IMPACT OF THE SEC SWING PRICING AND HARD CLOSE PROPOSAL ON RETIREMENT PLAN PARTICIPANTS

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IMPACT OF THE SEC SWING PRICING AND HARD CLOSE PROPOSAL ON RETIREMENT PLAN PARTICIPANTS

I. EXECUTIVE SUMMARY[1]

On November 2, 2022, the Securities and Exchange Commission (SEC) proposed amendments to its current rules for open-end mutual funds regarding liquidity risk management programs and swing pricing. At the end of 2021, open-end mutual fund assets totaled approximately $27 trillion, compared to approximately $309 billion for closed-end funds, $7.2 trillion of exchange-traded fund (ETF) assets, and $95 billion of Unit Investment Trusts (UITs).

Defined contribution retirement plans and individual retirement arrangements (IRAs) hold approximately 61.9 percent of all retirement plan assets in the United States. Open-end mutual funds represent 61.7 percent of all 401(k) plan assets and 81.3 percent of other private sector defined contribution plan assets. Changes to mutual funds by the SEC proposal would have significant negative impacts on retirement plan participants.

The economies of scale that exist with these plans give plan participants access to investment options, such as open-end mutual funds, that would not be available to an individual investor with limited investment assets and allow plan participants to diversify their investments to reduce investment risk.

> **The SEC acknowledged repeatedly throughout its analysis of the proposal the numerous ways in which the swing pricing with a hard close proposal would adversely impact retirement plan participants, but it failed to analyze or attempt to quantify the negative effects.**

Although retirement plan participants are long-term investors, retirement plans have ongoing transactions that occur on a daily basis, including periodic contributions to the plans, exchange of assets, asset rebalancing, and withdrawals (both periodic, upon job change, after retirement, and for special purposes, such as loans and hardships).

Over the last 30 years, the development of sophisticated systems for processing retirement plan transactions has enabled retirement plan transactions to be completed over a single trading day, reducing the time that retirement assets may be at risk of erosion due to being "out of the market." These systems are price dependent, meaning that the transactions require knowledge of a fund's daily net asset value (NAV) to be completed. Current systems allow plans and participants to submit orders by market close and have the transactions be completed overnight, rather than waiting multiple days to be completed, leading to "out of the market" risks to the assets.

The SEC hard close proposal will upend these processes and require retirement plans and plan participants to submit transaction orders much earlier in the day (e.g., by 12 noon ET), which puts the plan assets at risk of market fluctuations that occur after the orders are transmitted. The proposal also would turn many every-day transactions that now may be completed overnight,

[1] This report was originally published on July 10, 2023. This version reflects minor clarifications.

such as asset rebalancing or distributions into multiple day transactions, leaving retirement assets "out of the market" during this period. Further, orders that do not meet the hard close deadline will be "out of the market" for at least 24 hours and will be placed once the following day's NAV is determined.

The SEC hard close proposal will cause retirement plan participants to become "second-class" investors who are "behind the market," putting them at a disadvantage relative to higher income retail and institutional investors.

The SEC proposal would require a complete redesign of existing trade processing systems because the hard close requirement would render all existing systems inoperable. Some have suggested that full implementation of the hard close requirement would not be possible with respect to retirement plans. According to industry experts, system redesign alone would require billions of dollars of capital expenditures across the industry. In addition, every step in the retirement plan intermediary system would require amendments and revisions with concomitant cost, including (1) amendments to trading agreements and plan provisions, (2) modifying plan administrative procedures, such as changing the price used to determine rebalancing transactions from the current day to a previous (or next) day price, and (3) updating service agreements. The added complexities of the SEC proposal would also contribute to higher ongoing costs for these plans.

The upfront costs of implementing the SEC proposal and the increased ongoing costs will ultimately be borne by retirement plan participants, resulting in erosion of retirement savings.

Implementation of the SEC proposal could take 3-5 years, may not be administratively feasible, and will impose substantial costs on retirement plans and participants, thereby causing erosion of retirement savings. The negative impact of the proposal on retirement plans far outweighs any potential benefits of the proposal.

Retirement plan intermediaries process millions of routine transactions every year. Employer contributions and employee elective deferrals total over $600 billion per year for the more than 83 million participants in a defined contribution plan. These contributions occur in sync with payroll processing (e.g., weekly, biweekly, monthly). Other routine transactions, such as retirement plan withdrawals on job change, rollovers to IRAs, loans, hardship distributions, and required minimum distributions total hundreds of billions of dollars per year.

The SEC proposal is intended to impose costs on transactions that create a "first-mover" advantage for certain investors. However, these types of transactions are not common with retirement plan participants. Approximately 8 percent of retirement plan participants engage in exchange or rebalancing transactions each year and those transactions only occur about three to four times per year.

Retirement plans and their participants will be adversely affected by the application of swing pricing with respect to millions of routine transactions that occur without regard to market conditions and are not intended to gain a first-mover advantage. These everyday transactions, such as retirement plan contributions, asset allocations, loans and hardship withdrawals,

required minimum distributions, lump sum distributions, and rollovers to IRAs will face adverse effects.

The cost of swing pricing with a hard close would erode total retirement plan assets by $32 billion on average each year, as shown in Table 1.[2]

Table 1.—Estimated One-Year Impact of Aggregate Account Erosion, Applying Swing Pricing with a Hard Close to 2022 Historical Data *Dollar Amounts in Millions*			
Transaction	**Swing Factor**	**Hard Close**	**Total Effect**
Contributions and Deferrals	-4,953	-5,379	**-10,333**
Loans/Hardship Withdrawals	-990	-1,006	**-1,996**
Lump Sum Distributions	-390	-397	**-787**
Rollovers to IRAs	-5,586	-5,677	**-11,263**
Required Minimum Distributions	-2,903	-2,950	**-5,852**
Exchange/Reallocation	-990	-1,006	**-1,996**
Totals	**-$15,812**	**-$16,415**	**-$32,227**
Details may not add to totals due to rounding.			

The costs of retirement plans have declined over the past twenty years. This downward trend has been fueled by the growth in no-load mutual funds, which has brought down average expense ratios. In addition, advancements in the way that plan transactions are processed have helped to drive down costs.

The SEC proposal will reverse this trend. Implementation of the proposal will increase the costs of maintaining retirement plans. Over the short run, a complete overhaul of retirement plan processing systems will be required, resulting in substantial costs that will be passed through to plan participants. In addition, the SEC proposal will increase long-term costs due to the increased complexity of processing retirement plan transactions. These costs will ultimately be borne by plan participants.

Increased costs on plans will cause some employers (particularly small employers, who are particularly sensitive to plan costs) to reconsider decisions to start or continue a retirement plan for employees. The per participant cost of maintaining a retirement plan is highest for the smallest employers. An increase in costs of maintaining a retirement plan can be expected to depress the number of small employers starting and continuing retirement plans.

Including the costs of implementation would further erode retirement plan assets by an additional $10 billion each year (for an all-in cost of approximately $30-50 billion during the implementation period) and

[2] This analysis examines the effects of the SEC proposal to impose swing pricing with a hard close (including increased implementation and ongoing costs) with respect to assets in defined contribution retirement plans if the proposal had been in effect for a five-year period beginning June 3, 2018, and ending June 2, 2023. The analysis estimates a fraction of the total costs of the proposal and does not consider other types of savings' vehicles that would be similarly affected by the proposal. See Section III and Appendix B, below, for a detailed discussion of the methodology for calculating the erosion effects on retirement savings of the SEC proposal. Appendix A discusses other types of arrangements that would also be negatively impacted by the SEC proposal, but that are not part of this analysis.

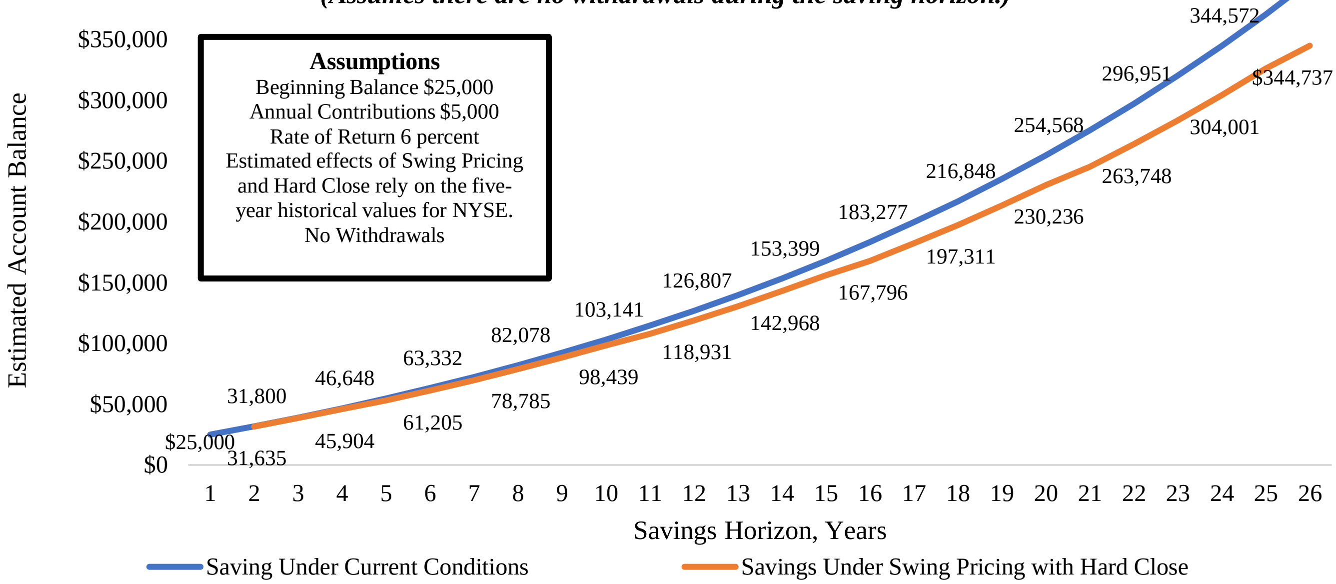
additional ongoing increased costs. These costs would be borne by all participants, not just those with routine retirement plan transactions.

Given the costs of the proposed changes, retirement assets face erosion over the saving horizon. Retirement savings plans are intended to help individuals accumulate savings over their working careers to provide financial security in retirement. The SEC proposal (swing pricing and the hard close) creates the potential for risk and uncertainty throughout the saving horizon and substantial erosion of retirement savings. Further erosion could occur as the liquidity risk management provisions of the proposal will reduce returns on mutual fund assets and potentially drive retirement plans and plan participants out of mutual fund investments.

A "set and forget" retirement plan participant with a small initial account balance could face an erosion of approximately $53,342 of retirement savings over a 26-year period solely due the costs of the SEC proposal to impose swing pricing with a hard close.

Graph 1.—Account Erosion, Set and Forget Participant, Assuming Swing Pricing with Hard Close

(Assumes there are no withdrawals during the saving horizon.)



Graph 1 shows the potential erosion of retirement savings over 26 years for a retirement plan with an initial account balance of $25,000 when the SEC proposal goes into effect. The participant contributes $5,000 per year and earns a 6 percent annual return on the investments (in mutual funds). There are no withdrawals during the saving horizon and the participant does not exchange or reallocate the investments. In this case, even those participants that "set and forget" their retirement plan would incur costs to their account, through higher upfront costs of approximately 25 percent of average current costs (.22 percent of assets during the first five years, with assumed ongoing transaction and compliance costs at half of this rate) and the effects of swing pricing with a hard close intermittently impacting their contributions. This example includes these higher upfront implementation costs, the ongoing increased plans costs of processing plan transactions, and the cost of the SEC policy on contributions, all of which would be borne by the participant.

II. OVERVIEW OF THE SEC PROPOSAL FOR OPEN-END FUND LIQUIDITY RISK MANAGEMENT PROGRAMS AND SWING PRICING: FORM N-PORT REPORTING

On November 2, 2022, the SEC proposed amendments to its current rules for open-end funds regarding liquidity risk management programs and swing pricing.[3] As part of the swing pricing proposal, the SEC also proposed imposing a "hard close" requirement for open-end funds, under which an order to purchase or redeem a fund's shares would be executed at the current day's price only if the fund, the designated transfer agent, or a registered securities clearing agency receives the order by 4pm Eastern before the fund calculates the net asset value (NAV) (i.e., the time each day at which the fund determines the current day's price).

The SEC states that "without effective liquidity risk management, a fund may not be able to make timely payment on shareholder redemptions, and sales of portfolio investments to satisfy redemptions may result in dilution of outstanding fund shares."[4] The SEC argues that shareholder values can be diluted even when a fund manages liquidity issues and that, in times of stress, redemptions can create a "first-mover" advantage that leaves other shareholders at a disadvantage.

Open-End Funds

The vast majority of the U.S. mutual fund market consists of open-end funds. According to the Investment Company Institute (ICI), closed-end funds held approximately $309 billion of assets at the end of 2021, compared to approximately $27 trillion in open-end mutual funds, $7.2 trillion in ETFs, and $95 billion in UITs.[5] In 2022, more than 55 percent of U.S. households (approximately 71.7 million households) owned shares in mutual funds.[6] Mutual funds represent the most common fund holding, with 52 percent of U.S. households (68.6 million households) owning these assets in 2022.[7] The vast majority of long-term mutual fund assets (94 percent) are held by U.S. households.[8]

While the SEC proposal attempts to find commonalities with the experiences with swing pricing in the European Union (EU), only 27 percent of EU investment fund assets are held by households. ICI notes that some portion of the EU funds invest primarily in other funds and estimates that excluding these funds would raise the percentage of household ownership of funds to 35 percent.

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[3] Securities and Exchange Commission, 17 CFR Parts 270 and 274, [Release Nos. 33-11130; IC-34735; File No. S7-26-22], RIN 3235-AM98, *Open-End Fund Liquidity Risk Management Programs and Swing Pricing: Form N-PORT Reporting*, November 2, 2022.

[4] *Ibid.* at p. 12.

[5] ICI, *2022 Investment Company Institute Fact Book, A Review of Trends and Activities in the Investment Company Industry,* 2022.

[6] ICI, *Investment Company Institute Letter to Ms. Vanessa Countryman, Secretary, Securities and Exchange Commission RE: Open-End Fund Liquidity Risk Management Programs and Swing Pricing: Form N-PORT Reporting (File No. S7-26-22),* Appendix A, February 14, 2023.

[7] *Ibid.*

[8] *Ibid.*

Existing Regulations and March 2020

Funds currently employ an array of effective tools to assist with the management of liquidity concerns, including the (1) fund's liquidity management program, (2) option to utilize voluntary swing pricing under previous SEC rule making, (3) ability to impose purchase or redemption fees, (4) ability to redeem in kind, and (5) credit lines or loan reserves. However, the SEC believes that the events of March 2020 led to market stresses that caused some investors to reallocate assets into cash and short-term investments and that these events "likely" contributed to dilution of value for mutual funds' remaining investors. However, the SEC admitted that they lacked specific data about fund dilution. Instead, they assumed that higher swing factors and increased use of swing pricing in European markets during the March 2020 period could suggest that U.S. funds likely had fund dilution during the same period.

SEC Proposal

The SEC proposed a number of approaches to fix the potential problem of market stresses leading to fund dilution. The SEC proposed the following modifications:

1. Adopt a number of changes that would require funds to incorporate stress into liquidity classification and change liquidity classifications;
2. Require all open-end funds to implement swing pricing and to apply a swing factor on any day a fund has net inflows exceeding a two percent threshold or net redemptions (outflows);
3. Amend both when and how a fund would adjust its NAV, which would vary depending on whether a fund has net purchases or net redemptions;
4. Impose a 4 pm Eastern Time (ET) cut-off time for purchase and redemption orders to receive a given day's NAV ("hard close"); and
5. Require changes to Form N-PORT to increase transparency of information.

The SEC states that the proposal is intended to provide investors with increased protection by better managing fund liquidity, reducing risks that funds will be unable to meet redemptions, protecting investors against potential "first-mover" advantages, reducing risks of fund dilution in times of market stress, and providing better information to investors and the SEC.

SEC Analysis

The SEC released a 400-plus page analysis of the proposal. Throughout the analysis, the SEC acknowledges the challenges of quantifying both the "problems" they attempt to resolve through the proposed swing pricing with a hard close and the impact of the proposal.

The analysis in this paper addresses the effects of the SEC swing pricing and hard close provisions of the proposal on one segment of the U.S. mutual fund industry – employer-sponsored defined contribution retirement plans. Throughout the SEC analysis (discussed in greater detail below), the SEC acknowledges that the proposal could be challenging to implement with respect to retirement plans and could have significant negative impacts on retirement savings invested in mutual funds. The SEC further acknowledges the lack of hard data on the potential impact of the proposal on retirement savings in the United States.

The research in this paper reviews underlying academic research and the multitude of industry comment letters addressing the challenges for retirement plans to implement the SEC proposal and the negative impact the proposal could have on the value of their assets, which could limit accumulations and availability of these assets. This analysis estimates the potential net effects (both positive and negative) of the proposal on the assets in retirement savings plans to provide a fact-based estimate of the impact the SEC proposal could have on retirement savings in the United States.

This analysis does not address the broader, industry-wide issues that have been raised by numerous commenters concerning the overall implementation of the SEC proposal. The lack of emphasis on these broader issues is not intended to imply that these issues are not equally serious and challenging for the mutual fund industry. Further, much of the analysis contained in this paper would apply to other types of products, which are similarly affected by the SEC proposal, including 529 educational savings plans and 529A plans for disabled individuals, IRAs (Traditional, Roth, SEP or SIMPLE plans), certain other types of deferred compensation plans (e.g., 457 plans of State and local governments and tax-exempt entities), and variable annuities. The data and results in this paper are limited to the impacts on private-sector defined contribution retirement plans (including 401(k) plans, variable annuities held in retirement accounts, and 403(b) retirement plans).

III. OVERVIEW OF ISSUES WITH THE SEC PROPOSAL

Comment letters submitted to the SEC identify numerous problems with the SEC proposal for liquidity management and swing pricing with a hard close. Many letters suggest that the entire proposal represents an overreaction to a potential problem and that the SEC provided no evidence of any actual market activity supporting the need for the proposal.

A full analysis of the potential adverse effects of the SEC proposal is beyond the scope of this paper. This analysis is limited to analyzing the potential adverse effects of the swing pricing and hard close proposal on defined contribution retirement plans and plan participants. Many of the issues raised with respect to retirement plans would also apply to other types of savings vehicles, such as variable annuities, IRAs, certain other types of deferred compensation plans, such as section 457 plans, and section 529 educational savings plans. See Appendix A.

Further, this analysis does not explore the potential long-term implications for U.S. capital markets of a proposal that would make mutual funds, which represent a cornerstone of American investments, less attractive and more cumbersome to own. Many believe that the SEC proposal would push investors overall, and retirement plan participants in particular, out of open-end funds and into other vehicles, such as exchange-traded funds (ETFs) and collective investment trusts (CITs).

With respect to retirement plans and plan participants, the comment letters address the potential for reduced returns due to the SEC liquidity management proposal, which would require funds to hold more highly liquid assets. In addition, the comment letters focus on the potential problems for retirement plans with respect to swing pricing and the very significant issues presented by the hard close requirement for the processing of transactions.

Swing pricing is a mechanism that adjusts the price at which traders buy or sell shares. The assets' NAV is "swung" or adjusted with a factor (swing factor) to account for additional costs of inflows or outflows. The direction and extent of the swing is dependent on the magnitude and direction of the dealing activity. The introduction of a swing mechanism makes it critical to have a hard close scheduled to determine the adjusted NAV; otherwise, the mutual funds cannot determine whether the swing factor is necessary and how to calculate it.[9]

However, determining the daily NAV requires considerable information. Therefore, all the daily inflows and outflows must be incorporated into the asset value, which cannot be done unless there is a firm cutoff – or a hard close. The hard close would affect all daily transactions and would be particularly onerous for retirement plan transactions and retail investor transactions if they utilize an intermediary. In particular, the processing of retirement plan transactions would require transaction orders to be placed much earlier in the day to enable all of the relevant intermediary steps to be processed by market close.

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[9] Under the SEC proposal, the swing factor would apply to net inflows exceeding a two percent threshold and all net outflows.

Processing transactions under SEC proposal creates "breakage"

In order for an intermediary to submit its trades under current procedures, it must net out purchase and sales across a number of different individual investment options. This process requires knowledge of each fund's NAV for the day. Most retirement plan transactions are allocated proportionately across all plan investments, which means intermediaries require multiple known NAVs to effectively process these transactions. In addition, any single account could have multiple transactions on the same day (e.g., investment rebalancing as well as a plan loan distribution). For any intermediary, there can be thousands and even millions of accounts affected on any given day. The Insured Retirement Institute (IRI) states "this large volume of transactions gives rise to a still larger set of simultaneous mathematical equations, waiting only for the new NAV to be dropped in and allow the calculations to be completed. If that NAV is not provided, then it will not matter whether the intermediary accepts trades up to market close or imposes an earlier cutoff; in either case, they cannot calculate the net purchase or sales for any single fund. If they are nevertheless required to provide trade activity to the fund by the market close despite the absence of the NAV, then they will need to use a proxy for the new NAV."[10]

This means that an intermediary would have to run the overnight batch cycle *prior* to the market close using a proxy NAV to generate the current day's transaction activity.[11] As part of its batch processing, intermediaries would also be required to submit trade orders before an official NAV is calculated. Once the actual NAV is determined, the intermediary would need to run the batch processing a second time to reconcile the differences between the proxy NAV and the actual NAV. This process gives rise to "breakage," which is the variance that occurs when pulling assets out of the separate account with assumed same day pricing and then subsequently having to apply a different NAV to those same funds. As IRI states, "this 'breaks' the system and results in an imbalance between the investor's unit value and the share value of the separate account."[12]

Breakage results in new costs (e.g., market risks and costs of holding assets out of the market for at least a day) that would likely be borne by the individual plan participants. Intermediaries will need to determine how the costs of breakage will be allocated. Thus, the costs could be borne by the individuals with transactions on any given day or across all participant accounts.

