recoup a fund's management fee and give its returns a nudge. Borrowers include broker/dealers and hedge funds, which usually borrow securities to avoid settlement failure when short or to take advantage of arbitrage opportunities. Lending agents take a cut of the revenue in exchange for matching the lender and borrower and executing most of the transaction.

To protect the lender from the risk of loss, lent securities are always collateralized using cash or securities. Cash collateral is more common in the United States, while Europe tends to favor noncash collateral. In either case, the revenue received by the lender is dependent on the demand value of the security on offer.

Lending With Cash Collateral

Exhibit 1 Overview of a Securities-Lending Transaction With Cash Collateral



Source: Morningstar Analysts.

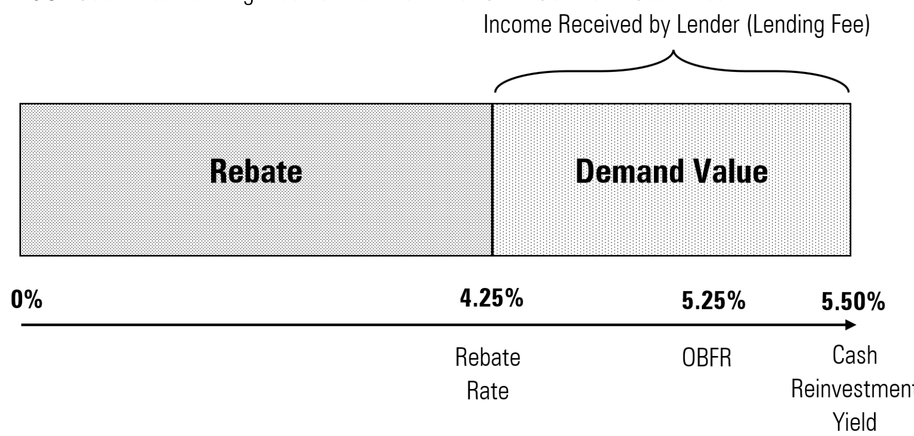
Exhibit 1 shows a securities-lending transaction with cash collateral. To compensate the borrower for interest on posted cash collateral, a rebate is paid to the borrower at a rate negotiated by both parties. The rebate rate is the lender's lever for generating income. It is determined by the demand value of the stock or bond on loan. Securities in high demand are stocks or bonds of typically small, illiquid, or otherwise unpopular companies. Meme-stock darlings GameStop GME, Beyond Meat BYND, and AMC Entertainment Holdings AMC were among the most profitable stocks to lend in 2022.[1,2]

The higher demand for securities like these means the lender can negotiate more-favorable terms on the loan, allowing it to lower the rebate rate and maximize the demand value and thus the securities-lending income. The breakdown of securities-lending income for cash collateral scenarios is shown in Exhibit 2.

[1] IHS Markit. 2022. "Securities Finance H1 2022 Review." S&P Global. https://www.spglobal.com/marketintelligence/en/mi/research-analysis/securities-finance-h1-2022-review.html

[2] IHS Markit. 2023. "Securities Finance H2 2022 Review." S&P Global. https://www.spglobal.com/marketintelligence/en/mi/research-analysis/securities-finance-h2-2022-review.html

Exhibit 2 Securities-Lending Income Breakdown for Cash Collateral Scenarios



Source: Morningstar Analysts. Hypothetical values are used for illustrative purposes.

The demand value is essentially the fee paid by the borrower to the lender. Securities with a high demand value are commonly referred to as "on-special" or "hard-to-borrow." By offering securities in high demand, the lender can negotiate a much lower rebate rate than the overnight bank funding rate, or OBFR, earning a higher profit. A liquid security with less demand and more supply would require a higher rebate rate to entice borrowers, pinching the demand value. In some cases, the demand value can be close to zero, or potentially negative. A hypothetical demand value of 1.25% is considerable and suggests the security on loan is in high demand.

The OBFR represents the yield the lender can receive by investing the cash collateral in a risk-free instrument. In this example, the reinvestment vehicle yields 0.25% above the OBFR. This difference represents the additional income gained for taking marginally more risk than reinvesting in a cash fund earning exactly 5.25%. The breadth of acceptable reinvestment choices is narrow,[3] but some low-risk vehicles do offer slightly better yields than the OBFR.

Lending agents get a piece of the action, too, usually collecting a fee of between 5% and 20% of total earned income. This is the negotiated fee split noted in Exhibit 1.

