

Mutual Fund Capital Structure

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MUTUAL FUND CAPITAL STRUCTURE

A. JOSEPH WARBURTON*

The Investment Company Act of 1940 regulates the capital structure of mutual funds in order to restrain their leverage and speculative character. It is often (mistakenly) assumed that the law prohibits open-end mutual funds from borrowing money. This Article (i) analyzes the law governing mutual fund capital structure to reveal when (and to what extent) borrowing is allowed and (ii) examines a novel dataset on mutual fund capital structure that shows borrowing is an unexpectedly common practice.

Using data on all registered investment companies in the U.S. from 1998 to 2013, I find that nearly 8% of open-end mutual funds, and 10% of all mutual funds, borrow money for leverage purposes each year. This figure increases to over 12% of funds when I include non-conventional forms of borrowing. In fact, mutual funds borrow about as often as they employ the most commonly used derivatives. Closed-end funds are more aggressive than open-end funds in their borrowing, often pushing leverage to the regulatory limits. I find that, in addition to borrowing for leverage purposes, mutual funds also borrow on a short-term basis to manage liquidity, via a host of practices: bank lines of credit, overdrafts on custodial accounts, and joint borrowing and lending facilities that allow funds to borrow from other funds. Recent regulatory initiatives (which focus on risks arising from illiquidity and derivatives) overlook the substantial borrowing practices of mutual funds.

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I.	INTRODUCTION	672
II.	LITERATURE REVIEW	675
III.	AN INTRODUCTION TO MUTUAL FUNDS	677
	A. Open-End and Closed-End Mutual Funds	677
	B. Redeemability and Liquidity Risk	678
	C. Capital Structure	682
IV.	HISTORY OF CAPITAL STRUCTURE REGULATION	683
V.	REGULATION OF MUTUAL FUND CAPITAL STRUCTURE	689
	A. Senior Capital	690
	B. Borrowing for Temporary Purposes	699
	C. An Alternative to Senior Capital	701
VI.	DATA	704
VII.	RESULTS	705
	A. Senior Capital	706
	1. Debt	706
	2. Preferred Stock of Closed-End Funds	707
	3. Asset Coverage Ratios	712
	4. Alternatives to Balance Sheet Debt	717
	B. Borrowing for Temporary Purposes	722
	1. Lines of Credit	722
	2. Overdrafts	724
	3. Interfund Borrowing	725
VIII.	CONCLUSION	730

I. INTRODUCTION

Nearly half of all American households own mutual funds (either directly or through retirement plans). Yet, we know little about the capital structures of mutual funds. A mutual fund, like any business, has a financial framework (i.e., a capital structure).

Mutual funds issue common stock to the general public; when an investor entrusts his or her savings to a mutual fund, he or she receives common stock in the fund. But common stock is not the only source of capital for mutual funds. Mutual funds can utilize other securities and financing sources which take priority over common stock (e.g., long-term loans, and in some cases, even bonds and preferred stock) for purposes of leverage (or boosting shareholder returns) and risk taking. This Article explores these other components of a fund's capital structure.

Despite the importance of a mutual fund's capital structure, the subject

has received little attention from scholars and policymakers. The capital structure of a mutual fund is regulated by the Investment Company Act of 1940.¹ Many assume that the Investment Company Act prohibits mutual funds from issuing senior capital, but this is a false notion. The Act imposes various requirements on fund capital structures to promote simplicity, transparency and sufficient fund assets to cover liabilities. But within these limits, the Act permits funds to issue senior capital (i.e., borrow money).

This Article is the first to examine the law that governs the senior capital of mutual funds. It uncovers the various options that mutual funds have under the law for organizing their capital structures. It then looks at the capital structure choices that mutual funds make, by constructing a novel dataset. I compile fund-level information on capital structure for the entire population of registered mutual funds in the U.S. from 1998 to 2013. Information is taken from semi-annual reports mutual funds are required to file with the Securities and Exchange Commission. The reports enable me to extract information unavailable in other databases, such as balance sheet figures and borrowing and investment practices.

The results reveal that borrowing money is an unexpectedly common practice. Approximately 10% of mutual funds (nearly 8% of open-end funds and 25% of closed-end funds) report that they borrow money for leverage purposes each year (on average). These figures do not include the usage of derivatives, which has attracted the focus of scholars and policymakers. I find that mutual funds borrow money as often as they employ the most commonly used derivatives. The results indicate that, in addition to derivatives, mutual funds also employ their capital structures to engage in leverage. Proposed regulations that seek to restrict derivatives usage could make borrowing an even more attractive option for leverage, underscoring the importance of timely research on mutual fund capital structure.

While both open-end and closed-end funds are permitted to issue senior capital (within limits), the regulations give closed-end funds more freedom in organizing their capital structures.² Open-end funds may borrow money from banks, while closed-end funds may borrow money, or issue

1. See generally Investment Company Act of 1940, 15 U.S.C. §§ 80a-1–80a-64 (2012).

2. Mutual funds generally organize in either closed-end or open-end form, which differ operationally in how their junior capital (common stock) is traded. Closed-end funds issue a fixed number of shares of common stock, which are then traded by investors on a stock exchange. Open-end funds exchange shares of common stock directly with investors, by issuing and redeeming shares as investors enter and exit the fund. See *infra* Part III.A.

bonds, preferred equity, or other senior securities. I find that closed-end funds are more aggressive than open-end funds in the amounts they borrow, often pushing their leverage to the regulatory limits. I also find that closed-end funds have favored preferred stock as their vehicle for leverage over most of the sample period, but since the financial crisis they have been shifting increasingly towards debt.

Aside from issuing senior capital for leverage purposes, mutual funds also borrow money on a short-term basis in order to manage the liquidity of their investment portfolios and meet their obligations to redeeming shareholders. This Article is among the first to examine data on key tools used by funds to manage liquidity. I find that mutual funds draw on bank lines of credit and, more frequently, employ overdrafts on their custodial accounts. I also find that, over the sample period, mutual funds have been turning increasingly to an innovative source of short-term financing not contemplated by the Investment Company Act—joint borrowing and lending arrangements that allow mutual funds to borrow money directly from other mutual funds.

Borrowing practices within the investment management industry have recently drawn the attention of researchers and policymakers concerned about illiquidity and instability within the financial system.³ Their investigations, however, have been hampered by lack of legal scholarship and empirical evidence on borrowing by mutual funds, one of the most widely held investment vehicles. This Article fills a sizeable gap in the literature on this popular financial product.

This Article is organized as follows: Part II contains a review of the related literature. Part III provides background on mutual funds and their capital structures. Part IV traces the origins of capital structure regulation. Part V unravels the current regulatory framework under the Investment Company Act to reveal how mutual funds are permitted to finance themselves. Part VI discusses the dataset that is assembled for this Article. Part VII analyzes empirically the capital structure choices and other borrowing

3. Regulatory initiatives include those pursued in the United States by the Financial Stability Oversight Council (*see* Notice Seeking Comment on Asset Management Products and Activities, 79 Fed. Reg. 77,488 (Dec. 24, 2014)) and the Securities and Exchange Commission concerning liquidity (*see* Open-End Fund Liquidity Risk Management Programs, 80 Fed. Reg. 62,274 (Oct. 15, 2015)) and derivatives (*see* Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80,884 (Dec. 28, 2015)), and internationally by the Financial Stability Board (*see* Financial Stability Board, Proposed Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities (June 22, 2016)). For related academic literature, *see infra* Part II.

decisions that mutual funds make. The final portion of this Article concludes.

II. LITERATURE REVIEW

In the legal literature, there is only one study on the capital structure of mutual funds. In it, Morley (2013) proposes broadening the Investment Company Act to allow open-end mutual funds to issue not only common stock to the public, but also debt securities.⁴ Morley argues that debt securities would offer investors a safer and more stable alternative to common stock. The purpose of that study is to present a theoretical argument for allowing mutual funds to offer debt securities to the public, not to explore the various ways mutual funds can incur debt under current regulations, nor to examine empirically how funds do incur debt (as detailed herein). Morley states that “there is no solid data on the state of mutual funds’ capital structure.”⁵ This Article seeks to supply that missing empirical foundation.

In finance, there is an emerging empirical literature on mutual fund leverage; however, it does not examine debt that mutual funds incur. Instead, it focuses on leverage generated through complex instruments such as derivatives and short selling strategies. For instance, Chen et al. (2013) examine short sales, finding that funds utilizing them perform better than those that do not.⁶ Cici and Palacios (2015), Cao et al. (2011), Almazan et al. (2004), and Lynch-Koski and Pontiff (1999) examine mutual funds that use derivatives, finding that derivatives do not significantly influence fund performance or risk characteristics.⁷ In contrast, Rohleder et al. (2015) find that mutual funds employing derivatives outperform other funds (because they believe derivatives can mitigate the adverse impact of investor flows on performance).⁸ But while funds may utilize derivatives in an at-

4. John Morley, *The Regulation of Mutual Fund Debt*, 30 YALE J. ON REG. 343 (2013).

5. *Id.* at 352.

6. Honghui Chen et al., *A First Look at Mutual Funds That Use Short Sales*, 48 J. FIN. & QUANT. ANAL. 761 (2013).

7. Gjergji Cici & Luis-Felipe Palacios, *On the Use of Options by Mutual Funds: Do They Know What They Are Doing?*, 50 J. BANKING & FIN. 157 (2015); Charles Cao et al., *Derivatives Do Affect Mutual Fund Returns: Evidence From the Financial Crisis of 1998*, 31 J. FUTURES MARKETS 629 (2011); Andres Almazan et al., *Why Constrain Your Mutual Fund Manager?*, 73 J. FIN. ECON. 289 (2004); Jennifer Lynch Koski & Jeffrey Pontiff, *How are Derivatives Used? Evidence From the Mutual Fund Industry*, 54 J. FIN. 791 (1999).

8. Martin Rohleder et al., *Management of Flow Risk in Mutual Funds*, 48 REV. QUANT. FIN. & ACCT. 31 (2017).

tempt to enhance performance, they have other tools available for this purpose. Mutual funds can issue senior capital by borrowing money and (for closed-end funds) issuing bonds and preferred stock. Furthermore, they may borrow for reasons other than enhancing performance. Besides leverage, borrowing is important for managing liquidity and redemption risk. These are issues explored in this Article.

Moreover, this study is relatively comprehensive, e.g., it examines data on all mutual funds and all kinds of senior securities and borrowings in their capital structures. Existing studies tend to limit their analyses to certain subsets of mutual funds. Studies generally focus on open-end funds in the form of domestic equity funds,⁹ or closed-end funds in the form of municipal bond funds.¹⁰ Some studies focus even further on a particular kind of security, such as auction-rate preferred stock issued by closed-end municipal bond funds.¹¹

Additionally, empirical studies show a tendency to overgeneralize (and at times misconstrue) regulations that govern mutual fund capital structure. For instance, Elton et al. (2013) state that, unlike closed-end funds, open-end funds “cannot use leverage.”¹² However, the leverage restrictions on open-end and closed-end funds are actually broadly similar.

9. Further, studies of domestic equity funds frequently examine only a subset of those funds, due to challenges in collecting and aggregating the data. For instance, Koski & Pontiff, *supra* note 7, examined a sample of 679 domestic equity funds that they surveyed by phone; and Cici & Palacios, *supra* note 7, and Cao et al., *supra* note 7, examined a sample of 250 domestic equity funds and 322 equity funds, respectively.

10. See, e.g., Edwin J. Elton et al., *Why Do Closed-End Bond Funds Exist? An Additional Explanation for the Growth in Domestic Closed-End Bond Funds*, 48 J. FIN. & QUANT. ANAL. 405 (2013). While there are studies on leverage within closed-end funds, those studies usually do not examine senior capital per se. Rather, they typically aggregate senior capital with other financial instruments like derivatives to use as controls in examining something else, such as how leverage can affect the discount or premium at which closed-end shares trade, or how leverage can provide liquidity that allows the fund to borrow short-term and invest long-term (see, e.g., Rohleder et al., *supra* note 8; Daniel N. Deli & Raj Varma, *Closed-End Versus Open-End: The Choice of Organizational Form*, 8 J. CORP. FIN. 1 (2002); Martin Cherkes et al., *A Liquidity-Based Theory of Closed-End Funds*, 22 REV. FIN. STUD. 257 (2009); Elton et al., *supra*). For surveys of the closed-end literature, see Martin Cherkes, *Closed-End Funds: A Survey*, 4 ANN. REV. FIN. ECON. 431 (2012); Elroy Dimson & Carolina Minio-Kozerski, *Closed-End Funds: A Survey*, 8 J. FIN. MARKETS, INSTS. & INSTRUMENTS 1 (1999).

11. Song Han & Dan Li, *The Fragility of Discretionary Liquidity Provision: Lessons from the Collapse of the Auction Rate Securities Market* (Fed. Reserve Bd., Working Paper No. 2010-50, 2010); Yuehua Tang, *Leverage and Liquidity: Evidence from the Closed-End Fund Industry*, (Apr. 19, 2013) (Ph.D dissertation, Georgia State University), <https://ssrn.com/abstract=1729296> [<https://perma.cc/93PP-PESY>].

12. Elton et al., *supra* note 10, at 406. Similarly, Cherkes et al. state that open-end funds “face both legal and self-imposed restriction[s] not faced by [closed-end funds], on borrowing.” Cherkes et al., *supra* note 10, at 274 (emphasis added).

While the rules are more relaxed for closed-end funds, open-end funds are indeed able to employ leverage. Such misunderstandings of the regulations can lead studies to overlook data, and misinterpret results, based on assumptions that certain funds cannot borrow. Admittedly, the law governing mutual fund capital structure is complex, and a lack of legal scholarship on this topic has impeded empirical researchers. Thus, one objective of this study is to guide future research by unraveling the law of mutual fund capital structure.

III. AN INTRODUCTION TO MUTUAL FUNDS

Mutual funds that market themselves to the general public must comply with the Investment Company Act of 1940 and register with the SEC.¹³ This Article focuses on mutual funds registered with the SEC under the Act, namely open-end and closed-end mutual funds.¹⁴

A. *Open-End and Closed-End Mutual Funds*

An *open-end mutual fund* is one that issues redeemable securities;¹⁵ thus, shareholders can redeem their shares (sell them back to the fund) in return for cash. The specific amount of cash is equal to the fund's net assets (assets minus liabilities) per share.¹⁶ This amount is known as the fund's "net asset value" (or NAV).¹⁷ Open-end funds will continually sell and redeem their shares at NAV (at the request of any shareholder); these funds, therefore, have a variable or "open" number of shares outstanding.

Closed-end mutual funds do not issue redeemable shares to investors.¹⁸ They have a fixed or "closed" number of shares outstanding. A closed-end fund issues shares to investors via an initial public offering (and invests the proceeds).¹⁹ After the IPO, investors buy and sell fund shares on a stock

13. See generally Investment Company Act of 1940, 15 U.S.C. §§ 80a-1-80a-64 (2012).

14. Mutual funds are called "investment companies" in the Investment Company Act section 3(a), and were generally known as "investment companies" and "investment trusts" at the time the Act was adopted. See WILLIAM O. DOUGLAS, INVESTMENT TRUSTS AND COMPANIES, H.R. DOC. NO. 75-707, pt. 1, at 35-65 (1939). For simplicity, this study uses the term "mutual fund" or "fund" to refer to investment companies registered under the Act.

15. Investment Company Act of 1940 § 5(a)(1), 15 U.S.C. 80a-5(a)(1) (2012). A redeemable security is a security that entitles its holder to receive a proportionate share of the net assets of the fund. *Id.* § 2(a)(32), 15 U.S.C. § 80a-2(32) (2012).

16. *Id.* § 2(a)(32), 15 U.S.C. § 80a-2(32) (2012).

17. *Id.* § 11(a).

18. *Id.* § 5(a)(2).

19. While the outstanding shares of closed-end funds typically remain relatively constant, closed-end funds may make subsequent offerings of shares to raise additional capital or issue additional shares for dividend reinvestment.

exchange (in transactions with other investors); share prices are determined by supply and demand and are only indirectly linked to the value of a fund's assets. Shares of closed-end funds can trade at a discount or premium (relative to the fund's underlying NAV).²⁰

Unlike open-end funds, closed-end funds do not continuously issue and redeem investor shares; thus, they are able to maintain a steadier asset base. This makes the application of leverage in a closed-end fund more attractive than in an open-end fund. The steady asset base also means closed-end funds can maintain lower cash reserves than open-end funds and invest in less liquid securities. They are also not subject to the liquidity requirements that the Act imposes on open-end funds.²¹

B. Redeemability and Liquidity Risk

Daily redeemability is a defining feature of open-end mutual funds.²² Open-end funds (i) are obligated to honor all redemption requests (submitted on any trading day), (ii) have almost no ability to suspend redemptions, and (iii) must deliver cash proceeds to redeeming investors within specified periods of time thereafter.²³ The cash proceeds must be delivered within (i) seven days of the redemption request under the Investment

20. A large literature has examined why closed-end fund shares tend to trade at a discount or premium to net asset value. See Cherkes, *supra* note 10, and Dimson & Minio-Kozerski, *supra* note 10, for surveys.

21. However, closed-end funds that elect to repurchase their shares at periodic intervals ("closed-end interval funds") are subject to certain liquidity standards in order to ensure that they can complete repurchase offers, and must adopt written procedures reasonably designed to ensure that their portfolio assets are sufficiently liquid. 17 C.F.R. § 270.23c-3 (2016). Only twenty-six such closed-end interval funds were in existence in 2014. Open-End Fund Liquidity Risk Management Programs, 80 Fed. Reg. at 62,289, n.134.

22. The Act requires open-end funds to sell and redeem fund shares at a price determined at least daily, based upon the fund's NAV next computed after receipt of an order to buy or redeem. 17 C.F.R. § 270.22c-1(a).

23. *Id.* Open-end funds can suspend redemptions only in certain unusual emergency circumstances. Investment Company Act § 22(e) (though money market mutual funds are permitted more flexibility via 17 C.F.R. § 270.2a-7). In contrast, private funds are free to restrict redemptions, which lessens their liquidity risk.

Company Act,²⁴ (ii) three days if the request is made via a broker-dealer,²⁵ or (iii) the next business day if the fund's prospectus so provides.²⁶ Thus, management of liquidity is "a constant area of focus for fund managers."²⁷

Borrowing arrangements can assist a fund with meeting redemption requests. By borrowing money to pay redeeming shareholders, a fund avoids having to immediately sell portfolio assets or access cash reserves. A fund can establish a standing line of credit with a bank and draw on it when cash is needed to meet redemptions. The loan can then be repaid later through asset sales (at a time and price the fund prefers) or through cash inflows that the fund receives over time (e.g., from new investors or from interest and dividends paid on portfolio securities).²⁸

For example, suppose an investor submits a redemption request on Monday at 2:00 p.m. The amount due to the investor is computed using the fund's NAV (as of 4:00 p.m. on Monday). That amount must be paid to the investor (i) seven days later under the Act, (ii) three days later if the redemption was made through a broker-dealer, or (iii) the next business day if the fund's prospectus so provides. Since payments are made in cash, the fund must sell some of the securities in its investment portfolio, or

24. Under section 22(e), open-end funds may not postpone the date of payment for more than seven days, absent specified unusual circumstances. Investment Company Act of 1940 § 22(e), 15 U.S.C. § 80a-22(e) (2012). That seven day deadline was adopted "in response to abusive practices of early open-end companies that claimed that their securities were redeemable, but then instituted barriers to redemption." *Investment Company Act of 1940 and Investment Advisers Act of 1940: Hearing on S. 3580 Before the Senate Comm. on Banking and Currency*. 76th Cong. 291-92 (1940) (statement of David Schenker, Chief Counsel, SEC) [hereinafter Senate Hearings].

25. 17 C.F.R. § 240.15c6-1. Broker-dealers are subject to the Securities Exchange Act of 1934, which mandates a three-day settlement period for trades. Investors often involve a broker-dealer in the purchase and sale of mutual funds. See Letter from Scott C. Goebel, Senior Vice President & Gen. Couns., Fidelity Mgmt. & Res. Co., to Patrick Pinschmidt, Deputy Assistant Sec'y, Financial Stability Oversight Council, at 6, n.20 (Mar. 25, 2015) [hereinafter Fidelity Comment].

26. Open-end funds may disclose their prospectuses that they will pay redemption proceeds on the next business day. See Letter from Paul S. Stevens, President & CEO, Investment Company Institute, to Patrick Pinschmidt, Deputy Assistant Sec'y, Financial Stability Oversight Council, at 17 (Mar. 25, 2015) ("[A]s a matter of practice funds typically pay proceeds within one to two days of a redemption request."); Fidelity Comment, *supra* note 25, at 6 ("[M]utual funds normally process redemption requests by the next business day . . ."). Disclosures by open-end funds are subject to antifraud provisions of federal securities laws.

27. Letter from Paul S. Stevens, *supra* note 26, at 11.

28. There can be drawbacks to borrowing for liquidity management purposes. When a fund borrows to meet redemptions, it temporarily leverages itself for remaining investors. Moreover, borrowing to pay redeeming investors imposes borrowing costs (e.g., interest and fees) on remaining investors. Also, it is strictly a short-term strategy (and cannot address persistent redemptions).

draw down its cash balances.²⁹ However, with a line of credit, the fund can borrow the amount needed to pay the redeeming investor in cash, and repay the loan later (e.g., the following month when fund assets are expected to command better prices or when the fund expects to receive a large dividend payment).

Despite the significant role that borrowing can play in managing liquidity risk, we know little about whether funds actually employ bank lines of credit and other forms of borrowing. Little empirical evidence has been collected, and the existing evidence is mixed. In a survey, 79% of respondents reported having access to a line of credit to manage outflows, and 64% reported that they had drawn on that line within the last five years.³⁰ On the other hand, several prominent fund families report never having drawn on their line of credit.³¹ Hence, the extent to which bank lines of credit are actually used is an empirical question, which this Article examines.

Given the importance of liquidity, the SEC has recently proposed a rule that would require open-end funds to formally adopt liquidity risk management programs.³² However, the SEC has proceeded without comprehensive data on this issue and is relying instead on “staff outreach” (to fund managers).³³ In the proposed rule, the SEC has stated, “We understand[,] *based on staff outreach*[,] that it is relatively common for funds to establish lines of credit to manage liquidity risk, and . . . meet shareholder redemptions”³⁴ Rather than relying on anecdotal evidence, this Article gathers and analyzes data on such borrowing practices.

29. Under the Act, the term “redeemable security” has traditionally been interpreted as giving the fund the option of redeeming its securities either in cash or in-kind. But the use of in-kind redemptions has been rare historically for operational and logistical reasons.

30. Letter from Timothy W. Cameron, Managing Director, Asset Management Group and Karen L. Barr, President & CEO, Investment Adviser Ass’n, to Patrick Pinschmidt, Deputy Assistant Sec’y, Financial Stability Oversight Council, at 23, n.73 (Mar. 25, 2015).

31. Fidelity Comment, *supra* note 25, at 20 (“During the time period since its inception in 2001, the committed bank line of credit has never been used.”); Letter from Douglas M. Hodge, Managing Director, CEO, PIMCO, to Patrick Pinschmidt, Deputy Assistant Sec’y, Financial Stability Oversight Council, app. 2 (Mar. 25, 2015) (“In practice, it is rare for funds to . . . draw on these lines of credit.”); Letter from John M. Zerr, Senior Vice President, Invesco, to Patrick Pinschmidt, Deputy Assistant Sec’y, Financial Stability Oversight Council, at 9–10 (Jan. 13, 2016) (stating that it has a line of credit for two funds that is used only on an “infrequent” basis).