Retirement plans may be forced to switch from batch processing and omnibus trading to individual account transactions

Some commenters have suggested that the current bundling and batch processing of retirement plan transactions may not be possible under the SEC proposal. If that happens, then retirement plans may be forced to process individual transactions, rather than the more efficient bundling and batch processing.

For retirement plan transactions under current processes, an omnibus methodology is used, which provides efficiencies (both time and cost) to the processing of the large number of daily

[10] Insured Retirement Institute, *Comment Letter Submitted to Vanessa A. Countryman, File Number S7-26-22,* February 14, 2023, *Letter to SEC,* at 4.
[11] *Ibid.* Since determining swing pricing requires funds to calculate if there are net inflows or outflows on a particular day, the SEC's proposal would upend current processing procedures by putting Step 3 ahead of Step 2. See the discussion in Appendix D.
[12] *Ibid.* at 4.

transactions that affect retirement plan assets. Typically, the retirement plan intermediary will combine and trade tens of thousands of individual transactions on a daily basis. If intermediaries are forced to switch to a system using individual processing of transactions, the number of transactions would increase exponentially. An intermediary member of IRI calculated the difference in costs between the current batch processing and individual processing for their clients; in a typical month, this firm batched 22,976 trades at a cost of $.06 per trade for a total cost of $1,387.55. If the batched trades were required to be done individually, that would translate to 668,717 trades at a cost of $.06 for each trade at a total cost of $40,123.02 for the month, a 28-fold increase in monthly costs. This would translate to an annual cost increase of approximately $465,000.[13]

SEC proposal raises significant fiduciary issues for retirement plans

In a comment letter to the SEC, the American Retirement Association (ARA) raised the issue of whether the SEC proposal would drive mutual funds completely out of retirement plans.[14] The Employee Retirement Income Security Act of 1974 (ERISA) requires plan fiduciaries to act prudently and solely in the interest of plan participants and beneficiaries for the exclusive purpose of providing retirement benefits and defraying costs.[15] If the SEC proposal is adopted, retirement plan participants with assets invested in mutual funds will be at a disadvantage because they will need to place orders hours before the 4pm ET market close, while investors in other investment vehicles and institutional investors of mutual funds can trade up until market close. This creates a potential advantage for later traders compared to retirement plan participants, as the later traders would have additional information not available to the retirement plan participants. In addition to the monitoring of the ERISA fiduciary standards by the federal government, plan participants can bring a civil suit against a fiduciary for breaches of fiduciary duty, which would represent a risk for plans under the SEC proposal. In addition, a significant increase in costs attributable to the processing of retirement plan transactions could raise similar issues about whether the ERISA fiduciary standards are being violated by retaining a more costly investment over other types, such as CITs or ETFs.

ARA noted that a question could be raised whether, were the proposed rule finalized, it is even prudent to offer mutual funds. Processing transactions with estimated NAVs and correcting those transactions once the NAV is known would significantly increase the costs of retirement plan transactions with respect to mutual fund assets. In addition, plan participants will be at a disadvantage relative to other investors who do not face these costs and information asymmetry as a result of having to make investment decisions earlier in the day. Together these issues could raise questions about the prudence of investing in mutual funds.

In its comment letter to the SEC, Charles Schwab notes that, under the proposal, in an exchange transaction, the sell order would (assuming the order meets the requisite cut-off time) be

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[13] *Ibid.*

[14] American Retirement Association, *Letter to Investment Company Regulation Office, Division of Investment Management, Open-End Fund Liquidity Risk Management Program and Swing Pricing; Form N-PORT Reporting; File Number S7-26-22.* The American Retirement Association is a coordinating entity for the American Society of Pension Professionals Actuaries (ASPPA), the National Association of Plan Advisors (NAPA), the National Tax-Deferred Savings Association (NTSA), the American Society of Enrolled Actuaries (ASEA), and the Plan Sponsor Council of America (PSCA).

[15] 29 USC. Sec. 1104(a).

executed on the day the order is placed and the corresponding buy order would be executed on the day after the order is placed (T+1), and settlement would not occur under the following day (T+2), meaning that participants would not have confirmation of the result of their request until two or even three days after the transaction request is made. Charles Schwab also raises an issue with respect to timing of transactions in their comment letter, stating "as a result of these challenges for the operation of retirement plans, a hard 4 p.m. close could raise questions about whether a retirement plan is fulfilling its fiduciary duty to participants. Plan sponsors would likely have to seriously consider eliminating mutual funds entirely as an investment option in retirement plans in favor of exchange-traded funds or other investment vehicles in order to ensure that participants can trade until Market Close."[16]

SEC proposed changes to liquidity classifications could reduce returns for retirement plan participants and other mutual fund investors

In addition to the swing pricing and hard close elements of the proposal, the SEC proposes requiring that all funds maintain a minimum of 10 percent of the fund's assets in highly liquid assets (the Highly Liquid Investment Minimum (HLIM)). This requirement would apply regardless of the fund's investment strategy or the composition of the fund's portfolio. This portion of the proposal would further disadvantage mutual fund investments relative to other types of investment, such as ETFs. In its comment letter to the SEC, Charles Schwab noted that the vast majority of funds currently invest in highly liquid assets and are therefore not required to maintain an HLIM.[17] Schwab states "a 10% requirement seems arbitrary, given that such a level of redemptions is so exceedingly rare. The requirement could, for certain funds, require a significant and ongoing change to the portfolio, potentially reducing investor returns, in service to the possibility of a level of redemptions that even the Commission acknowledges is exceedingly rare."[18]

The proposed SEC changes to liquidity classifications would result in an overstatement of liquidity risk for many funds and would disproportionately affect larger funds, which typically present lower risk. The SEC proposes to replace the concept of the reasonably anticipated trade size (RATS) with a standardized stressed trade size fixed at 10 percent for all funds. This would have the effect of reducing the investments classified as highly illiquid and increasing those classified as liquid. As a result, some funds would be forced to make significant changes to their investment strategies, which could reduce fund performance. In addition, the proposal would effectively limit mutual fund investors to investment strategies that rely on a narrow range of highly liquid securities.[19] For retirement plan participants, who are long-term investors and tend to be less active with trading, investing in lower yielding assets could significantly erode retirement benefits.

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[16] Charles Schwab, *Letter to Vanessa A. Countryman, Open-End Liquidity Risk Management Programs and Swing Pricing (Release Nos. 33-11130; IC-34746; Files No. S7-26-22)*, February 14, 2023, at 10.
[17] Charles Schwab, *Letter to SEC*, *supra.*
[18] *Ibid.* at 13.
[19] Dodge & Cox, *Letter to Vanessa A. Countryman, Proposed Rule, Securities and Exchange Commission: Open-End Fund Liquidity Risk Management Programs and Swing Pricing; RIN 3325-AM98, File Number S7-26-22,* February 14, 2023.

<u>Retirement plan participants become second-class investors</u>

Many comment letters to the SEC have also described the "second-class" investor status that would occur as a result of the proposal. In order to process transactions based on the current day's NAV, a cutoff time for submitting transactions would be required that could be up to four hours prior to the time NAV is determined.[20] As a result, "A new earlier cutoff time will place plan participants at a significant disadvantage versus other market participants since other market participants would be able to transact on information much closer to the close of the market."[21] The SEC stated that it did not believe that purchase or redemption orders are time sensitive for long-term investors. However, even small changes in the market prices can have a significant impact on these transactions. For example, consider a plan participant who is planning to withdraw all their assets from a retirement plan and roll the proceeds into an IRA. A downward swing in the market after the transaction order is placed would erode, in one day, a portion of the plan participant's long-term retirement savings. In addition, if there are net outflows to trigger application of a swing factor on the day the participant requests a withdrawal, this erosion would be even greater even though the participant's transaction would not be done to gain a first-mover advantage.

Plan participants need to be able to place purchase or redemption orders without being subject to market swings that occur solely because they are required to place an order by 12:00 ET (or conceivably even earlier) while other investors can wait until near the market close to place their orders.[22] As Paychex and many commenters note, "retirement plan participants would be made second-class investors within the mutual funds in which they invest."[23] This second-class investor status is exacerbated by differences in time zones across the United States and through asymmetric information available to non-retirement plan transactions.

<u>Significant up-front costs would be imposed on retirement plans and participants to comply with the SEC proposal</u>

Plan recordkeeping systems in operation today are "price dependent," meaning that they cannot be processed until the NAV has been received for the day from the funds available as plan investment options. Participant accounts and investment positions are valued following receipt of the NAVs.

The SEC proposal would require a complete redesign of existing trade processing systems, because the hard close requirement would render all existing systems inoperable. The Groom Law Group indicated in a comment letter to the SEC that their clients estimated that the costs of

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[20] Paychex, *Letter to Vanessa A. Countryman, Proposed Rule, Securities and Exchange Commission: Open-End Fund Liquidity Risk Management Programs and Swing Pricing; RIN 3325-AM98, File Number S7-26-22,* February 14, 2023.
[21] *Ibid.* at 3.
[22] This is particularly acute when retirement plan transactions are bundled and submitted as an omnibus transaction. The process of bundling can delay one participant's transaction, effectively keeping them out of the market.
[23] *Ibid. at 3.*

complete system redesign would involve billions of dollars of capital expenditures across the industry.[24]

One large plan intermediary has estimated total technology transition costs at approximately $30 million (+/− 10 to 20 percent) in a two-to-three-year project that would need to be integrated and coordinated with other planned work due to the number of interdependencies within the systems.[25] Another large intermediary indicated that it "might" be possible to redo systems by 2026 at the earliest. And the IT group of a third large intermediary estimated costs of approximately $3 million with a five-year time frame to update their processing systems. One Spark Institute member estimated that implementation would take a minimum of two to three years and involve at least 200 business resources and hundreds of thousands of man hours plus additional training and education for staff.[26]

The system changes would not be just by the companies that provide the software but would be required by every intermediary in the retirement plan processing system to provide a seamless system that works throughout the transaction. Thus, costs will be incurred at all levels. The Spark Institute comment letter identified the following implementation costs that would be incurred: (1) amendments to trading agreements and plan provisions, (2) modifying plan administrative procedures, such as changing the price used to determine rebalancing transactions from the current day to a previous (or next) day price, and (3) updating service agreements.[27] Spark Institute indicated that one member estimated the upfront costs of implementing the system would be a minimum of $25 million and likely much higher. One large recordkeeper indicated that there would be significant costs and time associated with amending the company's more than 2,000 intermediary contracts.

Spark Institute also noted that the costs and time associated with implementing the SEC proposal would divert resources from plan participant related issues. For example, the SEC proposal could interfere with the work of plans and their intermediaries to comply with the requirements of the Setting Every Community Up for Retirement Enhancement (SECURE) Act of 2019 and SECURE 2.0 (enacted in 2022).[28]

Ultimately, these upfront costs will be borne by plans and plan participants. As Spark Institute notes, the plan recordkeeping business is a low margin business, so the firms will be unable to absorb (internally) the costs. Further, the costs may drive some providers out of business, which will reduce access to these services for plans, particularly for smaller plans that struggle to balance the advantages of maintaining a retirement plan for employees with the costs. The Spark

[24] Groom Law Group, *Letter to Vanessa A. Countryman, Proposed Rule, Securities and Exchange Commission: Open-End Fund Liquidity Risk Management Programs and Swing Pricing; RIN 3325-AM98, File Number S7-26-22,* February 14, 2023.

[25] Input provided by industry intermediary.

[26] Spark Institute, *Letter to Vanessa A. Countryman, Proposed Rule: Open-End Fund Liquidity Risk Management Programs and Swing Pricing; Form N-PORT Reporting (RIN 3235-AM98),* at p. 15.

[27] *Ibid.* at p. 14.

[28] The SEC estimated that costs of implementing T+1 would range $3.5 to $4.95 billion to implement. In addition, they estimated compliance costs of $5.5 million per institution. (Refer to the Statestreet.com.) It is important to recognize that recordkeeping systems are in the process of modifying systems to comply with a SEC rule to require a standard T+1 settlement system for most securities transactions, reducing the time to settlement from T+2 or T+3. This change requires considerable resources and is underway currently for most processors. (When purchasing a security, the "T" refers to the transaction date, but the "+" refers to the time needed for settlement.)

Institute letter states: "If costs are significant enough, some recordkeepers and administrators may exit the business. Long-term, this would reduce industry competition and ultimately increase plan administration costs. There has been significant consolidation in the recordkeeping industry because of low profit margins, and if smaller recordkeepers cannot afford the system changes, we will see even more consolidation."[29]

One intermediary stated their view that, because there are a limited number of firms offering the software necessary to process trades, contraction of that segment of the industry would also be a likely result if the changes are adopted, making it even more likely that the costs of compliance will be passed through to plans and plan participants.[30] Further, contraction in the software industry would also drive total costs up for plans.

Proposal creates an increase in ongoing costs of processing system changes

The processing of transactions under the SEC proposal would result in additional ongoing costs due to the added complexities of handling orders, such as application of the swing pricing calculations, individual transaction processing, and breakage, among other challenges. While recordkeepers and other intermediaries acknowledge that these additional costs would arise, most cannot estimate what these costs might be given the uncertainty of how and when the proposal would be implemented. One large recordkeeper indicated costs would increase significantly due to system changes and the need for additional staffing to support clients through a more complex investment.[31]

Delays of processes for accruing and collecting fees

Fees owed by retirement plans to service providers are generally collected from plan assets by applying a daily accrual factor for the annualized amount of plan fees to daily valued plan holdings. In order for plans to run the fee collection software, the NAV for a day must be known. Because the NAV will not be known at the time trading closes if the swing pricing with a hard close proposal applies, a resultant lag will delay accrual of applicable fees until the following business day. Because final movement of funds depends upon the processing of applicable fees, transactions could be further delayed, contributing to inefficiencies and potential investment risks.

Combination of increased costs, application of the swing factor to routine retirement plan transactions, and the effects of the hard close will erode retirement savings

As explained in the following section, the combination of increased costs of plan transactions for retirement plan participants and the effects of the SEC swing pricing proposal with a hard close requirement will erode long-term retirement savings for the 85 million workers who rely on their employer retirement plan to provide a secure source of retirement income.

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[29] Spark Institute, L*etter to SEC, supra.* at 14. Refer to Appendix D for details on recordkeeper industry consolidation. As mentioned above, the recordkeeper industry has experienced considerable consolidation and the SEC proposal is likely to exacerbate this trend.
[30] Input provided by industry intermediary.
[31] Input provided by industry intermediary.

IV. QUANTIFYING THE EFFECTS OF SWING PRICING WITH A HARD CLOSE ON RETIREMENT PLANS

A. Overview

Mutual fund transactions relating to assets in retirement plans, variable annuities, and similar products typically take longer to process than retail or other institutional trading. Retirement plans are subject to numerous statutory and regulatory requirements that must be satisfied prior to the processing of any plan transactions. In addition, the processes often involve interactions between multiple plan intermediaries.

Retirement plan intermediaries manage the investments and typically maintain the overall allocation of funds within a participant account. For an active participant, this means contributions are allocated ratably to the investment mix and conversely, the same investment mix applies to withdrawals. For retirees who no longer make contributions to the plan, withdrawals would also be allocated ratably across the investment mix.[32] In 2022, the average Vanguard retirement plan offered 27.4 fund options to participants, but the average usage by plan participants was only 2.4 funds, in part due to the shift toward more widespread usage of target-date funds for retirement plan participants.[33] In Vanguard's survey, the median plan sponsor offered 16 different investment options in 2022.

While retirement assets are meant to accumulate over the working life of the participant and retirement plan participants are often referred to as "set it and forget it" investors, there are reasons participants would have plan-related transactions occurring both regularly and irregularly while a plan participant is working and during retirement. These transactions include: (1) making exchanges between two funds; (2) rebalancing investments to adjust the account allocation; (3) taking loans from the plan; and (4) withdrawals, including regular periodic distributions after separation from service, hardship or emergency withdrawals, required minimum distributions, and lump-sum distributions. In addition, regular contributions made to a plan, typically on a payroll cycle basis, require periodic purchases of funds according to a participant's asset allocations. During a typical plan year, retirees will have periodic or non-periodic withdrawals from a plan, such as required minimum distributions, as well as transactions such as exchanges between funds or portfolio rebalancing.

Retirement plans conduct a wide range of transactions during a typical year. Some large plan intermediaries report millions of transactions a day among the plan sponsors they represent. Thus, the concept of retirement plan participants as "set it and forget it" investors significantly misrepresents the extent to which retirement plan transactions will be impacted by the SEC proposal.

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[32] In the case of the investment mix as a participant ages, mutual fund shares of the total investment correlate inversely with age. As the participant ages, certain types of mutual funds (e.g., target date) play a lesser role in the investment mix.

[33] Refer to Vanguard, *How America Saves, 2023,* June 2023, at p. 60. This average figure is consistent with the most current Brightscope/ICI *Defined Contribution Plan Profile: A Close Look at 401(k) Plans*, for plan year 2018, released in June 2021. Brightscope/ICI found that plans offered 28 funds on average.

While much of the commentary on the adverse effects of the SEC proposal relates to withdrawals or trading activity under retirement plans, it is important to recognize that regular employer contributions and employee deferrals would also feel the effects of the proposal. Those regular contributions could be adversely affected by receiving a higher NAV and/or remaining out of the market for a period of time due to application of swing pricing with a hard close. If a fund has net inflows exceeding the applicable threshold, then retirement plan contributions subject to that day's NAV would face a "cost" under the SEC proposal, which would reduce the number of shares the plan contributions could purchase.

Current processes allow these retirement plan transactions to take place at the current day's NAV as long as the order is received by the close of trading for the day (4 pm ET). Under the SEC proposal, retirement plans and participants that place orders that are not eligible for the current day's NAV will be required to wait for the following day's NAV to post, meaning that they will be "out of the market" with respect to those orders for a full day of trading.[34] In effect, under the SEC proposal, retirement plan participants will always be "behind the market" because of the way retirement plan transactions must be processed.[35]

Swing pricing requires that the costs associated with daily (or frequent) trading be allocated to those making trades when activity for a fund records a net outflow or inflow above a threshold.[36] In theory, the mutual fund investments that sit untouched (set-and-forget accounts) will bear none of the costs of those investors conducting regular transactions that result in the application of a swing factor.[37] In the absence of swing pricing, under current practices, trading costs and fees would adjust the NAV of the fund and be spread across all shareholders.

Swing pricing would isolate the costs associated with regular transactions and impose those costs on only those shareholders making trades on days in which swing pricing is triggered. Typically, a mutual fund manager would adjust its NAV up or down when inflows or outflows of securities exceed some threshold. This ensures that the fund would only pass costs associated with trading activity to those conducting the trades.[38]

The SEC's stated goal in introducing swing pricing with a hard close is to protect (non-trading) shareholders from dilution and reduce the threats to financial stability. In other words, if trading activity occurs in a manner that exceeds the fund's available liquidity, then in theory illiquid assets might need to be sold at a loss (i.e., fire sale). This could dilute the value of the fund,

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[34] The implementation of "a hard close would do more than simply 'move the finish line' on processing trades – it would force transactions that happen in a single day to be spread out over potentially several days, involving many more steps than before." Spark Institute, *Letter to SEC*, *supra.* at 14.

[35] Most of the examples of problems with the hard close requirement listed below are outlined in the Spark Institute comment letter. In addition, Paychex, the Groom Law Group, Charles Schwab, American Retirement Association, T. Rowe Price, American Bankers Association, SIFMA, and multiple other commenters also provided examples of the challenges with the hard close for retirement plan transactions.

[36] European markets apply the swing factor in both directions, but only apply it when activity exceeds a certain threshold. Each fund determines their swing factor as well as the threshold.

[37] When the swing is triggered, funds can swing the NAV up or down by a fixed amount, called the swing factor. By "swinging" the NAV, transaction costs associated with trading are reflected in the NAV. The swing factor may vary across funds, but the swing factor represents the estimated additional transaction costs that apply to transactions. (The NAV is defined as the value of a fund's assets minus the value of its liabilities.)

[38] Brookings Institution, Kashyap, Anil, Donald Kohn, and David Wessel, *What is swing pricing?* (brookings.edu), Tuesday, August 3, 2021.

driving down the NAV. The non-trading shareholders would be penalized for the actions of these first mover investors.

This assumption of selling illiquid assets at a loss, when redemptions exceed the available liquidity, tends to ignore the lending practices available to most big mutual funds. Loans and lending practices allow the funds to handle extraordinary liquidity demands, while waiting for better prices to materialize on the less liquid asset.

Further, in the situations where the proposed SEC swing factor would apply, retirement plan participants with transactions during the day that swing pricing is triggered are disadvantaged because the fund imposes a separate, hidden cost on the transactions, even though these transactions typically represent everyday transactions for participants and have nothing to do with first-mover advantage. While a swing factor may only be applied to a fund when it crosses a certain threshold, the hard close will affect virtually all retirement plan transactions every single day. The hard close has the potential to put retirement plan participants at the risk of market fluctuations that occur after an order is placed or keep a portion of the participant's assets out of the market for at least 24 hours, creating uncertainty as to the precise value of the transaction and potentially depressing returns on assets.

The SEC proposal presents a number of uncertainties for plan participants, including the actual NAV of the transaction, whether a swing factor will apply to the transaction, and potential delays in completion of the transaction. These uncertainties will create measurable erosion of retirement assets as shown below even when the potential positive effects of swing pricing are considered.

B. Impacts of the SEC Proposal on Retirement Plans

The SEC proposal will introduce new costs to the U.S. retirement plan system. Almost every element of the SEC proposal contributes to these costs and collectively the costs will reduce retirement savings and increase market risks for retirement plan participants. The costs of the proposal include the following:

1. Liquidity risk management – results in lower overall returns because funds are required to hold more liquid assets;
2. Swing pricing – imposes costs on specific transactions, which would affect both retirement plan participants and plan sponsors;
3. Hard close – specific costs that occur with respect to individual retirement plan transactions, including exchanges, rebalancing, plan contributions, and withdrawals; and
4. Systemic costs of plan intermediaries – costs attributable to implementation of the SEC proposal (upfront and ongoing), which will be passed through to plan sponsors and plan participants in the form of increased fees from intermediaries.