Lending with Noncash Collateral

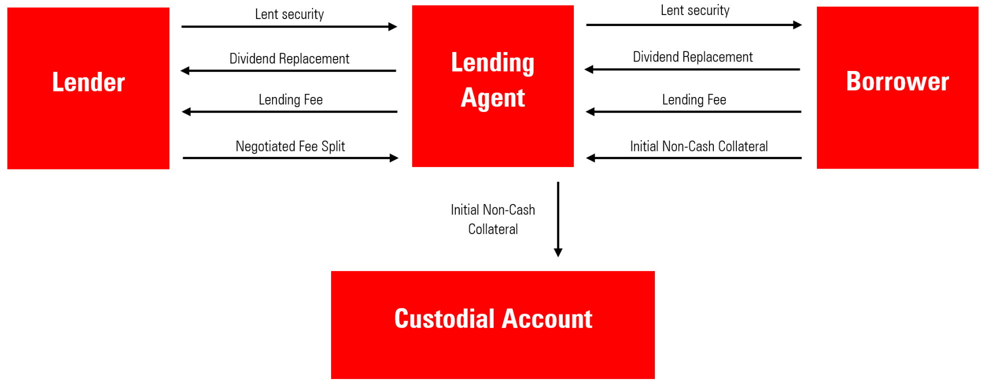
Lending arrangements that use collateral other than cash operate similarly to cash arrangements but without the opportunity to earn extra income by reinvesting the collateral. Fund sponsors generally prefer the flexibility of cash collateral, but some borrowers may be unwilling or unable to post cash. Instead, the borrower posts ultrasafe government debt as collateral and pays a fee directly to the lender.

For a lender to capture the full demand value of its stocks or bonds on loan, it must accept noncash collateral. However, the fund sponsor has ultimate discretion over what types of collateral it accepts.

[3] In 2010, the SEC mandated tighter quality, duration, and liquidity requirements for securities eligible for investment by money market funds: https://www.sec.gov/rules/final/2010/ic-29132.pdf

Recently, fund sponsors in the U.S. have begun accepting noncash collateral more often. Exhibit 3 shows a securities-lending transaction with noncash collateral.

Exhibit 3 Overview of a Securities-Lending Transaction With Noncash Collateral



Source: Morningstar Analysts.

There is no rebate for noncash lending, removing that as the primary lever for fund sponsors to generate income. Instead, a lending fee is negotiated with the borrower and paid to the lender. For noncash scenarios, this is the main driver of securities-lending income. But, in the same way, the rebate rate can vary based on the demand value of the securities on loan, the lending fee can also vary, and lenders require higher fees for hard-to-borrow securities. The fee split negotiated with and paid to the lending agent also applies to noncash scenarios and is subtracted from lending returns.

Risk Determines Securities-Lending Reward

The risks that contribute to securities-lending success can be bucketed into two groups:

- **Operational risk** is the risk assumed by the fund sponsor in operating a securities-lending program.
- **Strategy risk** is the investment risk assumed by the fundholder.

Operational Risk

Taking on significant operational risk does little to promote high securities-lending returns. These risks instead must be effectively managed to enable positive lending outcomes. There are two principal risks a fund company assumes by operating a securities-lending program. These risks include:

  - **Counterparty risk**—risk the short seller can't repay the collateral.
  - **Reinvestment risk**—risk the reinvested cash loses value.

Counterparty risk is generally negligible. In many lending agreements, the lending agent provides indemnification if the borrower goes defunct. The borrower is typically required to overcollateralize the loan, usually in the range of 102%-105% of the value of lent securities. As a final precaution, the loans are callable, which means the lender can request the securities back at any time.

Protections to mitigate counterparty risk make reinvestment risk a fund company's primary concern. Cash reinvestment vehicles are usually ultralow-risk, but they can lose money from time to time.[4] Some firms are conservative in how they reinvest cash collateral, opting to match the OBFR using only liquid reserve or money market funds. Others are more aggressive, electing to invest in still safe, but comparatively riskier, term repurchase agreements (aka repos) or commercial paper to enhance yield.[5] Exhibit 4 shows the most common cash reinvestment vehicle among the 10 largest fund sponsors.

Exhibit 4 Most Common Cash Collateral Reinvestment Vehicle

Fund Sponsor	**Most Common Reinvestment Vehicle**
Vanguard	Vanguard Market Liquidity Fund
Fidelity	Fidelity Cash Central Fund
BlackRock/iShares	BlackRock Cash Funds
Capital Group/American Funds	Capital Group Central Cash Fund
State Street	State Street Navigator Securities Lending Portfolio II
T. Rowe Price	T. Rowe Price Government Reserve Fund
Invesco	Invesco Private Prime Fund
JPMorgan	JPMorgan U.S. Government Money Market Fund
Dimensional	The DFA Short Term Investment Fund
Franklin Templeton	Institutional Fiduciary Trust - Money Market Portfolio

Source: N-CEN Filings from February 2022 to June 2023.