32. Open-End Fund Liquidity Risk Management Programs, 80 Fed. Reg. at 62,275.

33. *Id.* at 62,320.

34. *Id.* (emphasis added). Similarly, the SEC also stated, “We understand[,] *based on staff outreach*[,] that . . . funds may use borrowed money or draw on other funding sources to meet shareholder redemptions, typically during periods of significantly limited market liquidity.” *Id.* (emphasis added).

Of course, funds have other tools to manage redemption requests, but only to a limited extent. Redemption fees allow a fund to recoup costs that exiting shareholders (particularly market timers) impose (e.g., forcing the fund to sell securities at inopportune times or hold extra cash). Such fees, however, are capped at two percent of the redemption amount.³⁵ A mutual fund can also redeem in kind, giving investors a pro rata share of the fund's securities (instead of cash). By delivering securities, the fund avoids having to sell them, reducing liquidity risk.³⁶ But there are logistical and operational issues associated with redemption in kind, which limit its practicality,³⁷ and some shareholders are unable (or unwilling) to receive in-kind redemptions.³⁸ As a result, in-kind redemptions have been rare (limited to emergency circumstances and large institutional investors).³⁹ Thus, the SEC is considering additional tools. One is swing pricing, which (like redemption fees) allows funds to allocate transaction-related costs to redeeming shareholders.⁴⁰ Also, the SEC has asked recently whether funds

35. Investment Company Act Rule 22c-2, 17 C.F.R. § 270.22c-2 (2016). The SEC believed that a fee greater than two percent would harm ordinary shareholders who undertake unexpected redemptions as a result of financial emergencies, thus jeopardizing the redeemability of fund shares. Mutual Fund Redemption Fees, Investment Company Act Release No. 26,782, 70 Fed. Reg. 13,328 (Mar. 11, 2005) at 12. Money market funds have a similar but more powerful tool, liquidity fees, as well as the ability to suspend redemptions during a run on the fund, under Rule 2a-7. 17 C.F.R. § 270.2a-7(c)(2)(i)-(ii).

36. Besides managing liquidity risk, in-kind redemptions can be used for other reasons. For example, in-kind redemptions can have a lower tax impact on the fund than selling securities. If a fund realizes capital gains when it sells securities to pay a redeeming shareholder, the gains are distributed as taxable income to remaining shareholders. But when the fund distributes in kind, there is no tax event for remaining shareholders.

37. In-kind redemptions may be technically unworkable, due to complex valuation and operational issues that would be imposed on both the fund and investors receiving the distribution. See ICA Release No. 31,835, *supra* note 21, at 161 (citing Investment Company Act Release No. 30,551, 78 Fed. Reg. 36,834 (June 5, 2013)).

38. See *id.* See also Peter Fortune, *Mutual Funds, Part I: Reshaping the American Financial System*, NEW ENGLAND ECON. REV., July-Aug. 1997, at 45, 47 ("A fund redeeming in kind does so at the risk of its reputation and future business.").

39. ICA Release No. 31,835, *supra* note 21, at 252. However, an agreement by a fund to make payments to some shareholders in a manner different from payments to other shareholders would arguably create a class of senior securities prohibited by section 18(f)(1) of the Act. Investment Company Act Release No. 6561 (June 14, 1971) at 3 ("Such requirements would involve priorities as to distribution of assets and thus give rise to prohibited senior securities within the meaning of section 18 of the Act."). As a result, the SEC adopted Rule 18f-1 which allows a fund to adopt different in-kind redemption policies for different shareholders. 17 C.F.R. § 270.18f-1.

40. ICA Release No. 31,835, *supra* note 21, at III(F). With swing pricing, funds would adjust NAV during periods of heavy redemptions so redeeming shareholders bear exiting costs. *Id.* at 187-88.

should be allowed to suspend redemptions temporarily.⁴¹ But before adopting additional tools, the SEC should first consider evidence on the use of borrowing to manage liquidity risk.

C. Capital Structure

In addition to borrowing short-term for liquidity purposes, a fund can also borrow long-term for leverage purposes, by issuing senior capital.

As in any business enterprise, capital in a mutual fund can take two distinct forms: (i) *senior capital* (primarily debt and preferred stock) and (ii) *junior capital* (common stock). Debt is senior-most in the capital structure; thus, debtholders have priority over preferred and common stockholders (to the income and assets of a fund). Preferred stockholders have priority over common stockholders.⁴² Therefore, before common stockholders are paid, debtholders are entitled to interest and return of principal, and preferred stockholders are entitled to dividends and liquidation preference on the preferred stock, but neither group is entitled to otherwise share in the gains and losses of the fund (which belong to common stockholders). The term “senior securities” is used to distinguish debt and preferred stock from common stock, since they occupy a senior position with respect to income and assets (i.e., one that is superior to that of common stock).

Mutual fund managers use senior capital to buy additional investments for their portfolios and thereby create leverage for junior capital. In a levered fund, the value of the junior capital rises and falls faster than changes in the market value of the underlying assets.⁴³ This is because the common stock benefits from all gains and is first to absorb all losses. By magnifying

41. Section 22(e) of the Act permits a fund to suspend redemptions for such period as the SEC may permit for the protection of fund shareholders. In response to the Reserve Primary Fund failing to maintain a \$1 stable net asset value during the financial crisis, the SEC adopted a rule under section 22(e) that permits a money market fund to suspend redemptions during liquidation. Money Market Fund Reform, Investment Company Act Release No. 29,132, 75 Fed. Reg. 10,060 (Feb. 23, 2010). In the proposing release on money market funds, it asked whether the rule should be broadened to all mutual funds; however, the issue was not addressed in the adopting release. Investment Company Act Release No. 28,807, 74 Fed. Reg. 32,688 (Jun. 20, 2009).

42. Since they are junior to debt, preferred stockholders receive special voting rights pertaining to the fund’s board. Preferred stockholders have the exclusive right to elect two fund directors, and typically vote with the common stockholders to elect the remaining directors. If the fund does not pay dividends to the preferred stockholders for two years, they have the right to elect the majority of directors, until the dividends are paid. Investment Company Act of 1940 § 18(a)(2)(C), 15 U.S.C. § 80a-18(a)(2)(C) (2012). Debtholders are entitled to elect the majority of directors if the fund becomes highly leveraged. *Id.* § 18(a)(1)(C).

43. In addition, interest expense on debt can be matched against certain types of fund income and gains, thereby reducing tax liabilities (which is beneficial for shareholders).

gains and losses, leverage increases risks for common stockholders. (In contrast, senior securities represent a fixed charge on the assets of the fund.) Such leverage is called “structural” leverage and is a strategic part of a fund’s structure and design.

Suppose a fund has issued \$100 in common stock and \$50 in debt, for a total of \$150 in assets (as in Figure 1: open-end fund). If the fund experiences a 10% return on its total assets (i.e., \$15), this produces a 15% return on its common stock. If the fund instead issued \$100 of common stock but no debt, that same 10% return on its total assets (or \$10) would produce a 10% return on its common stock. Leverage thus magnifies the gains of a fund’s stockholders. But leverage also works in reverse. A 10% loss on the fund’s total assets produces a 15% loss for stockholders in the levered fund versus a 10% loss for stockholders in the unlevered fund.

It should be noted that, in addition to creating long-term systematic leverage via its capital structure, a fund can also create leverage by holding certain levered investments within its portfolio. This is referred to as “portfolio” leverage. Portfolio leverage is used to position the fund’s portfolio based on the manager’s investment decisions.⁴⁴ For instance, portfolio leverage might be used to create additional exposure to bonds of a certain maturity because the manager believes these investments will perform well. Since this kind of leverage is derived from holdings within a fund’s portfolio, it can be managed more quickly than increasing and decreasing debt or preferred stock. Portfolio leverage includes certain derivatives and reverse repurchase agreements. Portfolio leverage is not part of a fund’s capital structure and thus not the main focus of this Article; however, it is explored in Part V.C.

IV. HISTORY OF CAPITAL STRUCTURE REGULATION

The Investment Company Act of 1940 responded to capital structure practices of mutual funds in the 1920s and 1930s.⁴⁵ Mutual funds before 1940 were often organized with complex capital structures. Funds typi-

44. Note that some funds persistently employ portfolio leverage, making this kind of leverage appear as much a part of the fund’s design as structural leverage.

45. In 1939, the SEC released an exhaustive study of the investment company industry that laid the foundation for the Investment Company Act. U.S. SEC. & EXCH. COMM’N, INVESTMENT TRUSTS AND INVESTMENT COMPANIES, H.R. DOC. NO. 75-707, pt. 1 (1938); U.S. SEC. & EXCH. COMM’N, INVESTMENT TRUSTS AND INVESTMENT COMPANIES, H.R. DOC. NO. 76-70, pt. 2 (1939); U.S. SEC. & EXCH. COMM’N, INVESTMENT TRUSTS AND INVESTMENT COMPANIES, H.R. DOC. NO. 76-279, pt. 3 (1939) [hereinafter SEC Study]. For a discussion of leveraged capital structures of investment companies, see generally SEC Study, *supra*, pt. 3, ch. V, “Problems in Connection with Capital Structure.”

cally issued multiple classes of securities, with common stock issued alongside debt and preferred stock (even common stock was sometimes issued with one class having priority over another).⁴⁶ Although there were some funds with a single, uniform class of securities, multiple-security funds managed the majority of the industry's assets (97% in 1927 and 76% in 1936).⁴⁷ Many public investors did not understand how their securities fit within a fund's overall capital structure or how leverage affected their investments.⁴⁸

These complex capital structures played a large part in motivating Congress to pass the Investment Company Act. Most debate over the regulation of mutual funds "occurred behind closed doors and produced no traces in the historical record."⁴⁹ However, before considering legislation, Congress commissioned the SEC to investigate the fund industry and report its findings and recommendations to Congress.⁵⁰ Pursuant to this direction, the SEC conducted an exhaustive study of the industry, devoting almost 400 pages to problems with capital structure.⁵¹ Based upon its findings, the SEC sponsored a bill that served as the foundation for the Act.⁵² Public hearings were held on the bill by a subcommittee of the U.S. Senate Committee on Banking and Currency.⁵³ The SEC Report and Senate hearings reveal that Congress was concerned about protecting investors against potential adverse effects of senior securities. Below, I summarize these concerns and organize them into three categories.

46. SEC Study, *supra* note 45, pt. 3, at 1565. The Investment Company Act now defines preferred stock as stock of a class having priority over any other class of stock as to distribution of assets or payment of dividends. Investment Company Act of 1940 § 18(g).

47. SEC Study, *supra* note 45, pt. 3, at 1567. It is estimated that senior securities accounted for 56% of total assets of all multiple-security funds in 1929. SEC Study, *supra* note 45, pt. 2, at 140, Table 33. The statistics refer to closed-end funds only. There were far fewer assets in open-end funds at the time.

48. SEC Study, *supra* note 45, pt. 3, at 1674–75.

49. Morley, *supra* note 4, at 357.

50. The potential need to address problems in the investment management industry was recognized by Congress as early as 1935, the year it enacted the Public Utility Holding Company Act. Section 30 of that Act directed the SEC to study the industry and report its results and recommendations to Congress. The SEC's report was repeatedly cited and quoted throughout the hearings on the Investment Company Act. Section 1 of the Investment Company Act states that the statute is based "[u]pon the basis of facts disclosed by the record and reports of the Securities and Exchange Commission." Investment Company Act of 1940 § 1(b).

51. The SEC's study discusses the leveraged capital structures of mutual funds in Chapter V of part 3. SEC Study, *supra* note 45, pt. 3, at 1563–940 (Ch. V, "Problems in Connection with Capital Structure").

52. See generally Senate Hearings, *supra* note 24.

53. *Id.*

Funds operating without adequate assets and reserves. In a typical mutual fund at the time, fund sponsors (and others involved in the securities business) often held most or all of the common stock of a fund and senior securities (debt and/or preferred stock) were largely sold to the public. Senior securities were marketed as a source of steady income, without the risks inherent in common stock.⁵⁴ Investors (many of whom were individuals) bought the securities based on the belief that they were safe investments.⁵⁵ However, there was often little equity in the fund's capital structure to cushion senior securities during downturns.

As a general matter, senior securities (and the regular payments of interest and dividends on them) are protected by the investments of common stockholders (which function as buffers or cushions). Since senior securities are entitled to payment before equity securities in a liquidation, a fund can sustain a loss in assets equivalent to the cushion without impairing the liquidation value of the senior securities.⁵⁶ Prior to 1940, sponsors and promoters of funds usually invested relatively small amounts in a fund's common stock; therefore, there was only a thin equity cushion to protect senior securities held by the public.⁵⁷

For instance, the United States and Foreign Securities Corporation had a capital structure typical for funds at the time: it issued (i) \$25 million of senior securities to the public and (ii) \$5 million of junior securities to its sponsors.⁵⁸ Due to the small equity cushion, a 16-2/3% drop in the securities market was sufficient to wipe out that cushion and impair the senior securities.⁵⁹ While the term "senior security" gave the impression that they were superior in the capital structure, in practice they were not much safer than the common stock, because of the thin equity cushion.

Potential abuse of purchasers of senior securities. During the 1920s and 1930s, the portfolio assets of mutual funds consisted mainly of investments in equity securities. But equity investments do not provide stable asset values or steady income streams necessary to support a fund's senior

54. SEC Study, *supra* note 45, pt. 3, at 1583, 1594; Senate Hearings, *supra* note 24, at 272 (providing statements of David Schenker, Chief Counsel, SEC and L. M. C. Smith, Associate Counsel, SEC).

55. SEC Study, *supra* note 45, pt. 3, at 1583, 1594.

56. *Id.* at 1665 (explaining that "[t]his margin of insulation from loss is the chief virtue claimed for the senior securities").

57. *Id.* at 1594.

58. *Id.* at 1598-603.

59. *Id.* at 1667. For an analysis of the asset coverage in the industry more generally, *see id.* at 1665-68.

obligations.⁶⁰ Why did funds invest in a manner that would not support payment of senior obligations?

Sponsors of such funds typically reserved control for themselves and operated the fund in their own interests. Sponsors lodged voting rights in the fund's common stock, while senior securities (issued in much larger amounts) had no voting rights.⁶¹ Therefore, a small investment in a fund's common stock gave sponsors control over a greater amount of capital. In the example above, organizers, with a \$5 million investment, could control a fund equal to six times that amount. Thus, control of the fund (and consequently the safety of the senior securities) was placed in the hands of the sponsor/equityholder.⁶² Even when fund assets declined and ultimately were insufficient to cover the senior securities, the sponsor retained control of the fund.⁶³

Although they contributed only a small proportion of the fund's capital, the equityholders (as residual claimants) were entitled to all of the capital gains in excess of the fixed obligations on the senior securities (and operating expenses). Hence, sponsors had much to gain from excessive risk taking and little to lose due to their comparatively small investment. These incentives, together with control exercised by sponsors, led funds to pursue aggressive investment policies (to the detriment of senior securityholders).⁶⁴

The United States and Foreign Securities Corporation illustrates the payoffs to this capital structure. The public invested \$25 million in senior

60. Senate Hearings, *supra* note 24, at 265, 1027 ("The data show very clearly that the leverage investment companies almost invariably fail to earn a regular income at a rate sufficient to justify the charges on the senior securities."); SEC Study, *supra* note 45, pt. 3, at 1588-90; *id.* at 1583, n.53 (noting that capital structures were driven by sales expediencies not economic soundness).

61. *Id.* at 1597.

62. See generally Senate Hearings, *supra* note 24; SEC Study, *supra* note 45, pt. 3, at 1582, 1594-98; Senate Hearings, *supra* note 24, at 272 ("The only fun in getting control . . . is where for a relatively small amount you can get control of the senior security holders' money, and in every case where there was a selling down the river there was a case of the common stock holder as selling the senior securities' money to somebody else.").

63. Some indentures had covenants that required maintenance of a minimum asset coverage, but control nonetheless remained with the stockholders. During the debate over the Act, multiple-security funds were frequently likened to margin accounts but without the same protections afforded brokers. See, e.g., Senate Hearings, *supra* note 24, at 870, 1041; SEC Study, *supra* note 45, pt. 3, at 1568, 1593-94, 1598.

64. *Id.* at 1668-74. See also Michael Simkovic & Benjamin S. Kamnietzky, *Leveraged Buyout Bankruptcies, the Problem of Hindsight Bias, and the Credit Default Swap Solution*, 2011 COLUMBIA BUS. L. REV. 118, 214-18 (2011) (discussing the opposing interests of debt and equity in a firm).

securities and the sponsors invested \$5 million in junior securities.⁶⁵ Appreciation in assets of the fund would benefit the sponsors; however, if the assets depreciated, only the first \$5 million in losses would be assumed by the sponsors. Further depreciation would be assumed by the public (which had five times as much capital invested as the sponsors).⁶⁶

In addition to the advantages inherent in this capital structure, this arrangement also presented sponsors with opportunities to overreach, divert funds, and adopt specific measures to favor one class of securities over another.⁶⁷ While common law remedies were available to the investing public, the SEC felt these remedies were ineffective due to widely dispersed security ownership, secrecy, and other obstacles, and called for federal regulation.⁶⁸ Many of these problems and abuses were not unique to investment companies, but it was believed that “the liquidity of the assets . . . make the conflict of interest between the junior and senior securities of investment companies a far different matter than the conflict between such securities in other corporations.”⁶⁹

Volatility of equity securities. Another reason Congress sought to limit leverage was to protect public stockholders in a fund. Leverage augments risk for stockholders, by increasing the volatility of their returns.

During certain periods, sponsors marketed equity securities (not just senior securities) to the public. Specifically, when the safety of an investment had strong sales appeal, sponsors marketed just the senior securities of a fund to the public (retaining all or most of the equity securities for themselves); however, when leverage had more sales appeal, they often marketed the equity securities.⁷⁰ The sales appeal of equity securities was largely based upon leverage (e.g., equity securities often appealed to speculative investors).⁷¹ Of course, equity investors benefitted from leverage

65. SEC Study, *supra* note 45, at 1599.

66. *Id.* at 1672.

67. *See id.* at 1421, 1565–66, 1775.

68. Richard B. Tolins, *Investment Company Act of 1940*, 26 CORNELL L. Q. 77, 91–92 (1940).

69. Senate Hearings, *supra* note 24, at 1032. It was observed that other financial firms (e.g., banks and insurance companies) were highly regulated, while mutual funds were not, although the analogy is imperfect because investors in mutual funds take extra risk in order to achieve higher return. *Id.* at 778.

70. SEC Study, *supra* note 45, at 1582, 1594. Promoters would issue “almost any type or class of security which might appeal to the prevailing public whim. This was particularly true of the junior securities . . . because of the favorable action of leverage in times of rising securities prices.” *Id.* at 12.

71. *Id.* at 1582.

during the stock market boom of the 1920s, but when the value of investments crashed in 1929, leverage accelerated their losses.⁷² In the example of the United States and Foreign Securities Corporation, the levered common stock had a cumulative return of 336% over the four year period from 1924–1928, versus just 23% for the senior securities over that same period.⁷³ In the crash of 1929, the senior securities suffered losses, but leverage accelerated losses of the common stock, which by that time was held by the public (the sponsors had realized their gains by selling the common stock in 1928).⁷⁴

Hence, it was not only the senior security holder that Congress sought to protect, but also the public common stockholder.⁷⁵ Regulation of senior securities was also to protect against excessive leverage of junior securities. According to the Senate hearings, “[t]he end sought by section 18 [of the Act] in preventing the further issuance of senior securities is at least as much the prevention of the marketing of additional leverage common stocks as the senior securities”⁷⁶

Goals of the Investment Company Act. Congress enacted the Investment Company Act of 1940 in large part to protect investors against these potentially adverse effects of senior securities. This is evident in section 1 of the Act, which sets forth Congress’ findings and declaration of policy. Much of section 1 echoes the above three categories of concerns found in the SEC study and Senate hearings. Section 1(b) of the Act states, in part, that investors are adversely affected when funds: (i) operate without adequate assets and reserves;⁷⁷ (ii) fail to protect the preferences and privileges of the holders of their outstanding securities,⁷⁸ and (iii) increase unduly the speculative character of their junior securities via excessive borrowing and issuance of excessive amounts of senior securities.⁷⁹ Thus, the objective of Congress was to address these concerns with the Act (particularly with section 18). Note that the aim was to protect against excessive leverage, not to eliminate leverage altogether.

72. *Id.* at 877.

73. *Id.* at 1601, n.106.

74. See Senate Hearings, *supra* note 24, at 1027.

75. *Id.* at 1027–31 (noting that the dangers to common stock are at least as important as the dangers to senior securities with respect to ends sought by section 18).

76. *Id.* at 1028.

77. Investment Company Act of 1940 § 1(b)(8), 15 U.S.C. § 80a-1(b)(8) (2012).

78. *Id.* § 1(b)(1)–(6). See generally Senate Hearings, *supra* note 24, at 265–78. See also SEC Study, *supra* note 45, at 1583.

79. Investment Company Act of 1940 § 1(b)(7).

After passage of the Act, concerns about mutual fund leverage and capital structure disappeared from policy studies and academic research. In fact, the issue was not discussed at all in a 600-page Wharton study on the mutual fund industry, which was prepared for the SEC in 1962 (and provided the first major description and analysis of the fund industry since the SEC study prepared in connection with the Investment Company Act).⁸⁰ Thus, the issue, so important to the collapse of the industry in the 1930s and the focus of Congressional attention in 1940, had disappeared entirely by 1962.⁸¹

V. REGULATION OF MUTUAL FUND CAPITAL STRUCTURE

The Investment Company Act imposes various requirements on the capital structures of mutual funds to ensure they are simple and transparent. Within that simple and transparent capital structure, the Act also imposes limits on the amount of senior capital. Specifically, the Act restricts “senior securities” to reduce the possibility that a fund’s liabilities will exceed its assets.

A senior security is any security (or obligation) that takes priority over a fund’s common shares, such as a loan, a bond, or preferred stock. The Investment Company Act defines a senior security as “any bond, debenture, note, or similar obligation or instrument constituting a security and evidencing indebtedness”⁸² In addition to debt, the definition also includes preferred stock, or more generally, “any stock of a class having priority over any other class as to the distribution of assets or payment of dividends.”⁸³ The SEC historically has interpreted the definition of “senior security” broadly, taking the view that certain practices may create senior securities (e.g., selling securities short, purchasing securities on margin, and investing in many types of derivative instruments).⁸⁴

In section 18, the Investment Company Act directly addresses capital structure and the issuance of senior securities. Notably, section 18 does not prohibit mutual funds from issuing senior securities. To the contrary, they are permitted to issue senior securities, subject to limitations. Here,

80. See WHARTON SCHOOL OF THE UNIVERSITY OF PENNSYLVANIA, A STUDY OF MUTUAL FUNDS, H.R. REP. NO. 87-2274 (1962).

81. Nor is the issue raised by the SEC in its Half-Century Report in 1992. See generally U.S. SEC. & EXCH. COMM’N, PROTECTING INVESTORS: A HALF CENTURY OF INVESTMENT COMPANY REGULATION (1992) [hereinafter SEC Half-Century Report].

82. Investment Company Act of 1940 § 18(g). The definition of “senior security” excludes certain temporary borrowings.

83. *Id.* § 18(g).