This section analyzes the specific ways in which the SEC proposal could increase costs and market risks for retirement plans and plan participants and estimates the effects of the SEC proposal if it had been applied over a 5-year period ending June 2, 2023, using actual market data over the period. In addition, this section incorporates an analysis of the potential costs of the SEC proposal to plan intermediaries and estimates the extent to which these costs would be passed through to retirement plan participants in the form of increased recordkeeping and administration expenses.

Fundamentally, by increasing costs to plan sponsors and plan participants and introducing increased market risks, the SEC proposal will increase erosion of retirement savings.

The analysis below relies on a simulation of activity based on historical data observations. The potential to predict future market activity requires many assumptions, most of which will change as economic conditions change. Applying the effects of the SEC swing pricing with a hard close policy to historical data creates an example of the potential costs imposed on retirement plans. For purposes of this analysis, retirement plans included defined contribution plans, including 401(k) plans and similar type plans plus other types of defined contribution plans. Other types of savings arrangements would also be affected by the proposal, but are not included in this analysis (see Appendix A for a discussion of the effects of the SEC proposal on these other arrangements.)

The empirical work relied on the following assumptions:

- Historical data over a 5-year period beginning June 3, 2018, and ending June 2, 2023 (summarized in Table 16 in Appendix B) for frequency of application of a swing factor. Based on the historical data, if the SEC proposal had been implemented, on average the swing factor would apply to the NAV on 49.2 percent of the trading days (2.1 percent of net inflow days (5.4 average annual days divided by 251.8 average trading days) and 47.1 percent of net outflow days).

- Aggregate transactions are weighted and distributed according to the daily volume of activity (daily share of annual trading). Using transaction weights allows the retirement plan's transactions to follow the actual pattern observed. In other words, the days with a greater share of transactions indicates that the retirement plan transaction is more likely to occur on those days (weights are equal to daily transactions divided by total annual transactions).

- By first modeling the likelihood of a transaction occurring on a given day (weighted transactions are a proxy for the probability that activity would occur on a given day), and allowing these transactions to apply to daily activity, we simulated the uncertain nature of the retirement plan transaction.

- Transactions (such as employer contributions and employee deferrals) that occur on a regular basis, typically with payroll cycles, were weighted by employer size and typical payroll period so that the contributions and deferral patterns follow the likely pattern of such transactions.

- It is assumed that the hard close would affect 45 percent of daily transactions, based on input from industry representatives on the percentage of transactions that are placed before the close, but arrive to funds after the cutoff (market close) under current processing procedures. Industry representatives indicated that under current procedures, 45 percent of transactions remain in the queue and are processed overnight (e.g., for processing as omnibus trades). This represents a very conservative assumption, given that the hard close would likely impact the 45 percent of transactions that are not processed prior to 4 pm under current law, plus any additional transactions that would not be able to meet the much earlier hard close deadline under the proposal.

- The estimates simulate two effects of the hard close – the potential to reduce returns due to additional transaction costs, and the risk of timing for being out of the market (delays for processing NAV);

  - Estimated factor for the cost of being out of the market for the hard close relies on the difference in the daily notional values for the NYSE index (for the date of the weighted transaction, for 2022); ***While the yearly estimates rely on the actual daily changes, the simple average overnight percentage change in the NAV is -2.04%; the transaction weighted average (using shares or trades results in very little difference between the weighted averages) is -4.02%;***

- The estimated swing factor used in this analysis is 1.25, which applies to the activity on certain dates[39] (as shown in Table 16 in Appendix B) for approximately 57.4 percent of transactions; and

- The examples of the effects of the SEC proposal presented below apply the effects of the hard close first and then the effects of swing pricing. If the order of the estimates was reversed, there would be some impact on the relative effects of each component, but the overall effects of the proposal would be the same.

Liquidity Risk Management **–**The liquidity risk management portion of the SEC proposal forces all mutual funds to meet a one-size-fits-all liquidity standard that would require more assets to be held in more liquid, lower-return assets. This would result in costs for retirement plan participants as the liquidity risk management provisions would reduce expected returns on retirement plan assets. Research that predates the current economic conditions – and the liquidity concerns that the SEC proposes to address – have been studied extensively. One important study conducted prior to the global recession (2008) and the pandemic (2020) found that selloffs of assets did, in fact, dilute the assets of those that held a given mutual fund. [40] However, they found that these effects only were pronounced in those funds that had demonstrated poor historical performance.

The costs of the liquidity risk management provisions proposed by the SEC would affect all mutual fund investors, not just retirement plan participants. This analysis does not quantify those effects. Thus, the costs incorporated into this analysis represent just a fraction of the total costs that can be expected to occur under the SEC proposal.

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[39] Transactions on a given day are the aggregate activity (e.g., rollovers) multiplied by the daily notional weight. This provides an equal probability that, on a given day, this share of total assets is likely to be included in the transactions.

[40] Chen, Qi, Itay Goldstein and Wei Jiang, *Payoff Complementarities and Financial Fragility: Evidence from Mutual Fund Outflows,* February 2007.

Swing Pricing Erosion – Swing pricing has the potential to introduce variable costs that could apply to many trades or transactions for mutual funds held in retirement plans. The swing factor will vary from fund-to-fund, and would rely on statistical analyses of the net flows to mutual funds (historical daily close activities). Further, as in other markets, the swing factor likely will be re-evaluated monthly or quarterly to adjust to current market conditions. According to empirical research on European markets that employ swing pricing, the cost of the swing factor could range from 0.25 to 3.50 percent of the daily NAV.[41]

Under the SEC proposal, a fund would be required to adjust its NAV by the swing factor for any day when net purchases (net inflows) exceed 2 percent of net assets or any net redemptions occur (net outflows). The swing factor would include the costs the fund would incur if it sold or purchased a pro-rata amount of each portfolio investment. In general, the costs included in the swing factor would include brokerage commissions, spread costs, certain other costs, plus the market impact of the purchases and sales (but only with respect to net redemptions exceeding 1 percent of net assets).

Based on an analysis of the S&P 100 Index with daily close data for the past five years, the potential for negative earnings days relative to positive earnings days predicts that the swing factor would apply to those mutual funds with net outflows and affect 47.1 percent of all mutual fund trading days. Given the proposal's net inflow threshold of 2 percent, the swing factor would apply asymmetrically to inflows and only affect 2.1 percent of the trading days, based on historical data.[42]

Under the SEC proposal, the swing factor would apply on any given day that a net outflow occurs, regardless of the magnitude of that outflow. This suggests that the swing factor would, in fact, apply much more frequently in U.S. financial markets compared to European financial markets. This analysis chose a swing factor of 1.25 percent of the NAV, as this appears to be a common swing factor applied in European funds.[43] Refer to Appendix B for details on the underlying historical data and assumptions that support the modeling of applying the swing factor.

Hard Close Erosion – The hard close is likely to create significant disruption in retirement asset values. Retirement plan participants would have imperfect information at the time of a trading

[41] Securities and Exchange Commission, Proposed Rule, 17 CFR Parts 270 and 274 [Release Nos. 33-11130; IC-34746; File No. S7-26-22] RIN 3235-AM98 *Open-End Fund Liquidity Risk Management Programs and Swing Pricing; Form N-PORT.* See, e.g., Bank of England, *Liquidity Management in UK open-ended funds, Report based on a joint Bank of England & Financial Conduct Authority survey,* March 25, 2021, accessed at: https://www.bankofengland.co.uk/report/2021/liquidity-management-in-uk-open-ended-funds.

[42] In the European markets, the swing factor applies only in periods of significant volatility, which would be cases where the market would experience at least a 3 percent decline. While these trading days are somewhat infrequent, it is likely that panic selling or follower behavior could increase volume on these days relative to normal trading days.

[43] In practice, the actual swing factor will vary from fund to fund. The fund must assess the expected costs of transacting and accessing liquidity. Components of the swing factor include the following: brokerage fees and market charges; taxes, levies, other fees; bid-ask spread, and any market impacts caused by trading activity. Data found in studies of the European Union showed that the larger funds rely on a factor between 1 and 3 percent of the daily NAV. For example, one Luxembourg fund uses swing factors of 1.5 percent for equity funds and 3 percent for hybrid funds with multiple asset types. The SEC uses a 1 percent factor for illustration purposes. King, Benjamin and Jamie Semark, Bank of England, Staff Working Paper No. *975 Reducing liquidity mismatch in open-ended funds: a cost-benefit analysis,* April 2022.

decision or other transaction. Because plan participants will have to place orders much earlier in the day to receive the current day's NAV, they will be at risk of market changes that occur after their transaction orders are placed, creating a cost to the participant of being out of the market, as the flow of information necessary to determine the NAV is being processed. In addition, transactions placed after the cut off would be out of the market at least 24 hours. These costs cause erosion of retirement savings and will potentially impact all retirement plan transactions, including employer contributions (and elective deferrals), as these inflows could likely occur on a given day when other net inflows also occur. These estimates consider the estimated transaction costs as well as the loss in market value due to being out of the market. Please refer to Section IV, below, for estimates of the separate costs of the system-wide changes to plan recordkeeping and administration services.

C. Effects of the SEC Proposal on Retirement Plan Transactions

Retirement plans and plan participants conduct numerous transactions on a regular basis including contributions to the plans (employer contributions and employee elective deferrals) as well as recurring distributions, exchanges of plan assets, and account rebalancing transactions. Other plan activity might occur on a less regular basis, such as early withdrawals, including participant loans, hardship withdrawals, and other withdrawals that occur at job change. Retirement withdrawals, such as required minimum distributions, can occur at regular intervals, such as monthly or annually. Lump-sum distributions and rollovers to IRAs are typically one-time large transactions that occur irregularly.

This analysis simulates the impact of swing pricing with a hard close on specific categories of recurring or significant retirement plan transactions using historical actual volume and daily close data for the NYSE 100 index over the June 3, 2018, to June 2, 2023 period to demonstrate the potential erosion of retirement assets held in mutual funds under the SEC proposal.

Account Erosion - Isolating the Effects of Swing Pricing With Hard Close on Contributions to Retirement Plans

Assumptions
Beginning Balance $25,000
Annual Contributions $5,000
Rate of Return 6 percent
Estimated effects of Swing pricing and Hard Close rely on the five years of historical values for NYSE

Assume a plan participant has a beginning balance of $25,000. The participant contributes $5,000 annually and earns a 6 percent return on the investment. Further, assume the participant allocates those contributions to mutual fund assets each pay period throughout the year. Using the actual data from the NYSE (volume and NYSE 100 index daily close), the proposal would erode the participant's balance under the SEC policy.

Swing pricing with a hard close would erode the participant's account balance by 2.2 percent over five years.

1. Employer Contributions and Elective Deferrals **–** Total contributions to defined contribution retirement plans totaled $586 billion in 2020.[44] The Vanguard comment letter to the SEC discusses the problems of sustained time out of the market with regular plan contributions under

[44] Department of Labor, Employee Benefits Security, Administration, *Private Pension Plan Bulletin Abstract of 2020 Form 5500*, Annual Reports, Table A-1, 2022.

the SEC proposal.[45] Given the volume of retirement plan contributions, intermediaries would require an earlier cutoff time (most likely no later than 12 noon ET), well in advance of the 4 pm ET market close. The hard close poses a significant risk of market variations that might occur (after submission of the order, but prior to the market close). This puts these amounts at a disadvantage relative to other investors whose orders can be placed closer to the market close.

Further, if the hard close cutoff is not met, the assets will be out of the market for an additional day before the pro-rata investment purchases can be made based on the next day's NAV. As Vanguard notes, "the long-term savers the SEC is trying to protect would face ongoing costs of delay on each of these transactions – a persistent drag on main street investors that could overwhelm the economic benefit swing pricing is designed to produce."[46]

The application of the swing factor could also adversely impact regular retirement plan contributions, in certain situations. Because the contributions are typically made to coincide with regular payroll processing, these contributions could be subject to a swing factor on any given day, which would reduce the purchasing power of the contributions relative to other investors. Thus, as a result of the SEC proposal, the contribution pattern and timing of these contributions will expose participants to increased risk of market fluctuations (market changes that occur after an order is placed and potential costs due to application of the swing factor).

This analysis simulates the effect of the swing factor (in both directions) and hard close. The analysis indicates that, given the magnitude of periodic plan contributions and the potential to remain out of the market for a day (or more), the loss of earnings will be significant. For purposes of the analysis, aggregate contributions were allocated over the course of the calendar year to mimic payroll practices.

The contributions on behalf of the 85 million defined contribution plan participants occur in sync with the payroll process.[47] U.S. payroll systems typically provide payment weekly, bi-weekly, and monthly. Normally, elective deferrals by employees and concurrent employer matching contributions would coincide with the payroll cycle. The Bureau of Labor Statistics (BLS) Current Employment Survey shows that 31.8 percent of employers have weekly payroll periods, 45.7 percent have biweekly payroll periods, 18.8 percent have semimonthly payroll periods, and 4.4 percent have monthly payroll periods.[48] About 10 percent of the smallest employers (1-9 employees) have monthly payroll periods, compared to 0.9 percent of employers with 1,000 or more employees.

Table 2 shows the frequency of pay periods by employer size in the Current Employment Survey.

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[45] Vanguard, *Letter to Vanessa A. Countryman, Proposed Rule, Securities and Exchange Commission: Open-End Fund Liquidity Risk Management Programs and Swing Pricing; RIN 3325-AM98, File Number S7-26-22,* February 14, 2023.
[46] *Ibid.* at 12.
[47] Department of Labor, *supra.*
[48] U.S. Government, Bureau of Labor Statistics, *Length of pay periods in the Current Employment Statistics,* February 2022.

Table 2.—Frequency of Pay Periods, by Employer Size, Current Employment Survey [Percent of Total, February 2022]				
Size	**Weekly**	**Biweekly**	**Semimonthly**	**Monthly**
1-9	31.1%	36.0%	23.0%	10.0%
10-19	33.4	45.9	20.1	0.6
20-49	40.5	44.1	13.4	2.1
50-99	29.7	54.4	14.7	1.2
100-249	29.3	56.4	12.8	1.5
250-499	23.8	64.0	12.0	0.3
500-999	22.8	63.9	12.8	0.5
1,000+	21.6	67.6	9.8	0.9
Source: U.S. Bureau of Labor Statistics, *Current Employment Statistics Survey,* February 2022.				

Based on employment distributed by the size of the employer, small and mid-sized firms employ nearly half of the overall workforce (46.4 percent) in terms of employees.[49] However, the larger firms provide the majority of annual payroll (60.6 percent).[50] Using these weights, 48.3 percent of contributions was reported on the first day of each month, 38.2 percent was reported during the third week of the month, and the remaining 15 percent was distributed evenly across the second and fourth week.

Appendix B contains detailed information of the historical market activity over the 5-year period ending on June 2, 2023. To provide a sense of the magnitude of the daily change, the average cost of being out of the market is -2.04 percent.[51]

Table 3.—Simulated Aggregate Effects of Swing Pricing with a Hard Close Using Historical Data, Contributions and Deferrals to Retirement Plans, 6/3/2018 through 6/2/2023 *Aggregate Base and Simulated Costs in Millions*							
	2018† *(6/3/18 – 12/31/18)*	**2019**	**2020**	**2021**	**2022**	**2023†** *(1/23/23 – 6/2/23)*	***Total***
Aggregate Base Contributions and Deferrals	$239,000	$502,000	$529,000	$557,000	$586,000	$300,000	
Simulated Costs							
Swing Factor	-875	-4,968	-4,901	-5,121	-4,953	-339	**-21,157**
Hard Close	-1,517	-5,695	-5,451	-5,454	-5,379	-1,189	**-24,685**
Total	**-2,392**	**-10,663**	**-10,352**	**-10,575**	**-10,332**	**-1,528**	**-45,842**
† Six-month periods. Details may not add due to rounding.							

Table 3 indicates that both the application of the swing factor and the hard close will present a significant cost to retirement contributions. The hard close would provide a consistent cost to those plans unable to meet the earlier cutoff time (e.g., traders not in the Eastern Time zone or large plan omnibus transactions). The negative impact on retirement contributions will depend

[49] Refer to the Census Bureau, Statistics of U.S. Business, 2020.

[50] *Ibid.* Further, it is important to note that larger employers are more likely than their smaller firm counterparts to offer retirement plans to their workers.

[51] As noted above, the estimates rely on the actual change for the daily transactions, not the averages. The averages are presented here to provide a sense of the overall magnitude.

heavily on market activity. As the number of days with net outflows and inflows in excess of two percent increase, the cost of the swing factor for these retirement contributions will also increase. Using the historical data, the SEC proposal would have caused erosion of employer and plan participant contributions to retirement plans of nearly $46 billion during the 5-year historical period. Both the application of the swing factor ($21 billion of erosion) and the hard close ($25 billion of erosion) have significant adverse effects on plan contributions.

2. In-Service Withdrawals **–** Retirement plans are permitted to allow plan participants to access their retirement assets prior to separation from service or retirement under certain circumstances. These in-service withdrawals are an important element of retirement savings. Without some form of access to their retirement savings for emergency needs, lower earning employees would be less likely to participate in, and contribute to, a retirement plan.

This section considers the impact of the SEC proposal on two types of in-service withdrawals from retirement plans – loans and hardship withdrawals. Under current processing procedures, requests for loans and hardship withdrawals can be placed any time up to market close for a day and the transaction can be processed over night with payment occurring on the following day.

Most retirement plans require that these transactions are processed on a pro rata basis from plan assets. As a practical matter, this approach ensures that the appropriate plan asset ratios are maintained. In addition, many of the retirement plan participants who request these types of transactions would not have sufficient assets in any one investment to complete the requested transaction.

Theoretically, under the SEC proposal, a request for a loan or hardship withdrawal, if placed prior to the plan's cutoff time (e.g., 12 noon ET) for transactions, could be processed using estimated NAVs to approximate the amount of assets that would need to be liquidated to process the transaction. However, this approach could result in withdrawals that exceed the amount permitted either under the plan provisions or under applicable law or are not enough to cover the request, requiring a second processing of the transaction.

Therefore, for purpose of this analysis, it is assumed that all plan loan and hardship withdrawal transactions will be processed based on the next day's NAVs, the plan assets may be held in a holding account during that time period, and the plan participant will not be able to receive their withdrawals until day 2 following the date the transaction order is submitted.[52]

[52] Certain retirement plan transactions that are not dollar dependent (e.g., a request to withdraw all of the assets in a single mutual fund) could be processed using estimated NAVs, but the potential for violating plan provisions and applicable law would make it very difficult (or impossible) to accomplish with the types of in-service withdrawals discussed here.

Loan Activity – Under current law, retirement plans can offer loans to participants up to specified limits (i.e., generally, up to the lesser of 50 percent of the participant's vested account balance or $50,000).[53] According to Vanguard's *How America Saves 2023*, 82 percent of defined contribution retirement plans offer loans to their plan participants, representing 93 percent of the participants in these plans.[54] Based on the Vanguard data, the analysis relies on the average loan amount ($10,521).[55]

The Employee Benefits Research Institute data on 401(k) plans shows that 16 percent of eligible 401(k) participants had outstanding loans at the end of 2020 representing 8 percent of the remaining 401(k) account balance.[56] Outstanding loan balances total approximately $75 billion according to the Department of Labor, Form 5500 reporting.[57]

Under most plans, a plan loan is distributed ratably from plan assets across all investments. Under current loan processing procedures, when an order is placed for the disbursement of a loan to a participant, the plan recordkeeper knows the NAV for all the plan funds at some point after the 4 pm ET market close. As a result, the recordkeeper can calculate the share of each fund that needs to be redeemed to make the loan disbursement. As part of the process, the recordkeeper has to ensure that the amount of the loan complies with the current-law limitations on loan amounts (both percentage of account balance and total amount) and any plan limitations, which can be calculated under the current system.

Account Erosion - Isolating the Effects of Participant Loans under Swing Pricing With Hard Close

Assumptions
Beginning Balance $25,000
Annual Contributions $5,000
Rate of Return 6 percent
Loans taken in Years 2 and 5, each loan $10,521
Estimated effects of Swing pricing and Hard Close rely on the five years of historical values for NYSE

Assume a plan participant has a beginning balance of $25,000. The participant contributes $5,000 annually and earns a 6 percent return on the investment. The participant takes two loans, one in year 2018 and again in year 2021, and each is in the amount of $10,521. Using the actual data from the NYSE (volume and NYSE 100 index daily close), the hard close at the time the loan is taken would erode the participant's balance.

Estimated effects of swing pricing and hard close would erode the account balance by 1.7 percent over five years.

The SEC proposal would make it considerably more challenging for a participant to receive a timely plan loan that is a pro rata share of plan assets. As a practical matter, for most plan

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53 Internal Revenue Code of 1986, Sec. 72(p)(2). Early withdrawals (prior to age 59-1/2) from retirement plans are subject to an early withdrawal tax to discourage plan participants from accessing their retirement savings prior to retirement. Thus, loans and hardship withdrawals provide the only penalty-free access to retirement funds for plan participants.

54 Vanguard, *How America Saves 2023*. Most plans offering loans (54 percent) offer one loan per participant, with 38 percent of plans offering two loans, and 8 percent offering three or more loans.

55 *Ibid.* at 50.

56 EBRI, *401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2020, Issue Brief No. 576*, November 29, 2022.

57 Department of Labor, *supra, Table A-3*. Following the pandemic-era withdrawals, non-retirement loans and hardship withdrawals have reverted back to the pre-pandemic trends – lower levels (approximately 8 percent of assets) and smaller average amounts ($10,521). Vanguard, *How America Saves*, *supra*. These figures are consistent with those reported in analysis of the EBRI/ICI 401(k) participant database.

participants taking loans from retirement plans, loans could not be made from a single designated investment as the participants would lack sufficient funds in a single plan investment to cover the amount of the participant's loans. In order to make the proposal workable, recordkeepers may be forced to take the loan amount only from one investment. Taking these challenges into account, the SEC proposal would effectively force plan participants to wait for a minimum of 48 hours to receive a requested plan loan.