While most sponsors opt for safe money market or cash funds, some, like Invesco Private Prime Fund, stand out as relatively risky. The fund allocates across commercial paper, certificates of deposit, repos, and time deposits.[6] It stands in contrast to others like JPMorgan U.S. Government Money Market MJGXX, which exclusively invests in government securities or term repos securitized by U.S. government debt. Assuming sound due diligence by Invesco and J.P. Morgan, neither should saddle the respective firm with securities-lending losses, but in extreme cases, Invesco Private Prime Fund may be more vulnerable to market shocks.

In the context of both operational risks and the cost of managing them, fund companies should rarely enter into agreements where the cost of lending exceeds the earned income of the program. Sound organizational processes and reinvestment vehicle due diligence establish a baseline for lending return potential across the family of funds.

Strategy Risk

The investment risk of the strategy itself determines its lending return potential. Hard-to-borrow securities generate the highest securities-lending returns but can be some of the most volatile in the

[4] During the 2008 global financial crisis, a few index mutual funds and ETFs incurred a securities-lending loss, causing the funds to lag their benchmarks by much more than anticipated: Lambert, E. 2012. "Securities Lending Meltdown." Forbes. https://www.forbes.com/forbes/2009/0622/mutual-funds-pension-securities-lending-meltdown.html?sh=5a8173f224b9

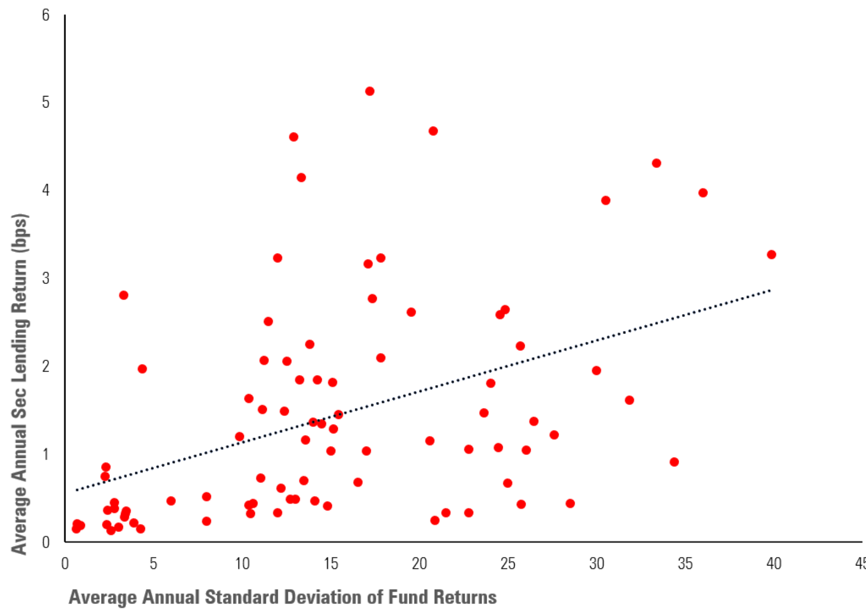
[5] Hester, A. 2023. "An Advanced Perspective on Securities Lending." State Street Global Advisors. https://www.ssga.com/us/en/intermediary/ic/insights/perspective-on-securities-lending

[6] Holdings as of Nov. 30, 2022. https://www.invesco.com/us-rest/contentdetail?contentId=2ca4a0f5be226710VgnVCM1000006e36b50aRCRD

market. If a portfolio consists largely of these risky names, lending income may be high, but the strategy may also be quite volatile. Thematic funds with concentrated portfolios typically earn the highest securities-lending returns because of this. For example, Global X Cannabis ETF POTX added almost 3 percentage points to performance through securities lending in 2022. Still, the fund lost over 67% for the year.

Exhibit 5 broadens the picture across most of the fund universe and further illustrates this point. The graphic plots the average securities-lending return against the average standard deviation of fund returns in 17 categories over the previous five years.

Exhibit 5 Riskier Funds Usually Earn Higher Securities-Lending Returns



Source: Morningstar Direct. Data as of Dec. 31, 2022.

Investors should always prioritize strategy risk considerations over securities-lending returns. Funds and categories that boast the highest securities-lending returns often hold some of the market's most unloved companies and can falter because of it. The scatterplot reveals a weak positive relationship, indicating that more-volatile categories tend to earn higher securities-lending returns than less-volatile ones.

Where to Find Securities-Lending Success

Not all securities-lending programs are created equal. Certain fund sponsors generate more revenue than others. Exhibit 6 displays the average securities-lending return across the 10 largest fund sponsors in the past five years, inclusive only of funds authorized to lend securities. Securities-lending return is calculated for each fund using net securities-lending income and average net assets reported in N-CEN filings.