84. See *infra* Part V.C.

we explore the various ways that mutual funds are permitted to organize their capital structures (under section 18 of the Act).⁸⁵ Section 18 distinguishes between senior capital (e.g., long-term debt and preferred stock) and short-term (or temporary) debt, and places separate restrictions on each. The reasons for using long-term debt (i.e., enhancing returns) and short-term, temporary debt (i.e., redemptions and liquidity management) are distinct and have different drivers. This Part V explores each set of limitations.

A. Senior Capital

Section 18 regulates the (i) kind of senior capital that mutual funds can issue, (ii) source of senior capital, and (iii) amount of senior capital.⁸⁶ There are subtle (but important) differences in the application of section 18 to open-end and closed-end mutual funds that result in closed-end funds having more freedom in organizing their capital structures.

First, section 18 regulates the *source* of senior capital. It does this by prohibiting open-end mutual funds from issuing senior capital to anyone other than banks.⁸⁷ Thus, an open-end fund that seeks to borrow money must do so from a bank (not from any other institution or the public).⁸⁸ Closed-end funds, however, are not restricted to banks; they may issue senior securities to a bank, any other party in a private transaction, or the

85. Part VII will examine, empirically, the extent to which mutual funds actually do issue senior capital (in its various forms).

86. Morley, *supra* note 4, at 348–49. For analytical purposes, Professor Morley divides section 18’s approach to capital structure regulation into these three dimensions, although section 18 does not explicitly do so itself.

87. Investment Company Act of 1940 § 18(f)(1). Section 18(f)(1) prohibits open-end funds from issuing senior securities. Of course, when a fund borrows from a bank, “by definition, lenders receive senior securities.” TAMAR FRANKEL & ARTHUR B. LABY, *THE REGULATION OF MONEY MANAGERS* 21–68 (3d ed. 2016). Section 18(f)(1), therefore, carves bank loans out of its prohibition on senior securities, making them a senior security that open-end funds may issue. Some observers interpret 18(f)(1) as prohibiting all senior securities (without exception) and viewing bank loans as something other than a senior security. While the end result may be the same, that interpretation contradicts the broad definition of “senior security” in the Act (which encompasses any “evidence of indebtedness”) and the expansive interpretation of the term by the SEC, which encompasses even arrangements that do not clearly represent borrowings (*see, e.g., id.* at n.337 and text accompanying n.337 to n.339).

88. Restricting open-end funds to banks helped to ensure that the lender would be independent of the fund and its sponsors, since at the time banking institutions were barred from engaging in most aspects of the mutual fund business by the 1933 Glass-Steagall Act. The repeal of Glass-Steagall raises the issue of whether open-end funds should now be permitted to borrow from non-bank financial institutions, broadening their source of debt capital.

public.⁸⁹ Thus, section 18 gives closed-end funds more freedom with respect to the source of their senior capital.

Second, the Investment Company Act regulates the *form* of senior capital. Open-end funds can only borrow.⁹⁰ They are not permitted to issue bonds (or any other form of debt) or issue any preferred stock. Besides borrowing from a bank, the only kind of security that an open-end fund can issue is common stock. Closed-end funds are permitted to borrow and to issue other forms of senior capital (e.g., bonds and preferred stock). In order to keep their capital structures from becoming complex, closed-end funds are restricted to a single class of debt and a single class of preferred stock.⁹¹

While both closed-end and open-end funds can issue common stock, closed-end funds are restricted to a single class of common stock, in order to keep their capital structures from becoming complex. Open-end funds can issue multiple classes of common stock; however, those classes can vary only with respect to fees.⁹²

In short, both closed-end and open-end funds may issue common stock and senior securities; however, (i) with open-end funds, senior securities are limited to bank loans and (ii) with closed-end funds, senior securities may consist of loans or other forms of debt, and/or preferred stock. This difference in senior capital is due, in part, to the fact that open-end funds issue fully redeemable common stock and nothing prevents the holders of common stock from redeeming the equity that normally supports or “cushions” the payment obligations on the senior securities.⁹³

89. However, any debt issued to the public by a closed-end fund is entitled to a certain minimum asset coverage before the fund can pay any dividends or repurchase its stock (as described later in this Part V). In contrast, debt issued in a private transaction by a closed-end fund is not required by the Act to contain these protections. Investment Company Act of 1940 § 18(g). Presumably, private parties could negotiate such protections for themselves.

90. *Id.* § 18(f)(1).

91. *Id.* § 18(c). While closed-end funds may not issue multiple *classes* of debt or multiple *classes* of preferred stock, they may issue different *series* of each. No series, however, may have priority over any other series. *Id.* See *infra* note 92.

92. Investment Company Act of 1940 § 18(f)(2); 17 C.F.R. § 270.18f-3 (2016). In addition to multiple *classes*, open-end funds can also issue multiple *series* of securities. Each series (of a fund) must have assets specifically allocated to it. Section 18(f)(2) then excludes it from the definition of senior security. Each series, for all practical purposes, is a separate mutual fund. 17 C.F.R. § 270.18f-3 governs the operational aspects of a series that result in it functioning in most respects as a separate mutual fund. 17 C.F.R. § 270.18f-3; Fair and Equitable Treatment of Series Type Investment Company Shareholders, 37 Fed. Reg. 4219 (Feb. 29, 1972) (“Each series of stock represents a different group of stockholders with an interest in a segregated portfolio of securities.”).

93. See SEC Half-Century Report, *supra* note 81, at 262. For another perspective, however,

Third, the Investment Company Act limits the *amount* of senior capital. In an open-end fund, senior capital (i.e., bank loans) cannot exceed one-third of the fund's assets. Stated equivalently, the assets of an open-end fund must always be at least three times its bank loans. According to section 18(f), an open-end fund must maintain 300% "asset coverage" for its bank borrowings.⁹⁴ Asset coverage is defined as the following ratio:

$$\frac{A - L + B}{B}$$

where *A* is total assets, *L* is total liabilities (including bank borrowing), and *B* is aggregate bank borrowings.⁹⁵

The asset coverage requirement for open-end funds is a maintenance requirement. Thus, open-end funds must maintain a 300% asset coverage ratio at all times. If the ratio should fall below 300%, an open-end fund must pay down its borrowings (within three days) so that the 300% ratio is satisfied.⁹⁶

For example, the open-end fund in Figure 1 has \$150 in assets and \$50 in bank loans, for an asset coverage ratio of $\frac{\$150 - \$50 + \$50}{\$50} = \frac{3}{1}$, or 300%.⁹⁷ Should the assets subsequently decline in value, the asset coverage ratio would fall below 300% and the fund would be required to repay the bank loans within three days in order to restore the ratio to 300% (or greater). Therefore, the asset coverage requirement ensures that the borrowings of an open-end fund are always backed (or covered) by assets valued at least three times greater.

In addition to the Investment Company Act, a levered open-end fund might also have to comply with margin regulations issued by the Federal Reserve Board (Regulations T, U, and X).⁹⁸ The margin regulations impose an asset coverage requirement of 200% or greater (i.e., at least \$2 of net assets for each \$1 of loans) on "purpose credits," which are loans used for purchasing or carrying margin stock (i.e., publicly traded stock). Any loan to an open-end equity mutual fund is presumed to be a purpose credit.⁹⁹

see *infra* note 123.

94. Investment Company Act of 1940 § 18(f).

95. *Id.* § 18(h). The asset coverage ratio can be expressed equivalently as: $\frac{TNA+B}{B}$ where TNA is the fund's total net assets, or equity. See Morley, *supra* note 4, at 349, n.17.

96. Investment Company Act of 1940 § 18(f)(1).

97. The example assumes the fund has no liabilities other than bank loans.

98. 12 C.F.R. §§ 220, 221, 224 (2016). Regulation X applies to borrowers while Regulations T and U apply to lenders that are broker-dealers and other financial institutions, respectively.

99. See 12 C.F.R. § 221.109.

But compliance with the Investment Company Act should produce compliance with the margin regulations (as the three-to-one asset coverage requirement under the Act is stricter than the two-to-one requirement under the margin regulations).¹⁰⁰

Closed-end funds have more flexibility with respect to the amount of their senior capital (just as they are given more flexibility as to its source and form). Under the Investment Company Act, a closed-end fund may issue debt as long as there is at least 300% asset coverage for its debt securities immediately after issuance.¹⁰¹ Similarly, a closed-end fund may issue preferred stock so long as there is at least 200% asset coverage for preferred stock (and other senior securities) immediately after issuance.¹⁰²

For closed-end funds, the asset coverage ratio applicable to debt is similar to that of open-end funds, except that bank loans are broadened to include other types of senior securities:

$$\frac{A - L + D + P}{D} \quad (1)$$

where A is total assets, L is total liabilities (including debt and preferred stock), D is aggregate debt, and P is the aggregate liquidation preference of preferred stock.¹⁰³ The asset coverage ratio applicable to preferred stock is similar:

$$\frac{A - L + D + P}{D + P} \quad (2)$$

except both senior securities appear in the denominator.¹⁰⁴

For closed-end funds, asset coverage is an incurrence requirement (not a maintenance requirement). While open-end funds must maintain 300% asset coverage at all times, closed-end funds must meet their asset coverage requirements only when they undertake certain specified actions (e.g.,

100. Although similar, the two requirements are not entirely identical. For instance, the Investment Company Act excludes all temporary borrowings from the coverage requirement, but the margin regulations exclude only those temporary borrowings incurred for settlement and clearing purposes. 12 C.F.R. § 221.6.

101. Investment Company Act of 1940 § 18(a)(1)(A).

102. *Id.* § 18(a)(1)(B).

103. *Id.* § 18(h). The asset coverage ratio can be expressed equivalently as: $\frac{TNA+D+P}{D}$ where TNA is the fund's total net assets, or equity.

104. *Id.* § 18(h). The asset coverage ratio can be expressed equivalently as: $\frac{TNA+D+P}{D+P}$ where TNA is the fund's total net assets, or equity.

issuing debt or preferred stock). The requirements are applied at the time that the action is undertaken, and compliance generally does not have to be maintained thereafter. Once senior securities are issued, a closed-end fund would have to satisfy the asset coverage test only if it wants to issue senior securities again, pay dividends (or other distributions), or purchase its stock.¹⁰⁵ In such an event, the prescribed asset coverage requirement must be satisfied immediately after the transaction. The various actions and coverage ratios that would apply are summarized in the table below:

105. Despite being an incurrence requirement, there are reasons why a closed-end fund would want to pay attention to its asset coverage ratios. Some closed-end funds (e.g., those that seek to make monthly or quarterly distributions to their shareholders) have to be in compliance each time those distributions are made, making the coverage tests seem more like maintenance requirements than incurrence requirements. In addition, if a closed-end fund falls sufficiently below the asset coverage ratio (below 100%), voting control over the fund is turned over to the debt holders and an event of default is deemed to have occurred. *Id.* § 18(a)(1)(C). A fund could also jeopardize its pass-through tax status under the Internal Revenue Code if it fails to distribute substantially all of its taxable income annually.

Asset Coverage Requirements for Closed-End Funds

Action	Asset Coverage Ratio	Equation	ICA Section
Issue debt	300% on debt	1	18(a)(1)(A)
Issue preferred stock	200% on senior securities	2	18(a)(2)(A)
Declare a dividend on preferred stock ¹⁰⁷	200% on debt ¹⁰⁶	1	18(a)(1)(B)
Purchase its preferred stock ¹⁰⁸	300% on debt ¹⁰⁶	1	18(a)(1)(B)
Declare a dividend on common stock ¹⁰⁷ or purchase its common stock ¹⁰⁸	300% on debt ¹⁰⁶ and 200% on senior securities	1 and 2	18(a)(1)(B) and 18(a)(2)(B)

For example, suppose the closed-end fund in Figure 1 initially had outstanding \$100 in common stock and no senior securities. That fund could

106. The asset coverage requirements for dividends and share purchases apply only in the case of debt issued publicly, not debt issued in a *private* transaction with a bank or other person. *Id.* § 18(g). For example, a fund may declare a dividend despite being in violation of the asset coverage requirement when its debt has been issued privately, not publicly. However, while the Act does not require it, the parties could presumably negotiate similar protections in a private transaction.

107. There is an exception for dividends payable in *stock* of the fund. Payment of stock dividends is not subject to the asset coverage requirement. *Id.* § 18(a)(1)(B). Thus, a fund may declare a stock dividend even when the asset coverage ratio is below the threshold required for cash dividends.

108. The purchase of shares by a closed-end fund is a particularly important area of regulation. A closed-end fund's repurchase of its own shares is regulated much like a repurchase made by an operating company, since (i) both issue shares that trade in the secondary market at prices that can differ from the net asset value of the share and (ii) abuses might arise when an issuer repurchases its shares in such cases. Offers to repurchase shares generally must comply with the requirements of the tender offer rules under the Securities Exchange Act of 1934 except for offers made in reliance on rules issued by the SEC under section 23(c) of the Investment Company Act. *See* Wendell M. Faria, *Closed-End Investment*, in PRACTICING LAW INSTITUTE, MUTUAL FUNDS AND EXCHANGE TRADED FUNDS REGULATION § 33, 6–7 (Clifford Kirsch ed., 2011) (providing a further description of the rules issued by the SEC).

issue debt in the amount of \$50. With total assets after the debt issuance of \$150, the asset coverage ratio for the debt would be 300%, in compliance with section 18(a)(1)(A). The fund could next issue preferred stock with a liquidation preference of \$50. With total assets after the issuance of \$200, the asset coverage ratio for the senior securities would be 200%, in compliance with section 18(a)(2)(A).¹⁰⁹ A subsequent decline in asset values could cause coverage ratios to fall below the thresholds. However, a closed-end fund is not required to restore either ratio. It would need to achieve compliance only if it wished to take one of the actions in the table above (i.e., issuing additional senior securities, paying a dividend, or purchasing its stock). For instance, in order to declare a cash dividend on its common stock, the fund would have to have \$3 in assets for each \$1 in outstanding debt, and \$2 in assets for each \$1 in outstanding senior securities (i.e., debt and preferred stock).

The table below summarizes differences between open-end and closed-end funds, in terms of source, form and amount of senior capital:

Senior Capital: Open-End Versus Closed-End Funds

Mutual Fund	Source	Form	Amount	Compliance
Open-end	Banks only	Loans only	300% asset coverage on bank loans	At all times
Closed-end	Unrestricted	Unrestricted, except only one class of debt (whether loans, bonds, or other debt) and one class of preferred stock	300% asset coverage on debt, and/or 200% asset coverage on senior securities	For certain actions

In establishing the asset coverage requirements, Congress borrowed from covenants found in bond indentures (of closed-end funds) at the time. Although no laws mandated it, indentures contained a host of protective covenants.¹¹⁰ In its report to Congress, the SEC examined certain indentures and found that each required their associated funds to maintain, at

109. After the preferred stock issuance, the coverage ratio for debt would rise to 400%.

110. SEC Study, *supra* note 45, pt. 3, at 1571.

all times, a specified minimum asset coverage for the bonds.¹¹¹ Most also imposed an incurrence test (requiring a separate asset coverage ratio be satisfied) for the fund to issue additional debt.¹¹² Some forbid the issuance of securities with a superior security interest in the fund's assets.¹¹³ The indentures also provided for acceleration of principal upon an event of default for violation of one of these covenants and for other violations (e.g., non-payment of interest when due).¹¹⁴

In most cases, preferred shareholders were also extended protective provisions resembling those in the bond indentures and those later incorporated into the Investment Company Act. It was common (i) for funds to be blocked from paying dividends on common stock (if asset coverage ratios were not satisfied)¹¹⁵ and (ii) to provide for a transfer of voting rights upon non-payment of dividends on the preferred shares.¹¹⁶ Funds commonly had to obtain the consent of preferred shareholders in order to issue additional bonds or preferred stock.¹¹⁷

Despite the many protections being imposed on funds, the SEC felt the public was still exposed to potential abuses and thus would need federal regulation. Specifically, the SEC expressed concern about the public's ability to understand what was contained in the indentures.¹¹⁸ There was also concern about ambiguity in the indentures and the enforceability of certain provisions.¹¹⁹ Thus, the Investment Company Act was viewed as en-

111. The minimum coverage ratios ranged from 110% to 250%. *Id.* Although these ratios appear more generous than the 300% coverage ratio in the Investment Company Act, it is difficult to reach that conclusion, as the ratios were computed differently. The SEC's study describes the coverage ratios in the indentures as the ratio of "assets over total liabilities" whereas the Act defines it as the ratio of assets minus liabilities (other than the senior securities) to the senior securities. Hence, it is possible that the ratios under the bond indentures were as restrictive as under the Act or more so. There is, however, Senate testimony to the effect that the indenture covenants, as defined, were "too narrow" and "deficient by reason of ambiguity or unenforceability." Senate Hearings, *supra* note 24, at 1040.

112. The SEC Study describes these ratios as the ratio of "assets to principal amount of bonds which are to be outstanding after any subsequent issues." They required ratios ranged from 120% to 200%. SEC Study, *supra* note 45, pt. 3, at 1572.

113. *Id.*

114. *Id.*

115. *Id.* at 1574; Senate Hearings, *supra* note 24, at 1040 (concluding that "[s]uch voluntary provisions are, of course, akin to the provisions of . . . the proposed act").

116. SEC Study, *supra* note 45, pt. 3, at 1574.

117. *Id.*

118. *Id.* at 1674 (noting that indentures were between "40 to 125 pages in length" and the protective provisions were "set forth in involved language").

119. Senate Hearings, *supra* note 24, at 1040 (concluding that indenture covenants were "too narrow" and "deficient by reason of ambiguity or unenforceability").

hancing investor protection by providing uniformity and a more enforceable floor of protection (leaving parties free to negotiate stricter protections).

Notably, Congress did not opt to prohibit mutual funds from leveraging themselves. Although the original version of the bill prohibited all forms of borrowing by open- and closed-end funds, the Investment Company Act instead largely reflects the approach taken in the existing indentures, with funds allowed to engage in leverage within the well-defined limits set forth in the Act.

Why did the Investment Company Act afford closed-end funds greater capital structure leniency than it afforded open-end funds? Given large losses from excessive leverage and other scandals associated with closed-end funds before 1940, one might have expected the Investment Company Act to be stricter on closed-end funds (or equally strict on both types of funds).¹²⁰ However, this different treatment is likely due, at least in part, to the fact that open-end funds issue redeemable common stock. In an open-end fund, “common stockholders can come in at any time, redeem their shares, and get their money,” putting holders of senior securities in more precarious positions than in closed-end funds.¹²¹ Redeemability thus makes it desirable to have a simple capital structure. Unlike open-end funds, closed-end funds do not issue redeemable securities, hence the Act permits them greater use of leverage.¹²²

However, the stricter treatment of open-end funds, instead, may have been an attempt by the industry to drain assets away from closed-end funds.¹²³ That is, section 18 may have been an attempt to lock-in a competitive advantage in the marketing of open-end funds, namely the simplicity of their capital structures. Capital structure simplicity was often emphasized by open-end funds in their sales pitches, likely a reaction to the complex capital structures of closed-end funds at the time.¹²⁴ More

120. At the time, the vast majority of funds were organized in closed-end form. Although the open-end form was fairly new, the SEC Study did document some abuses in their operations as well. See generally SEC Study, *supra* note 45, pt. 3, at 867.

121. *Investment Trusts and Investment Companies: Hearing on H.R. 10065 Before a Subcomm. of the H. Comm. on Interstate and Foreign Com.*, 76th Cong. 121 (1940) (statement of David Schenker) [hereinafter House Hearings]. It is “unsound to have outstanding an issue of bonds or preferred stock, where the common stock was subject to redemption at the will of the stockholder, for the equity could thus be taken away completely from behind the senior security.” Alfred Jaretzki, *The Investment Company Act of 1940*, 26 WASH. U. L.Q. 303, 335 (1941).

122. SEC HALF-CENTURY REPORT, *supra* note 81, at 268.

123. John Morley, *Collective Branding and the Origins of Investment Fund Regulation*, 6 VA. L. & BUS. REV. 341 (2012).

124. *Id.* at 387.

broadly, the heavier restrictions on open-end leverage may have represented an attempt to restore public confidence in the industry as a whole, after closed-end funds tarnished the industry's reputation in the 1920s and 1930s.¹²⁵ Supporting this view is the fact that there was almost no disagreement between the industry and the SEC on the need for capital structure regulation.¹²⁶

In addition to supporting the Act's adoption, the industry may have attempted to rehabilitate its reputation in another way as well: by shunning the use of leverage. Early studies show that the industry avoided permissible leverage for decades following adoption of the Act, foregoing the borrowing capacity made available to them under the statute. For instance, until the late 1980s, no closed-end fund had any leverage.¹²⁷ The industry's distaste for leverage during this time may have been misinterpreted by observers as a legal outcome. Decades of inactivity may have given rise to the assumption that mutual funds cannot borrow under the Act. But as we see from the statute and its history, this assumption is false. Later in this Article, we find that the industry has re-discovered leverage since the 1990s (in both closed-end and open-end funds), making it time to question prevailing assumptions regarding the regulation of leverage.

B. Borrowing for Temporary Purposes

Mutual funds (both open-end and closed-end) are permitted to incur debt for temporary purposes. Temporary debt is carved out of the definition of "senior security" and is not subject to the above limitations on senior capital.¹²⁸ The exception for temporary debt is intended to provide mutual funds with a tool to manage liquidity risk (i.e., funds can use temporary borrowings in order to meet shareholder redemption requests and other unexpected cash shortfalls without having to immediately sell portfolio securities).¹²⁹

What is temporary debt? Under the Investment Company Act, temporary debt is a loan that is for "temporary purposes only" and, therefore, is

125. *Id.*; Senate Hearings, *supra* note 24, at 1040 (summarizing the Senate hearing by stating, "The 'introduction of leverage' by long-term borrowings was one of the practices of investment companies most severely criticized by investment-company sponsors and managers themselves at the public hearings.").

126. *See* Senate Hearings, *supra* note 24, at 1056.

127. Dimson & Minio-Kozerski, *supra* note 10, at n.9 (finding that, until 1988, no closed-end fund had leverage). *See also* SEC Half-Century Report, *supra* note 81, at n.53 (finding that, in 1992, most closed-end funds had not issued significant amounts of senior securities).

128. Investment Company Act of 1940 § 18(g), 15 U.S.C. §§ 80a-1 to 80a-64 (2012).

129. *See supra* Part III.B.

considered not for purposes of leverage.¹³⁰ A loan is presumed for temporary purposes if it is repaid within sixty days (and not extended or renewed).¹³¹ A loan repaid in more than sixty days does not benefit from the temporary-purpose presumption and is instead treated as a senior debt security.¹³² However, such a loan might still qualify as temporary debt, as the Act's characterization can be rebutted by evidence.¹³³

While temporary debt is not subject to limitations applicable to senior securities, it is subject to a separate limitation. The amount of temporary debt that a fund may have outstanding is capped; such debt cannot exceed five percent of the fund's total assets.¹³⁴

While the cap on temporary debt is lower than that on senior securities in most instances, this is not always the case. The cap on temporary debt is computed against the fund's total assets, whereas the cap on senior debt securities is computed against the fund's net assets (total assets net of all liabilities other than senior securities). A fund with substantial liabilities (other than senior securities) could conceivably have a higher cap on temporary debt than on senior securities.¹³⁵ In addition, the cap on temporary debt is computed only at the time the debt is incurred. Hence, a fund may borrow the maximum amount and keep all of it outstanding during the sixty-day window, even though the fund's total assets are declining during this time.¹³⁶ In other words, the 5% limitation resembles an incurrence test.