Further, the SEC proposal could result in a reduction in the number of retirement plans offering plan loans due to the complications of processing them under the proposal. While not specifically incorporated as a part of this analysis, the elimination of plan loan options from retirement plans would potentially reduce plan participation by lower earning employees, leading to even greater erosion of retirement savings.

For purposes of this analysis, loan activity of defined contribution plan accountholders relies on Vanguard data, which provides participants, distributed by income, and their likelihood of having a loan feature on their plan.[58] Further, Vanguard also provides the share of account balances in loans, average loan amount, and average account balance for those with loans. These figures provide a basis by which to estimate aggregate loan activity throughout the year. The analysis incorporates estimated total loan activity which is weighted by the historical transaction data. In other words, loan activity is weighted across the year according to transaction volume.

Hardship Withdrawals – Certain in-service withdrawals represent another important feature of retirement plans that allow participants to access funds for a financial hardship. Such withdrawals can be used for college education expenses, medical expenses, burial or funeral expenses, purchase of a first home, as well as withdrawals for a demonstrated financial hardship, such as receipt of an eviction or mortgage foreclosure notice, casualty losses, or certain expenses on account of disaster losses.[59]

Among all Vanguard defined contribution plans in 2021, 94 percent allowed hardship withdrawals with 4 percent of participants taking a hardship withdrawal. Vanguard reported that plan participants who took, on average, a hardship withdrawal took 33 percent of their account assets. However, these hardship withdrawals represented only 1 percent of total plan assets.

Active participants may need to make a hardship withdrawal from their retirement plan at some point in their life cycle. These withdrawals would be characterized as one-time withdrawals that would be subject to income tax and penalty taxes

Hardship Withdrawals

A participant who needs a hardship distribution quickly would face challenges under the SEC proposal. For example, if a participant requests a hardship distribution of $10,000 to meet an urgent need (such as a past-due medical bill or an apartment eviction notice), the participant request will, under most plans, be a pro-rata distribution out of plan investments. Unless the distribution is processed prior to the cut-off time for the day's transactions, the distribution will not be processed until the following day's NAV is calculated.

Realistically, the plan recordkeeper could not process a request for a hardship withdrawal overnight. Thus, like loans, these withdrawals would take a minimum of 48 hours to process, leaving the participant's assets out of the market for a full day.

58 Refer to Vanguard, *How America Saves, supra,* and Employee Benefits Research Institute, *Issue Brief No. 576, supra*.

59 Internal Revenue Code of 1986, Sec. 401(k)(14). Vanguard, *How America Saves 2023, supra.* The hardship withdrawal provisions, like plan loans, make it easier for lower earning employees to commit to save for retirement, while knowing that they can access their savings in the case of an emergency.

if the participant is under the age of 59 1/2. The amount that can be withdrawn cannot exceed the amount needed for the hardship.

The ability to access retirement savings prior to retirement typically serves to alleviate a short-term crisis.[60] Financial emergencies occur consistently across high- and low-income households yet have differing effects on their financial well-being.[61] Hardship withdrawals are time-sensitive and typically for a precise amount.

Swing pricing with a hard close will complicate hardship withdrawals, making it more difficult for plan participants to meet an urgent financial need. If a plan were to try to process a hardship distribution overnight, the amounts distributed under these circumstances could be too little or too much depending upon how the NAV affects the amounts distributed.[62] As noted above, this analysis assumes that hardship withdrawal requests would be processed the following day and the withdrawal would be made 2 days after the request is submitted.

Table 4 shows that, based on historical data, the SEC proposal would have caused $9.3 billion of erosion of retirement assets with respect to loans to plan participants and hardship withdrawals, based on the extra time it will take to process loans and hardship withdrawals and the time these assets will be out of the market.

Table 4.—Simulated Aggregate Effects of Swing Pricing with a Hard Close Using Historical Data, Loans and Hardship Withdrawals from Retirement Plans, 6/3/2018 through 6/2/2023
Aggregate Base and Simulated Costs in Millions

	2018† *(6/3/18 to 12/31/18)*	**2019**	**2020**	**2021**	**2022**	**2023†** *(1/2/23 to 6/2/23)*	**Total**
Aggregate Base for Loans and Hardship Withdrawals*	$57,000	$115,000	$121,000	$115,000	$110,000	$56,000	
Simulated Costs							
Swing Factor	-343	-714	-895	-748	-990	-454	**-4,144**
Hard Close	-559	-1,009	-1,009	-1,009	-1,006	-565	**-5,157**
Total	**-902**	**-1,723**	**-1,904**	**-1,757**	**-1,996**	**-1,019**	**-9,301**

† Six-month period. Details may not add due to rounding.
** Aggregate Base reflects retirement plan assets invested in mutual funds, adjusted for likely behavior.*

60 The vast majority of households are unprepared financially when they experience a financial emergency. A recent CNBC survey indicated that 51 percent of households do not have adequate savings to help them deal with financial emergencies. Refer to CNBC and CreditDonkey, available online: 51% of Americans have less than 3 months' worth of emergency savings (cnbc.com) and 23 Retirement Statistics That Will Terrify You (creditdonkey.com)

61 A PEW Charitable Trust report on financial emergencies indicates that 60 percent of households have experienced an economic or financial shock. Refer to Pew Charitable Trusts, *The Role of Emergency Savings in Family Financial Security How Do Families Cope with Financial Shocks?* Pew Trust Brief, 2015.

62 Withdrawals that exceed the amount needed for the hardship cannot be returned to the account. These excess withdrawals will erode the account balance and could increase the current tax liability of the retiree. This needlessly depletes retirement accounts under a hard close by investors who receive more than requested due to changes in the NAV after the request is made or who overcompensate in the requested amount to ensure they obtain sufficient funds to cover their emergency.

3. Other Withdrawals – When a plan participant retires or separates from service with an employer, the individual generally has a number of options with respect to the defined contribution plan assets. Retirement plan participants often have the typical options: retaining assets in the plan; rolling over plan assets directly to an IRA(s); taking a lump sum (cash) distributions; and using a combination of rollovers and cash distributions. With the exception of retaining assets in the plan, rollovers to IRAs and lump sum distributions present a significant risk of erosion of retirement savings under the SEC proposal. The primary risk associated with each option is the risk of remaining out-of-market for a period of time and the potential loss of value to the distribution.

In 2022, a majority of individuals terminating employment (51 percent) remained in the plan.[63] However, a significant portion of assets (39 percent) are rolled over to another plan or an IRA or taken as a lump-sum distribution. [64] Less than one half of one percent of those participants who left employment in 2022 arranged for regular installment payments (from their defined contribution plans).[65] According to Vanguard, nearly two-thirds of plan sponsors permit plan participants to establish periodic installment payments from the plan. The election of installment payments jumps to 16 percent for individuals in their 70s, most likely because of the minimum required distribution rules (see the discussion below in this section).

Further, 39 percent of plans permit terminated plan participants to take a partial ad-hoc distribution from the plan, representing 74 percent of plan participants.[66] With an ad-hoc distribution feature, former participants can use the plan as a flexible source of retirement income.

This analysis examines the impact of the SEC proposal on lump-sum distributions, rollovers to IRAs, and required minimum distributions, but it is important to note that other non-periodic and periodic withdrawals (such as ad hoc partial distributions and periodic withdrawals after job separation) can occur from retirement plans that would also be adversely affected by the SEC proposal. Thus, this analysis underestimates the overall withdrawal activity that could be impacted by the SEC proposal.

Lump Sum Distributions – Lump-sum distributions can occur when employees retire or when they terminate employment prior to retirement age. In 2022, 32 percent of individuals terminating employment from Vanguard plans elected a lump-sum distribution.[67]

This average data may understate actual activity because lump sum distributions are often taken by terminating employees with very small account balances. However, those participants at retirement age taking a lump sum distribution are likely to have account balances comparable to

[63] Vanguard, *How America Saves, supra,* at 106. These figures include those with a job change, as well as those at retirement age.
[64] *Ibid.* at 106. Since the vast majority of IRAs are self-directed, it is unclear if the transactions would be bundled (omnibus transactions) and subject to the same risks as retirement plan transactions. However, the treatment of these transactions would depend upon the financial intermediary with whom the assets are invested. (Generally, unbundled transactions would have less uncertainty of the NAV at the time of any transactions.)
[65] *Ibid, at 105*.
[66] *Ibid.*
[67] *Ibid, at 106.*

those rolling over assets to IRAs (see below).[68] This analysis includes both retirees and terminating employees under retirement age. While the effect on retirees is considerably greater, terminating employees would also face a potential loss in asset value relative to their total withdrawal.

Each time an individual makes a lump sum withdrawal of assets from an employer retirement plan, the risk of additional erosion of retirement savings occurs as statistics show that less than 100 percent of retirement assets withdrawn as a lump sum are rolled over into another retirement savings vehicle (IRA or another employer plan). Thus, there is a potential for either the distribution or rollover to be subject to risk of being out of the market and losing value.

Under the SEC proposal, when an individual requests a lump sum distribution, their assets could be subject to potential losses due to the delays between the time the withdrawal order is placed and subsequently distributed. Under current practices, the order for a withdrawal will be placed by 4 pm ET and eligible for the current day's NAV. Under the SEC proposal, the distribution order will either be placed much earlier in the day and subject to market fluctuations that occur between the time the order is placed and the time the NAV is calculated, or the distribution order will be placed after the deadline for the day and the distribution will be subject to the following day's NAV, delaying this distribution by an additional day.[69]

Within Vanguard accounts, 32 percent of participants who terminated in 2022 elected to take a lump sum distribution, totaling 5 percent of total assets (i.e., a significantly smaller amount of assets than the amounts rolled over to IRAs).[70] Some of the amounts withdrawn in a lump sum distribution may be rolled over into another plan or an IRA.

Table 5.—Simulated Aggregate Effects of Swing Pricing with a Hard Close Using Historical Data, Lump Sum Distributions from Retirement Plans, 6/3/2018 through 6/2/2023
Aggregate Base and Simulated Costs in Millions

	2018† *(6/18 to 12/18)*	**2019**	**2020**	**2021**	**2022**	**2023†** *(1/23 to 6/2/23)*	**Total**
Aggregate Base for Lump Sum Distributions*	$21,000	$45,000	$48,000	$45,000	$43,000	$22,000	
Simulated Costs							
Swing Factor	-135	-282	-353	-295	-390	-179	**-1,634**
Hard Close	-220	-399	-398	-398	-397	-223	**-2,035**
Total	**-355**	**-681**	**-751**	**-693**	**-787**	**-402**	**-3,669**

† Six-month period. Details may not add to totals due to rounding.
** Aggregate Base reflects retirement plan assets invested in mutual funds, adjusted for behavior.*

[68] Internal Revenue Service, Statistics of Income, *Table 2. Taxpayers with Individual Retirement Arrangement (IRA) Plans, By Size of Adjusted Gross Income, Tax Year 2020,* accessed at: https://www.irs.gov/statistics/soi-tax-stats-accumulation-and-distribution-of-individual-retirement-arrangements. For the 2020 tax year, the IRS reported that $618 billion was rolled over to IRAs by 5.7 million taxpayers, for an average rollover of approximately $109,000 per taxpayer.
[69] In addition, intermediaries will have to fix breakages over successive days following the initial transactions, to make sure that investor's accounts reflect the true value.
[70] Vanguard, *How America Saves, supra,* at 106. See Appendix B for a discussion of the adjustments made to the IRS data to accurately reflect lump sum distributions.

Under the SEC proposal, dilution of value occurs when the participant takes an action, as opposed to those taking no action. The dilution of value on a lump sum distribution, in particular, will represent a real and permanent loss of retirement savings because the money is no longer in the retirement system and cannot make up for the losses incurred by the proposal.

Table 5 summarizes the impact of the SEC proposal on lump sum distributions, based on the historical market data and the fact that these amounts will be out of the market for an additional time before being distributed. As in other cases, the hard close poses a significant and regular effect on transactions. In this case, the total asset valuation losses imposed by swing pricing with a hard close would be nearly $3.7 billion over the five-year period.

***Rollover to IRAs* –** Currently, there are about $11.5 trillion of IRA assets. These assets continue to grow and now surpass assets held in retirement plans (with $9.3 trillion). However, the accumulated growth in IRAs results from rollovers from retirement plans each year, which currently average $500 billion to $600 billion per year. Thus, the assets in IRAs derive substantially from former retirement plan assets. Table 6 presents the historical pattern of rollover activity from qualified plans. During the past ten years, rollovers to IRAs from qualified plans have grown steadily each year, with the exception of 2016.

Table 6.—Rollover Amounts to IRAs from Retirement Plans, 2010 to 2020
Source: IRS SOI, Taxpayers with IRAs, (Table 2), Various Years

Tax Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rollovers	$305	344	404	435	473	445	478	534	554	618
Percentage Change		12.8%	17.4%	7.7%	8.7%	-5.9%	7.4%	11.7%	3.7%	11.6%

Graph 2.—Rollovers to IRAs, by Age of Taxpayer, Tax Year 2020
Source: IRS SOI, Table 4

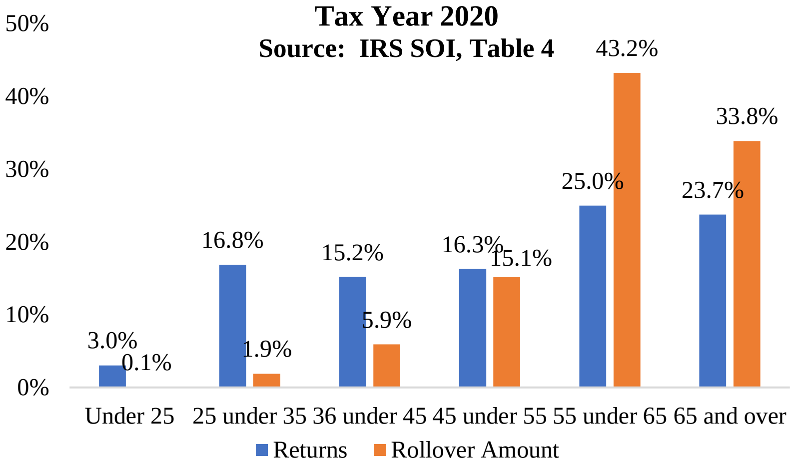


Table 7.—Average Rollovers to IRA, Tax Year 2020

Adjusted Gross Income	Average Rollover Amount
Under $25,000	$50,143
$25,000 under $50,000	$48,419
$50,000 under $75,000	$65,902
$75,000 under $100,000	$80,358
$100,000 under $200,000	$116,609
$200,000 or more	$242,850
Average All Rollovers	**$109,256**

Source: IRS SOI, Taxpayers with Individual Retirement Arrangement Plans, by Size of Adjusted Gross Income, Tax Year 2020

Rollovers reflect a transition away from an employer. Graph 2 indicates that approximately 77 percent of assets rolled into an IRA are concentrated in older accountholders (those over 55 years of age). Table 7 provides the simple average rollover to IRAs from qualified plans for tax year 2020.[71]

Given the magnitude of these transactions, under the SEC proposal, rollovers from retirement plans to IRAs would face annual valuation losses of approximately $10 billion. Table 8 indicates that had swing pricing with a hard close been in place throughout the past five years, rollovers to IRAs would have a reduced valuation of nearly $53 billion because of the time the assets would have been out of the market.

Table 8.—Simulated Aggregate Effects of Swing Pricing with a Hard Close Using Historical Data, Rollovers to IRAs from Retirement Plans, 6/3/2018 through 6/2/2023
Aggregate Base and Simulated Costs in Millions

	2018† (6/3/18 to 12/18)	2019	2020	2021	2022	2023 † (1/23 to 6/2/23)	Total
Aggregate Base for Rollovers to IRAs	$267,000	$554,000	$618,000	$649,000	$681,000	$349,000	
Simulated Costs							
Swing Factor	-1,935	-4,029	-5,051	-4,223	-5,586	-2,563	**-23,387**
Hard Close	-3,179	-5,695	-5,692	-5,692	-5,677	-3,185	**-29,120**
Total	**-5,114**	**-9,724**	**-10,743**	**-9,915**	**-11,263**	**-5,748**	**-52,507**

† Six-month period. Details may not add to totals due to rounding.

Required Minimum Distributions – Individuals are required to begin distributions from retirement savings once they reach a specific age.[72] For 2023, required minimum distributions from an employer retirement plan must begin in the year an individual turns age 73 unless the individual is still employed and is not a five percent owner of the business. If an individual fails to withdraw the minimum required amount, the individual could be subject to a 25 percent excise tax, which could possibly be reduced to 10 percent if the error is corrected within two years.

Similar to the analysis above, it is assumed that plans will not attempt to estimate NAVs in order to process required minimum distributions in a single day. The potential for overestimating or underestimating the amount of the withdrawal could create significant issues for the plan and the plan participant. Therefore, the most likely assumed action will be to delay the processing of the transaction until the next day's NAVs are calculated, and the payments would then be made the following day.

This approach will require plan participants to submit their minimum required distribution request well in advance of the deadline for the payment to ensure that the funds will be distributed by the due date. This could cause potential additional erosion as the participant's account will be out of the market longer than necessary.

There are two data sources employed in this analysis to determine the amounts distributed in required minimum distributions. First, we consider average withdrawal for taxpayers over age

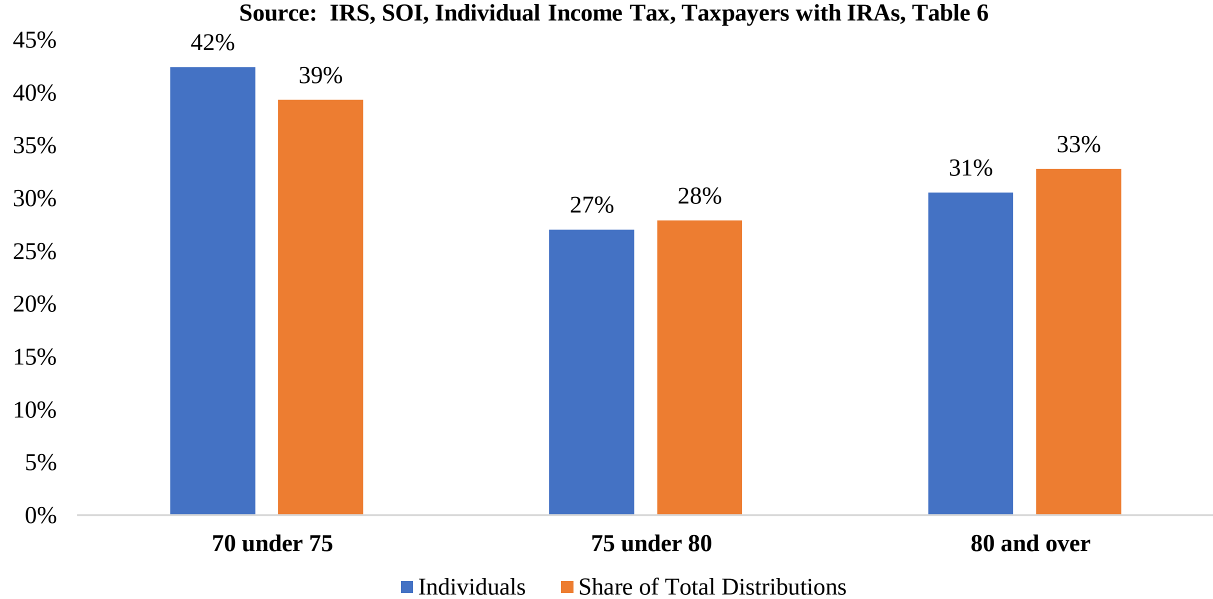
[71] According to the U.S. Census, median income in the United States was approximately $70,784 in 2021. Refer to U.S. Census, *Median Household Income* (census.gov), available online.
[72] Internal Revenue Code of 1986, Sec. 401(a)(9). The minimum required distribution rules do not apply to Roth 401(k) plans and Roth IRAs.

72 that receive distributions from their IRAs. Second, we consider information for taxpayers with taxable pension income. The taxpayers with taxable pension income who are likely to receive a minimum required distribution are assumed to represent the same proportion of total taxpayers as those receiving IRA required minimum distributions (50.3 percent of total IRA distributions are taken by those over age 72).[73] Graph 3 shows taxpayers age 70 and older by percentage of taxpayers and by share of total distributions.

Overall, the analysis suggests that approximately $312 billion dollars were received as required minimum distributions in tax year 2020. This is calculated by removing defined benefit plan amounts and taxpayers under age 72 from the total distributions.[74]

These individuals who are required to take the minimum distributions are, by definition, older and have somewhat higher incomes, as such characteristics correlate with workers near the end of their work careers. Just as with rollover activity to IRAs, NAV-imposed losses due to swing pricing with a hard close will not allow ample time to recover the valuation loss.

Graph 3.—Share of Total Individuals and Distributions,
Taxpayers with IRAs, Aged 70 and over
Source: IRS, SOI, Individual Income Tax, Taxpayers with IRAs, Table 6



[73] IRS SOI, *Taxpayers with IRAs, Ibid*. It is important to note that separate analysis and experience with Internal Revenue Service Estate and Gift Tax data indicate that retirement plan assets and IRAs continue to represent a considerable share of assets in decedent's estates. This points to a pattern of holding retirement assets as long as possible for those with adequate incomes.
[74] Amounts attributable to defined benefit plans rely on an estimate from DOL's Form 5500 data. Age distribution of taxpayers by adjusted gross income were applied from the Internal Revenue Service Statistics of Income, Individual Income Taxpayers, Distributed by Gender and Age. These IRS data were cross-referenced to the Census Bureau's Current Population Survey, 2020.