Exhibit 6 Average Securities-Lending Return by Fund Sponsor in Basis Points

	Average Securities Lending Return (bps)				
	2018	2019	2020	2021	2022
Vanguard	3.41	2.00	1.47	1.53	2.31
Fidelity	1.78	1.10	1.12	0.61	0.63
BlackRock/iShares	2.66	2.22	2.39	2.08	2.12
Capital Group/American Funds	0.45	1.25	0.30	0.69	0.73
State Street	4.12	3.14	1.04	3.55	3.43
T. Rowe Price	1.19	0.98	0.34	0.51	0.85
Invesco	3.02	5.59	1.36	2.15	3.50
JPMorgan	0.00	0.65	0.93	0.68	0.31
Dimensional	5.82	4.20	5.44	2.15	2.02
Franklin Templeton	1.09	0.98	0.38	0.47	0.47

Source: Morningstar Direct. Data as of Dec. 31, 2022.

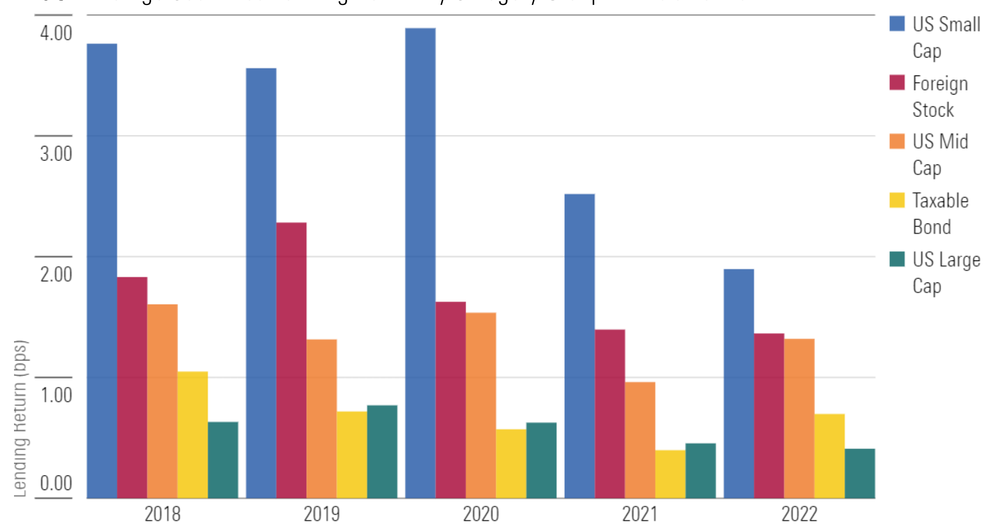
Large index fund sponsors tend to dominate their actively managed counterparts, as index funds' lower turnover and broader portfolios are more conducive to securities lending. State Street and Invesco stood out in this sample for providing consistently high securities-lending income, wrapping up 2022 with around 3.5 basis points in average lending return each. Investors in BlackRock, Vanguard, and Dimensional funds also enjoyed some success.

The exception to passive shops' domination is active manager Dimensional, whose securities-lending return rivaled those of large passive managers. Their funds tend to lend more securities than is typical, and they are further aided by indexlike diversified portfolios with low turnover and a flexible trading structure.

While an increase in the supply of securities available to borrow has led to an increase in total lending revenue in recent years,[7] the average fund's securities-lending return has declined. This owes to tightening fee spreads and a lower average percentage of the portfolio on loan.

[7] IHS Markit. 2023. "Securities Finance H2 2022 Review." S&P Global. https://www.spglobal.com/marketintelligence/en/mi/research-analysis/securities-finance-h2-2022-review.html

Exhibit 7 Average Securities-Lending Return by Category Group in Basis Points



Source: Morningstar Direct. Data as of Dec. 31, 2022.

The small-cap category group still commands the highest return among those sampled here, though its lead over other categories has dwindled in recent years. After small-cap funds, U.S. mid-cap and foreign stock funds offer consistently higher securities-lending returns compared with funds in the taxable-bond and U.S. large-cap cohorts.

Impact on Fundholders

Successful securities-lending programs may not generate huge returns, but investors can instead think of lending revenue as a way to offset fees. In some cases, it can offset a meaningful portion of a fund's expense ratio and put more green back in investors' pockets. Between 2019 and 2021, iShares Russell 2000 ETF IWM returned an average of 0.14% annually to shareholders from its lending activities. This offset a sizable portion of the fund's 0.19% annual expense ratio over this period. Another example is iShares Micro-Cap ETF IWC. The fund's securities-lending return reached 0.59% in 2020, nearly erasing its 0.60% sticker price.