Why the separate treatment for temporary loans? In its report to Congress, the SEC explained that such temporary loans are generally not deemed capital securities "because the money advanced does not constitute a sufficiently stable increase in the capital fund of the company, and the relationship between the company and the creditor is transient."¹³⁷

130. Investment Company Act of 1940 § 18(g).

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.* Although the Act restricts the amount of temporary debt, it does not restrict its form, as it does with senior debt securities. This suggests that, unlike debt securities which can be issued in only one class or priority, there could be multiple temporary loans with different seniorities and priorities.

135. For example, the open-end fund in Figure 1 could take out a temporary loan of \$7.50 (5% of \$150). But under the 300% asset coverage requirement, it could have only \$7 in (long-term) bank loans outstanding in the event it had \$136 in liabilities: $\frac{\$150 - \$136 + 7}{7} = \frac{3}{1} = 300\%$.

136. The open-end fund in Figure 1, for example, could borrow \$7.50 (5% of \$150) on day one and not repay any of it until day sixty, even though its assets drop on day two.

137. SEC Study, *supra* note 45, pt. 3, at 1564, n.5. In contrast, the "capital" of a mutual fund is money raised "to devote to the purpose for which the [fund] has been formed." *Id.* at 1564.

Therefore, it was felt that temporary loans should not be included within the limit that Congress would impose on capital structure. However, Congress felt there should be a cap on temporary borrowings for the same reason it restricted senior securities (because leverage magnifies the losses of common stockholders).¹³⁸ Congress was also interested in protecting investors (both senior and junior) from a bank taking a priority interest in a fund's assets.¹³⁹ Before the Investment Company Act, aggressive borrowers would pledge their entire investment portfolios as collateral to secure bank loans. By receiving a security interest in the fund's assets, those secured lenders gained priority over senior security holders.¹⁴⁰

C. *An Alternative to Senior Capital*

Other than debt and preferred stock, senior securities might also arise out of certain *investment* transactions made by the fund, such as one that gives a counterparty a future claim to the fund's assets. The SEC has established a broad definition of the term "senior security" that encompasses not just debt and preferred stock but also complex instruments like derivatives and short sales.

Derivatives, broadly described, are instruments that have value based upon (or derived from) some other reference asset.¹⁴¹ They enable funds to gain exposure to the value of the reference asset without actually owning the asset. Common examples include futures, options, forwards and swaps.¹⁴² Funds employ derivatives for a variety of purposes (e.g., gaining access to certain markets, achieving greater transaction efficiencies, and

138. Senate Hearings, *supra* note 24, at 288 (statement of John H. Hollands, Attorney, SEC) ("[B]ank borrowings will be a fixed charge against the company; and, because of the fixed charge, the value of the common stock will shoot up and down in the same way that it would if they had debentures outstanding.") *Id.* at 1041 ("[O]ne of the greatest evils or dangers is the borrowing of bank money . . .").

139. *Id.*

140. See, e.g., SEC Study, *supra* note 45, pt. 3, at 139–42 (discussing the example of a fund, the General Empire Corporation, that liquidated a large portion of its portfolio to secure funds to lend to its parent, Atlas Corporation, in order to acquire control of Chatham Phoenix Allied Corporation). Instead of capping temporary bank loans, Congress could have restricted the granting of security interests in fund assets or alternatively required that senior security holders be *pari passu*. However, that may have impacted the availability and cost of borrowing.

141. See JOHN C. HULL, *OPTIONS, FUTURES, AND OTHER DERIVATIVES* 1, 779 (7th ed. 2009) ("A derivative can be defined as a financial instrument whose value depends on (or derives from) the values of other, more basic underlying variables." A derivative is an "instrument whose price depends on, or is derived from, the price of another asset.").

142. Use of Derivatives by Investment Companies Under the Investment Company Act of 1940, 76 Fed. Reg. 55,237, 55,239–41 (Sept. 7, 2011).

hedging risks).¹⁴³ They can also be used to boost returns, which raises concerns about leverage.¹⁴⁴

Leverage is embedded in many derivatives. With a derivative, a fund may post only a small percentage of the notional amount of the reference asset as initial margin or collateral (or it may receive a premium payment or it may not be required to make any upfront payment).¹⁴⁵ Yet, it is exposed to gains and losses on the full notional amount, meaning it may ultimately have to make payments to counterparties that are substantially greater than those paid to initiate the transaction.¹⁴⁶ Thus, the risk of loss with such derivatives (i.e., ones that impose a payment obligation on the fund) differ from the risk of loss on other investments (which may result in a loss of asset value but would not require a fund to make payments to a counterparty). Although funds may use derivatives for a variety of purposes, derivatives which impose a payment obligation involve the potential for leverage “because they enable the fund to participate in gains and losses on an amount that substantially exceeds the fund’s investment, while imposing a conditional or unconditional obligation on the fund to make a payment or deliver assets to a counterparty,” in the SEC’s view.¹⁴⁷ Derivatives thus invoke the undue speculation and asset reserve sufficiency concerns that motivated Congress to adopt the Act.¹⁴⁸ Hence, the staff of the SEC has taken the position that a fund’s obligation to pay on a derivative is equivalent to its obligation to pay on a loan.¹⁴⁹ Since that ob-

143. *Id.*

144. Derivatives also raise other concerns such as liquidity risk and counterparty risk.

145. Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80,884, 80,890 (Dec. 28, 2015).

146. *Id.* at 80,891. The “notional value” is the value of the derivative’s underlying assets at the spot price (computed without regard to whether the party’s obligations under the instrument could be netted against the obligations of the counterparty). See JAY G. BARIS ET AL., COMM. ON FED. REG. OF SEC. ABA SEC. OF BUS LAW, REP. OF THE TASK FORCE ON INV. COMPANY USE OF DERIVATIVES AND LEVERAGE 7, n.11 (2010) [hereinafter ABA Report].

147. Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80,890–91. Not all derivatives require the fund to make a payment, in which case they would not be considered senior securities. For example, a fund that purchases an option typically will make a premium payment to acquire the option, but will not have any subsequent obligation to deliver cash or assets to the counterparty unless the fund chooses to exercise the option. *Id.* Note also that derivatives can be used to reduce risk, such as to hedge a fund’s portfolio exposures.

148. See *supra* Part IV.

149. Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80,889.

ligation is owed to someone other than the fund's shareholders, derivatives resemble senior securities.¹⁵⁰

Short sales and reverse repurchase agreements are similar. With a short sale, a fund receives payment for a security immediately, but does not have to deliver the security until some future date. With a reverse repurchase agreement (i.e., a reverse repo), a fund sells a security to another party on the current date at a specified price, with a commitment to buy the security back at a later date (for another specified price). Since these transactions allow a fund to receive cash upfront in return for a promise to make a payment (i.e., of cash or securities) in the future, they resemble borrowing.

However, there is an alternative to treating these complex instruments as senior securities under section 18 of the Act. Specifically, the SEC has adopted an approach that gives funds more freedom to engage in them: the fund must hold a sufficient amount of assets in a segregated account to "cover" the potential liability under the instrument.¹⁵¹ In the SEC's view, segregated assets impose "a practical limit on the amount of leverage" the fund can incur and ensure that the fund is able to meet its obligations arising from the transactions.¹⁵² Still, the segregated asset approach has been criticized for allowing funds to achieve substantial leverage via derivatives. Critics charge that the approach permits funds to borrow freely via derivatives so long as they have adequate security. Morley (2013) argues that "[t]he asset segregation system is vaguely similar to a requirement that derivative obligations be secured, when the security can consist partly of the proceeds received from the borrowing itself."¹⁵³ There are now some funds that rely on derivatives extensively as part of their investment

150. *Id.* at 80,889–90.

151. *See* Securities Trading Practices of Registered Investment Companies, 44 Fed. Reg. 25,128, 25,131–32 (Apr. 18, 1979). Instead of establishing a segregated account with a custodian, a fund can segregate assets by designating them on its books or cover by entering into off-setting transactions (for instance, a short sale can be covered by holding the underlying security).

152. *Id.* at 25,132.

153. Morley, *supra* note 4, at 352. Other criticisms of the segregated account approach can be made. First, SEC guidance is not consistent on how to segregate assets. For some instruments, funds are to segregate assets based on the notional value of the instrument, while for other instruments, funds segregate assets equal to only the daily market-to-market value of the instrument. Second, segregating an amount equal to only the daily market-to-market liability might fail to take into account potential future losses on such instruments or fail to account for increases in exposure under the instrument intraday. The approach could understate the risk of loss, especially during times of volatility. *See* ABA REPORT, *supra* note 146, at 15, n.27; Use of Derivatives by Investment Companies Under the Investment Company Act of 1940, 76 Fed. Reg. 55,242–43 (Sept. 7, 2011).

strategy,¹⁵⁴ and the SEC has expressed concern that investors may not understand the risks of investing in such funds.¹⁵⁵

The SEC and its staff have developed this approach to regulating derivatives on a case-by-case basis over more than three decades, issuing more than thirty no-action letters and other informal guidance over that period.¹⁵⁶ The SEC has been undertaking a review of its practices with the goal of adopting a formal rule that sets forth a more comprehensive approach to the regulation of fund derivative transactions.¹⁵⁷

VI. DATA

No publicly available electronic database exists with information on mutual fund capital structure. But, such information is reported semi-annually to the SEC by all mutual funds that are subject to the Investment Company Act. Mutual funds are required to file semi-annual reports on Form N-SAR (which are made available publicly and disclose information about funds' business practices and financial condition).¹⁵⁸ The N-SAR filings enable me to extract information unavailable in other databases (e.g., balance sheet information with dollar amounts of assets and liabilities as well as information about permissible borrowing and investment practices and whether they were engaged in during the reporting period). Funds were mandated to file Form N-SAR beginning in 1996 after an initial phase-in period.¹⁵⁹

Each individual N-SAR filing is made publicly available on EDGAR as a plain text file. However, collecting and aggregating that reported data requires a labor-intensive process that must be undertaken before the data

154. For example, leveraged and inverse funds seek to replicate a multiple of the return (or the inverse of the return) of the reference index on a daily basis. Long/short funds and funds that seek to replicate hedge funds also rely on derivatives extensively.

155. See, e.g., Andrew J. Donohue, Dir., Div. of Inv. Mgmt., SEC, Investment Company Act of 1940: Regulatory Gap Between Paradigm and Reality?, Remarks at American Bar Association Meeting (Apr. 17, 2009).

156. Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80,884, 80,888-89 (Dec. 28, 2015); ABA REPORT *supra* note 146, at 12. See also SEC, *Registered Investment Company Use of Senior Securities: Select Bibliography* (June 17, 2016), <https://www.sec.gov/divisions/investment/seniorsecurities-bibliography.htm> [<https://perma.cc/M7K8-RUHK>].

157. Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80,892, 80,954.

158. 17 C.F.R. § 270.30b1-1 (2016). SEC, Semi-Annual Report for Registered Investment Companies (Form N-SAR) [hereinafter Form N-SAR].

159. A small sample of funds voluntarily filed and/or had their reporting requirements phased in. To mitigate selection bias, I examine only data from the period following mandatory disclosure.

can be analyzed. For this study, I compile the data contained in the N-SAR filings for the fiscal year of each mutual fund between 1998 and 2013. My resulting dataset consists of fund-level information for the entire population of registered U.S. mutual funds during the period from 1998 through 2013.

Table 1 (Panel A) shows the total number of mutual funds in the dataset by year over that time period, and the number and percent of funds organized in open-end versus closed-end form. Panel B shows the same for total net assets. The figures are quite close to those reported by the Investment Company Institute for the sample period.¹⁶⁰ This indicates that the dataset derived from the N-SAR filings is an accurate representation of the fund industry.

Panel C shows the number of funds, by category. Equity funds are the largest category, representing (on average) about half of the number of mutual funds in the industry each year. Bond funds are the next largest category, representing more than a quarter of funds in the industry. Next are money market funds and balanced funds, each under 10% of funds. Collectively, bond funds, balanced funds, and money market funds constitute nearly half of the total number of funds in the industry. Panel D shows the same for total net assets. Equity funds manage about half of industry assets (on average) each year. Both bond funds and money market funds manage nearly a quarter of industry assets, and balanced funds manage about 5%. Collectively, bond funds, money market funds, and balanced funds manage about half of industry assets.

VII. RESULTS

While Part V examined the capital structure options available to mutual funds under the Investment Company Act, this Part VII examines the capital structure choices that mutual funds have made in practice. It looks at data on (a) senior capital and (b) temporary borrowing, since the Investment Company Act distinguishes between the two and treats them differently.

160. See INV. CO. INST., 2015 INVESTMENT COMPANY FACT BOOK (55th ed. 2015), https://www.ici.org/pdf/2015_factbook.pdf [<https://perma.cc/6GQL-PD2E>]. The figures are within about 3% in most years. Note that the Investment Company Fact Book is not an official government publication and shows only mutual funds that chose to report statistical information to the Investment Company Institute.

A. Senior Capital

This subpart examines the senior securities that mutual funds may issue. Specifically, it explores the *senior debt securities* (i.e., long-term debt) that mutual funds may issue and *senior equity securities* (i.e., preferred stock) that closed-end funds may issue.

1. Debt

Mutual funds disclose their outstanding debt on the balance sheet section of Form N-SAR (Item 74Q: Senior Long-Term Debt). Debt is disclosed as of the reporting date. Table 2 shows the number of funds that report debt outstanding each year (Panel A). On average, 0.69% of funds report long-term debt on their balance sheet (per year).

While fewer than 1% of funds overall borrow, certain types of funds are more inclined to borrow than others. A greater percentage of closed-end funds report debt outstanding than open-end funds. On average, 8.17% of closed-end funds report debt outstanding each year, while only 0.15% of open-end funds do so. Thus, we observe that borrowing has greater appeal for closed-end funds, consistent with the more stable asset base of closed-end funds and the flexible regulatory treatment of closed-end debt.

Moreover, there is a time trend (i.e., more funds borrow as time goes by). Specifically, the percentage of funds reporting debt on their balance sheets increases steadily over the sample period (from under 0.5% of funds in 1998 to over 1% of funds, generally from 2010 forward). Closed-end funds are driving this increase in borrowing. Whereas fewer than 4% of closed-end funds borrowed in 1998, over 16% borrowed in 2013.¹⁶¹ In contrast, open-end funds exhibit no change in their predilections for borrowing over time (which stay within small and consistent ranges of about 0.10% to 0.20% of open-end funds annually).

Panel B focuses on debt, by category of fund. Among closed-end funds, balanced funds are most likely to borrow (on average, 45% of balanced funds report debt outstanding per year). A lower percentage of bond and equity funds borrow; approximately 9% of bond funds borrow and about 7% of equity funds borrow, on average, per year. Prior studies of closed-

161. The trend towards greater borrowing over time by closed-end funds is consistent with studies of earlier time periods. See Dimson & Minio-Kozerski, *supra* note 10, at 4, n.9, 7 (finding closed-end funds had no debt outstanding in 1988, but by 1999 debt was reported by 6% of closed-end funds in their sample). See also SEC HALF-CENTURY REPORT, *supra* note 81, at 433, n.53 (reporting that, in 1992, closed-end funds had not issued significant amounts of senior securities).

end leverage tend to focus on bond funds, overlooking other types of closed-end funds that are similarly (or more) inclined to borrow.¹⁶² Panel B also shows borrowing by open-end funds. Although fewer than 1% of open-end funds borrow overall, we see that, of those that do borrow, bond funds are more likely to borrow than equity funds (an average of 0.37% of bond funds borrow each year versus 0.10% of equity funds). Prior studies of open-end fund leverage tend to focus on equity funds, overlooking bonds funds (which are more inclined to borrow).¹⁶³ Balanced funds and money market funds are the least likely open-end funds to borrow, with 0.03% and 0.02% of such funds borrowing.

Panel B also shows debt by subcategory of fund.¹⁶⁴ Among closed-end equity funds, borrowing was most popular in the total return subcategory, followed by income and growth & income. However, almost no capital appreciation funds borrow, and there is no borrowing at all among aggressive capital appreciation funds and growth funds. Overall, it is the less aggressive subcategories that engage in borrowing. Furthermore, open-end equity funds exhibit a similar pattern. Aggressive capital appreciation funds and capital appreciation funds are among the least likely subcategories to borrow, while growth and growth & income are the subcategories with the highest percentage of borrowers. In all, the results suggest that debt is used to enhance yield for investors.

Among closed-end bond funds, corporate has the largest percentage of funds that borrow. Government and municipal have the smallest percentages of funds that borrow. The lack of borrowing by municipal funds is inconsistent with a literature that assumes leverage, in the closed-end universe, is concentrated within municipal funds;¹⁶⁵ however, closed-end funds can engage in leverage by issuing preferred stock as well as debt (examined in the next subpart). Of open-end funds, the municipal subcategory has the highest percentage of funds borrowing.

2. Preferred Stock of Closed-End Funds

Closed-end funds can issue a type of senior security that open-end funds cannot: preferred stock. Table 3 shows closed-end funds that report preferred stock outstanding on Form N-SAR. Panel A shows the number

162. See *supra* notes 10 and 11.

163. See *supra* note 9.

164. Equity funds are classified into subcategories according to the primary investment objective reported each year on their N-SAR. Bond funds are classified into subcategories according to portfolio holdings reported each year on their N-SAR.

165. See, e.g., Elton et al., *supra* note 10, at 405–25.

and percentage of closed-end funds with preferred stock outstanding each year; an average of 39% of closed-end funds per year have preferred stock outstanding. Thus, closed-end funds are more active users of preferred stock than debt.

Panel B shows the closed-end funds with preferred stock, by category. Closed-end bond funds are the most active issuers of preferred stock; over 52% of bond funds have preferred stock outstanding each year (on average). Equity funds do not rely on preferred stock nearly as much; fewer than 16% of equity funds have preferred stock outstanding each year (on average). In between are balanced funds, with 28% reporting preferred stock (on average).

Panel B also examines preferred stock by subcategory. Among equity funds, income funds are the most reliant on preferred stock, with an average of 42% per year reporting preferred stock outstanding. Among bond funds, municipal funds are, by far, the most reliant on preferred stock. On average, 75% of municipal funds, per year, have preferred stock outstanding. Corporate bond funds are a distant second, with fewer than 21% reporting preferred stock.

In other words, income-oriented funds are most reliant on preferred stock. This finding is consistent with the “yield-centric” marketing of closed-end funds, as leverage can enhance the income that is pitched to investors.¹⁶⁶ The results are also consistent with Elton et al. (2013), who found that municipal bond funds were more reliant on preferred stock than non-municipal bond funds in their sample of closed-end funds.¹⁶⁷ Elton et al. (2013) explain that municipal bond funds are heavy issuers of preferred stock, because the dividend on preferred stock of municipal funds is tax exempt to the holder; however, interest on debt is not.¹⁶⁸ Accordingly, we find that while only 1% of closed-end municipal funds report debt outstanding (Table 2), 75% of them report preferred stock outstanding.

Closed-end funds tend to obtain senior financing through a single channel: I find that fewer than 2% of closed-end funds report *both* debt and preferred stock on their balance sheets, indicating that closed-end funds view debt and preferred stock as alternative sources of leverage. And be-

166. TAMAR FRANKEL & KENNETH E. BURDON, INVESTMENT MANAGEMENT REGULATION 467 (5th ed. 2015). Of course, leverage can magnify losses as well.

167. Elton et al., *supra* note 10, examine a sample of closed-end funds that they are able to match to open-end funds having the same portfolio manager, policy, and family.

168. *Id.* at 441.

tween the two, preferred stock has been favored (over debt) as the leverage vehicle for closed-end funds. Figure 2 (Panel A) shows the aggregate dollar amount of outstanding debt and preferred stock each year for closed-end funds. It shows that, historically, closed-end funds have issued more preferred stock than debt. It also shows a dramatic increase in preferred stock outstanding from 2002 to 2005. However, in 2008, this pattern reversed; there was a sudden and dramatic decrease in preferred stock outstanding and a steady rise in the amount of debt outstanding. This reversal was precipitated by the collapse of the auction-rate securities market in 2008. (While Elton et al. (2013) examine auction-rate preferred stock issued by closed-end funds, their sample ends in 2006, before the collapse of this securities market during the financial crisis.)

Historically, closed-end funds have relied upon one form of preferred stock: auction-rate preferred stock (ARPSs). ARPSs paid dividends at floating rates that were reset pursuant to auctions run every one to four weeks. Through the auction process, the dividend rate would be periodically adjusted to a level where demand for ARPSs equaled available supply.¹⁶⁹ ARPSs were used extensively by closed-end funds from the 1990s to 2008.¹⁷⁰ Auction-rate securities were issued by others as well (e.g., municipalities, corporations and student loan authorities).¹⁷¹

If an auction failed to clear (because of insufficient demand for ARPSs), the rate would be set to a predetermined maximum rate (typically above the market rate) in accordance with a security's prospectus.¹⁷² Prior to 2008, the maximum rate had rarely been triggered due to a failed auction; to prevent a failed auction, auction dealers would intervene and purchase

169. In addition to re-setting the dividend rate, the auctions also functioned as a form of secondary market for ARPSs, providing liquidity on a periodic basis to any holder who wished to sell. For a description of the auction process, see *Auction Rate Securities: What Happens When Auctions Fail, Investor Alerts*, FIN. INDUS. REG. AUTH. (Nov. 18, 2008), <http://www.finra.org/sites/default/files/Investor-Alert-Auction-Rate-Securities-What-Happens-When-Auctions-Fail.pdf> [<https://perma.cc/47XK-E2DH>]; 6 THOMAS P. LEMKE & GERALD T. LINS, *SECURITIES LAW TECHNIQUES*, pt. 7, ch. 83, at § 83.07(20)(e).

170. At the start of 2008, closed-end funds accounted for about 20% of the ARPS market. *Auction Rate Securities Market: A Review of Problems and Potential Resolutions: Hearing Before the H. Comm. On Financial Services*, 110th Cong. 9–11 (2008) (statement of Linda Thomsen, Director, Div. of Enft, SEC).

171. For studies of the auction-rate securities market more generally, see John J. McConnell & Alessio Saretto, *Auction Failures and the Market for Auction Rate Securities*, 97 J. FIN. ECON. 451 (2010); Michael J. Alderson et al., *Dutch Auction Rate Preferred Stock*, 16 FIN. MGMT. 68 (1987); Michael J. Alderson & Donald R. Fraser, *Financial Innovations and Excesses Revisited: The Case of Auction Rate Preferred Stock*, 22 FIN. MGMT. 61 (1993). Auction rate securities were also issued in the form of bonds as well as preferred stock.

172. LEMKE & LINS, *supra* note 169, § 83.07(20)(e).

shares to make up any difference. Because of the stress of the credit crisis in February 2008, however, their participation ceased and the auctions collapsed.¹⁷³ Consequently, rates spiked as high as 20% for some securities as they were reset to predetermined maximum rates.¹⁷⁴ As ARPSs suddenly became much more expensive, closed-end funds sought to redeem outstanding ARPSs. By 2011, closed-end funds had redeemed (or announced plans to redeem) 84% of the ARPSs that were outstanding in February 2008.¹⁷⁵

Academic studies often mistakenly characterize closed-end funds as having been *forced* to redeem their ARPSs upon breaching their asset coverage ratios during the financial crisis.¹⁷⁶ But the coverage ratios applicable to closed-end funds are not maintenance requirements and thus compliance is not mandatory (unless a fund wishes to undertake certain actions).¹⁷⁷ There were certainly strong financial incentives to redeem ARPSs; however, redemptions were not an outcome of regulatory mandates.¹⁷⁸ While funds may have *chosen* to de-lever (redeeming ARPSs by liquidating assets), this is not the same as “forced” liquidation. To the contrary, breaching regulatory asset coverage requirements would have *blocked* funds from redeeming ARPSs.¹⁷⁹ For that reason, the SEC provided temporary relief to facilitate efforts to redeem ARPSs at this time. Specifically, it granted temporary exemptions from the asset coverage requirements of the Act in order to facilitate the refinancing of ARPSs with new

173. See Han & Li, *supra* note 11, at 7–8.

174. *Id.* at 8.