Table 9.—Simulated Aggregate Effects of Swing Pricing with a Hard Close Using Historical Data, Required Minimum Distributions from Retirement Plans, 6/3/2018 through 6/2/2023 *Aggregate Base and Simulated Costs in Millions*							
	2018† *(6/3/18 to 12/31/18)*	**2019**	**2020**	**2021**	**2022**	**2023†** *(1/2/23 to 6/2/23)*	**Total**
Aggregate Base for Required Minimum Distributions	$121,000	$345,000	$314,000	$345,000	$343,000	$122,000	
Simulated Costs							
Swing Factor	-1,006	-2,094	-2,625	-2,194	-2,903	-1,332	**-12,154**
Hard Close	-868	-2,959	-2,957	-2,958	-2,950	-895	**-13,587**
Total	**-1,874**	**-5,053**	**-5,582**	**-5,152**	**-5,853**	**-2,227**	**-25,741**
† *Six-month period. Details may not add to totals due to rounding.*							

Table 9 shows that the total cost of the SEC proposal for retirees who are required to take required minimum distributions would exceed $5 billion in most years. The retirees receiving such required distributions face considerable loss of control over the timing of these transactions and face the risk of NAV-induced losses from being out of the market. Applying these historical trends to required distributions indicate that retirees would face losses totaling nearly $26 billion over the 5 years analyzed for withdrawals they are required by law to take.

4. Ongoing Transactions – While not an everyday occurrence for plan participants, most large retirement plans conduct daily transactions either to make exchanges between mutual funds or reallocate (rebalance) their assets. In each case, there are several important parameters needed to evaluate these effects, including: daily transaction volume, day-to-day price fluctuations, and the timing of these transactions (under current practices compared to swing pricing with a hard close).

To evaluate these two ongoing transactions, the estimate attempts to break apart daily transactions as (1) offsetting transactions and (2) excess transactions. These are evaluated in dollars and volume to characterize these activities.

Exchange between funds – Under swing pricing with a hard close, the hard close poses the greatest challenge for exchanges. The timing of these transactions could influence the NAV at which they are valued. (Refer to the example in the callout box below.)

Exchanges between investment funds require submitting the request to the plan recordkeeper, who in turn sends the order to redeem an amount from one fund and submit the purchase for another fund. Under the SEC proposal, if the NAVs are not known when the order is sent, the redemption will only be completed after the NAVs for both funds are determined. If this occurs after trading ends for the day, the investor's funds will remain in a cash account with a pending order placed for the other fund – which cannot be determined until the NAV is set on Day 2.

When the purchase is completed overnight on Day 2, the retirement plan participant becomes a 'second-class investor,' because their investment is held out of the market in a cash account for at least a full trading day. The hard close introduces additional risks and opportunity costs for this cash, and these risks are transferred to the plan participants.

***Reallocation of assets* –** Under the SEC proposal, a participant's rebalancing transactions would face steep difficulties. The Groom Law Group notes that this is a particular problem for target-date funds and risk-based funds maintained by retirement plans and organized as "fund-of-funds,"[75] which would have trouble rebalancing target allocations. Assuming a redemption order would be placed in a timely manner by the plan's cutoff time on Day 1, the redemption would be Day 1 NAV. However, it would be impossible for the purchase orders to be processed using the Day 1 NAV. Thus, the purchases cannot be processed until the Day 2 NAV is determined. Thus, the proceeds of redemptions to reduce investments in one asset would remain out of the market for at least one day before reinvestment transactions could be placed and the amounts attributable to the redemption would be held in a cash account.

Account Erosion - Isolating the Effects of Swing Pricing With Hard Close on Participant's Exchanges or Rebalancing Assets

Assumptions
Beginning Balance $25,000
Annual Contributions $5,000
Rate of Return 6 percent
Estimated effects of Swing Pricing and Hard Close rely on the five years of historical values for NYSE

Assume a plan participant has a beginning balance of $25,000. The participant contributes $5,000 annually and earns a 6 percent return on the investment. The participant makes exchanges between funds or rebalances about 10 percent of the account assets each year. Using the actual data from the NYSE (volume and NYSE 100 index daily close), the transactions would erode the participant's balance under the SEC policy.

Estimated effects of swing pricing and hard close would erode the account balance by 1.5 percent over five years from the imposition of a swing factor and the effects of the hard close.

Plan participants may also conduct exchange and rebalancing transactions. However, most plan participants do not regularly alter the investments in their retirement plan assets. Generally, the behavior observed is referred to as 'set-it-and-forget it.' A small portion of participants might (1) exchange one fund for another or (2) rebalance their portfolio. However, empirical evidence from Vanguard plan data suggests that the reallocation of assets only occurs with respect to approximately 6 percent of retirement plan participants (participant-directed investments only), with an assumed frequency of 3 to 4 times per year.[76] The percentage of participants trading (including managed account investors) was 15 percent. For participants who did make an exchange, the most common action was account rebalancing.

Table 10 summarizes the simulated effects of the SEC proposed changes. As in the other transactions, the hard close has a greater impact on the retirement plan participants with a reduced value from participant exchanges and asset reallocations of nearly 9.3 billion. In general, the participant has no control and imperfect information regarding the timing of their transactions, once placed.

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[75] A Fund-of-Funds is an investment strategy that invests in such vehicles as other mutual funds, rather than directly in stocks, bonds, or other assets.

[76] Vanguard, *How America Saves*, *supra*. According to Vanguard, as the participant balance increases, so does the average annual number of contacts with the account. These average annual contacts include calls (5), automated voice systems (6), mobile apps (20), and websites (10). However, it is unlikely that all of these contacts represented changes in investments.

Table 10.—Simulated Aggregate Effects of Swing Pricing with a Hard Close Using Historical Data, Participant Exchanges and Asset Reallocation Transaction in Retirement Plans, 6/3/2018 through 6/2/2023 *Aggregate Base and Simulated Costs in Millions*							
	2018† *(6/3/18 to 12/31/18)*	**2019**	**2020**	**2021**	**2022**	**2023†** *(1/2/23 to 6/2/23)*	**Total**
Aggregate Base for Exchanges and Asset Reallocations*	$44,000	$93,000	$98,000	$103,000	$109,000	$56,000	
Simulated Costs							
Swing Factor	-343	-714	-895	-748	-990	-451	**-4,141**
Hard Close	-560	-1,009	-1,008	-1,009	-1,006	-563	**-5,155**
Total	**-903**	**-1,723**	**-1,903**	**-1,757**	**-1,996**	**-1,014**	**-9,296**
† *Six-month period. Details may not add due to rounding.* * *Aggregate Base reflects retirement plan assets invested in mutual funds, adjusted for behavior.*							

D. Summary of the SEC Proposal's Costs

U.S. markets would face an increased likelihood of a swing factor applying to regular daily transactions, relative to the European swing pricing system. The European system applies only to net inflows or outflows that exceed a certain threshold. The SEC proposal would apply to net inflows exceeding 2 percent and all net outflows, which would cover a significantly larger number of transactions.

Table 11.—Estimated One-Year Impact of Aggregate Account Erosion, Applying Swing Pricing with a Hard Close to 2022 Historical Data *Dollar Amounts in Millions*			
Transaction	**Swing Factor**	**Hard Close**	**Total Effect**
Contributions and Deferrals	-4,953	-5,379	**-10,332**
Loans/Hardship Withdrawals	-990	-1,006	**-1,996**
Lump Sum Distributions	-390	-397	**-787**
Rollovers to IRAs	-5,586	-5,677	**-11,263**
Required Minimum Distributions	-2,903	-2,950	**-5,853**
Exchange/Reallocation	-990	-1,006	**-1,996**
Totals	**-$15,812**	**-$16,415**	**-$32,227**
Details may not add to totals due to rounding.			

In addition, implementing the hard close would impose daily risks to a large proportion of retirement plan participants, because transactions received after the hard close could remain out of the market (un-invested) for a day. Further, plan participants will face ongoing costs through up-front structural costs, which intermediaries will pass on to the plan participant.[77]

[77] Refer to Appendix B for detailed assumptions that apply to each of these estimates.

Table 11 provides the simulated aggregate retirement account erosion that would occur in the presence of the proposed SEC policy, based on actual historical data for 2022 (NYSE 100 index and volume data).[78] As shown, the hard close is likely to impose the greater cost to retirement plans (both structural and variable costs) compared to the costs of the swing factor, which would occur sporadically in specific market circumstances depending upon final implementation practices. The hard close, in particular, represents a system-wide change that potentially affects every transaction or account activity for retirement plan assets.

The initial focus of the comment letters considered only the costs associated with exchanging funds or account rebalancing. However, retirement plans have activity unlike other investors in mutual funds. Specifically, active plan participants would be impacted by the proposed changes through their ongoing contributions ($586 billion in year 2022), plan transactions (rebalancing and exchanges), and/or loans or withdrawals. Each of these activities has the potential to be adversely affected by the hard close and swing pricing. Similarly, retirees face potential negative impacts when taking required minimum distributions (as there is no mechanism available to reinvest excess withdrawals).

Table 12.—Summary of the Simulated Aggregate Effects of Swing Pricing with a Hard Close, Selected Retirement Plan Transactions, Five-Year Period Ending June 2, 2023
Dollar Amounts in Millions

Transaction	Swing Pricing	Hard Close	Total
Contributions and Deferrals	-$21,157	-$24,685	**-$45,842**
Loans/Hardship Withdrawals	-4,144	-5,157	**-9,301**
Lump Sum Distributions	-1,634	-2,035	**-3,669**
Rollovers to IRAs	-23,387	-29,120	**-52,507**
Required Minimum Distribution	-12,154	-13,587	**-25,741**
Exchange/Reallocation	-4,141	-5,155	**-9,296**
Total	**-$66,617**	**-$79,740**	**-$146,357**

Estimates rely on actual historical NYSE data for the five-year period beginning June 3, 2018, and ending June 2, 2023. Details may not add to totals due to rounding.

Collectively, retirement plan assets could decrease by approximately $32 billion in a single year if these policies were implemented. The one-year estimates reflect the direct costs of swing pricing with a hard close that would occur in a given year. However, these costs of the SEC policy would have a cumulative effect on transactions and ultimately on retirement assets. A one-year erosion of $32 billion would compound significantly over time.

It is also important to note that, based on the actual historical data, application of the swing factor itself would create considerable costs, nearly as high as those imposed by the hard close. Table 12 summarizes the swing pricing with hard close estimates for the past five-year period (ending June 2, 2023) for all transactions considered in this analysis. These transactions represent only a fraction of the accounts that would be impacted (e.g., IRAs, variable annuities, and other arrangements face many of the same problems), but demonstrate that the impact would be substantial.

[78] Refer to Appendix B for an explanation of the data used to support this analysis.

V. IMPACT OF THE INCREASED COSTS TO IMPLEMENT AND PROCESS TRANSACTIONS FOR RETIREMENT PLANS UNDER THE SEC PROPOSAL

The SEC proposal will fundamentally alter the way that retirement plan mutual fund transactions are processed. The changes will require a total overhaul of existing processing systems over a significant period of time at substantial cost to the intermediaries who handle the multitude of legal and regulatory requirements with respect to these plans.

These processing system costs will be passed through to the retirement plans and, ultimately, will be borne by the participants in these plans. Long-standing economic theory suggests that employees bear the costs of employer-provided benefits.[79] This theory supports the notion that, if an employer's costs of providing a retirement plan go up, these costs will be passed through to employees (through wage and salary reductions or reductions in benefits provided.) The SEC acknowledges that there will be costs associated with the adoption of the proposed changes but does not attempt to quantify what these costs will be.

Further, the proposal will otherwise increase ongoing fees for retirement plans and participants, while at the same time significantly hamper the ability of participants to invest in open-end mutual funds. The fees attributable to implementation and ongoing processing of retirement plan transactions under the SEC proposal will cause erosion of plan participant retirement savings. This erosion will have a greater impact on participants in smaller plans.

This section analyzes the potential cost increases attributable to recordkeeping and administration expenses under the SEC proposal.

<u>Services provided to retirement plans</u>

Retirement plans cannot exist without the services of a variety of intermediaries. Few companies are large enough to manage the many recordkeeping and administration functions (operational and legal) that are required to keep retirement plans in compliance with all applicable laws and regulations.

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[79] Summers, Lawrence H., *Some Simple Economics of Mandated Benefits*, The American Economic Review, Vol. 79, No. 2, Papers and Proceedings of the Hundred and First Annual Meeting of the American Economic Association (May, 1989), pp. 177-183. A 1989 paper by Larry Summers states: "Imagine that employers can compensate their workers in different ways: with cash, by providing them with insurance, or by giving them consumption goods directly. If employers and employees can negotiate freely over the terms of the compensation package, they will reach a mutually efficient outcome. If a health benefit that would cost and employer $20 to provide is worth $30 to prospective employees, employers could provide the benefit and reduce the employee's salary by between $20 and $30, leaving both better off. Reasoning of this sort demonstrates that benefits will be provided up to the point where an extra $1 spend by employers on benefits is valued by employees at $1."

Intermediaries provide the following services to 401(k) plans as shown in Figure 1.

Figure 1.—Services Provided to 401(k) Plans

Administrative Services	
Recordkeeping	Including maintaining plan records; processing employee enrollment; processing participants' investment elections, contributions, and distributions; and issuing account statements to participants
Transaction Processing	Including purchases and sales of securities within participant accounts
Plan Creation/Conversion/ Termination	Including associated administrative services
Trustee Services	Providing the safe holding of the plan's assets in a trust, as required by ERISA
Participant-Focused Services	
Participant Communication	Including employee meetings, call centers, voice-response systems, web access, and preparation of summary plan description and other participant materials
Participant Education and Advice	Including online calculators and face-to-face investment advice
Investment Management	Typically offered through a variety of professionally managed investment options
Brokerage Window	If offered, allowing direct purchase of individual securities (and other funds not on the plan's menu) by plan participants
Maintenance of An Employer Stock Fund	If offered, to facilitate the purchase of employer securities within the plan
Loan Processing	If a loan feature is offered under the plan
Distribution Services	If offered, facilitating installment payments or periodic withdrawals
Insurance and Annuity Services	If offered, including offering annuities as distribution options
Regulatory and Compliance Services	
Plan Document Services	Including off-the-rack prototype plans
Consulting	Including assistance in selecting the investments offered to participants
Accounting and Audit Services	Including preparation of annual report (Form 5500)
Legal Advice	Including advice regarding interpretation of plan terms, compliance with legal requirements, plan amendments, and resolution of benefit claims
Plan Testing	To comply with the Internal Revenue Code nondiscrimination rules
Processing of Domestic Relations Orders	Ensuring that the split of accounts pursuant to divorce orders complies with ERISA

Source: Investment Company Institute, *The Economics of Providing 401(k) Plans: Services, Fees, and Expenses, 2021.*

Small employer retirement plans and plan costs

Small employers with less than 100 employees constitute 97.5 percent of all businesses in the United States and employ 35.1 percent of all workers.[80] (Refer to Table 13.) While the percentage of small employers offering a retirement plan has increased over the past ten years, among small employers, only 48 percent of firms with less than 50 employees offer a retirement plan.[81] This percentage increases with firm size, as 77 percent of firms with between 50 and 100 employees offer a retirement plan. However, these rates still fall short of the 95 percent of firms with 500 or more employees offering a retirement plan.

Table 13.—Percentage of Firms and of Private Sector Workers by Firm Size, 2019

	1-99	100-499	500-999	1,000 or More
Firms	97.5%	2.1%	0.3%	0.2%
Workers	35.1%	17.3%	7.0%	40.6%

Sources: U.S. Bureau of Labor Statistics, *Business Employment Dynamics (2019);* Center for Retirement Research at Boston College, *Why do Some Small Businesses Offer Retirement Plans?*

Cost is often cited as a concern for smaller employers with respect to offering a retirement plan. The *Why Do Small Businesses Offer Retirement Plans* report noted that 35 percent of small businesses cited costs as a reason for not offering a retirement plan.[82] An increase in costs of maintaining a retirement plan can be expected to depress the number of small employers starting and maintaining retirement plans for their employees.[83] This analysis does not attempt to quantify the potential dampening effect of the SEC proposal on the formation of small business retirement plans.

Quantifying recordkeeping and administration fees paid with respect to retirement plans

Retirement plans typically have a variety of possible fees and fee structures. Retirement plan fees can be assessed as direct per participant fees, percentage of asset fees or transactional fees for specific types of plan transactions (e.g., processing qualified domestic relations orders). For most purposes, plans and plan participants are indifferent to how plan fees are assessed but will be sensitive to the total amount of fees imposed.

The 2014 Deloitte study conducted on behalf of the ICI created an "all-in" fee that incorporated all administrative, recordkeeping, and investment fees for defined contribution plans, whether assessed at the plan level, the participant-account level, or as an asset-based fee, across all intermediaries providing services to these plans.[84] In the Deloitte study, the "all-in" fee is expressed as a percentage of assets. The study found that the "all-in" fees tend to decline as a percentage of plan assets as plan size increases (average participant account balance, total number of participants, and total assets).

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80 Center for Retirement Research at Boston College, *Why do Some Small Businesses Offer Retirement Plans?* Special Report May 2022

81 U.S. Bureau of Labor Statistics, *National Compensation Survey*, 2022.

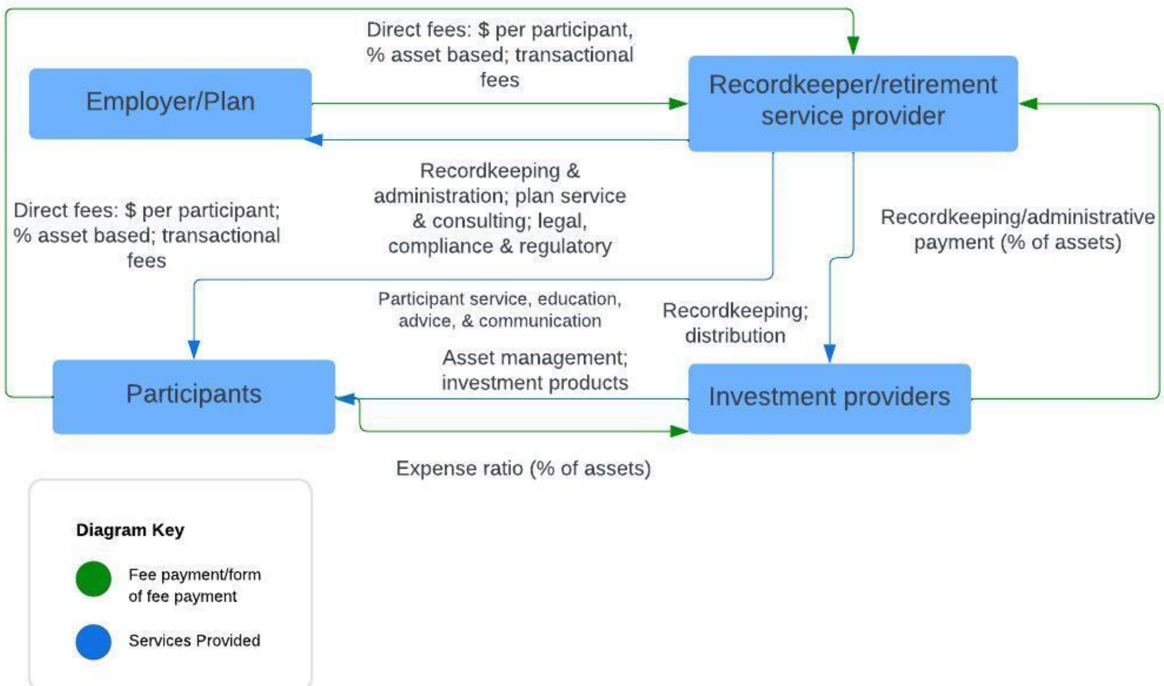
82 *Ibid*.

83 Center for Retirement Research, *supra*.

84 Deloitte/ICI, *Inside the Structure of Defined Contribution/401(k) Plan Fees, 2013: A study assessing the mechanics of the 'all-in' fee,* conducted by Deloitte Consulting LLP for the Investment Company Institute August 2014.

Figure 2 shows the potential flows of fees and services for retirement plans. [85] The potential implementation and ongoing costs of the SEC proposal would represent increases primarily to recordkeeping and administration expenses. However, the increases could also be reflected in increases to fund expense ratios as the implementation and ongoing cost increases for the funds would also be passed through to retirement plan participants (and other mutual fund investors).

Figure 2.—Flows of Fees and Services for Retirement Plans



The Deloitte 2019 Defined Contribution Benchmarking Survey Report provides information on how retirement plan recordkeeping and administration fees are charged and paid.[86] Table 14 shows the responses to the survey.

[85] *Ibid.*

[86] Deloitte, *The retirement landscape has changed—are plan sponsors ready? 2019 Defined Contribution Benchmarking Survey Report*. The survey includes responses from approximately 240 plan sponsors on a variety of topics relating to their defined contribution plans.

Table 14.—Retirement Plan Recordkeeping and Administration Fees Source: Deloitte 2019 Defined Contribution Benchmarking Survey Report	
How are plan recordkeeping and administration fees charged?	**Percent of Responses**
1. No additional fees-all of the recordkeeping and administrative fees are paid through investment revenue (e.g., expense ratios or revenue-sharing arrangements that may be in place with the plan's investment funds)	33%
2. There is a direct fee that is charged by the recordkeeper	52%
3. There are additional fees in the form of a wrap fee or added basis point charge on the investments	15%
How are plan recordkeeping and administration fees allocated?	
1. Allocated to participants pro rata based on account balances	29%
2. Allocated to participants based on an equal flat dollar amount	28%
3. Paid directly by the company	25%
4. Both the company and the participants pay this fee	12%
5. Paid from the forfeiture account	3%
6. Other	3%

Under the Deloitte survey, 52 percent of plan sponsors reported that recordkeeping and administration expenses were charged by a direct fee. Other fees (such as revenue-sharing fees) include fees attributable to recordkeeping and administration expenses. As a result, any analysis of direct recordkeeping and administration fees will understate the full amount of these fees being paid because these fees will not include the recordkeeping and administration fees incorporated into other fee structures.