Exhibits 8a and 8b display the average percentage of fund fees offset by securities lending over the past five years. An example of the fee offset calculation is below:

$$\textit{20\% fee offset} = \frac{\text{0.05\% securities lending return}}{\text{0.25\% fund expense ratio}}$$

Despite having several positive examples of fee offsets, BlackRock and iShares funds on average do not generate the most lending income. They trail State Street, Vanguard, and Invesco. Nonetheless, passive managers still maintain a lead over their active counterparts here. A combination of lower fees and stronger securities-lending returns contributed to their success.

Similar to the trend in securities-lending return, the percentage of funds' fees offset by securities-lending revenue has declined in recent years. Small-cap funds were most capable of erasing their expenses with lending income, though their lead is shrinking. While fees have come down across the board for U.S. funds, they have been stickier in more complex markets like small-cap stocks.

Categories offsetting the highest percentage of their fees also tend to charge the highest fees. Fund sponsors can point out that the actual cost of owning these funds is lower than the sticker price. But securities-lending revenues are less consistent than expense ratios, making them less reliable for investors in the future. All else equal, it's better to choose a fund with a lower fee rather than a fund that offsets more of its fee with securities-lending income.

Exhibit 8a Average Fee Offset Percentage by Fund Sponsor

	Average Fee Offset				
	2018	2019	2020	2021	2022
Vanguard	24.28%	14.67%	15.88%	11.05%	15.99%
Fidelity	2.16%	1.40%	0.89%	0.81%	0.85%
BlackRock/iShares	3.98%	3.55%	3.60%	3.74%	3.85%
Capital Group/American Funds	0.61%	1.68%	0.69%	1.00%	1.07%
State Street	15.96%	12.05%	19.01%	13.44%	13.38%
T. Rowe Price	1.95%	1.64%	1.49%	0.76%	1.36%
Invesco	3.18%	6.00%	3.43%	2.53%	4.16%
JPMorgan	0.00%	0.86%	1.41%	0.92%	0.43%
Dimensional	17.68%	12.41%	11.35%	7.66%	7.39%
Franklin Templeton	1.12%	1.03%	1.32%	0.50%	0.50%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 8b Average Fee Offset Percentage by Category Group

	Average Fee Offset				
	2018	2019	2020	2021	2022
US Large Cap	0.65%	0.81%	0.67%	0.51%	0.46%
US Mid Cap	1.51%	1.25%	1.49%	0.94%	1.29%
US Small Cap	3.31%	3.13%	3.48%	2.29%	1.73%
Foreign Stock	1.46%	1.83%	1.34%	1.18%	1.17%
Taxable Bond	1.16%	0.81%	0.68%	0.50%	0.87%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

A Big Slice of the Securities-Lending Pie?

Securities-lending programs are not free to run, and the associated fees can eat away at fundholders' take from lending. A lending agent administers the program and receives a cut of the revenue, typically via a tiered fee split based on total assets on loan. Other costs include cash collateral management fees (expenses for reinvesting cash collateral) and administrative fees.

What matters for investors is the percentage of lending income they receive. Exhibit 9 displays fundholders' net income as a percentage of gross lending revenue minus rebates paid back to borrowers. Deducting the rebate from the denominator helps parse out the impact of different fees on the securities-lending return that the fund has a claim on.

Exhibit 9 Average Percentage of Securities-Lending Revenue (Excluding Rebates) Passed to Fundholders

	Using Affiliated Agents?	**Fundholders' Percentage of Securities Lending Income**
Vanguard	Yes	97.05%
Capital Group/American Funds	No	95.03%
Franklin Templeton	No	91.48%
Fidelity	Yes	90.57%
T. Rowe Price	No	89.57%
State Street	Yes	79.06%
Dimensional	No	79.05%
Invesco	Yes	76.97%
BlackRock/iShares	Yes	74.52%
JPMorgan	No	63.87%

Source: SAI filings from February 2022 to June 2023, analyst calculations. Figures are calculated on a sample of lending funds from each sponsor.

Most of the larger passive shops use an affiliated lending agent. In some of these cases, such as for Invesco or Vanguard, the revenue split with affiliated agents tends to be lower than when using a third-party agent. They charge an administrative fee instead, though these fees tend to be minimal. Most of Vanguard's lending funds do not carry any revenue split, except for its international stock funds that use a third-party agent. Invesco funds, on the other hand, paid around 7% to its third-party lending agent and 1.8% to its affiliated agent in the period sampled.

Currently, most of the other sampled sponsors send around 5%-10% of the revenue to their lending agents, except for State Street and BlackRock. These firms' affiliated agents get a 14%-16% split from the lending revenue. While these funds retain a lower percentage of the lending income, they ultimately generate more revenue by lending more aggressively. Thus, despite retaining the majority of their lending revenue, on average Vanguard investors do not enjoy the highest securities-lending return.