175. Daniel Schrass et al., *The Closed-end Fund Market*, 18 ICI RESEARCH PERSPECTIVE 1, 6 (2012).

176. See, e.g., Tang, *supra* note 11, at 9–10 (stating that closed-end funds had “three days to deleverage to stay in line with the federal requirements . . . [which] force[d] the investment companies to liquidate their assets to stay within the legal bounds”); Phelim Boyle & Stephen Szaara, *Leverage and Closed-End Bond Funds*, 24 J. FIXED INCOME 47, 54 (2015) (stating that closed-end funds “were forced to reduce leverage to stay within their regulatory bounds”).

177. Even then, a closed-end fund can disregard the asset coverage requirements applicable to dividends and repurchases, where its debt has been issued in private transactions. Investment Company Act § 18(g), 15 U.S.C. § 80a-18(g) (2012). See also *supra* Part V.A.

178. While it is conceivable that the preferred shares’ prospectuses mandated redemption when certain asset coverage tests were breached, that is different from a regulatory mandate. It is also conceivable that a fund could jeopardize its pass-through tax status if it were prevented from distributing substantially all its taxable income.

179. Section 18(a) prohibits a closed-end fund from purchasing its own stock unless there is sufficient asset coverage. Investment Company Act of 1940 § 18(a)(1)(B); *id.* § 18 (a)(2)(A). See also *supra* Part V.A. An exception is provided in section 18(e), which permits a fund to issue preferred stock in violation of section 18 if it is for purposes of refinancing outstanding preferred stock. But many funds viewed debt as more expedient during the crisis. See, e.g., Calamos Convertible Opportunities and Income Fund et al., 74 Fed. Reg. 4268–70 (Jan. 14, 2009).

debt and non-auction preferred stock at lower rates (than the ARPSs).¹⁸⁰ According to the Investment Company Institute, closed-end funds turned to alternative vehicles for leverage following the collapse of the auction-rate market.¹⁸¹

In Figure 2 and Table 3, we see evidence that is consistent with a shift in the source of leverage after ARPSs (once the dominant type of preferred stock for closed-end funds) suffered the liquidity crisis in 2008. Following a surge in popularity from 2002 to 2007, the aggregate amount of preferred stock outstanding (Panel A of Figure 2) and the percent of closed-end funds with preferred stock outstanding (Panel A of Table 3) declined substantially. While approximately 35% of closed-end funds had preferred stock outstanding in the late 1990s, this figure peaked at 45% to 50% from 2003 to 2007 and then dropped to 20% by 2013. This same pattern is exhibited by all three categories of closed-end funds (bond, balanced, and equity) and by municipal bond funds (the primary issuer of ARPSs). Since the collapse of the auction-rate market, closed-end funds have shifted increasingly toward borrowed money to maintain leverage, which helps explain the rise in borrowing by closed-end funds observed in Table 2.¹⁸²

Panel B of Figure 2 shows that closed-end funds aggressively issued new preferred stock from 2002 to 2004. After the auction-rate market froze in 2008, we do not see funds turning significantly to new issuances of preferred stock (except briefly in 2011). However, we do observe a spike in redemptions and repurchases of preferred stock. Panel C shows debt issuances versus repurchases and redemptions of debt (by closed-end funds). From 2006 to 2009, new debt issuances exactly matched debt redemptions and repurchases. After 2009, funds added to their net debt

180. See, e.g., *id.* (Notice of Application); *In re Calamos Convertible Opportunities and Income Fund et al.*, Investment Company Act Release No. 28,615 (Feb. 10, 2009) (Order). See, e.g., *Eaton Vance Floating-Rate Income Trust, et al.*, 73 Fed. Reg. 58,691–92 (Oct. 7, 2008) (Notice of Application); *In re Eaton Vance Floating-Rate Income Trust, et al.*, Investment Company Act Release No. 28,464 (Oct. 23, 2008) (Order). In addition, the SEC (and other regulators) provided other relief to permit market participants to purchase ARPSs on behalf of investors and discretionary accounts. See, e.g., *Inv. Company Inst.*, SEC No-Action Letter (Mar. 12, 2009); *Auction Rate Securities-Global Exemptive Relief*, SEC No-Action Letter (Sept. 22, 2008); *Auction Rate Securities-Investment Mgmt. Supplement to Global Relief Request*, SEC No-Action Letter (Jan. 6, 2009).

181. Daniel Schrass et al., *The Closed-End Fund Market, 2012*, 19 INV. CO. INS. RESEARCH PERSPECTIVE 1, 7 (2013).

182. In addition to debt, funds have turned to non-auction forms of preferred stock as well as to various forms of portfolio leverage. *Id.* at 7. My data does not distinguish among forms of preferred stock.

positions (with debt issuances exceeding debt repurchases/redemptions) as debt became the favored vehicle for leverage.

Overall, we observe that closed-end funds leverage themselves more frequently than open-end funds. The preferred leverage vehicle of closed-end funds has historically been preferred stock; however, much of that was driven by the ARPSs market. Since the freezing of the market in 2008, closed-end funds have turned increasingly to debt.

3. Asset Coverage Ratios

While this subpart has heretofore explored the percent of funds reporting senior securities outstanding on their annual filings, it is also informative to explore leverage via the amount of senior securities. Instead of examining absolute dollar amounts, it is more helpful to examine senior capital relative to the assets of the fund. The Investment Company Act provides a statutory definition of leverage—the asset coverage ratio (which measures the extent to which a fund's assets “cover” its senior securities). Asset coverage ratios are computed separately for (i) debt capital and (ii) senior capital (i.e., debt and preferred stock).¹⁸³

Figure 3, Panel A, shows the asset coverage ratios of funds in the sample that issue debt.¹⁸⁴ We see that closed-end funds that borrow tend to have coverage ratios that are low. They aggressively push their debt to the regulatory limit. In contrast, open-end funds that borrow are more conservative in their borrowing. They do not crowd the regulatory limit (as closed-end funds do). Instead, open-end funds generally have greater asset coverage for their debt than the Investment Company Act requires. In other words, open-end funds borrow less than they are allowed to under the Act.

Panel B shows only those funds with asset coverage ratios under 1,200%, to observe more closely what is happening around the 300% regulatory threshold. We see that closed-end funds cluster closely around the 300% limit, with many dipping below. In contrast, no open-end fund is below the threshold, and few even get close to it.

In addition to the 300% coverage ratio on debt, closed-end funds are also subject to a 200% coverage ratio on debt (shown by the dashed line).

183. See *supra* Part V.A.

184. I excluded three closed-end funds that were issued an exemption from the asset coverage requirements of the Investment Company Act during the 1980s because they are issuers of asset-backed securities. The three funds were organized before Rule 3a-7 was adopted in 1992, which allows qualifying asset-backed issuers to avoid the requirements of the Act. 17 C.F.R. § 270.3a-7 (2016).

If this 200% threshold is violated, a closed-end fund cannot pay a dividend on preferred stock. We observe that closed-end funds exhibit caution near the 200% threshold (unlike at the 300% threshold). This suggests closed-end funds consider it a serious penalty to be blocked from paying dividends on preferred stock. In Panel B, only one fund has a ratio below 200%.¹⁸⁵

Table 4 (Panel A) provides statistics for asset coverage ratios on debt. For funds with debt, the median coverage ratio is 467%. The median open-end fund has a much greater coverage ratio than the median closed-end fund: 12,708% versus 421%, respectively. The vast majority of open-end funds maintain very high coverage ratios—over 88% of open-end funds have ratios above 900%, which is more than triple the required ratio. A similar percentage of closed-end funds (83%) has coverage ratios within the lower 300% to 900% range. Most closed-end funds are comfortable operating close to the coverage limit. In fact, approximately 5% of closed-end funds have coverage ratios under 300%. In contrast, no open-end fund has a coverage ratio below 300%.

Overall, we see that open-end funds rarely borrow; furthermore, when they do, they borrow conservatively. Not only do closed-end funds borrow more frequently, but they are also more aggressive with the amount and push their asset coverage ratios to the threshold (and beyond).

The different borrowing behaviors reflect the different regulatory treatment of open-end and closed-end funds. Recall that for open-end funds, the asset coverage ratio is a maintenance requirement (demanding 300% asset coverage or better at all times). Therefore, borrowing puts an open-end fund in a precarious position. A sudden decline in assets could drop the fund below the 300% coverage ratio and force the fund to pay down debt in order to restore the ratio. Hence, we observe that open-end funds generally take a conservative approach to borrowing.

In contrast, the asset coverage requirement is an incurrence (not a maintenance) requirement for closed-end funds. Therefore, violating the 300% ratio does not require a closed-end fund to restore the ratio. It only blocks the fund from taking certain actions (i.e., issuing new debt, purchasing its capital stock, and paying cash dividends on common stock).¹⁸⁶ The

185. That fund was commencing its first year of operations, during which time it issued preferred stock and debt but had not completed issuing its common shares.

186. And even then, a fund is blocked from taking these actions only if it has issued debt publicly. Debt issued in a private transaction does not benefit from the prohibitions on repurchases and dividends. Investment Company Act of 1940 § 18(g), 15 U.S.C. § 80a-18(g) (2012). See *supra* Part V.A.

ratio would have to be restored only if the fund wanted to take one of the aforementioned actions. It would not prevent a fund from issuing preferred stock¹⁸⁷ or paying a dividend on preferred stock.¹⁸⁸ Since closed-end funds historically have relied more on preferred stock than on debt for leverage, it makes sense that these fund managers have not considered the 300% coverage ratio on debt to be a binding constraint. Hence, we observe most closed-end funds taking advantage of that flexibility when they borrow, allowing their coverage ratios to approach—and even slip under—300%.¹⁸⁹ For closed-end funds, it is the 200% (not the 300%) ratio on debt that can involve serious consequences. Falling below the 200% threshold on debt would prevent a fund from paying dividends on its preferred stock (which would matter to holders of preferred stock that have come to expect regular dividend payments). Hence, we observe closed-end funds behaving more conservatively near the 200% ratio on debt.

Closed-end funds (unlike open-end funds) can also issue senior securities in the form of preferred stock. As we have seen, more closed-end funds issue preferred stock than debt.¹⁹⁰ To issue preferred stock, the fund must have an asset coverage ratio of 200% or better (which, in the context of preferred stock, is computed using both senior securities in the denominator).¹⁹¹ Moreover, once a fund has issued preferred stock, it must meet this coverage ratio any time it purchases, or pays dividends on, its common stock.¹⁹²

Figure 4 shows asset coverage ratios for closed-end funds that issue preferred stock. Panel A shows all preferred stock coverage ratios in the sample. Panel B shows only those coverage ratios under 1,000%, to focus on behavior around the 200% regulatory threshold. We see few funds crossing the 200% threshold. In addition, they leave more of a margin for themselves. Thus, while closed-end funds will push up to, and over, the

187. Issuance of preferred stock is subject to a different test: a 200% coverage requirement on senior securities. Investment Company Act of 1940 § 18(a)(2)(A). *See also supra* Part V.A. This is examined in the subsequent paragraphs.

188. Paying dividends on preferred stock is subject to the lower 200% coverage ratio on debt. Investment Company Act of 1940 § 18(a)(1)(B). *See also supra* Part V.A.

189. I find three closed-end funds with asset coverage ratios under 300% that declared new debt issuances during the reporting period (N-SAR Item 86E), without an exemptive order from the SEC. Since the ratios are just under 300% (283%, 291%, and 298%), this suggests that their ratios exceeded 300% at issuance and subsequently dipped below 300% at the end of the reporting period.

190. On average, 8% of closed-end funds report debt outstanding each year versus 39% that report preferred stock (Tables 2 and 3).

191. Investment Company Act of 1940 § 18(a)(2)(A). *See also supra* Part V.A.

192. Investment Company Act of 1940 § 18(a)(2)(B). *See also supra* Part V.A.

300% limit on debt, fewer will do so with the 200% limit on preferred stock.

According to Table 4, Panel B, fewer than 1% of closed-end funds with preferred stock outstanding have ratios below 200%. About half (57%) have ratios just above the threshold (in the range of 200% to 299%) while 40% have ratios between 300% and 900%.

It makes sense that closed-end funds are more conservative around the 200% ratio applicable to preferred stock than around the 300% ratio applicable to debt, as closed-end funds have historically relied more on preferred stock than on debt.¹⁹³

Performance of Highly Indebted Open-End Funds. While few open-end funds borrow aggressively, there are some that do. How do these highly indebted open-end funds perform compared to others? Are they riskier? Do they generate superior risk-adjusted performance?

Highly levered funds are likely more volatile than others (as leverage magnifies gains and losses). On the other hand, debt might lessen risk taking. Funds with debt face the possibility of having to liquidate their investments in order to satisfy asset coverage ratios. Moreover, funds with debt have external monitors (i.e., banks) in addition to regulatory oversight (by the SEC); furthermore, loan covenants might be stricter than regulatory requirements.

I examine risk taking and risk-adjusted performance of these highly levered open-end funds. Performance data for each fund is obtained from CRSP on a monthly basis and linked to the main dataset.¹⁹⁴ For each fund with an asset coverage ratio below 1,200%, I compute its annual return for that year and compare it to its benchmark.¹⁹⁵ There are forty-eight total fund-year observations (twenty-two for bond funds and twenty-six for equity funds). Results are computed on an equal-weight basis and appear in Table 5. On average, the bond funds underperform their benchmark by

193. Violating the 200% ratio would prevent the fund from being able to issue additional preferred stock, and paying a dividend on common stock, which could jeopardize its flow-through tax treatment under the tax code. See *supra* note 105.

194. Data in CRSP is organized by mutual fund share class. Hence, I aggregate all observations pertaining to different share classes into one observation for each fund, by taking the weighted average of the attributes (returns, expenses) of the individual share classes, using the lagged TNA of each share class as the weight. I compute returns before expenses.

195. Using the Lipper classifications in CRSP, I match each domestic equity fund with the relevant US equity index (S&P 500, S&P MidCap 400, or S&P SmallCap 600), each global equity fund with the MSCI ACWI Index, and each bond fund with the relevant bond index (Barclays Municipal Bond Index or Barclays Aggregate Bond Index). Similar results are obtained using only the MSCI US Broad Market Index.

about 4.5% per year (the underperformance is statistically significant at the 1% level). Not only do the bond funds underperform the market, they are also riskier; they have a significantly higher standard deviation of monthly returns. With respect to the highly indebted equity funds, they have an average return of about 8% per year in excess of their benchmark. However, there is much variation in the performance and the excess returns are not significantly different from zero. As with the bond funds, the equity funds are riskier than the market, with a significantly higher standard deviation of monthly returns.

Since the equity funds give some hint of outperforming the market, I examine their performance further by computing returns on a risk-adjusted basis using a four-factor model.¹⁹⁶ This analysis is restricted to domestic equity funds.

Risk-adjusted returns (alphas) and factor loadings appear in Panel B of Table 5. These highly indebted funds generate alphas that are not statistically different from zero. Therefore, after adjusting for their greater risk taking, we see that these funds are not adding value by taking on debt. However, they are not destroying value either; they are able to generate sufficient risk-adjusted returns to cover expenses.¹⁹⁷

The factor loadings in Table 5 shed further light on risk taking by highly indebted funds. First, there is a significant positive loading on the market factor. The coefficient of 1.32 on the market factor indicates that these fund take on greater market risk in their investment portfolios than other funds. Second, with respect to the size factor, there is a significant positive loading. That is, the indebted funds tilt their portfolios significantly toward small-cap stocks and away from large-cap stocks. Third, the momentum factor has a significant positive loading. Thus, these indebted funds tend to pursue a momentum strategy, not a contrarian strategy. In other

196. Risk-adjusted return is computed monthly as the difference between the fund's actual return and the fund's expected return given its exposure to market risk, commonly measured by four factors: size (market capitalization, *SMB*), value (book-to-market ratio, *HML*), momentum (rate of increase in the stock price over recent months, *MOM*), and an overall market index (R_{ALL}). Risk-adjusted return (or "alpha") is the difference between a fund's actual return (in excess of the risk-free rate, $R_{i,t} - R_{ft}$) and its expected return given its exposure to the risk factors, $a_i = R_{i,t} - R_{ft} - [b_i(R_{ALL,t} - R_{ft}) + s_iSMB_t + h_iHML_t + m_iMOM_t + e_{i,t}]$, with positive alpha indicating the fund outperformed on a risk-adjusted basis and negative alpha indicating that it underperformed. For further description of this regression model, see A. Joseph Warburton, *Competition in Financial Services: Evidence from British Mutual Funds*, 9 J. EMP. LEGAL STUD. 827, 846 (2012); A. Joseph Warburton, *Trusts Versus Corporations: An Empirical Analysis of Competing Organizational Forms*, 36 J. CORP. L. 183, 211 (2010).

197. The reported results are obtained using returns before fund expenses are deducted. I get similar results using returns after fund expenses.

words, they chase recent hot stocks, tilting their portfolios towards recent winning investments. Finally, there is an insignificant coefficient on the value-versus-growth factor. These funds do not exhibit a significant tilt toward either value or growth stocks. Overall, these results indicate that highly indebted funds take on greater systematic risk than other funds. These funds take on greater exposure to high-market-beta stocks, small-cap stocks, and momentum stocks. These are all riskier investment strategies. In all, we observe that these highly indebted open-end funds engage in greater risk taking, and compensate their investors appropriately for that extra risk. But these funds are unable to earn superior performance for their investors on a risk-adjusted basis.

4. Alternatives to Balance Sheet Debt

Although the Investment Company Act permits the issuance of senior debt securities (within limits), we observe that few mutual funds actually take advantage of the borrowing capacity that is available to them. Why don't more funds report debt outstanding?

One possible explanation is that open-end funds are deterred by the bright-line requirement of maintaining 300% asset coverage at all times while debt is outstanding. Violation would force asset sales and cash draw-downs, which could have severe adverse effects on the fund. While that might explain their reluctance to incur maximum leverage, it does not explain why we observe few open-end funds borrowing lesser amounts. And why do so few closed-end funds (which have more flexible requirements) borrow? Could there be other explanations?

Perhaps there is another impediment to borrowing (besides that contained in the Investment Company Act). While the Act restricts borrowing, funds can also impose restrictions voluntarily on their activities, including on their ability to borrow. Funds can go beyond prohibitions in the Act by adopting policies that further restrict their ability to issue debt. These self-imposed, voluntary restrictions are meaningful because (under the Act) they cannot be changed without the approval of fund shareholders.¹⁹⁸ Hence, it might be that funds face self-imposed borrowing restrictions.

Form N-SAR requires funds to disclose whether or not they are permitted to borrow money. Figure 5 shows the percent of funds that are permitted to borrow each year. According to the data, while some funds do self-restrict, the great majority are permitted to borrow. On average, 82% of open-end funds are permitted to borrow, and over 91% of closed-end

198. Investment Company Act of 1940 § 13(a)(2), 15 U.S.C. § 80a-13(a)(2) (2012).

funds are permitted. Consistent with earlier evidence, we see that closed-end funds are more aggressive in their borrowing policies than open-end funds. Although there is a sizeable group of funds that self-impose borrowing restrictions (18% of open-end funds and 9% of closed-end funds), there are not enough self-restricting funds to account for the low rate of borrowing that we observe.

Another possibility is that funds are borrowing, but the debt is not recorded on balance sheets because it is incurred and repaid during the course of a year. The regulations only require funds to report a snapshot of the debt on their books on two days of the year (at the end of each semi-annual period). Thus, prior to the end of each period, funds could repay outstanding borrowings to make their balance sheets appear safer. Other studies have shown that mutual funds engage in similar behavior by trading securities before and after reporting dates in order to conceal their investment strategies.¹⁹⁹

There is no data on the amount of debt outstanding between semi-annual reporting dates. However, a fund must indicate on its N-SAR whether it “engaged in” the borrowing of money at any time during the period (Item 700). In completing Item 700, funds are instructed to exclude any borrowings that are for temporary purposes, answering only whether they engaged in borrowing for investment purposes (i.e., for leverage).²⁰⁰ Although this item does not include dollar amounts, the information does reveal whether there is debt that is not being captured by the balance sheet item.

Figure 5 shows the percent of funds that report borrowing for investment purposes each year (which, naturally, is less than the percent of funds that are permitted to borrow). Statistics appear in Table 6. Each year, over 7% of open-end funds, on average, report that they borrow for investment purposes during the year. In contrast, fewer than 1% of open-end funds report debt outstanding on their annual balance sheets at year-end, on average (Table 2). Similarly, for closed-end funds, an average of 25% report that they borrow for investment purposes during the year, versus only 8% that report debt on their annual balance sheets.

199. See, e.g., Marcin Kacperczyk et al., *Unobserved Actions of Mutual Funds*, 21 REV. OF FIN. STUD. 2379 (2008); Iwan Meier & Ernst Schaumburg, *Do Funds Window Dress? Evidence for U.S. Domestic Equity Mutual Funds*, Working Paper (May 1, 2006), <http://neumann.hec.ca/pages/iwan.meier/window050106.pdf> [<https://perma.cc/DGR7-YY2S>]; Matthew R. Morey & Edward O’Neal, *Window Dressing in Bond Mutual Funds*, 29 J. OF FIN. RES. 325 (2006).

200. See SEC, Instructions to Semi-Annual Report for Registered Investment Companies (Instructions to Form N-SAR), Item 70 [hereinafter Instructions to Form N-SAR]. Temporary borrowings are reported elsewhere on Form N-SAR and analyzed separately in this Article.

This suggests that borrowing funds do not keep their debt outstanding for long periods of time, generally paying it off within the year. This debt is referred to as “long-term” debt on Form N-SAR, but in practice it is not used this way by most funds that borrow. Although there is no regulatory requirement that long-term debt be repaid within any period of time (unlike with temporary borrowings), the results suggest that most funds repay the debt within the reporting period.

Table 6 also shows the percent of funds that borrow for investment purposes, by category and subcategory of fund. Among closed-end funds, balanced funds are most likely to engage in borrowing; an average of 60% report borrowing each year. More bond funds engage in borrowing than equity funds; specifically, 27% and 21% (respectively) report that they have borrowed during the year. Among open-end funds, bond funds and equity funds engage in borrowing most frequently (with 8% of each reporting that they borrowed). Only 5% and 4% of balanced funds and money market funds (respectively) report engaging in borrowing. Furthermore, within the subcategories, borrowing is engaged in across the board. Each subcategory reports a sizeable percent of funds that engage in borrowing (in contrast, balance sheet debt was concentrated within certain subcategories, e.g., income-oriented equity funds).

In sum, when we consider the borrowing that occurs between reporting dates, we see evidence that borrowing is a more common practice than it otherwise appears. This suggests that funds are “window dressing” their balance sheets by repaying their debt prior to their N-SAR reporting date.