The 401k Averages Book provides a useful resource of the breakdown of fees for 401(k) plans.[87] The data provides information based on average account balance ($10,000, $50,000, and $100,000) and number of plan participants (10, 25, 50, 100, 200, 500, 1,000, and 2,000). The book measures net investment expenses, revenue sharing expenses, and recordkeeping and administration expenses. Net investment expenses represent the portion of the "investment expense" retained by the investment manager. Recordkeeping and administration expenses represent any hard dollar charges for recordkeeping and administration services to the plan (e.g., testing, Form 5500 preparation, non-discretionary trustee expenses, communications and document preparation and any other recordkeeping or administration expenses) that are part of a product in the database. Costs attributable to participant-initiated transactions (e.g., loans) are not included.

Revenue sharing is the portion of the investment expense received by other plan service providers; a portion of revenue sharing costs are also attributable to recordkeeping and administration expenses. However, the portion of these costs that are attributable to recordkeeping and administration expenses are not separately stated so cannot be discerned from the data.

[87] Pension Data Source, Inc., *401k Averages Book,* www.401ksource.com, 23rd edition, 2023. The 401k Averages Book has been published each year since 1995 and is derived from a database of 182 product offerings from 67 providers. The 2023 edition contains data updated through September 30, 2022. The book is designed to provide financial services professionals and plan sponsors with benchmark information concerning 401k plan costs.

Table 15 shows the average retirement plan fees and expenses for 2022 as reported in the 401k Averages Book. The table shows that the average plan costs per participant for recordkeeping and administration are highest for the plan with only 10 participants and decline as plan participant size increases and plan assets grow.

Table 15.—Average Retirement Plan Fees and Expenses, 2022

Size of Plan		Costs (Average Percentage of Assets)				Costs (Average Plan Cost per Participant)			
Number of Participants	**Total Assets**	**Net Investment**	**Revenue Sharing**	**Recordkeeping Administration**	**Total Bundled**	**Net Investment**	**Revenue Sharing**	**Recordkeeping Administration**	**Total Bundled**
10	$100,000	0.43	1.23	2.29	3.95	$43	$123	$229	$395
10	$500,000	0.46	0.90	0.44	1.80	$230	$450	$218	$898
10	$1,000,000	0.44	0.80	0.16	1.40	$443	$800	$161	$1,404
50	500,000	0.43	1.09	0.67	2.19	$43	$109	$67	$219
50	2,500,000	0.43	0.76	0.12	1.31	$217	$380	$62	$659
50	5,000,000	0.44	0.61	0.04	1.09	$444	$610	$43	$1,097
100	$1,000,000	0.42	0.90	0.51	1.83	$42	$90	$51	$183
100	$5,000,000	0.45	0.63	0.09	1.17	$223	$315	$47	$585
100	$20,000,000	0.47	0.47	0.03	0.97	$467	$470	$27	$964

Source: 401k Averages Book, data updated through September 30, 2022.

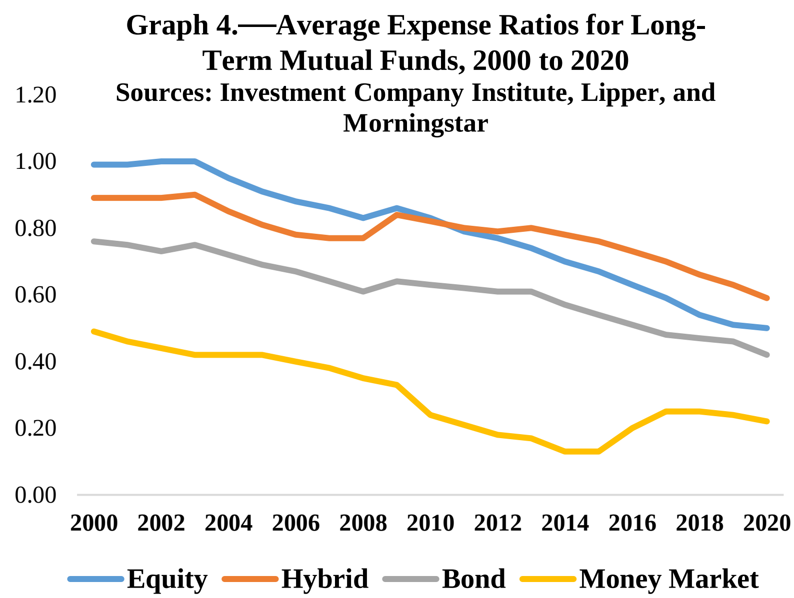
For a very small plan with small ($10,000) average account balances, the annual bundled fees comprise 3.95 percent of plan assets (or $395 per participant). Recordkeeping and administration expenses (excluding the portion of revenue sharing expenses that are also recordkeeping and administration expenses) comprise 2.29 percent of plan assets or nearly 60 percent of total plan costs.

By contrast, plans with 100 participants and assets of $20,000,000 ($200,000 average account balance), recordkeeping and administration expenses (excluding the portion of revenue sharing expenses that are also recordkeeping and administration expenses) comprise less than 3 percent of total bundled expenses.

Retirement plan fees generally have trended downward over the last 25 years. Declines in fees have been primarily driven by reductions in the average expense ratios of equity, hybrid, and bond mutual funds.[88] These decreases reflect a long-term shift of investors toward lower-cost funds and fund share classes and movement toward no-load share classes, which do not have a front-end load fee, a back-end load fee, nor a 12b-1 fee of more than 0.25 percent.[89] Advancements in the way that plan transactions are processed have helped to drive down costs.[90]

[88] Investment Company Institute, ICI Research Perspective, *Trends in the Expenses and Fees of Funds*, 2022, Vol. 29, No. 3, March 2023.
[89] *Ibid*.
[90] The average mutual fund expense ratios for 401(k) plans generally tend to be lower than the industry average expense ratios. See Table 18 in Appendix B.

Since 2000, the average expense ratios for mutual funds have declined significantly, particularly for equity, hybrid, and bond funds, as shown in Graph 4. A 2019 Morningstar report identified several factors driving fees downward: (1) growth in investor awareness of the importance of minimizing investment costs, (2) intensifying competition among fund managers drives fees down to increase market share, and (3) changes in the economics of advice.[91] Morningstar also noted that the move to fee-based models of charging for financial advice represents a key driver in the shift to lower-cost funds, share classes, and fund types (e.g., ETFs). Graph 4 shows the trend in average expense ratios by type of mutual fund. In all categories of mutual funds, the expense ratios demonstrate significant declines over the period—declines that could be undermined by the added costs of the SEC proposal.



The 2019 BrightScope/ICI Profile calculated the average total plan costs for retirement plans at 0.87 percent of assets, implying total costs in 2021 of approximately $96 billion based on 2021 defined contribution plan asset size.[92] For purposes of the profile, total plan costs include administrative, advice, and other fees from Form 5500 filings plus asset-based management fees.

ICI data suggests that investment fees are well below 0.50 percent of assets on average. To provide a very conservative estimate of the share of expenses attributable to recordkeeping and administration, it is assumed that annual investment expenses total approximately 0.55 percent of assets (approximately $53 billion). This would leave approximately $43 billion annually in fees attributable to revenue sharing and recordkeeping and administration expenses.

Recordkeeping and administration costs under SEC proposal

Recordkeeping and administration costs charged to retirement plans and retirement plan participants will increase under the SEC proposal. Many comment letters to the SEC describe the massive changes that would be required to try to adjust the current recordkeeping processes to handle the complexities added by the SEC proposal. (Refer to a sample of these recordkeeper comments included in Appendix B.)

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[91] Morningstar, *2019 U.S. Fund Fee Study, Marking nearly two decades of falling fees,* June 2020.

[92] BrightScope/ICI, *The BrightScope/ICI Defined Contribution Plan Profile: A Close Look at 401(k) Plans*, 2019, September 2022. The BrightScope/ICI Defined Contribution Plan Profile provides an annual examination of key metrics for retirement plans based on plan-level data from audited Form 5500 filings and more than 58,000 plans. The profile consists of plans that have between four and 100 investment options and typically at least 100 plan participants.

Large and small plans alike would be required to bear all or some of the cost increases attributable to these system changes. Under the general theory of compensation, these costs will be borne by employees either directly under their retirement plan or indirectly. Both the Deloitte and the BrightScope/ICI benchmarking surveys confirm that most plan fees are passed through to plan participants (only 25 percent of plan sponsors reported paying these fees directly, as shown in Table 15, above).

Further, these implementation and ongoing costs will occur at every stage throughout the retirement plan recordkeeping and administration system. Each step in the process for handling retirement plan transactions will require changes, including amendments to the plans, updating plan information provided to employees, changes to trustee services, changes to participant communications, education and advice, changes to loan processing, hardship withdrawal and other participant transactions, accounting services, legal advice, and plan testing.

Further, multiple computer system changes will be needed at every step in the process, including fundamental structural changes to the platforms used by plans and plan participants for handling retirement plan accounts, changes to batch processing systems, transactions, etc. Indeed, many industry representatives have questioned whether it is possible to restructure the retirement plan processing systems needed to comply with the SEC proposal.

An article in *Investment News* stated that, in 2019, technology costs for larger recordkeeping platforms could reach more than $100 million per year just for maintenance and that major revisions or upgrades would add even more expense.[93]

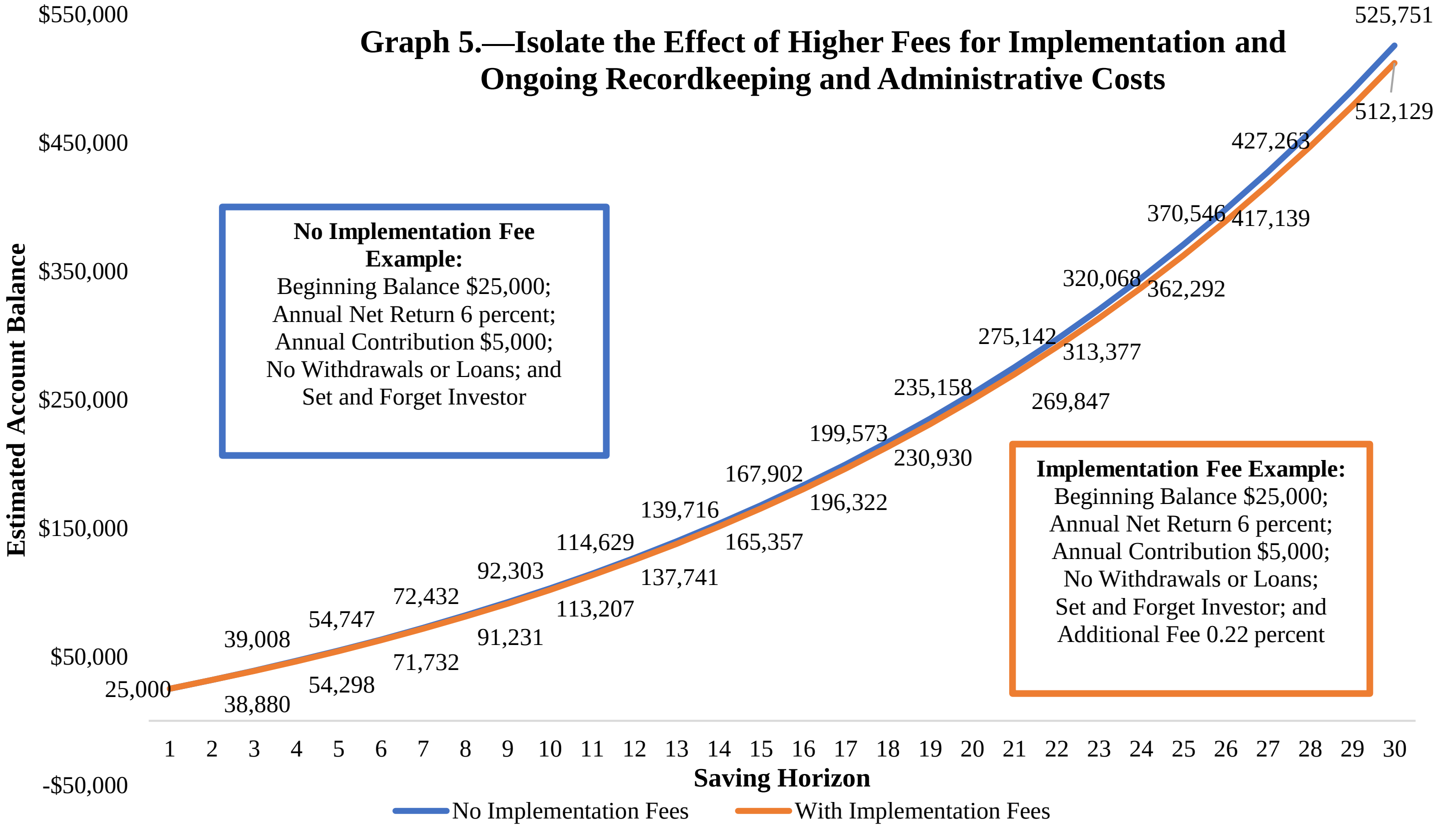
The upfront costs of the SEC proposal would be spread over the transition period prior to full implementation of the proposal. Based on comment letters submitted to the SEC, it would appear that a minimum of three years and mostly likely closer to five years would be needed to implement the proposal fully. Even a modest increase in costs would add $5 to $10 billion per year to the costs of retirement plans.

These additional costs will be passed through to retirement plan participants and will erode their retirement savings. The following graph isolates the effect of higher fees, showing an example of the differential in account balances with higher implementation and ongoing recordkeeping and administrative fees. Holding everything else constant, the only difference between the two returns is the imposition of the implementation and ongoing fees. In this example, the starting account balance is $25,000, with a 6 percent rate of return. The retirement plan participant contributes $5,000 per year and does not make any withdrawals or investment changes. Simply imposing the additional implementation and ongoing costs for the system-wide changes would erode the account balance overtime. For purposes of this analysis, it is assumed that costs for retirement plan participants would increase by 25 percent over the implementation period for the SEC proposal (which would equal approximately .22 percent of assets based on an assumed all-in fee of .87 percent of assets per the Brightscope/ICI analysis referenced above). The implementation period is assumed to take up to 5 years. While these implementation cost increases will come down after the initial implementation period, costs will remain higher over

[93] Investment News, *Is Massive Consolidation in the 401(k) recordkeeping industry inevitable?* RPA Watch, November 9, 2019, accessed at https://www.investmentnews.com/is-massive-consolidation-in-the-401k-record-keeping-industry-inevitable-170640, on June 5, 2023.

the long term due to the increased complexity of processing retirement plan transactions under the SEC proposal.

This example in Graph 5 indicates that the ending balance would be 2.6 percent lower ($13,621), without consideration of other costs associated with swing pricing and a hard close.[94] In this example, it is assumed that the higher costs persist in the first five years (as intermediaries recover their upfront costs of implementation). In addition, it is assumed that the overall recordkeeping costs will decline by 50 percent after the implementation period but would remain moderately higher (12.5 percent increase compared to current expenses) throughout the saving horizon to account for the ongoing increased costs of processing transactions under the SEC proposal.[95]



Once fully implemented, the likely complexity of retirement plan transactions under the SEC proposal will add additional ongoing costs to plan participants. These costs would be smaller than the upfront implementation costs but would persist each year and would cause further erosion of retirement savings for the very people the proposal is intended to protect.

[94] The difference is calculated as $512,129 minus $525,751, which equals -$13,621, or a 2.6 percent reduction attributable only to fees.

[95] The first five years had higher costs of 0.22 percent of assets. The subsequent years assume that the higher costs gradually phase-down to 0.11 percent of assets over the saving horizon. This declining pattern follows the historical trend for mutual fund fees, as displayed in Graph 5.

VI. SUMMARY

U.S. markets would face an increased likelihood of a swing factor applying to regular daily transactions, relative to the European swing pricing system. In addition, implementing the hard close would impose daily risks to a large proportion of retirement plan participants, as transactions received after the hard close could remain out of the market for a day. Further, plan participants will face up-front structural costs and ongoing costs of complying with the SEC proposal, which intermediaries will pass on to the participant.

Based on historical data, the SEC proposal would result in more than $32 billion of erosion of assets in retirement plans in a single year just from the application of the swing factor and the hard close. This erosion would compound significantly over time. If the SEC proposal had been in effect for the five-year period ending on June 2, 2023, the proposal would have resulted in the erosion of almost $150 billion in U.S. retirement assets.

Retirement plans have activity unlike other investors in mutual funds. Retirement plan active participants would be impacted by the proposed changes through their ongoing contributions ($586 billion in year 2022), plan transactions (rebalancing and exchanges), and/or loans or withdrawals. Each of these activities has the potential to be adversely affected by the hard close and swing pricing. Similarly, retirees face potential negative impacts when taking required minimum distributions (as there is no mechanism available to reinvest excess withdrawals). These transactions represent only a fraction of the accounts that would be impacted (e.g., IRAs, variable annuities, and section 529 plans would face many of the same problems), but demonstrate that the impact would be substantial.

In addition, retirement plans and plan participants will face substantial upfront costs and ongoing costs of implementing and complying with the SEC proposal. Even modest cost increase assumptions would add $5 to $10 billion per year in the costs to U.S. retirement plans.

Given the costs of the proposed changes, retirement assets face erosion over the saving horizon, as shown above in Graph 1, above. Retirement savings plans are intended to help individuals accumulate savings over their working careers to provide financial security in retirement. The SEC proposal (swing pricing and the hard close) creates the potential for risk and uncertainty throughout the saving horizon and substantial erosion of retirement savings.

APPENDIX A – IMPACT OF THE SEC PROPOSAL ON OTHER TYPES OF INVESTMENT PRODUCTS

While this paper focuses primarily on the impacts of the SEC proposal on retirement savings plans, similar issues have been raised with respect to other types of investment vehicles. The following represents a summary of some of the issues raised in comment letters to the SEC. While a full quantitative analysis of each of these separate types of investment could have significant effects on the total effects estimated in this paper, such analysis was beyond the scope of the work undertaken. Many comment letters submitted to the SEC on the swing pricing with a hard close proposal noted the challenges of implementing the proposal given the extensive inefficiencies the new rules would introduce to the processing of transactions for retirement savings plans and similar products.

Individual Retirement Arrangements (IRAs), SIMPLE, SEP, SAR-SEP

IRAs (SEP and SIMPLE plans) hold more than $5 trillion in open-ended mutual funds.[96] For tax year 2020, there were 16.5 million taxpayers with IRAs who contributed $83.2 billion to these arrangements.[97] Of these taxpayers, 4.9 million reported traditional IRAs ($22.1 billion of contributions), 9.2 million reported Roth IRAs ($33 billion of contributions), 1.1 million reported SEP plans ($16.5 billion of contributions), and 2.1 million reported SIMPLE plans ($11.6 billion of contributions).[98] During the same year, there were approximately $618 billion of rollover contributions to IRAs.

As these investments conduct regular transactions, they are vulnerable to the same adverse impacts with respect to routine transactions. For example, a required minimum distribution from an IRA could be subject to costs of the swing factor even though the distribution would be required by law for older IRA owners. The required minimum distribution estimates in Section III address only distributions from retirement plans. Given the magnitude of IRA assets that would be affected by this proposal, the potential for account erosion exists for IRA assets as well.

Variable Contracts

In a comment letter to the SEC, the American Council of Life Insurers (ACLI) and the Committee of Annuity Insurers (CAI) state that the SEC failed to consider or evaluate the costs to variable annuity contract investors and the costs and regulatory problems to sponsoring insurance companies with respect to these contracts.[99] The letter notes that as of 2021, more than 28 million variable annuity contracts (16.5 million individual and 12.2 million group contracts) were in force in the United States and nearly 1.5 million new contracts were issued during 2021.

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[96] ICI Q4, 2022 database.

[97] Internal Revenue Service, Statistics of Income, *Tables 1-4, Taxpayers with Individual Retirement Arrangements, Tax Year 2020*.

[98] *Ibid.*

[99] ACLI and The Committee of Annuity Insurers, *Letter to Vanessa A. Countryman, Open-End Fund Liquidity Risk Management Programs and Swing Pricing: Form N-PORT Reporting, File No. S7-26-22, Release Nos. 33-11130; IC-34746*, February 14, 2023. The analysis in the body of this paper includes variable annuities held as retirement plan assets but does not include other variable annuity contracts held, for example, by individual investors.

In 2021, individuals paid $125.3 billion in premiums for variable annuities and, at year end 2021, there was nearly $2.6 trillion in assets in variable annuities in the United States.[100]

Like retirement plan assets, variable contracts typically are NAV-dependent contracts between insurance companies and investors. In addition, some variable contracts represent assets in retirement plans or IRAs. Thus, variable contract owners can place orders for transactions, such as purchases, withdrawals, and other transfers permitted under the contract or other systematic activity (e.g., automatic asset rebalancing, dollar-cost averaging, required minimum distributions of retirement assets, or employer contributions).

Like retirement plans, variable accounts for which orders are received prior to 4 pm ET will receive the current day's NAV for the order under current procedures. As with retirement plans, same day pricing is important to protect against account breakage. The ACLI and CAI noted that the order of operation (i.e., receiving NAV first) is inherent in the structure and operation of variable contracts and is part of the contractual agreement between insurance companies and their variable contract investors.[101] As a result, under the SEC proposal, insurance companies would lose same-day pricing on the variable contract fund orders and the loss of same day pricing would expose separate accounts to breakage risk every day. In addition, the ACLI notes that the SEC proposal could cause these transactions to be at odds with state laws.

Insurance companies cannot speed up the timing of transactions in order to ensure same day NAV. Therefore, the funds' swing pricing would always be one day behind and the individuals who transacted on Day 2 will also bear the costs of individuals who transacted on Day 1.