Management fees on cash collateral can be an unexpected detractor from lending revenue. Typically, sponsors reinvest cash collateral in affiliated, high-quality money market funds. In this sample, many of J.P. Morgan's smaller funds incurred a high cash collateral management fee that ended up eating away at lending returns.

All else equal, sharing a greater portion of the gross revenue generated from securities lending is a better shake for investors. Nonetheless, this metric should be used side-by-side with the securities-lending return and fee offset percentage generated by the program.

Fund Sponsors' Approaches to Securities Lending

Two main items differentiate a firm’s approach to securities lending:

- Collateral preference
- Percentage of portfolios on loan

For collateral, some sponsors accept either cash or noncash collateral only, but not both. Others accept both to attract more borrowers. High-quality Treasuries or agency bonds are typically offered as noncash collateral. These securities eliminate the reinvestment risk that cash collateral carries and do not have an impact on the lender’s balance sheet. However, they may return less than an asset manager’s reinvested cash. However, reinvested cash is usually conservatively allocated to affiliated money market funds, so return potential is relatively low.[8] Regardless of the type of collateral accepted, it's marked to market daily to monitor the collateralization ratio as required by the SEC.

Fund sponsors also differ on the aggressiveness of their lending program. Some fund sponsors lend only hard-to-borrow securities to earn a higher fee spread. Others lend out a greater portion of the portfolio regardless of lending fees. More-aggressive securities lending is not necessarily much riskier given the conservative requirements of eligible cash reinvestment options. Depending on the fund sponsor’s arrangement with its lending agent, the revenue earned may not be much greater than the fee paid to the agent. Aggressive lending may not be justified in this case.

The percentage of a fund's portfolio on loan is an indicator of how aggressively fund sponsors use securities lending to generate additional income. More-aggressive fund sponsors likely lend out a larger proportion of securities. Exhibits 10a and 10b show the average percentage of the portfolio on loan sorted by fund sponsor and category group.

BlackRock, State Street, and Dimensional stand out with a relatively aggressive approach to lending, focusing more on volume than fee spreads. They tend to generate the highest securities-lending return but incur higher lending fees (including revenue split and cash collateral management fees).
Another high-earning firm, Invesco, began lending out a greater percentage of its portfolios in recent years. However, much of Invesco's revenue comes from lending out niche, thematic funds with hard-to-borrow stocks or bonds. Many of its funds received a negative rebate in the most recent fiscal year, meaning its borrowers paid Invesco on top of the reinvestment income as the lending fee is higher than the reinvestment return.

[8] See Exhibit 4, which shows the most common cash collateral reinvestment vehicles for the largest 10 fund sponsors.

Exhibit 10a Average Percentage of Portfolio on Loan by Fund Sponsor

	Average Percentage of Portfolio on Loan				
	2018	2019	2020	2021	2022
Vanguard	0.00%	1.01%	0.49%	0.49%	0.56%
Fidelity	1.09%	0.94%	0.70%	0.77%	0.90%
BlackRock/iShares	3.21%	7.29%	2.41%	2.66%	2.55%
Capital Group/American Funds	1.40%	2.78%	0.22%	0.36%	0.36%
State Street	4.28%	4.42%	4.99%	4.52%	4.15%
T. Rowe Price	2.50%	2.01%	1.67%	1.11%	1.07%
Invesco	1.21%	2.35%	1.64%	2.35%	4.25%
JPMorgan	0.03%	2.31%	1.33%	1.54%	0.65%
Dimensional	9.75%	6.22%	4.51%	3.44%	3.76%
Franklin Templeton	2.14%	1.41%	0.68%	0.37%	0.33%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 10b Average Percentage of Portfolio on Loan by Category Group

	Average Percentage of Portfolio on Loan				
	2018	2019	2020	2021	2022
US Large Cap	1.97%	1.43%	1.53%	1.00%	1.01%
US Mid Cap	3.85%	3.18%	2.50%	1.73%	1.82%
US Small Cap	7.06%	5.86%	5.22%	3.90%	3.32%
Foreign Stock	2.56%	1.78%	1.43%	1.33%	1.15%
Taxable Bond	3.03%	2.36%	1.68%	1.62%	1.98%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Generally, funds that loan out small-cap stocks earn more because these stocks have higher borrowing demand. Thus, small-cap funds have a markedly higher portion of their portfolios on loan compared with other categories. By the end of 2022, small-cap funds lent out more than 3% of their portfolios on average, compared with less than 2% for funds in other categories. It's worth noting that the SEC limits securities lending for 1940-Act funds to one third of their portfolios, but funds rarely approach this limit.