However, borrowing funds do have an additional expense; they must pay interest on their debt. Interest expense is reported on Form N-SAR. Hence, we can examine interest expense to get a better sense of borrowing practices.²⁰¹ Specifically, Figure 6 shows interest paid annually on debt and (for comparison) other expenses reported on the income statement portion of Form N-SAR (for funds that borrow). Interest is not a trivial expense for these funds. The average borrowing fund has an interest expense of about \$500,000 per year, its fourth largest expense. Advisory fees are the largest expense, followed by marketing and distribution, shareholder services, and interest expense (which are ahead of administrator fees, custodian fees, legal expenses, auditing and bookkeeping expenses, and compensation). Panel B shows expenses for closed-end funds only. For these funds, interest expense is the second largest expense (trailing

201. The figures reported on Form N-SAR are net of any reimbursement of the expense. See Instructions to Form N-SAR, *supra* note 200, Item 72. Note that funds incur other borrowing costs besides interest, such as issuance costs.

only advisory fees).²⁰² Interest expense can also be measured as a percent of a fund's total net assets (TNA). For the average fund that borrows, interest expense amounts to seven basis points per year. Thus, interest is a non-trivial annual expense for the average borrower. This is particularly true for closed-end funds. As a percent of TNA, the average closed-end borrower pays fifty-two basis points in interest expense each year. Overall, these sizeable interest expense figures suggest that funds maintain debt outstanding for substantial portions of the year.

Perhaps funds incur debt in ways other than borrowing money. There are, of course, ways for funds to obtain credit aside from traditional methods. In addition to borrowing money, funds can sell securities short and purchase securities on margin.²⁰³ Since these transactions obligate a fund to make a payment to someone other than the fund's shareholders, they are considered senior debt securities.²⁰⁴ Thus, funds must disclose on Form N-SAR whether they engaged in short selling or margin purchases during the reporting period. Results appear in Table 7. On average, nearly 4% of all funds report engaging in short sales each year, and just under 1% report engaging in margin purchases.²⁰⁵ This compares to 9% of funds that report borrowing money for investment purposes each year. Closed-end funds engage in short selling and margin purchases more often than open-end funds (as with borrowing money). The table also shows whether funds report engaging in at least one of these practices during the year (i.e., either short selling, margin purchases, and/or borrowing money). We see that over 12% of funds each year report engaging in leverage via at least one of these practices (on average). Approximately 11% of open-end

202. The figure includes only interest on debt, not dividend payments on preferred stock, so it understates payments on senior securities for closed-end funds.

203. With a short sale, a fund receives payment for the security immediately, but does not have to deliver the security until some future date. With a margin purchase, money is borrowed from the broker to purchase the security.

204. Section 12 of the Investment Company Act authorizes the SEC to regulate both short sales and margin purchases. Investment Company Act of 1940 §§ 12(a)(1), (3), 15 U.S.C. §§ 80a-12(a)(1), (3) (2012). However, the SEC has not adopted any rules under section 12(a). Instead, it has regulated short sales and margin purchases as senior securities under section 18.

205. The percent of funds reporting such liabilities on the balance sheet portion of the N-SAR is smaller. Only 2.09% of funds reported liabilities outstanding for short sales (3.36% of closed-end funds and 2.02% of open-end funds). While funds also incur obligations by purchasing securities on margin, this information is not disclosed on the N-SAR balance sheet. I also examined the N-SAR balance sheet to find funds that reported liabilities under reverse repurchase agreements (which is another form of borrowing). I find 0.99% of funds report such liabilities outstanding. Closed-end funds were more likely to report liabilities under reverse repos than open-end funds (5.36% versus 0.69%, respectively).

funds and 28% of closed-end funds engage in one or more of these practices.²⁰⁶ Again, when we expand the definition of borrowing, we find that the practice is more common than we would otherwise think, and contradicts the common assumption in the finance literature that open-end funds do not borrow.

We can expand the definition of borrowing even further to include derivatives. Funds are required to indicate on Form N-SAR whether they employed certain derivatives during the reporting period.²⁰⁷ Funds can use derivatives to create leverage (if they cover assets with a segregated account or comply with asset coverage requirements in section 18). Table 7 examines data on funds' usage of derivatives. Each year, about 22% of funds employ one or more types of derivatives (on average). Closed-end funds employ derivatives more than open-end funds (29% versus 22%).

Overall, funds engage in derivatives only slightly more than borrowing, short selling and margin (22% and 12%, respectively). Closed-end funds engage equally in derivatives and the other forms of leverage (29% and 28%, respectively) and in derivatives only slightly more than borrowing money (25%).

The prevalence of borrowing is even more striking when we examine funds' usage of individual derivatives. Funds borrow money about as often as they engage in the two most popular derivatives—stock index futures and interest rate futures. About 10% of funds use stock index futures and 9% use interest rate futures, versus 9% that borrow money. Moreover, funds borrow money more often than they use any of the option contracts, which are employed by only 1% to 5% of funds (on average). For closed-end funds, borrowing money is more common than any of the individual derivative strategies. While 25% of closed-end funds borrow (on average

206. Moreover, there is an increasing percentage of open-end funds that report engaging in these practices over the sample period. Open-end funds are making increasing use of each practice over time.

207. The N-SAR reports information for the following derivatives: options on equities, options on debt securities, options on stock indexes, interest rate futures, stock index futures, options on futures, options on index futures and other commodity futures. One limitation of the N-SAR data is that it does not distinguish in all cases between those derivatives that create potential future obligations (e.g., written options) and those that do not (e.g., purchased options). However, studies using other data on derivatives have found results similar to mine. Daniel Deli et al., *Use of Derivatives by Registered Investment Companies*, SEC White Paper (2015) (using derivatives information collected from Form N-CSR for a random sample of funds). Second, while the N-SAR data specifies whether funds have positions in derivatives, it does not indicate potential exposures under the derivatives. But the data does offer an indication of the extent to which funds are using derivatives.

per year), interest rate futures are used by only 17% and the other derivatives are used by fewer than 10%.

Derivatives often receive attention in academic literature and policy debates; however, the prevalence of borrowing is on par with funds' usage of derivatives. Moreover, borrowing could become even more common if recently proposed regulations restrict the ability of funds to use derivatives, suggesting mutual fund capital structure is a timely topic of research.²⁰⁸

B. Borrowing for Temporary Purposes

Section 18(g) of the Investment Company Act allows funds to borrow "for temporary purposes."²⁰⁹ Such temporary borrowings are not considered "senior securities" and therefore are not subject to section 18's restrictions.²¹⁰ Temporary borrowings are a tool to manage liquidity risk, helping funds meet shareholder redemption requests (and other unexpected cash shortfalls) without having to immediately sell portfolio securities, and helping funds settle trades. In this subpart, we examine empirical evidence on various kinds of temporary borrowings that funds employ to manage liquidity risk.

1. Lines of credit

Pursuant to section 18(g), funds have entered into revolving line of credit facilities with banks. When a fund needs cash, such as for unexpected redemption requests, it draws on the line of credit and repays the loan shortly thereafter (within sixty days to qualify for the temporary-purpose presumption).²¹¹ To economize on costs, lines of credit are typically arranged at the family level and made available to many funds within the family.²¹²

208. See the SEC's proposed rule regarding use of derivatives by mutual funds, *supra* note 157.

209. Section 18(g) defines a "senior security" that is subject to section 18's borrowing restrictions in a manner that excludes borrowings for a temporary purpose.

210. Temporary borrowings are, however, capped at 5% of the fund's total assets at the time made. Investment Company Act of 1940 § 18(g), 15 U.S.C. § 80a-18(g) (2012). A loan is presumed for temporary purposes if repaid within sixty days. *Id.* See *supra* Part V.B.

211. Such lines of credit for shareholder redemption requests are often called "redemption facilities." Note that lines of credit can also be used for investment purposes, to boost leverage for short periods of time. However, in that case, the borrowing would instead be deemed for "investment" purposes, not "temporary" purposes, and would be reported elsewhere. See Instructions to Form N-SAR, *supra* note 200, Item 70.

212. To avoid one fund being liable for another fund, the loan facility must be clear that each fund is responsible only for its pro rata share of any commitment fees, and for interest based

Table 8 examines the extent to which funds utilize lines of credit. On average, 6% of open-end funds draw on bank lines of credit each year. Closed-end funds are more likely to draw on bank lines of credit, with over 13% borrowing each year (on average). The figures are conservative estimates, as funds are directed to report credit line usage on Form N-SAR only if they had loans outstanding during the year that exceeded one percent of net assets, to avoid having to identify and report small amounts.²¹³

This greater usage of bank lines by closed-end funds may appear counter-intuitive. Shareholders of closed-end funds do not redeem by selling shares back to the fund, but rather by selling them on secondary markets. Thus, closed-end funds do not need lines of credit for purposes of meeting shareholder redemptions. Still, lines of credit can help closed-end funds manage liquidity in other ways. For example, they can help funds manage the trade settlement process, an important issue for many closed-end funds. Closed-end funds have flexibility to invest in less-liquid securities and securities with long-settlement periods (because they do not issue redeemable securities); therefore, lines of credit can be used to manage investment portfolios between the time when a decision is made to sell an asset and when the sales proceeds are ultimately received.²¹⁴

Table 8 also looks at usage of credit lines by category of funds. Among closed-end funds, equity funds are more likely than bond funds to draw on a line of credit (15% versus 11% of funds). Among open-end funds, equity funds and bond funds are equally likely to draw on a line of credit (6% of each). Money market funds are the least likely to use lines of credit (under 2%), which makes sense as money market funds have sufficiently liquid assets that they typically would not need to borrow money to meet redemptions. Money market funds also have special tools to manage redemptions.²¹⁵

on its actual usage of the facility.

213. Instructions to Form N-SAR, *supra* note 200, Item 55. Moreover, the instructions direct funds to report only the usage of credit lines. Funds do not report the availability of credit lines, if not drawn upon during the year.

214. For example, for funds that invest in bank loans and loan participations, the median settlement time for a loan sale is twelve days. Open-End Fund Liquidity Risk Management Programs, 80 Fed. Reg. 62,274 (Oct. 15, 2015) at 62,283, n.79 (citing Comment Letter of Oppenheimer Funds on the FSOC Notice at 3–4). In addition, funds can experience unanticipated cash shortfalls from a trade “fail,” in which cash payment for a security sold by a fund has been delayed.

215. See *supra* note 35 (discussing liquidity fees and redemption gates).

2. Overdrafts

In addition to bank lines of credit, funds have also used their temporary borrowing authority under section 18(g) to establish overdraft facilities with their custodians.

To protect fund assets, the Investment Company Act requires that all funds maintain strict custody of fund assets (separate from assets of fund advisers). Nearly every fund uses a bank custodian for holding its securities.²¹⁶ These custodians are required to segregate and safeguard the securities and cash assets of their mutual fund clients. However, the data reveal that custodians permit their clients to overdraw upon their accounts when they need access to short-term funding. In essence, these overdrafts function as lines of credit.

Table 8 examines use of overdrafts by mutual funds and shows that funds make heavy use of overdrafts. Form N-SAR requires that funds report whether they had any overdrafts outstanding during the year (in excess of one percent of net assets).²¹⁷ On average, 27% of open-end funds and 35% of closed-end funds report having overdrafts outstanding during the course of a year. Also, funds use overdrafts more than lines of credit. Compared to lines of credit, overdrafts are used by five times as many open-end funds, and by three times as many closed-end funds. Hence, borrowing for temporary purposes is more common than it appears from just looking at data on line of credit usage.

Funds are placing greater reliance on a type of borrowing that may not be providing them with the best terms. Overdrafts are not typically negotiated; whereas, the fund's adviser actively shops for a line of credit and negotiates the various terms (e.g., applicable interest rates, fees, and covenants). Moreover, lines of credit give funds clarity concerning their ability to borrow (so long as the conditions are met, they can borrow), while overdrafts are at the discretion of the custodian. Another difference concerns the length of the loan. Borrowings under credit lines can be outstanding for relatively long periods of time (up to sixty days under the Act), while overdrafts typically extend only for the time it takes a trade to settle.²¹⁸ Thus, overdrafts might be less advantageous to mutual funds than lines of

216. INV. CO. INST., *supra* note 160, at 263.

217. As with lines of credit, overdrafts must be reported only if they exceed one percent of net assets. Instructions to Form N-SAR, *supra* note 200, Item 55.

218. A custodian typically permits an overdraft when it knows securities have been sold and cash will arrive at the end of the settlement period, making repayment of the overdraft fairly certain. (Banks could similarly require repayment at the end of the settlement period, but the Act does not require that.)

credit. On the other hand, overdraft facilities are cheaper than credit lines, which entail legal and administrative fees and potentially fees on undrawn amounts.

Table 8 also looks at overdrafts by category of funds. Bond fund employ overdrafts more than equity funds do. This is the case for both closed-end and open-end funds. Among open-end funds, 32% of bond funds use overdrafts, versus 26% of equity funds. Among closed-end funds, approximately 48% of bond funds have overdrafts, versus only 16% of equity funds. A large percent of money market funds use overdrafts (32%). While money market funds are unlikely to use lines of credit (fewer than 2% do), they are heavy users of overdrafts. This suggests that although money market funds do not normally borrow to manage redemptions, they do manage settlements via overdrafts fairly routinely.

Figure 7 shows temporary borrowing over time. The figure shows the percent of funds that report using overdrafts (solid lines) and lines of credit (dashed lines) each year. The figure shows an increase in the percent of funds that were employing overdrafts during the downturn of 2001 and 2002. It also shows a spike in overdraft usage during the financial crisis in 2008, followed by a decline. The pattern is the same for both open-end and closed-end funds and is consistent with funds turning to overdrafts during times of market stress. With respect to usage of credit lines, we see a similar pattern for open-end funds (with usage increasing during times of market stress). However, the pattern diverges for closed-end funds. For these funds, credit line usage (i) declined during 2001 and 2002 and (ii) accelerated after 2008 (instead of spiking in 2008 and then declining). This pattern reflects the fact that closed-end funds use lines of credit for purposes other than redemptions. The pattern is consistent with closed-end funds investing increasingly in illiquid assets and securities with long settlement periods, circumstances in which lines of credit are more appropriate than overdrafts from custodians.²¹⁹

3. Interfund Borrowing

In recent years, mutual fund complexes have designed borrowing and lending arrangements that allow their funds to borrow from their other funds, instead of from a bank. These programs allow mutual funds within the complex to lend money directly to (and borrow money directly from) each other for temporary purposes. For instance, an equity fund needing

219. Since 2010, the largest growth has been in non-traditional bond funds, foreign funds, and alternative strategy funds. See Daniel Deli et al., *supra* note 207, at 6.

cash to meet redemptions could borrow from a bond fund that is receiving cash inflows during the day. Fund management companies, which administer the loans without any additional charge, argue that interfund borrowing programs benefit both borrowing and lending funds. They allow funds needing cash to borrow at lower cost than borrowing from a bank or under an overdraft with the custodian. Interfund borrowing is cheaper because it avoids the profit that a third-party lender would earn (by charging a higher margin on the interest rate or by charging a fee).²²⁰ They allow funds with excess cash available to earn a return on that cash, which would otherwise be invested at a lower return or not at all.

Form N-SAR does not require funds to provide information about interfund borrowing programs and hence the extent of these programs cannot be determined from my main dataset. However, interfund borrowing is prohibited by the Investment Company Act and, consequently, fund complexes must obtain the permission of the SEC to establish such a program. This enables me to identify how many fund families have received permission to set up interfund borrowing facilities.

The SEC must issue an exemption to establish an interfund borrowing program since the lenders and borrowers, under such a program, are other mutual funds. This violates several of the Investment Company Act's requirements: Section 18(f) requires that open-end funds borrow only from "banks" and sections 17(a)(3) and 21(b) prevent mutual funds from borrowing from and lending to affiliated funds.²²¹ These provisions were intended to address potential conflicts of interests between investors and funds. Without these protections, funds could, for example, transfer money to affiliates by lending at non-market interest rates or fees.²²² However, these protective provisions also preclude the potential efficiencies from interfund borrowing and lending. The SEC is empowered under the Act to issue exemptions when they are consistent with the public interest and protection of investors.²²³

220. In addition to incorporating bank profit, the interest rates and fees that banks charge on lines of credit must also reflect bank regulatory costs (which mutual fund lenders don't face). Bank regulatory requirements also make bank loans less flexible than interfund loans.

221. Other potential violations concern sections 12(d)(1) (restricting the pyramiding of funds), 17(a)(1) (preventing an affiliate from selling securities or other property to a fund) and 17(a)(2) (preventing an affiliate from buying securities or other property from a fund).

222. See *supra* Part IV.

223. Investment Company Act of 1940 § 6(c), 15 U.S.C. § 80a-6(a)(5)(C) (2012) (permitting the SEC to exempt a transaction from the Act where necessary and appropriate in the public interest and consistent with the protection of investors and the purposes of the Act); Investment Company Act § 12(d)(1)(J) (authorizing the SEC to exempt a transaction from 12(d)(1) if consistent with the public interest and the protection of investors); Investment Company Act of

To apply for an exemption, funds submit an application which describes the purpose of the program and certain details (e.g., how interest is computed and how the program is administered).²²⁴ To approve the application, the SEC first posts a notice in the Federal Register.²²⁵ The notice gives interested parties and the SEC an opportunity to request a hearing. If no hearing is requested, the SEC then issues an order exempting the program from the designated portions of the Act.²²⁶

Fidelity was the first fund family to obtain SEC authorization to engage in interfund borrowing, receiving its exemptive order in 1990.²²⁷ In order to identify how widespread these programs have become within the industry, I obtain all exemptive orders that the SEC has issued concerning interfund borrowing from 1990 through 2014.²²⁸ I identify the date that each exemptive order was issued and the funds named in the order. Figure 8, Panel A, shows the number of exemptive orders issued by the SEC in each year.

Figure 8, Panel B, shows the percent of funds that have obtained SEC approval to engage in interfund borrowing, by assets under management. To compute the yearly percentages, I sum the net assets of funds that have obtained SEC approval (issued in that year or earlier), and divide by industry net assets in that year. The figure shows percentages from 1998 (the first year of my main dataset) to 2014. In 1998, 23% of industry assets were authorized to engage in interfund borrowing programs. Since the first program was approved in 1990, fund assets eligible for interfund borrowing increased from zero percent (at the start of 1990) to about one-quarter by 1998. The figure rises to 47% by 2014. Thus, about half of the

1940 § 17(b) (authorizing the SEC to exempt a transaction from 17(a) if it is fair and reasonable, does not involve overreaching, and is consistent with purposes of the Act and the policies set forth in the fund's registration statement). Further, § 17(d) and Rule 17d-1 allow the SEC to permit certain joint arrangements. 17 C.F.R. § 270.17d-1 (2016).

224. See, e.g., *Notice of Application of PNC Funds*, SEC (Aug. 10, 2015), <https://www.sec.gov/Archives/edgar/data/778202/000114036115030630/form40app.htm> [<https://perma.cc/R282-XSWM>].

225. Investment Company Act of 1940 § 40(a); 17 C.F.R. § 270.0-5.

226. The exemption's scope is limited to the extent necessary to allow a fund to borrow through the interfund program (*see supra* note 221 and accompanying text). Funds remain subject to all other requirements of the Act, including its 300% asset coverage requirement and the requirement that temporary borrowings not exceed 5% of assets.

227. Daily Money Fund et al., Investment Company Act Release No. 17,303 (Jan. 11, 1990).

228. I identify exemptive orders by searching the federal register on Lexis using broad search terms (using as keywords any of the following or variations thereof: interfund, inter-fund, joint lending, or joint borrowing). Then I review the orders and related applications for substance to eliminate irrelevant results. I exclude orders that focus solely on permitting funds to invest excess cash in affiliated money market funds for cash management purposes.

industry is now authorized to engage in interfund borrowing.

These percentages are conservative estimates, as I include only funds that are named in the SEC's exemptive order and the related notice of application. However, authorization is not limited to the named funds and may extend to any existing or future eligible fund within the family.²²⁹ Moreover, going forward, the popularity of interfund borrowing may accelerate further. "Recent changes in bank regulatory capital rules may reduce willingness by banks to . . . offer [such lines of credit to mutual funds]," or significantly raise their cost.²³⁰ Indeed, changes in bank capital rules have been cited as recent motivations for applicants to file for interfund borrowing clearance.²³¹ As a result, interfund borrowing could become a more attractive alternative to bank loans.

As Figure 8 reveals, the mutual fund industry is increasingly pursuing a source of funding that is not permitted under the Investment Company Act. Congress intended that open-end funds would borrow from banks only. Moreover, Congress prohibited funds from transacting with affiliated parties (to preclude the earlier abuses in the industry). Admittedly, the Act does empower the SEC to issue exemptions when in the public interest and consistent with investor protection.²³² But to this extent? Interfund borrowing facilities are becoming common borrowing mechanisms instituted on an ad hoc basis through exemptive orders issued to individual fund families. The SEC's case-by-case approach to interfund borrowing resembles its approach to the use of derivatives by mutual funds. However, the SEC is now undertaking a review of its practices with derivatives with the goal of adopting a formal rule and a comprehensive approach.²³³ Given the prevalence of interfund borrowing facilities, the SEC should undertake a similar review of its approach to interfund borrowing and propose a comprehensive rule for comment. The SEC has already adopted rules to guide other kinds of transactions between affiliated funds.²³⁴

229. The applications and orders list those funds that "currently intend to rely on the requested order . . ." But they also open participation to "any existing or future" fund within the complex. *See, e.g.*, Notice of Application for John Hancock Variable Insurance Trust, et al., 76 Fed. Reg. 72,731 (Nov. 25, 2011) [hereinafter John Hancock Notice of Application].

230. Miles Weiss, *BlackRock Seeks SEC Clearance for Internal Fund Lending*, BLOOMBERG (Jun. 26, 2015).

231. *See, e.g., id.*; Analyst Blog, *BlackRock to Set an Internal Lending Program if SEC Agrees*, ZACKS EQUITY RESEARCH (Jun. 29, 2015).

232. *See supra* note 223.

233. *See supra* note 157.

234. These include Rules 17a-7 (governing cross-trades between affiliated funds) and 17a-8 (governing mergers involving affiliated funds). 17 C.F.R. § 270.17a-7-8 (2016).

Although it has not been articulated comprehensively, an outline of the SEC's position can be inferred via review of the legal analysis (and other sections) in the exemptive orders and applications. The SEC believes there is no potential for misuse because the programs must be implemented on terms that "preclude the possibility of any . . . [f]und obtaining an undue advantage over any other . . ." ²³⁵ For instance, the borrowing facility must be administered by the funds' investment adviser under its existing advisory agreement. ²³⁶ As such, the adviser must administer the facility as a disinterested fiduciary and can charge no additional fee as compensation. Moreover, participation by all funds must be on the same terms as that of other funds. ²³⁷

Nevertheless, the arrangement has the potential for exploitation. As administrator, the adviser makes key determinations (such as the interest rate applicable to each loan and who gets to borrow and lend). The SEC implicitly recognizes the potential for exploitation in this arrangement via its imposition of decision-making restrictions on an operational level. For instance, it requires that the adviser's decisions be made by a committee that excludes portfolio managers of participating funds. ²³⁸ Also, it requires that interest rates be set within a range; specifically, no less than what a lending fund could get under an overnight repurchase agreement and no higher than what a borrowing fund would pay under a short-term bank loan. ²³⁹ In addition, it requires that independent directors approve the method of allocating loans among the funds, and that an officer certify compliance annually. ²⁴⁰

Operational constraints, however, might not function as intended during times of market stress. For example, while interest rates are to be set within a range, subjectivity might be required to establish such a range if markets have frozen or ceased operating normally. Moreover, the decision making procedures might not prevent an adviser from favoring some funds over others during crises. For instance, the method for allocating loans might not work as intended, as these programs "anticipate that there

235. See, e.g., John Hancock Notice of Application, *supra* note 229, at 72,733.

236. See, e.g., *id.* at 72,732.

237. See, e.g., *id.* at 72,734.

238. See, e.g., *id.* at 72,732.

239. These procedures are discussed in the Conditions section of the Notice of Application. See, e.g., *id.* at 72,732–34.