529 Education Savings and 529A ABLE Plans

Under current law, individuals can save on a tax-favored basis for higher education expenses (under section 529) and for expenses of disabled individuals (section 529A (ABLE plans)). States establish 529 plans to allow families to save for college and related educational expenses; contributions to a 529 plan are made on an after-tax basis for Federal tax purposes but may be eligible for a state income tax deduction or credit. States create ABLE plans to allow for savings to cover expenses of qualified disabled individuals for the purpose of supporting and maintaining health, independence, and quality of life.

According to the College Savings Plan Network, at the end of 2022, 529 plans comprised total assets of over $411 billion over 16.04 million 529 accounts.[102] The average account balance at that date was $25,633. As of June 30, 2022, 38 percent of 529 plans were receiving automatic periodic contributions. Many states offer target-date funds as part of their 529 plan investment mix.

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[100] Insurance Information Institute (iii), *Facts + Statistics: Annuities*, accessed at https://www.iii.org/fact-statistic/facts-statistics-annuities on May 22, 2023.
[101] *Ibid.*
[102] National Association of State Treasurers, *Total Assets in 529 Plans Nationally*, accessed at: https://nast.org/wp-content/uploads/529_factsheet-september-2022.pdf on May 23, 2023.

As of December 31, 2022, ABLE plans held accumulated assets of $1.25 billion in approximately 137,000 accounts, with an average account balance of $9,132.[103]

529 and ABLE plans face issues similar to retirement plans with respect to the effect of the SEC proposal for swing pricing with a hard close. 529 plan assets are frequently invested in target-date funds as investors try to invest sufficient funds to meet future college or other educational expenses. However, investors also have significant flexibility on how the 529 assets are invested.

Under current law, 529 plans may not direct investments of contributions under the plan more than twice in any year. This rule prevents an account holder from rebalancing a 529 account by selling an investment and then in a subsequent transaction purchasing a different investment. As a result, any account rebalancing must be done simultaneously and cannot be decoupled into multiple transactions.

Like retirement plans, the SEC proposal would (1) force 529 plans to use earlier cut-off times for transactions, (2) make omnibus processing impossible (and because of the limit on investment directions, make it much harder for 529 account holders to manage their investments), (3) result in delays in receiving funds for college expenses, (4) create delay in having contributions invested in the market, and (5) impose significant implementation costs that would be borne by the 16 million account holders, resulting in a dilution of assets for these accounts.[104]

CITs and ETFs as an Alternative to Open-End Mutual Funds

The SEC proposal could fundamentally restructure the investment marketplace in the United States. The proposed changes could make mutual fund investments significantly less competitive with other types of investments. The SEC acknowledges this issue in their economic analysis of the proposal and identifies three reasons why investments in open-end funds would decline under the proposal: (1) holding open-end funds would become relatively more expensive relative to other collective investment options; (2) some investors may prefer to hold fewer liquid assets in a collective investment vehicle structure; and (3) investors may be averse to the potential effects of the proposal on costs and increased uncertainty.

A transition away from open-end funds could be particularly challenging with respect to retirement plans, which may be forced into alternative investment structures due to the substantial operational challenges and costs associated with application of the proposal to retirement plan transactions. Neither CITs nor ETFs are equivalent investments to open-end funds and increased competition for these funds may drive up costs for all investors.

One of the largest recordkeepers has indicated that they expect contractions in the mutual fund industry, which would be a disadvantage to their clients. This recordkeeper indicated that, without mutual funds as an investment option, plan sponsors and retirement plan participants would be left with more complicated, investment products.

Even a commenter generally supportive of the SEC swing pricing proposal urged caution with respect to the assumption that retirement plans could simply switch to ETF investments as an alternative to open-end mutual funds, saying "Adoption of ETFs in 401(k) plans has been slow. Hence, I think it is important to evaluate the tradeoffs between ETFs and open-end mutual funds, both, from a portfolio allocation as well as a financial stability perspective, more carefully before drawing any conclusions regarding their substitutability."

[1] Anna Helmke, *Letter to Vanessa A. Countryman, RE: S7-26-22, Open-End Fund Liquidity Risk Management Programs and Swing Pricing Form NPORT Reporting*, February 14, 2023. Ms. Helmke is a PhD candidate in Finance at Wharton School of the University of Pennsylvania and contributed to a chapter of the International Monetary Fund's latest financial stability report with respect to open-end mutual funds and fragilities in financial markets.

[103] National Association of State Treasurers, *Achieving a Better Life (ABLE)*, accessed at: https://nast.org/able-advocacy/ on May 23, 2023.
[104] College Savings Foundation, *Letter to Vanessa A. Countryman, Proposed Hard Close (File No. S7-26-22)*, on February 14, 2023.

The relatively low average account balances for 529 and 529A plans suggests that the implementation costs will create a significant up-front erosion of assets as the costs of completely reprogramming the handling of investments in these accounts would be borne by the relatively small number of account holders compared to retirement plans. The problem would be particularly acute for 529A plans, which have a very low average account balance.

Section 457 deferred compensation plans

Section 457 plans are nonqualified deferred compensation plans established by state and local governments or tax-exempt organizations. Most 457 plans allow employees to contribute on a pre-tax basis to the plan like 401(k) plans. According to the National Association of Plan Advisors (NAPA), as of 2019, 457 plans held nearly $1 trillion in assets and covered 22.9 million federal, state, and local government employees.[105] Section 457 plans operate similarly to 401(k) plan with elective deferrals generally made by an employee.

The same issues that arise with respect to 401(k) plans with respect to the SEC proposal will also arise under 457 plans. Because of the nature of transactions under these plans and the need to place transaction orders much earlier in order to receive current-day NAV on transactions, many of the same problems will arise for the millions of 457 plan participants. This could be especially acute for plans and participants outside of the Eastern Time zone.

[105] National Association of Plan Advisors, Iekel, John, *Understanding the 457(b) Market*, November 13, 2019. Data were not available for 457 plans of tax-exempt organizations, but this is likely a much smaller market as those plans are typically used for executive compensation.

APPENDIX B – SUPPORTING DETAILS FOR SIMULATING COSTS OF SWING PRICING WITH A HARD CLOSE

The following sections describe the steps necessary to simulate retirement plan activities. The simulation relies primarily on income tax data from the Internal Revenue Service, which is targeted and verified using additional sources. Data for retirement plan transactions invested in mutual funds is not available. However, there are ample sources that allow for accurate simulation of this activity. By using detailed data, distributed by detailed income classes, targeting these data to aggregate sources allows for an accurate simulation. In each case, the assumptions and an example accompany each separate calculation.

Estimated Retirement Plan Assets in Mutual Funds

Defined contribution plan account holders may be active participants in a plan or no longer with the employer plan (i.e., separated or retired). Therefore, to capture the total number of individuals that might be affected by these changes, the first stage of the modeling characterizes the defined contribution retirement market by detailed adjusted gross income classes.[106] These data rely on IRS SOI tax return data.

Active participant data are derived from the Form W-2, which provides information on whether an individual contributed to a defined contribution plan.[107] The IRS data provides details of those individuals with defined contribution plans, with and without elective deferrals. Using the statistics that show the presence of the indicator (of a defined contribution plan) would correspond roughly to the Form 5500 reporting, which serves as a cross reference (for the same year) to ensure that the totals are comparable (and allocate plan assets accordingly).

With respect to retirees, data for individuals reporting taxable pension income on their Form 1040 income tax return serves as the basis of the estimate. Weights derived from the IRS income classes (individual income tax data for taxpayers with taxable pension income) are targeted to retirees reported on the Form 5500 data for defined contribution plans, so as to not include defined benefit plan participants.[108]

The total assets in defined contribution retirement plans are then distributed into investment choices, including mutual funds and variable annuities invested in mutual funds. The mutual fund assets held in these accounts were targeted to the ICI Q4, 2022 database to reflect the most recent estimates of mutual fund balances.[109]

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[106] The available IRS individual income tax data is tabulated by adjusted gross income classes. Adjusted gross income is a tax concept that allows for certain subtractions and additions to income. The IRS provides detailed data across 15 income classes, with the lowest income class of taxpayers with no income to taxpayers with incomes over $1 million.

[107] These data include individuals that have a box checked on their Form W-2 for a defined contribution plan, regardless of whether they made elective deferrals in the tax year.

[108] Taxable pension income includes all taxpayers with defined benefit or defined contribution income (retired and those with early distributions). However, it was assumed that the income distribution, on average reflected that of the defined contribution plan retiree targets derived from the Form 5500. Workplace individual retirement arrangements, SIMPLE, SEP, and SAR-SEP plans, were not included. Refer to Appendix A for additional details.

[109] Investment Company Institute, *The US Retirement Market,* Fourth Quarter 2022. Average rates of return over the savings horizon were six percent, before incorporating the costs of the SEC proposal.

Each of the variable costs identified with respect to the SEC proposal were estimated separately, as there is likely to be little overlap among participants. The following sections provide the overall assumptions for estimating and applying the increased: (1) structural costs; (2) hard close cost; and (3) swing factors. In addition, specific behavioral assumptions are applied to each of the activities/transactions that would be impacted by these specific costs. In each case, the estimates assume net negative activity days (days in which the NAV would fall based on NYSE volatility index). (See the discussion below for additional detail on how these assumptions are derived.)

1. Contributions – Aggregate contributions were allocated over the course of the calendar year, to simulate payroll practices. U.S. payroll systems are likely to provide payment weekly, bi-weekly, and monthly. The analysis assumed that larger employers would provide payment more frequently (e.g., weekly or biweekly), while smaller employers would do so less frequently (e.g., monthly or bimonthly). Based on employment distributed by the size of the employer, small and mid-sized firms employ nearly half of the overall workforce (46.4 percent) in terms of employees.[110] However, the larger firms provide the majority of annual payroll (60.6 percent).[111] Using these weights, 48 percent of contributions was reported on the first day of each month and 38.2 percent of contributions was reported on the 15th of the month, and 15 percent was distributed on the 2nd and 4th weeks.

2. In-Service Withdrawals – Plan data indicate that 13 percent of participants will have loans from their defined contribution plans, but these loans account for approximately 8 to 10 percent of their plan assets. We assume that this trend continues and the average loan is $10,614. These figures were consistent with data from the EBRI/ICI 401(k) database and Vanguard, How America Saves, 2022.[112]

3. Other Retirement Plan Withdrawals – When employees terminate from their employment, in many cases, they do not move their assets from the plan. However, the Vanguard surveys indicate that about 29 percent of terminating employees will take a distribution of approximately 4 percent of total plan assets.[113] It is important to note that this data may understate the actual activity, because lump sum distributions are often taken by terminating employees with very small account balances. This analysis assumes that retirees taking a lump sum distribution are likely to have account balances comparable to those rolling over assets to IRAs to eliminate the distribution of very small account balances which would be less affected by the SEC proposal and to avoid overstating the effect of the SEC proposal on lump sum distributions.

Rollovers to IRAs – Approximately $500 billion to $600 billion of retirement assets are moved to IRAs each year.[114] This figure continues to increase at a brisk pace (approximately an average 8 percent according to IRS SOI data). The temporal estimate assumes that implementation of the

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[110] U.S. Census Bureau, *Statistics of U.S. Business*, 2020.
[111] *Ibid.* Further, it is important to note that larger employers are more likely than their smaller firm counterparts to offer retirement plans to their workers.
[112] Vanguard, *How America Saves,* 2023 and Employee Benefits Research Institute, Holden, Sarah, Steven Bass, and Craig Copeland, *401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2020, supra.*
[113] *Ibid.*
[114] Table 7, above, shows the historical data for rollovers from retirement plans to IRAs. Internal Revenue Service, Statistics of Income Division, *Individual Taxpayers with IRAs*, Table 4, various tax years.

SEC proposal would ensure that the current pattern does not decline or, in some cases, could hasten the pattern.

Required Minimum Distributions from Retirement Plans – There are two data sources employed to determine the amounts distributed as required minimum distributions from retirement plans. First, we consider the average withdrawal for taxpayers over age 72 that receive distributions from their IRAs as a proxy for retirees that remain in the employer plan. Second, we consider information for taxpayers with taxable pension income. The taxpayers with taxable pension income who are likely to receive a minimum required distribution are assumed to represent the same proportion of total taxpayers as those receiving IRA required minimum distributions (50.3 percent of total IRA distributions are taken by those over age 72).[115]

Overall, the analysis assumes that approximately $312 billion dollars were received as required minimum distributions in tax year 2020 from retirees that remained in retirement plans. The aggregate taxable distributions from pension (IRS data) includes adjustments to remove defined benefit plan amounts and taxable distributions from taxpayers under age 72.[116]

For purposes of the analysis, the age at which required minimum distributions are required is assumed to be age 73 for individuals who turn age 72 after December 31, 2022, and would not apply to individuals with Roth IRAs or Roth 401(k) balances beginning in 2024.

4. Other Ongoing Transactions (Exchanges/Rebalancing) – The vast majority of plan participants do not regularly alter the investments in their retirement plan assets. Generally, the behavior observed is referred to as 'set-it-and-forget it.' However, there are a small portion of participants that (1) might exchange one fund for another or (2) rebalance their portfolio. Empirical evidence from Vanguard studies suggest that these transactions occur with respect to approximately 8 percent of participants with a frequency of 3 to 4 times per year.[117] While the transaction amounts vary from participant to participant, the estimate assumes that approximately 10 percent of total retirement plan assets will be involved in exchanges or rebalancing transactions throughout the year.

Estimating the Application of the Swing Factor

We estimate the effects of the SEC proposal on retirement plan participants by recreating baseline activity based on historical data and observations. In order to do so, the analysis relies on the New York Stock Exchange data for daily close amounts and volume for the past five years (June 3, 2018, to June 2, 2023). The analysis uses the NYSE U.S. 100 Index, which tracks the largest U.S. companies traded on the New York Stock Exchange. Flows to and from mutual funds would provide an alternate view of the impact. However, in the absence of the availability of such data, this index provided a proxy on which to base this simulation. This analysis simply simulates the impact of these policies on one segment of the mutual fund market.

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[115] *Ibid*.

[116] Amounts attributable to defined benefit plans rely on an estimate from DOL's Form 5500 data. Age distribution of taxpayers by adjusted gross income were applied from the Internal Revenue Service Statistics of Income, Individual Income Taxpayers, Distributed by Gender and Age. These IRS data were cross-referenced to the Census Bureau's Current Population Survey, 2020.

[117] Vanguard, *How America Saves*, 2023.

It is important to note that predicting future net flows to mutual funds is fraught with difficulties and beyond the scope of this analysis. However, given the available data and the specifics of the proposed policies, this simulation demonstrates that the policy could have unintended negative impacts on retirement plans. While the market valuation for this index may (or may not) correlate with future mutual fund flows, it does demonstrate that under certain conditions the asymmetry in the proposed policy could impose adverse effects.

Using the NYSE index simply allows the simulation of mutual funds flows, as mutual funds are largely held in equities.[118] Retirement funds hold 61.7 percent of their total assets in mutual funds.[119] The vast majority of these funds are target date funds (81 percent of participants; and 61 percent of contributions). Further the NYSE index represents the largest publicly traded U.S. companies (with the inference being that these are the companies being held by mutual funds or diversified equity funds).

Data were collected for the past five years (June 2018 to June 2023) for the daily open, high, low, close, and adjusted close, in addition to transaction data as summarized in Table 16.[120] The data for changes in the trading price is summarized in Table 16 as well as the following graphs. The data demonstrate the potential frequency of the swing factor applying to a given mutual fund, on a given day. (Refer to Graphs 6 through 11 for the daily activity.)

Table 16.— Summary of New York Stock Exchange U.S. Index, Five Years Trading Activity
Source: Authors Calculations based on historical data from Yahoo Finance

Date	Number of Trading Days	Days with a Net Inflow, 2 Percent or more	Days with a Net Outflow	Total Trading Days with Outflow	Total Swing Pricing Days
June 3 – December 31, 2018	146	2	73	50.0%	51.4%
January 2 – December 31, 2019	252	0	106	42.1%	42.1%
January 2 – December 31, 2020	253	12	118	46.6%	51.4%
January 4 – December 31, 2021	252	0	110	43.7%	43.7%
January 3 – December 30, 2022	251	13	131	52.2%	57.4%
January 3 – June 2, 2023	105	0	55	52.4%	52.4%
Five Year Total	**1,259**	**27**	**593**	47.1%	49.2%
Average Annual Days and Percent of Days	***251.8***	***5.4***	***118.6***	***47.1%***	***49.2%***

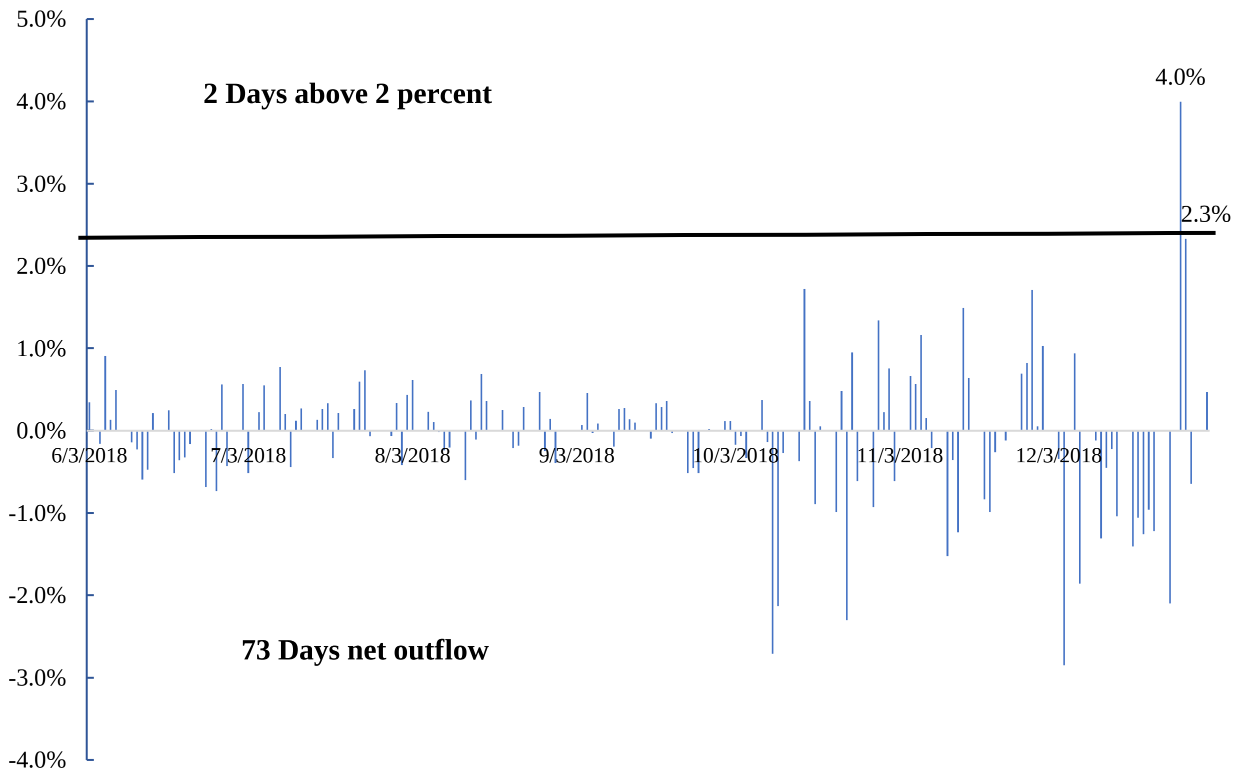
Regarding the potential for the swing factor to apply to a given trading day's NAV, it is more likely that the factor would apply in cases where the net outflow occurs (estimated as the

[118] According to Vanguard, *How America Saves, 2023, supra*, overall 66 percent of all retirement assets are held in equities, with 42 percent in diversified equity funds and 38 percent in target date funds. This suggests that the majority of target date funds are equities (approximately 63.2 percent). Research by Vanguard indicates that despite the net movement toward fixed income investments, even at the height of market volatility, there were significant gross flows toward equities among participants.
[119] ICI *Q4 2022 data*, *supra*.
[120] Data for transaction were available online at U.S. Equities Historical Market Volume Data (cboe.com)

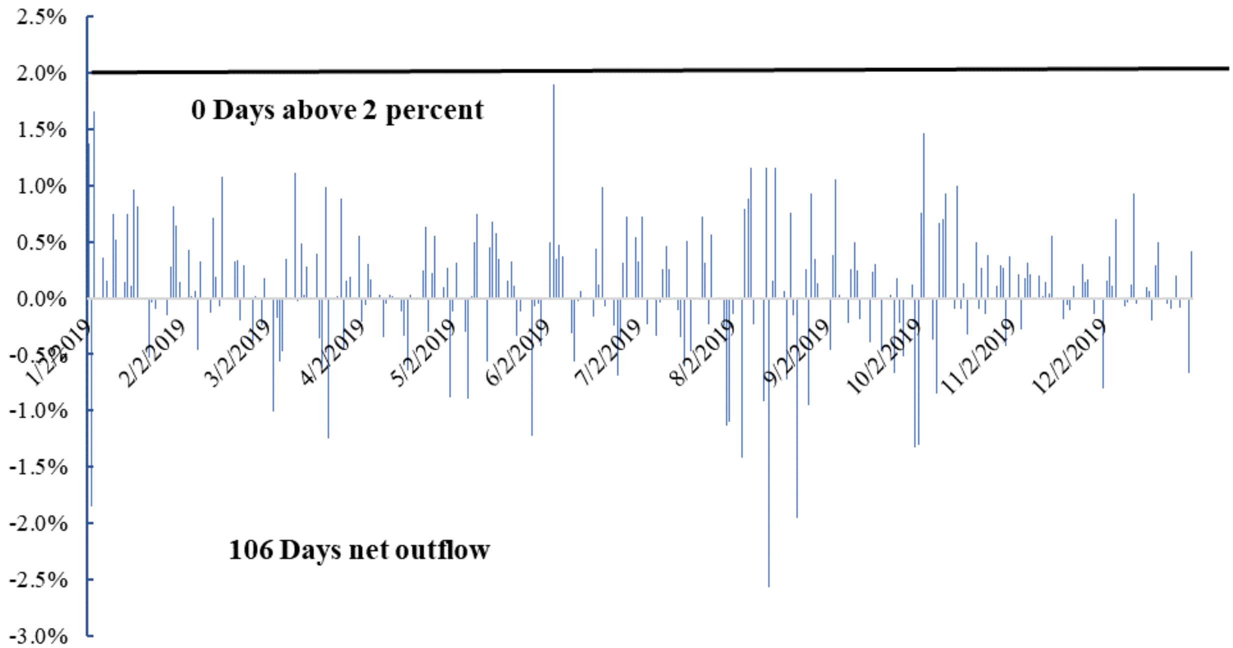
reduction in the index stock value) as well as certain net inflows (2 percent or greater). It should be noted that there is a potential for the swing factor to apply also on other days, since it applies on a fund-by-fund basis.