The percentage of small-cap and foreign stock funds authorized to lend has climbed over the years as fund sponsors look to take advantage of the lending income. On the other hand, the logistical challenges of lending fixed-income securities limited taxable-bond fund utilization relative to their equity counterparts. Around 70% of taxable-bond funds were authorized to lend by the end of 2022, compared to more than 80% for all sampled equity categories.

Exhibit 11 Average Percentage of Funds Authorized to Lend by Category Group

	Average Percentage Authorized				
	2018	2019	2020	2021	2022
US Large Cap	72.35%	77.87%	83.27%	83.16%	83.05%
US Mid Cap	73.44%	81.05%	84.20%	83.97%	85.09%
US Small Cap	75.47%	79.81%	82.07%	82.75%	84.88%
Foreign Stock	72.25%	76.78%	81.24%	78.79%	80.84%
Taxable Bond	63.89%	65.91%	66.72%	68.89%	71.63%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Proceed With Caution

Securities lending plays a small role in overall fund management, but it's a useful tool for offsetting fund expenses and slightly boosting returns. Fund sponsors use differing approaches, but each of the sampled programs benefits investors.

Broad-market funds from firms like Vanguard and J.P. Morgan are usually conservative in their securities-lending approaches. Other firms, like Dimensional, take a more aggressive approach, attempting to capture as much of their holdings' demand value as possible. All three are successful in their practices, but it's important to remember that the underlying strategy will always be the main driver of risk and return.

In short, securities lending is helpful, but not enough to make a bad fund good. Hard-to-borrow securities tend to be those that the market expects to do the worst. Investors should be cautious about owning them. However, there is still an opportunity for investors to gain from securities lending. As fund fees and technologies converge, securities-lending programs serve as a differentiator for fund sponsors. Investors can use the information in this report to select the right provider for them. Investors should first select the right strategy for them, then seek out the asset manager that maximizes the risk/reward profile of securities lending for that strategy. M

Appendix

Appendix A Only One of the Top Funds by Securities-Lending Returns Outpaced the Market in 2022

Name	Ticker	Morningstar Category	Securities Lending Return (%)	Net Expense Ratio (%)	Fee Offset	Return (%)	Standard Deviation
Invesco Alerian Galaxy Crypto Eco ETF	SATO	Digital Assets	3.20	0.61	524%	-80.05	65.42
Global X Cannabis ETF	POTX	Miscellaneous Sector	2.87	0.51	562%	-67.42	50.54
VanEck Digital Trfmt ETF	DAPP	Digital Assets	2.81	0.50	561%	-85.35	79.54
Invesco Aln Glxy Blkh Usr&Dctrzd Cmr ETF	BLKC	Digital Assets	1.80	0.61	295%	-63.27	42.04
Invesco WilderHill Clean Energy ETF	PBW	Miscellaneous Sector	1.77	0.62	285%	-44.43	48.43
Global X Blockchain ETF	BKCH	Digital Assets	1.71	0.50	342%	-85.23	75.17
Invesco Dynamic Networking ETF	PXQ	Technology	1.64	0.63	261%	-29.54	25.49
Procure Space ETF	UFO	Industrials	1.56	0.75	207%	-25.94	30.38
Invesco Global Clean Energy ETF	PBD	Miscellaneous Sector	1.31	0.75	174%	-29.54	39.41
Direxion Moonshot Innovators ETF	MOON	Technology	1.16	0.65	179%	-60.92	32.33
Amplify Lithium & Battery Tech ETF	BATT	US Fund Natural Resources	0.91	0.59	155%	-31.84	26.36
iShares MSCI China Small-Cap ETF	ECNS	US Fund China Region	0.91	0.58	157%	-24.77	38.42
iShares Interest Rate Hdg Hi Yld Bd ETF	HYGH	US Fund High Yield Bond	0.85	0.51	167%	-0.98	10.27
Amplify Transformational Data Shrg ETF	BLOK	US Fund Digital Assets	0.82	0.75	110%	-61.88	41.88
Amplify Emerging Markets FinTech ETF	EMFQ	US Fund Foreign Large Growth	0.78	0.69	114%	-45.94	25.28
AdvisorShares Restaurant ETF	EATZ	US Fund Consumer Cyclical	0.74	0.99	74%	-20.75	25.16
VanEck Future of Food ETF	YUMY	US Fund Consumer Defensive	0.63	0.69	92%	-26.16	23.07
American Beacon ARK Transfmt Innov C	ADNCX	US Fund Mid-Cap Growth	0.62	2.19	28%	-66.60	35.24
VanEck Rare Earth/Strat Mtls ETF	REMX	US Fund Equity Precious Metals	0.61	0.54	113%	-30.72	38.64
SPDR® S&P Kensho Smart Mobility ETF	HAIL	US Fund Technology	0.59	0.45	132%	-45.64	33.80
Morningstar US Market Index		**Large Blend**				**-19.43**	**23.20**