240. See, e.g., *id.* at 72,735.

typically will be far more available uninvested cash each day than borrowing demand."²⁴¹ During a crisis, advisers might target some funds to be saved (e.g., a high-profile flagship fund or profitable fund) while leaving others to wither. Furthermore, some funds might be saddled with poor credits.

Interfund borrowing programs can raise other issues (outside a crisis). For example, what happens when a borrower fund defaults on a loan? The terms of these programs do not address how defaults are to be handled, except to say that the loan is referred to an independent arbitrator.²⁴² Would a lending fund be stricter on a defaulting fund than a bank would be, since it lacks a bank's workout experience, or more lenient, since the borrower is a member of the fund family?

Interfund borrowing raises larger, systemic concerns. Should the terms of interfund programs be the same for all fund complexes, or differ based on the size of the fund complex? Perhaps interfund borrowing lessens or worsens the kind of interconnectedness that implicates systemic risk concerns. Since half of the industry is now able to operate under interfund borrowing programs, these have become significant questions.

VIII. CONCLUSION

Despite its importance, the capital structure of mutual funds has received little attention from scholars and policymakers. Many assume that the Investment Company Act simply prohibits mutual funds from issuing senior capital. This Article is the first to unwind the complex regulations governing the issuance of senior capital by mutual funds. It reveals how mutual funds are permitted to organize their capital structures, and the limitations they face. The Article also examines the capital structure choices that mutual funds actually make, by constructing a dataset on capital structure for all registered mutual funds in the United States from 1998 to 2013.

Although some funds report debt outstanding on their annual balance sheets, I find that a surprising number of mutual funds are borrowing money and repaying it during the course of a year. Nearly 10% of all mutual funds report that they borrow money for leverage purposes each year,

241. *See, e.g., id.* at 72,732.

242. *See, e.g., id.* at 72,735. Perhaps interfund facilities should be limited to circumstances where there is a timing mismatch between when a fund is required to pay redeeming shareholders and when asset sales (executed by the fund in order to pay redemptions) will settle. The lending fund can reasonably predict that the loan will be repaid relatively quickly and reliably under such circumstances.

on average (about 8% of open-end funds and one-quarter of closed-end funds). Borrowing increases to over 12% of all funds when I include non-conventional forms of borrowing (e.g., short selling and purchasing securities on margin). In fact, mutual funds borrow as often as they engage in the most popular derivatives. If proposed regulations restrict derivatives usage by mutual funds, capital structure could become an even more attractive option for leverage.

I also find that mutual funds borrow on a short-term basis to manage the liquidity of their investment portfolios. Tools used to manage liquidity include bank lines of credit and, more frequently, overdrafts on custodial accounts. Increasingly, mutual funds are entering into joint borrowing and lending facilities that allow one fund to borrow money directly from another, a source of short-term financing not contemplated by the Investment Company Act. This new practice has the potential to re-introduce abuses that had been addressed by the Investment Company Act decades earlier, and raises novel issues.

The analysis, overall, reveals that mutual funds engage in borrowing and leveraging activities via a host of practices. However, much of this goes unreported in significant detail. Form N-SAR discloses only the amount of borrowings that happen to be outstanding on two particular dates each year, and whether a fund has engaged in borrowing during the year. As a result, asset coverage ratios can be computed, at most, semi-annually, raising the possibility that funds are gaming the system by breaching coverage ratios between reporting dates. Also, there is presently no way to identify the source of financing.

The SEC should require greater reporting of borrowing activities beyond that currently required by Form N-SAR. Funds could be required to report the dollar amount of borrowings outstanding on each day of the reporting period, and the source of the financing, including interfund loans. Or, the average dollar amount outstanding, maximum dollar amount, and number of days could be reported. In addition, information should be reported in a structured format that enables aggregation and analysis of the data. These enhancements could be accomplished as part of the SEC's current effort to modernize mutual fund reporting.

The SEC has recently proposed that mutual funds report certain financial information on a more frequent basis than under the existing regime.²⁴³ In its proposal, the SEC has recommended that key financial information currently reported in Form N-SAR and elsewhere be

243. Investment Company Reporting Modernization, 80 Fed. Reg. 33,590 (June 12, 2015).

consolidated within new Form N-PORT, which would be filed on a monthly basis. However, only information relating to the third month of the fund's fiscal quarter would be made available to the public. Moreover, N-PORT would emphasize detailed reporting of a fund's portfolio holdings and its derivatives, but not detailed reporting of its borrowings and other liabilities. In fact, key information on borrowing that is presently reported in Form N-SAR would no longer be reported, such as whether certain practices were permitted and engaged in, and whether the fund borrowed for temporary purposes from banks and/or custodians.²⁴⁴

Thus, the SEC's proposal represents a step backward with respect to the reporting of mutual fund borrowing activity. Instead, the SEC should modify proposed N-PORT to require enhanced reporting of borrowing and related liabilities. Such improvements to the reporting system would help regulatory authorities and researchers evaluate the extent of a fund's borrowing activities and the risks presented.

244. *See id.* at n.54 (and accompanying text), 245–46, 250 (item 55 of Table 1), and 500–10. In a recent modification to its proposal, the SEC has suggested that information concerning temporary bank lines of credit could be reported in its proposed new Form N-CEN, which would require funds to report census-type information. Investment Company Reporting Modernization, Investment Company Act Release No. 31,835 at n.574 (amending Release No. 31,610). However, N-CEN would be filed only once per year, and would not require comprehensive reporting of temporary borrowing practices. For instance, as proposed, N-CEN would not require reporting of overdrafts with custodians (the most prevalent form of borrowing). Reporting of borrowing practices should not be an afterthought, but rather a focus of efforts to modernize mutual fund reporting.

Figure 1: Example of Mutual Fund Capital Structure

An example of an open-end fund and a closed-end fund that have issued senior securities. The example assumes the funds have no liabilities other than the senior securities shown.

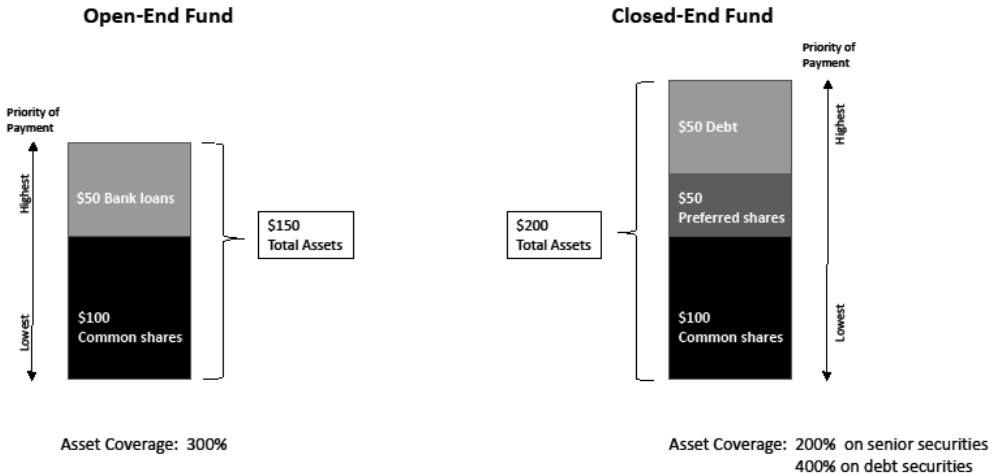
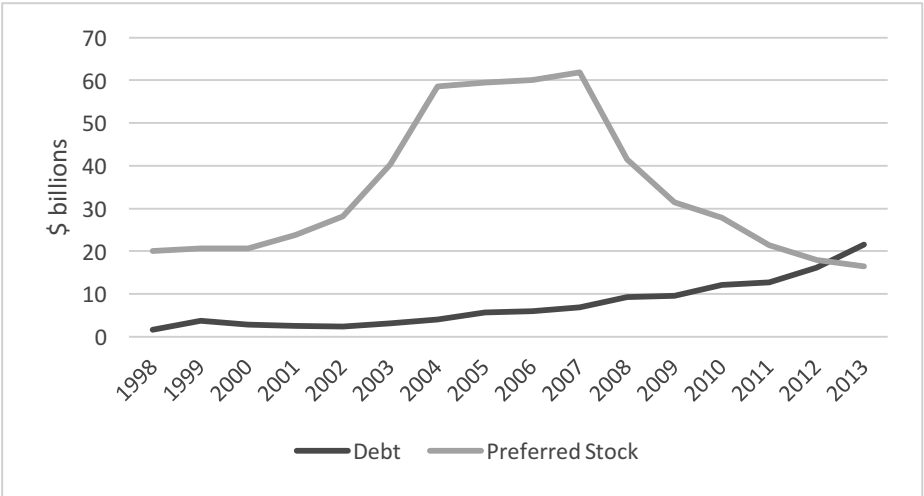


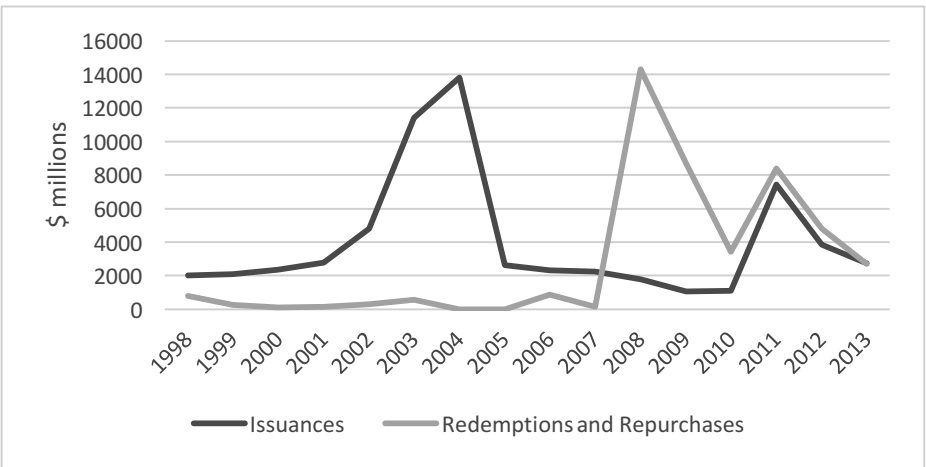
Figure 2: Preferred Stock and Debt

The figures show preferred stock and debt of closed-end funds. Panel A shows the aggregate amount (in \$ billions) outstanding each year. Panel B shows new issuances and redemptions/repurchases of preferred stock each year, and Panel C shows new issuances and redemptions/repurchases of debt each year (each in \$ millions).

Panel A: Aggregate Outstanding Debt and Preferred Stock



Panel B: Preferred Stock: New Issuances and Redemptions/Repurchases



Panel C: Debt: New Issuances and Redemptions/Repurchases

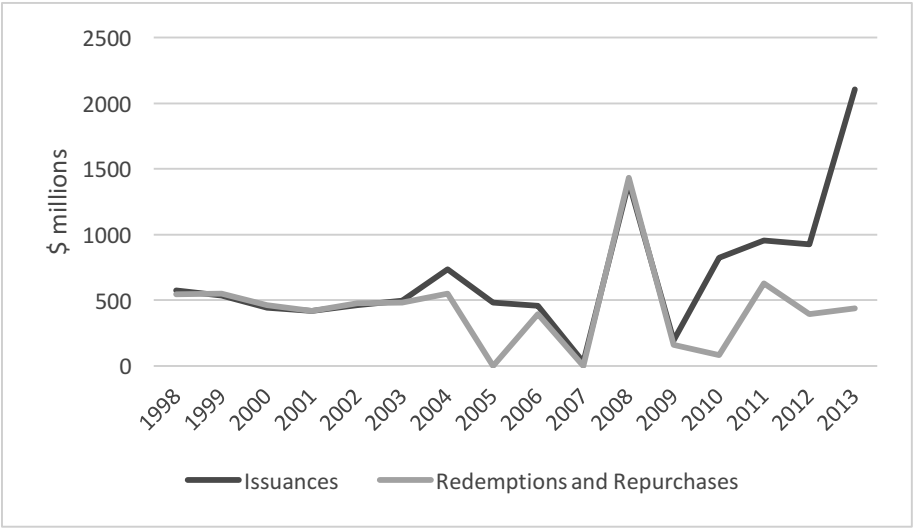
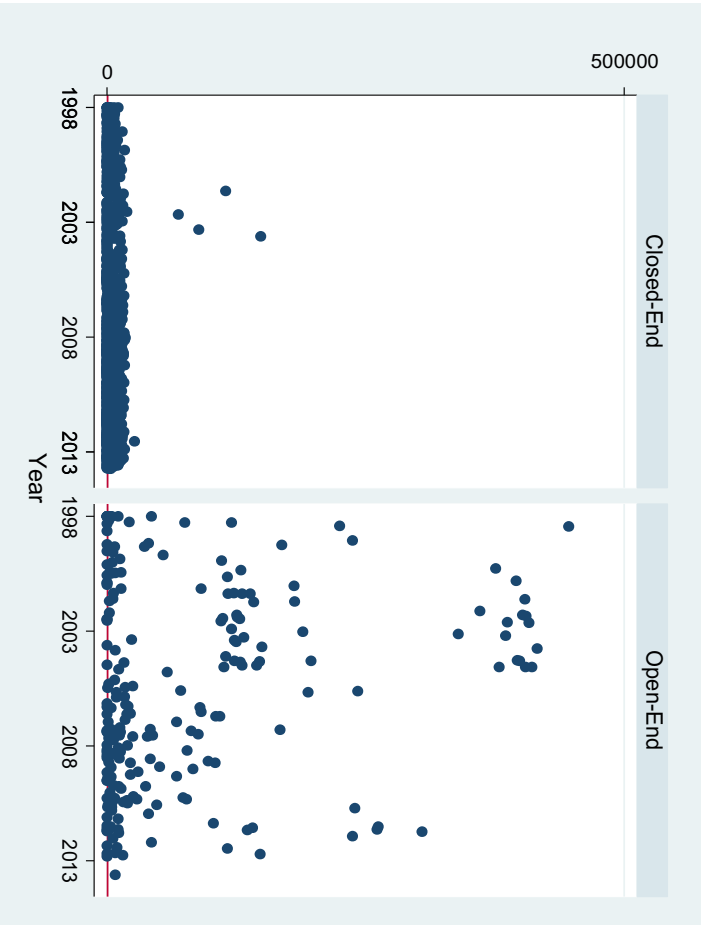


Figure 3: Asset Coverage Ratios – Debt
The figures show asset coverage ratios on debt, for closed-end funds and open-end funds with debt outstanding. Panel A shows all ratios. Panel B shows only those ratios under 1,200%.

Panel A: All Ratios



Panel B: Ratios Under 1,200%

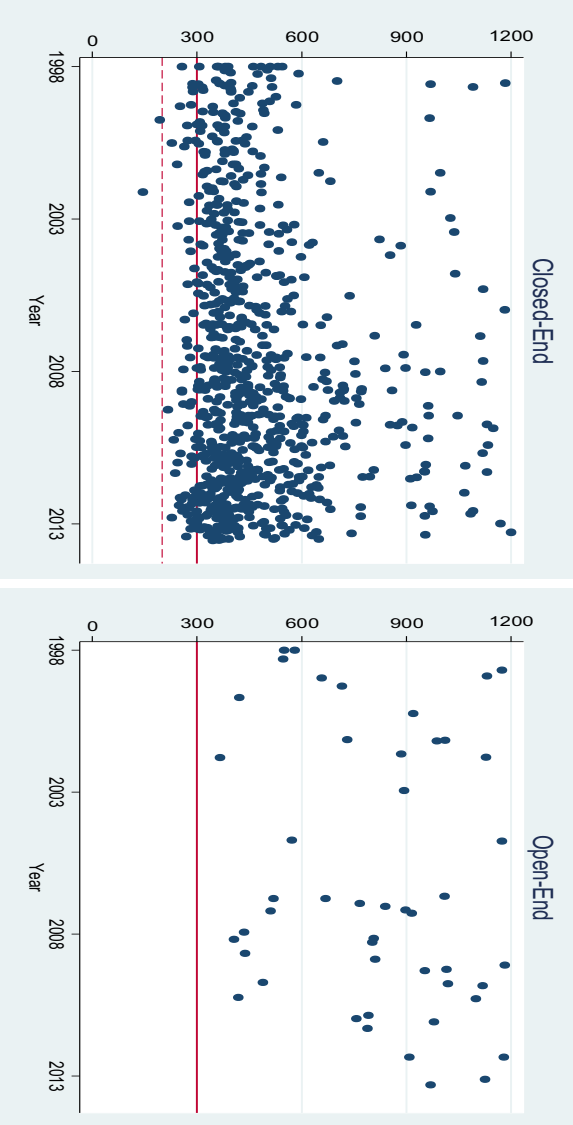
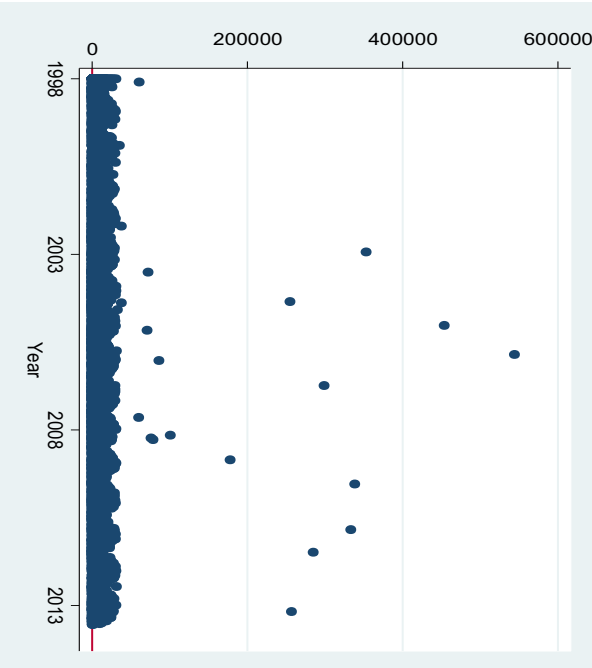


Figure 4: Asset Coverage Ratios – Preferred Stock

The figures show asset coverage ratios on senior capital (debt and preferred stock), for closed-end funds with preferred stock outstanding. Panel A shows all ratios. Panel B shows only those ratios under 1,000%.

Panel A: All Ratios



Panel B: Ratios Under 1,000%

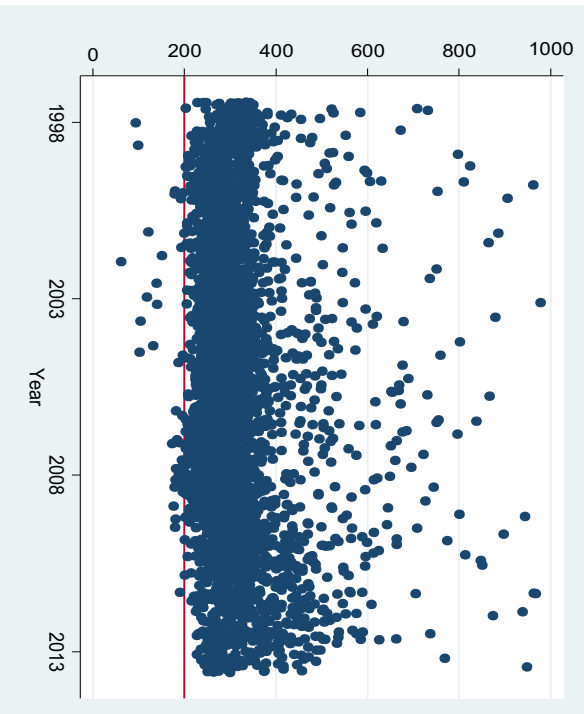


Figure 5: Permission to Borrow; Engaged in Borrowing

The figure shows the percent of funds that are permitted to borrow money and the percent of funds that engaged in borrowing money (for investment purposes). Percentages are shown separately for closed-end funds and open-end funds.

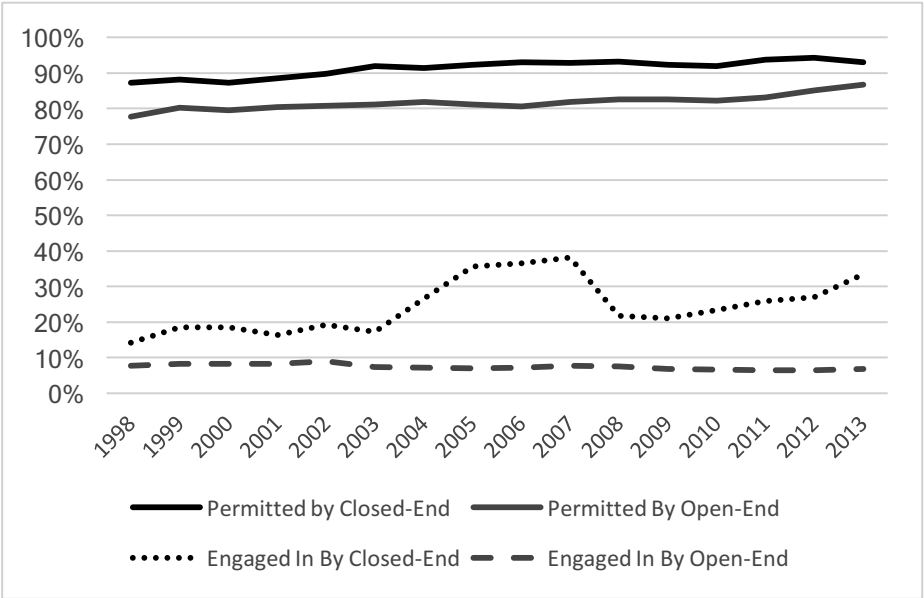
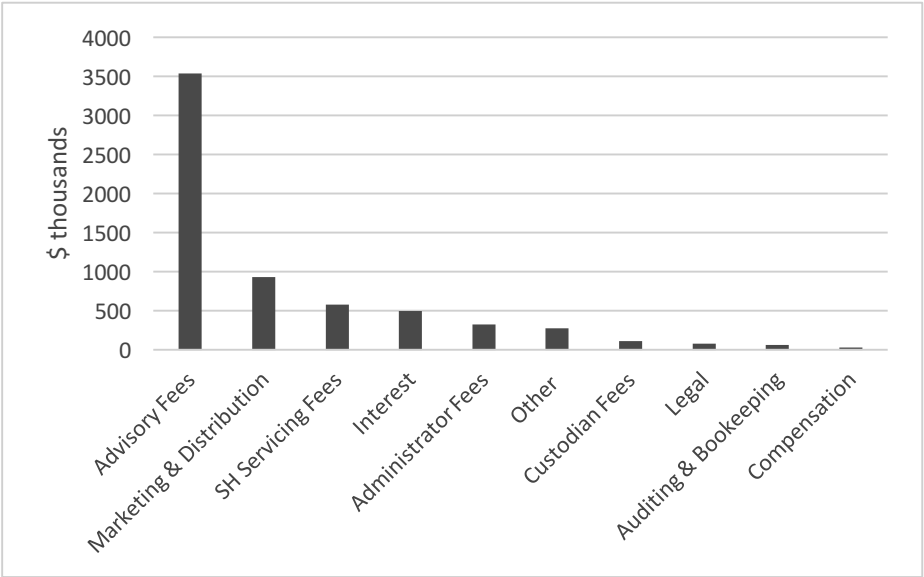


Figure 6: Expenses

The figures show the average annual amount (in \$ thousands) of expenses paid, by expense category. Panel A shows all funds and Panel B shows closed-end funds only.

Panel A: All Funds



Panel B: Closed-End Funds

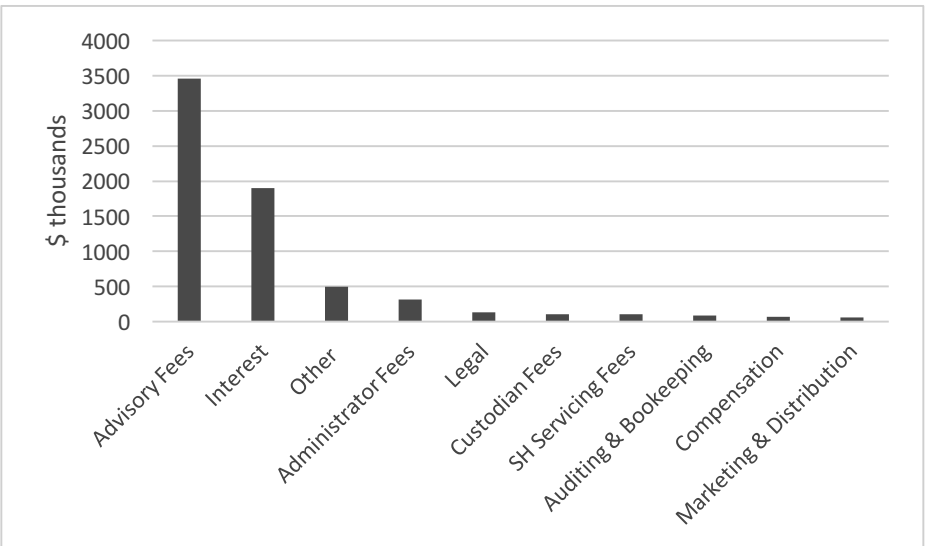


Figure 7: Borrowing for Temporary Purposes

The figure shows the percent of funds that report borrowings under lines of credit and overdrafts each year. Percentages are shown separately for closed-end funds and open-end funds.

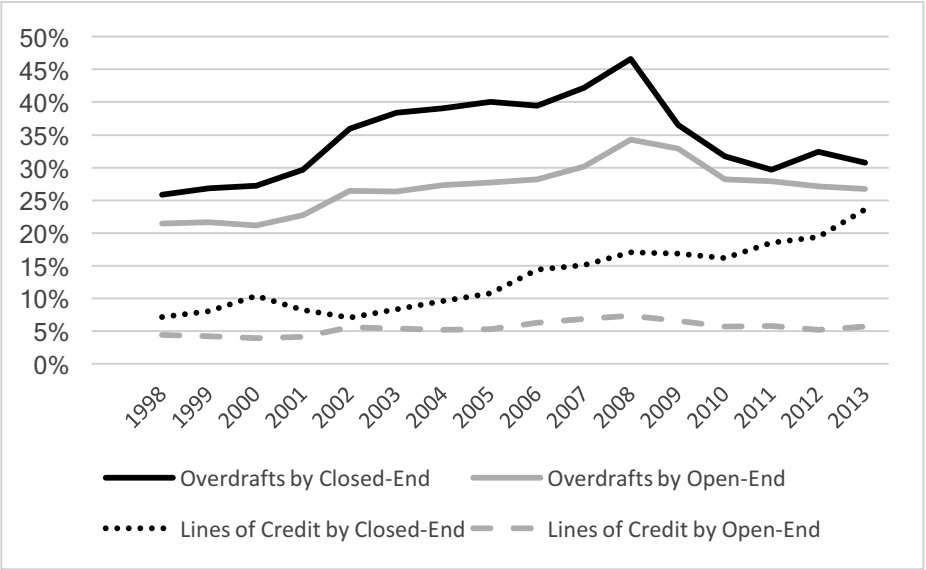
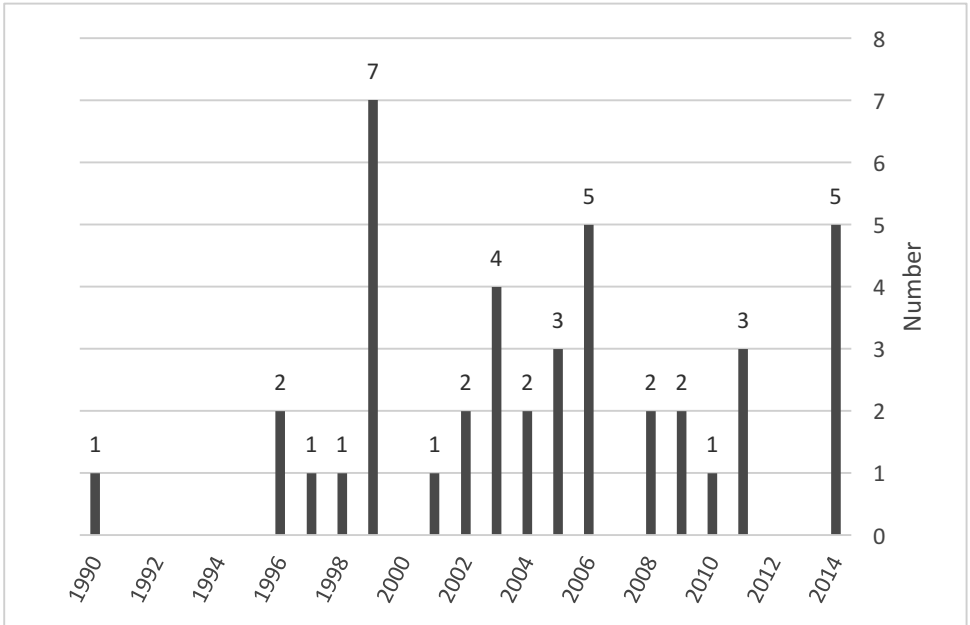


Figure 8: Interfund Borrowing Programs

Panel A shows the number of exemptive orders authorizing interfund borrowing programs that have been issued by the SEC each year. Panel B shows the percent of industry assets that are authorized under an SEC exemptive order to participate in interfund programs, by year.

Panel A: Exemptive Orders



Panel B: Percent of Industry TNA

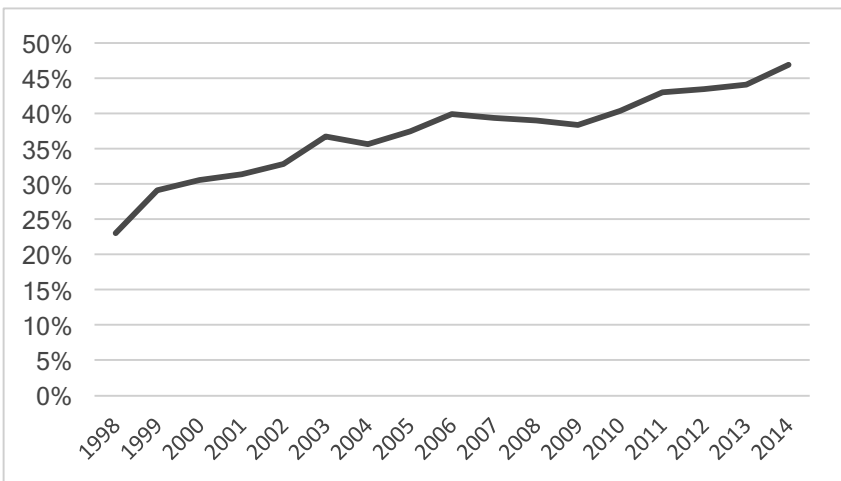


Table 1: Number of Funds and Assets

Number of funds (Panel A) and total net assets (Panel B) are shown for all funds, closed-end funds, and open-end funds. Number of funds (Panel C) and total net assets (Panel D) are shown by fund category.

Panel A: Number of Funds

Year	Overall	Closed-End		Open-End	
	N	N	%	N	%
1998	8,613	532	6.18%	8,081	93.82%
1999	9,296	544	5.85%	8,752	94.15%
2000	9,873	531	5.38%	9,342	94.62%
2001	10,173	531	5.22%	9,642	94.78%
2002	10,249	592	5.78%	9,657	94.22%
2003	10,357	673	6.50%	9,684	93.50%
2004	10,458	737	7.05%	9,721	92.95%
2005	10,313	771	7.48%	9,542	92.52%
2006	10,775	798	7.41%	9,977	92.59%
2007	10,883	818	7.52%	10,065	92.48%
2008	11,623	795	6.84%	10,828	93.16%
2009	10,967	778	7.09%	10,189	92.91%
2010	10,865	776	7.14%	10,089	92.86%
2011	11,061	775	7.01%	10,286	92.99%
2012	11,328	784	6.92%	10,544	93.08%
2013	11,361	765	6.73%	10,596	93.27%
<i>Annual Avg</i>	<i>10,512</i>	<i>700</i>	<i>6.63%</i>	<i>9,812</i>	<i>93.37%</i>

Panel B: Assets (in \$ millions)

Year	Overall	Closed-End		Open-End	
	Assets	Assets	%	Assets	%
		164,00	3.05		96.95
1998	5,384,000	0	%	5,220,000	%
		176,00	2.72		97.28
1999	6,466,000	0	%	6,290,000	%
		173,00	2.37		97.63
2000	7,313,000	0	%	7,140,000	%
		146,00	2.01		97.99
2001	7,246,000	0	%	7,100,000	%
		138,00	2.02		97.98
2002	6,848,000	0	%	6,710,000	%
		175,00	2.19		97.81
2003	8,005,000	0	%	7,830,000	%
		228,00	2.55		97.45
2004	8,938,000	0	%	8,710,000	%
		245,00	2.55		97.45
2005	9,625,000	0	%	9,380,000	%
	11,594,00	294,00	2.54	11,300,00	97.46
2006	0	0	%	0	%
	13,118,00	318,00	2.42	12,800,00	97.58
2007	0	0	%	0	%
	11,826,00	226,00	1.91	11,600,00	98.09
2008	0	0	%	0	%
	12,431,00	231,00	1.86	12,200,00	98.14
2009	0	0	%	0	%
	13,460,00	260,00	1.93	13,200,00	98.07
2010	0	0	%	0	%
	13,955,00	255,00	1.83	13,700,00	98.17
2011	0	0	%	0	%
	14,962,00	262,00	1.75	14,700,00	98.25
2012	0	0	%	0	%
	17,387,00	287,00	1.65	17,100,00	98.35
2013	0	0	%	0	%
<i>Annual</i>					
<i>Avg</i>	<i>10,534,875</i>	<i>223,625</i>	<i>2.21%</i>	<i>10,311,250</i>	<i>97.79%</i>

Panel C: Number of Funds

Year	Equity		Bond		Balanced		Money Market	
	N	%	N	%	N	%	N	%
1998	4,122	49.47%	2,823	33.88%	376	4.51%	1,011	12.13%
1999	4,648	51.90%	2,900	32.38%	394	4.40%	1,013	11.31%
2000	5,275	55.24%	2,841	29.75%	412	4.31%	1,021	10.69%
2001	5,712	57.95%	2,778	28.19%	357	3.62%	1,009	10.24%
2002	5,902	59.11%	2,729	27.33%	369	3.70%	984	9.86%
2003	5,758	57.95%	2,797	28.15%	385	3.87%	997	10.03%
2004	5,888	58.41%	2,889	28.66%	381	3.78%	923	9.16%
2005	5,940	59.54%	2,757	27.63%	399	4.00%	881	8.83%
2006	6,383	61.09%	2,836	27.14%	417	3.99%	812	7.77%
2007	6,682	63.08%	2,781	26.25%	395	3.73%	735	6.94%
2008	7,234	64.29%	2,792	24.81%	448	3.98%	778	6.91%
2009	6,882	64.44%	2,653	24.84%	418	3.91%	727	6.81%
2010	6,939	64.88%	2,624	24.53%	406	3.80%	726	6.79%
2011	7,152	65.69%	2,680	24.61%	408	3.75%	648	5.95%
2012	7,333	65.66%	2,775	24.85%	428	3.83%	632	5.66%
2013	7,427	66.37%	2,744	24.52%	439	3.92%	581	5.19%
Annual Avg.	6,205	60.32%	2,775	27.35%	402	3.94%	842	8.39%

Panel D: Assets (in \$ millions)

Year	Equity		Bond		Balanced		Money Market	
	Assets	%	Assets	%	Assets	%	Assets	%
1998	2,830,000	54.11%	984,000	18.81%	219,000	4.19%	1,200,000	22.94%
1999	3,520,000	55.61%	1,080,000	17.06%	259,000	4.09%	1,470,000	23.22%
2000	4,260,000	59.17%	1,090,000	15.14%	265,000	3.68%	1,590,000	22.08%
2001	3,620,000	50.56%	1,230,000	17.18%	251,000	3.51%	2,060,000	28.77%
2002	2,910,000	42.92%	1,540,000	22.71%	255,000	3.76%	2,070,000	30.53%
2003	3,670,000	47.05%	1,660,000	21.28%	316,000	4.05%	2,150,000	27.56%
2004	4,500,000	51.84%	1,890,000	21.77%	397,000	4.57%	1,890,000	21.77%
2005	5,220,000	55.65%	1,800,000	19.19%	475,000	5.06%	1,880,000	20.04%
2006	6,390,000	56.05%	2,290,000	20.09%	609,000	5.34%	2,100,000	18.42%
2007	7,180,000	55.66%	2,670,000	20.70%	659,000	5.11%	2,430,000	18.84%
2008	5,430,000	46.41%	2,640,000	22.56%	512,000	4.38%	3,170,000	27.09%
2009	5,690,000	45.89%	2,810,000	22.66%	538,000	4.34%	3,340,000	26.94%
2010	6,660,000	49.70%	3,180,000	23.73%	611,000	4.56%	2,940,000	21.94%
2011	7,050,000	50.72%	3,480,000	25.04%	664,000	4.78%	2,710,000	19.50%
2012	7,340,000	49.59%	3,750,000	25.34%	865,000	5.84%	2,900,000	19.59%
2013	9,290,000	53.39%	4,180,000	24.02%	1,010,000	5.80%	2,910,000	16.72%
<i>Annual Avg</i>	<i>5,347,500</i>	<i>51.52%</i>	<i>2,267,125</i>	<i>21.08%</i>	<i>494,063</i>	<i>4.57%</i>	<i>2,300,625</i>	<i>22.87%</i>

Table 2: Debt

The table shows funds that report debt outstanding. Panel A shows figures for all funds (number and percent of all funds), closed-end funds and open-end funds (number and percent of closed-end funds and open-end funds, respectively), by year. Panel B shows figures by category (percent of funds in that category, for closed-end and open-end funds) and by subcategory (percent of funds in that subcategory, for closed-end and open-end funds), on average per year.

Panel A: All Funds and by Closed-End versus Open-End

Year	Overall		Closed-End		Open-End	
	N	%	N	%	N	%
1998	37	0.43%	20	3.76%	17	0.21%
1999	48	0.52%	34	6.25%	14	0.16%
2000	41	0.42%	31	5.84%	10	0.11%
2001	46	0.45%	27	5.08%	19	0.20%
2002	46	0.45%	34	5.74%	12	0.12%
2003	44	0.42%	33	4.90%	11	0.11%
2004	54	0.52%	41	5.56%	13	0.13%
2005	61	0.59%	46	5.97%	15	0.16%
2006	64	0.59%	49	6.14%	15	0.15%
2007	73	0.67%	50	6.11%	23	0.23%
2008	96	0.83%	82	10.31%	14	0.13%
2009	105	0.96%	89	11.44%	16	0.16%
2010	112	1.03%	90	11.60%	22	0.22%
2011	104	0.94%	91	11.74%	13	0.13%
2012	126	1.11%	111	14.16%	15	0.14%
2013	129	1.14%	123	16.08%	6	0.06%
<i>Annual Avg</i>		<i>0.69%</i>		<i>8.17%</i>		<i>0.15%</i>

Panel B: By Category and Subcategory

	<u>Closed-End</u>	<u>Open-End</u>
Equity Funds	6.69%	0.10%
Aggressive Capital Appreciation	0.00%	0.00%
Capital Appreciation	0.96%	0.05%
Growth	0.00%	0.21%
Growth & Income	8.28%	0.11%
Income	14.69%	0.04%
Total Return	17.61%	0.08%
Bond Funds	8.64%	0.37%
Corporate	27.09%	0.14%
Government	3.34%	0.09%
Municipal	1.32%	0.77%
General	10.20%	0.33%
Other	24.21%	0.27%
Short-Term	7.19%	0.09%
Balanced Funds	45.03%	0.03%
Money Market Funds		0.02%

Table 3: Preferred Stock

The table shows closed-end funds that report preferred stock outstanding. Panel A shows the number and percent of all closed-end funds, by year. Panel B shows percentages by category and subcategory (as a percent of funds in that category and subcategory), on average per year.

Panel A: Closed-End Funds with Preferred Stock

Year	Closed-End	
	N	%
1998	190	36.75%
1999	190	35.65%
2000	174	33.46%
2001	192	37.21%
2002	234	41.34%
2003	305	48.03%
2004	349	50.36%
2005	369	51.11%
2006	361	48.78%
2007	358	46.98%
2008	333	44.58%
2009	286	39.83%
2010	251	34.86%
2011	212	29.24%
2012	172	23.09%
2013	149	20.61%
<i>Annual Avg</i>		<i>38.87%</i>

Panel B: By Category and Subcategory

	Closed-End
<u>Equity Funds</u>	<u>15.74%</u>
Aggressive Capital Appreciation	0.00%
Capital Appreciation	3.28%
Growth	31.94%
Growth & Income	24.38%
Income	41.60%
Total Return	22.86%
 <u>Bond Funds</u>	 <u>52.20%</u>
Corporate	20.82%
Government	2.98%
Municipal	74.85%
General	11.55%
Other	17.97%
Short-Term	11.35%
 <u>Balanced Funds</u>	 <u>28.25%</u>

Table 4: Asset Coverage Ratios

Panel A shows statistics for asset coverage ratios on debt, for all funds, for closed-end funds, and for open-end funds, with debt outstanding. Panel B shows statistics for asset coverage ratios on senior capital (debt and preferred stock), for closed-end funds with preferred stock outstanding.

Panel A: Asset Coverage Ratios – Debt

	Overall	Closed-End	Open-End
Min	149%	149%	370%
Median	467%	421%	12708%
Mean	28928%	15068%	82318%
Max	1061950%	1061950%	872260%
Obs.	1,155	919	228
<hr/>			
Under 200%	0.09%	0.11%	0.00%
Under 300%	3.99%	5.01%	0.00%
300% to 900%	68.54%	83.12%	11.84%
Over 900%	27.47%	11.87%	88.16%

Panel B: Asset Coverage Ratios – Preferred Stock

	Closed-End
Min	100%
Median	294%
Mean	6575%
Max	3227958%
Obs.	4,138
<hr/>	
Under 200%	0.36%
200% to 299%	57.23%
300% to 900%	40.31%
Over 900%	2.10%

Table 5: Performance of Highly Indebted Open-End Funds

Panel A shows market-adjusted returns (on an annualized basis) and standard deviation of returns. Values are in percent (except number of observations). Panel B shows one-month risk-adjusted returns (alphas) and factor loadings from a four-factor model. Alphas are computed on a gross basis and the analysis is restricted to domestic equity funds. Standard errors are shown in parentheses. Significance is indicated by *** (1%), ** (5%), and * (10%).

Panel A: Market-Adjusted Returns and Volatility

	Obs.	Market-Adjusted Returns		Obs.	Standard Deviation of Returns
Bond Funds	22	-4.55 (0.93)***	Bond Funds	204	1.71 (0.05)***
			Bond Market		1.05 (0.03)***
			Difference		0.61 (0.04)***
Equity Funds	26	8.25 (53.94)	Equity Funds	288	6.89 (0.27)***
			Equity Market		4.85 (0.08)***
			Difference		2.04 (0.25)***

Panel B: Risk-Adjusted Returns and Factor Loadings

Obs.	Return	Factor Loadings			
	(alpha)	Market	Size	Value	Momentum
252	0.0036 (0.0039)	1.3146 (0.0863)***	0.3310 (0.1029)***	0.1631 (0.1091)	0.1103 (0.0643)*

Table 6: Borrowing for Investment Purposes

The table shows the percent of funds that report borrowing for investment purposes during the annual reporting period, for closed-end funds and open-end funds (on average per year). Figures are shown for funds in all categories and by category and subcategory (as a percent of funds in that category and subcategory).

	<u>Closed-End</u>	<u>Open-End</u>
All Categories	24.60%	7.43%
Equity Funds	20.72%	8.08%
Aggressive Capital Appreciation	16.67%	11.74%
Capital Appreciation	12.67%	9.20%
Growth	16.44%	7.31%
Growth & Income	20.33%	6.15%
Income	36.26%	3.98%
Total Return	41.03%	5.70%
Bond Funds	26.46%	8.02%
Corporate	48.73%	8.39%
Government	45.54%	7.62%
Municipal	15.85%	9.31%
General	29.40%	7.12%
Other	52.10%	9.66%
Short-Term	12.07%	4.53%
Balanced Funds	59.62%	5.32%
Money Market Funds		3.99%

Table 7: Funds Engaged in Leverage (Borrowing, Short Selling or Margin) Versus Derivatives

The table shows the percent of funds that report engaging in leverage through short selling, margin purchases and/or borrowing money for investment purposes, and that report engaging in derivatives, on average per year.

	All	Closed-End	Open-End
Leverage	12.16%	28.17%	10.84%
Short Selling	3.71%	5.47%	3.59%
Margin Purchases	0.70%	1.49%	0.65%
Borrowing Money	8.76%	24.60%	7.43%
Derivatives	22.41%	29.02%	21.93%
Options on Equities	4.58%	7.31%	4.38%
Options on Debt Securities	1.94%	2.79%	1.87%
Options on Stock Indices	1.95%	4.40%	1.77%
Interest Rate Futures	8.51%	16.80%	7.90%
Stock Index Futures	9.72%	2.16%	10.29%
Options on Futures	2.64%	3.48%	2.60%
Options on Stock Idx Futures	0.74%	0.34%	0.77%
Other Commodity Futures	0.46%	0.47%	0.46%

Table 8: Borrowing for Temporary Purposes

The table shows the percent of funds that report borrowings under bank lines of credit and overdrafts with custodians, for closed-end and open-end funds (on average per year). Figures are shown for funds in all categories and by category (as a percent of funds in that category).

	Lines of Credit		Overdrafts	
	Closed-End	Open-End	Closed-End	Open-End
All Categories	13.14%	5.45%	34.52%	26.89%
Equity Funds	15.02%	5.95%	16.40%	25.47%
Bond Funds	11.20%	6.19%	47.88%	31.72%
Balanced	38.47%	2.80%	27.13%	21.53%
Money Mkt		1.60%		31.88%

* * *