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Appendix B Securities-Lending Return in Basis Points by Category

	Average Securities Lending Return (bps)				
	2018	2019	2020	2021	2022
US Large Blend	0.41	0.49	0.43	0.43	0.33
US Large Growth	1.04	1.16	1.04	0.61	0.67
US Large Value	0.47	0.70	0.44	0.33	0.25
US Mid-Cap Blend	1.45	1.28	1.61	0.73	1.05
US Mid-Cap Growth	2.09	1.81	1.95	1.48	2.23
US Mid-Cap Value	1.04	0.67	0.91	0.49	0.33
US Small Blend	3.23	2.76	3.97	2.06	1.81
US Small Growth	4.67	5.12	4.30	3.23	2.65
US Small Value	3.16	2.62	3.27	2.25	1.08
Foreign Large Cap	1.84	2.06	1.37	1.51	1.46
Foreign Small Mid Cap	4.15	4.61	3.89	2.51	2.58
Diversified Emerging Markets	1.36	1.84	1.22	1.20	1.15
Short Term Bond	0.21	0.19	0.15	0.15	0.28
Intermediate Core Bond	0.19	0.16	0.21	0.13	0.23
Intermediate Core Plus Bond	0.75	0.37	0.46	0.36	0.51
Corporate Bond	0.44	0.32	0.33	0.35	0.42
High Yield Bond	2.81	1.97	1.34	0.85	1.63

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Appendix C Average Percentage of Fee Offset by Category

	Average Fee Offset				
	2018	2019	2020	2021	2022
US Large Blend	0.48%	0.58%	0.52%	0.54%	0.42%
US Large Growth	1.00%	1.13%	1.04%	0.63%	0.70%
US Large Value	0.49%	0.74%	0.47%	0.36%	0.27%
US Mid-Cap Blend	1.52%	1.34%	1.71%	0.79%	1.14%
US Mid-Cap Growth	1.83%	1.61%	1.77%	1.39%	2.08%
US Mid-Cap Value	1.01%	0.66%	0.90%	0.50%	0.34%
US Small Blend	3.13%	2.68%	3.88%	2.08%	1.80%
US Small Growth	3.93%	4.33%	3.63%	2.79%	2.29%
US Small Value	2.65%	2.20%	2.78%	1.97%	0.94%
Foreign Large Cap	1.82%	2.07%	1.40%	1.57%	1.53%
Foreign Small Mid Cap	3.36%	3.67%	3.26%	2.15%	2.15%
Diversified Emerging Markets	1.08%	1.48%	1.00%	1.01%	0.99%
Short Term Bond	0.29%	0.27%	0.21%	0.23%	0.43%
Intermediate Core Bond	0.29%	0.25%	0.34%	0.21%	0.40%
Intermediate Core Plus Bond	0.93%	0.48%	0.61%	0.50%	0.69%
Corporate Bond	0.59%	0.44%	0.46%	0.51%	0.63%
High Yield Bond	2.87%	2.04%	1.43%	0.93%	1.81%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Appendix D Percentage of Funds Authorized to Lend Securities by Category

	Average Percentage Authorized				
	2018	2019	2020	2021	2022
US Large Blend	70.80%	78.57%	81.83%	82.03%	81.82%
US Large Growth	75.27%	78.33%	83.56%	83.89%	83.76%
US Large Value	71.08%	76.66%	84.58%	83.73%	83.76%
US Mid-Cap Blend	69.41%	74.73%	82.73%	84.20%	82.58%
US Mid-Cap Growth	71.30%	80.99%	81.02%	80.19%	83.60%
US Mid-Cap Value	80.58%	87.11%	89.87%	88.95%	89.80%
US Small Blend	70.43%	80.98%	82.64%	84.31%	85.76%
US Small Growth	78.03%	77.66%	80.82%	82.92%	86.79%
US Small Value	78.72%	81.03%	82.90%	80.47%	81.34%
Foreign Large Cap	78.88%	78.88%	84.58%	85.08%	85.71%
Foreign Small Mid Cap	77.12%	73.13%	81.27%	80.73%	86.35%
Diversified Emerging Markets	71.26%	77.46%	81.23%	78.45%	79.85%
Short Term Bond	57.89%	60.18%	60.14%	64.53%	66.32%
Intermediate Core Bond	61.18%	64.87%	63.19%	66.45%	67.45%
Intermediate Core Plus Bond	64.64%	72.28%	74.16%	76.39%	78.59%
Corporate Bond	77.36%	60.21%	60.40%	64.65%	65.74%
High Yield Bond	66.98%	67.72%	70.20%	69.03%	74.49%

Source: Morningstar Direct. Data as of Dec. 31, 2022.

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