Based on the historical data, if the SEC proposal had been implemented, on average the swing factor would apply to the NAV on 49.2 percent of the trading days (2.1 percent of net inflow days (5.4 average annual days divided by 251.8 average trading days) and 47.1 percent of net outflow days). Graphs 6 through 11 present the daily changes on a calendar year basis (the data reflect five full trading years from June 2018 to June 2023). In any given year, the likelihood of net outflows exceeds the likelihood of net inflows above 2 percent. Yet, clearly there are years where the inflows are significantly higher.

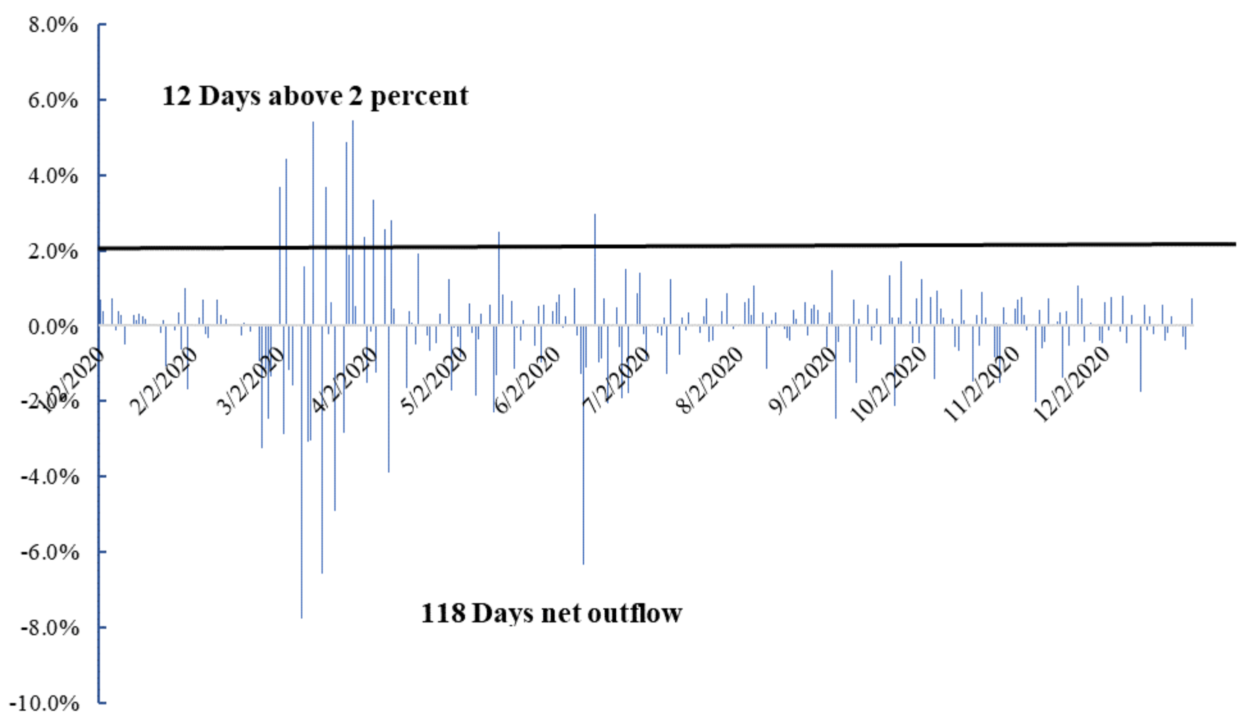
Graph 6 - Net Flows, New York Stock Exchange Index, 2018
June 3, 2018 to December 31, 2018



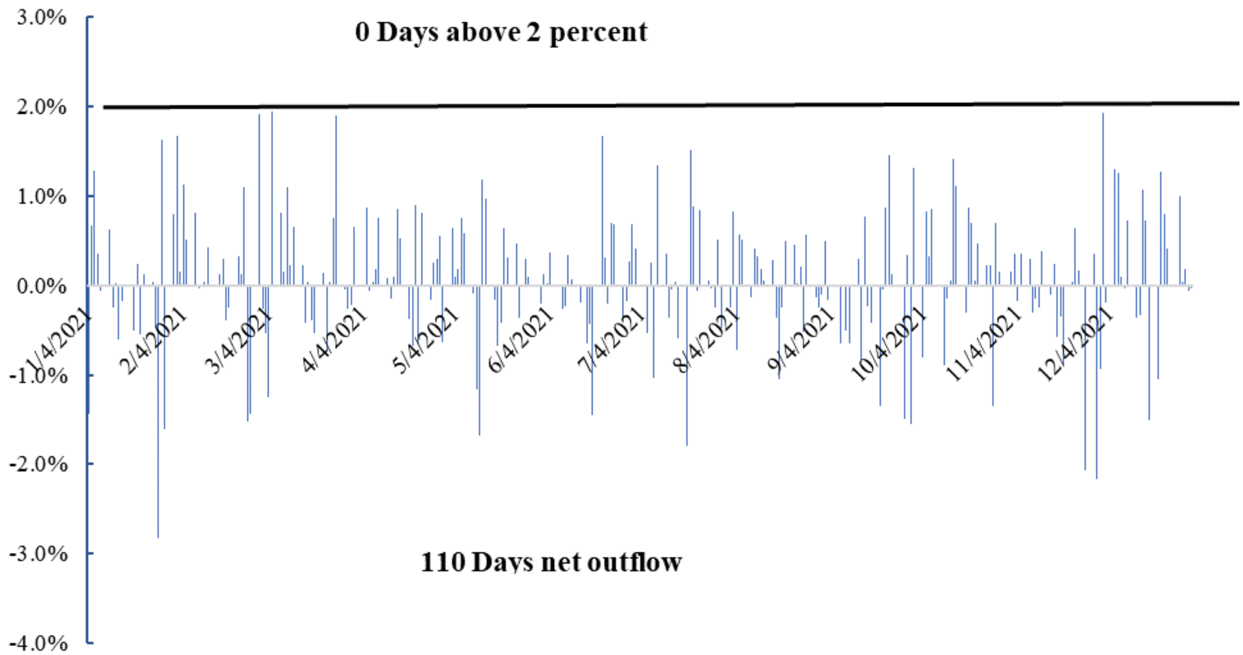
Graph 7 - Net Flows, New York Stock Exchange Index, 2019
January 2, 2019 to December 31, 2019



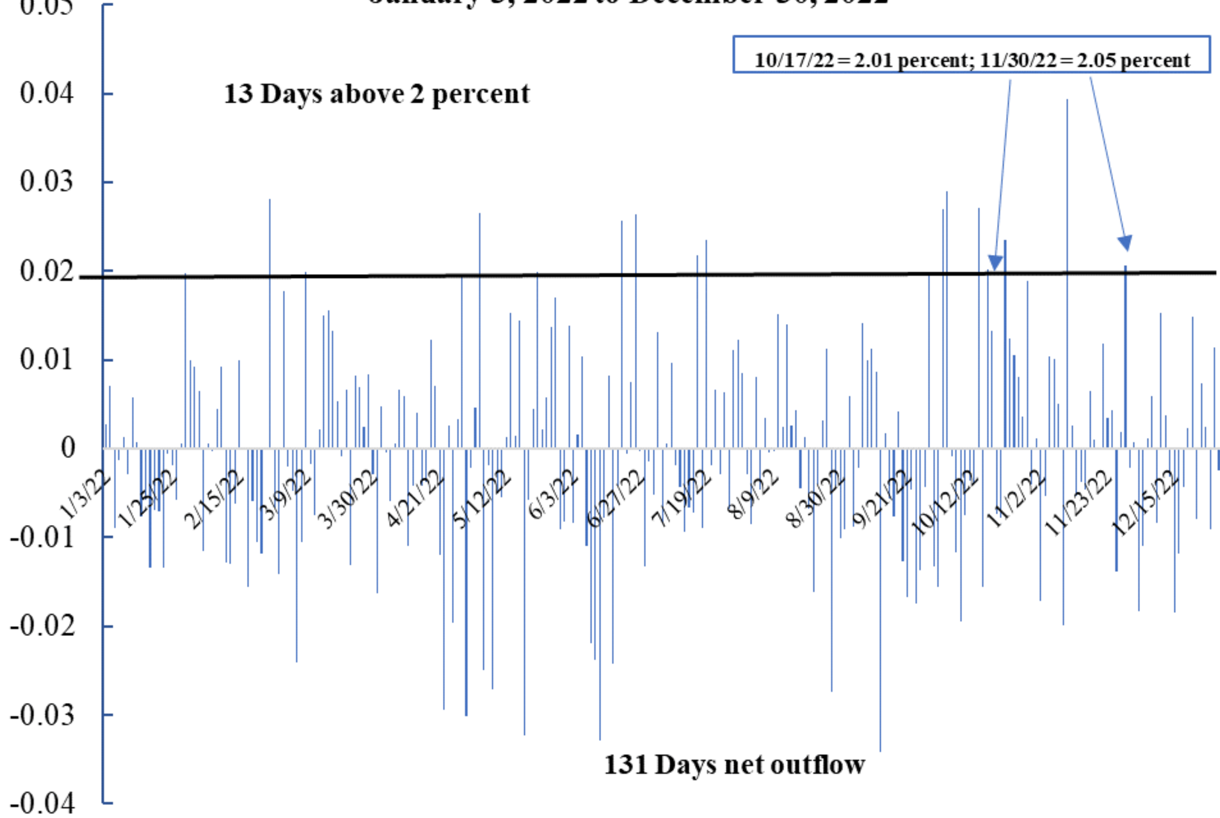
Graph 8 - Net Flows, New York Stock Exchange Index, 2020
January 2, 2020 to December 31, 2020



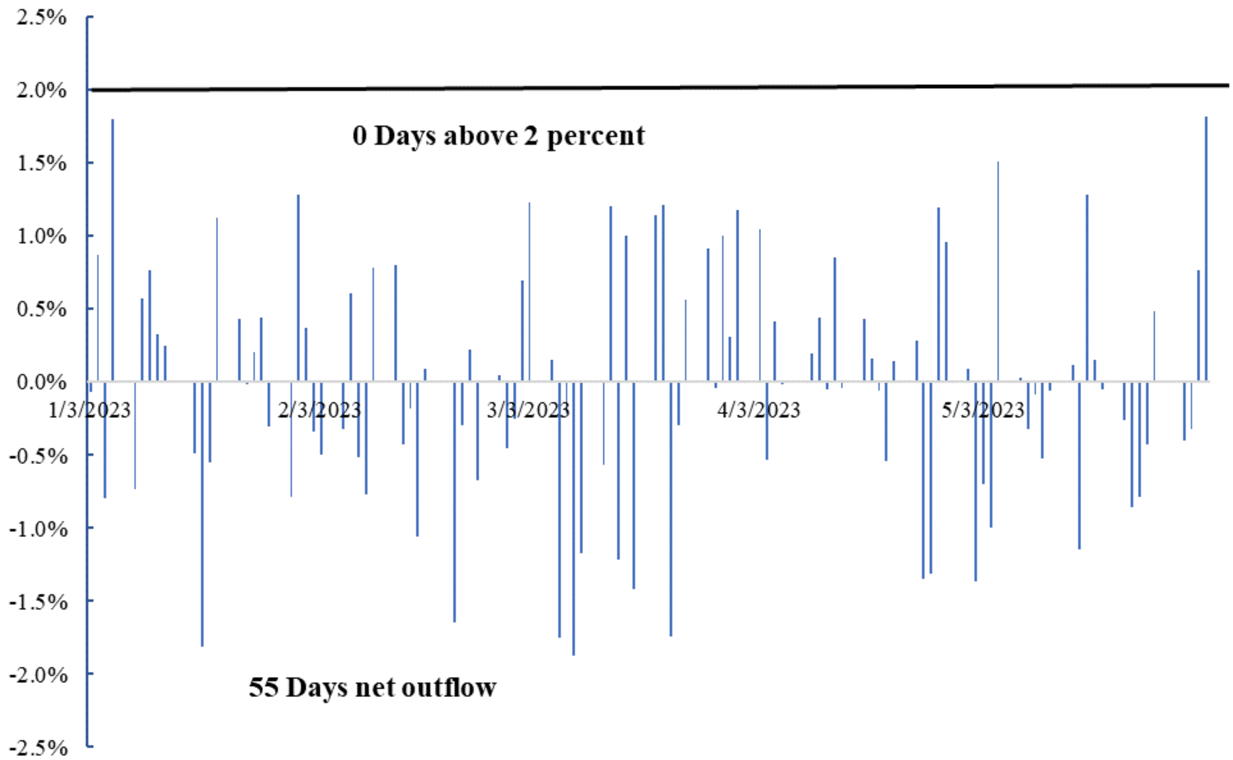
Graph 9 - Net Flows, New York Stock Exchange Index, 2021
January 4, 2021 to December 31, 2021



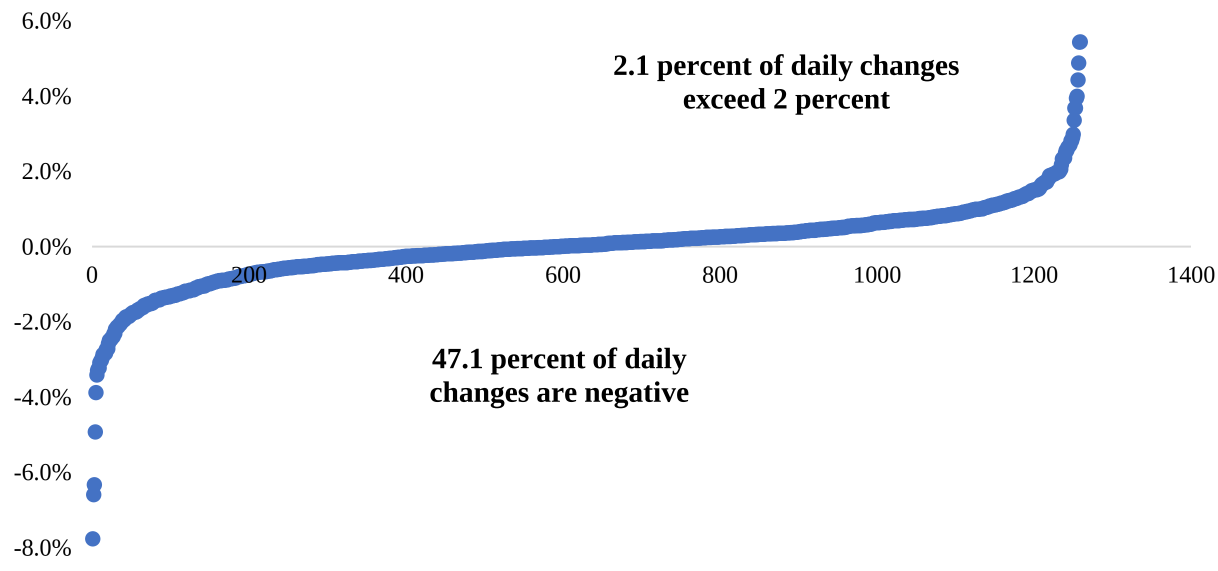
Graph 10 - Net Flows, New York Stock Exchange Index, 2022
January 3, 2022 to December 30, 2022



Graph 11 - Net Flows, New York Stock Exchange Index, 2023
January 3, 2023 to June 2, 2023



Graph 12 - Frequency of the Percentage Change in Daily Close, NYSE Index, Five Years Ending June 3, 2023



Graph 12 demonstrates the frequency of daily change results of the NYSE index over the past five years. As shown, the distribution is fairly balanced over the long term, despite the short-term variations. While these movements are not necessarily correlated with mutual fund flows, they represent the movements of the underlying assets held in funds.

Simulation for Swing Pricing with Hard Close with Historical Data

The analysis relies on a simulation of activity based on historical data observations. The potential to predict future market activity requires many assumptions, most of which may change as economic conditions change. Applying the SEC swing pricing with a hard close policy to historical data creates an example of the potential costs imposed on retirement plans.

The empirical work relied on the following assumptions:

- Historical data over a 5-year period beginning June 3, 2018, and ending June 2, 2023 (summarized in Table 16 in Appendix B) for frequency of application of a swing factor. Based on the historical data, if the SEC proposal had been implemented, on average the swing factor would apply to the NAV on 49.2 percent of the trading days (2.1 percent of net inflow days (5.4 average annual days divided by 251.8 average trading days) and 47.1 percent of net outflow days).

- Aggregate transactions are weighted and distributed according to the daily volume of activity (daily share of annual trading). Using transaction weights allows the retirement plan's transactions to follow the actual pattern observed. In other words, the days with a greater share of transactions indicates that the retirement plan transaction is more likely to occur on those days (weights are equal to daily transaction divided by total annual transactions).

- By first modeling the likelihood of a transaction occurring on a given day (weighted transactions are a proxy for the probability that activity would occur on a given day), and allowing these transactions to apply to daily activity, we simulated the uncertain nature of the retirement plan transaction.

- Transactions (such as employer contributions and employee deferrals) that occur on a regular basis, typically with payroll cycles, were weighted by employer size and typical payroll period so that the contributions and deferral patterns follow the likely pattern of such transactions.

- It is assumed that the hard close would affect 45 percent of daily transactions, based on input from industry representatives on the percentage of transactions that are placed before the close, but arrive to funds after the cutoff (market close) under current processing procedures. Industry representatives indicated that under current procedures, 45 percent of transactions remain in the queue and are processed overnight (e.g., for processing as omnibus trades). This represents a very conservative assumption, given that the hard close would likely impact the 45 percent of transactions that are not processed prior to 4 pm under current law plus any additional transactions that would not be able to meet the much earlier hard close deadline under the proposal.

- The estimates simulate two effects of the hard close – the potential to reduce returns due to additional transaction costs and the risk of timing for being out of the market (delays for processing NAV);

  - Estimated factor for the cost of being out of the market for the hard close relies on the difference in the daily notional values for the NYSE index (for the date of the weighted transaction, for 2022); ***While the yearly estimates rely on the actual daily changes, the simple average overnight percentage change in the NAV is -2.04%; the transaction weighted average (using shares or trades results in very little difference between the weighted averages) is -4.02%;***

- The estimated swing factor used in this analysis is 1.25, which applies to the activity on certain dates[121] (as shown in Table 16 in Appendix B) for approximately 57.4 percent of transactions; and

- The examples of the effects of the SEC proposal presented below apply the effects of the hard close first and then the effects of swing pricing. If the order of the estimates was reversed, there would be some impact on the relative effects of each component, but the overall effects of the proposal would be the same.

Supporting Information for Implementation and Ongoing Costs

Table 17 provides supporting information for the most recent periods, by type of mutual fund. These data are consistent with those available in other surveys and reports, which suggest that there is a significant ability to pass along costs to retirement plan participants owning mutual funds.

The mutual fund expense fees in Table 17 appear generally consistent the net investment fees reported in the 401k Averages Book. (See Table 15, above.) Because revenue sharing also includes a component of recordkeeping and administration fees, the 401k Averages Book suggests that, for smaller plans, recordkeeping and administration fees can represent a significant fraction of total plan expenses on a per participant basis, while these fees will be lower as a per participant percentage of overall expenses for large plans. The economies of scale that large plans can achieve supports the fact that large plans have lower per participant recordkeeping and administration costs.

[121] Transactions on a given day are the aggregate activity (e.g., rollovers) multiplied by the daily notional weight. This provides an equal probability that, on a given day, this share of total assets is likely to be included in the transactions.

Table 17.— Average Mutual Fund Expense Ratios for 401k Plans, Compared to Industry Averages, As a Percent of Assets[122] Source: Investment Company Institute and Morningstar.						
	2019		2020		2021	
	Industry[1]	401(k)[2]	Industry[1]	401(k)[2]	Industry[1]	401(k)[2]
Equity mutual funds	**0.51**	**0.39**	**0.50**	**0.39**	**0.47**	**0.36**
Domestic	0.47	0.37	0.46	0.36	0.43	0.32
World	0.64	0.45	0.52	0.49	0.60	0.52
Hybrid mutual funds	**0.63**	**0.46**	**0.59**	**0.44**	**0.57**	**0.43**
Bond mutual funds[3]	**0.45**	**0.35**	**0.42**	**0.32**	**0.37**	**0.25**
Investment grade	0.32	0.28	0.31	0.25	0.28	0.20
World	0.53	0.32	0.49	0.27	0.45	0.23
Other taxable	0.64	0.62	0.59	0.58	0.52	0.46
Money market funds	**0.24**	**0.30**	**0.21**	**0.26**	**0.12**	**0.12**

[1] The industry average expense ratio is measured as an asset-weighted average.
[2] The 401(k) average expense ratio is measured as a 401(k) asset-weighted average.
[3] Excludes tax-exempt funds.

Publicly Available Industry Comments Supporting Higher Implementation and Ongoing Costs of the SEC Proposal

The SEC's economic analysis of the proposal repeatedly acknowledges the potential problems that retirement plan participants could face. Among the statements SEC made include the following:

- "It may impose significant switching costs (e.g., changing business practices, computer systems, integrating new technologies, etc.) on funds, their intermediaries, and service providers that could ultimately be passed on to fund investors.
- A large number of small retirement plans may be disproportionately affected by the implementation costs related to the proposed hard close. To the extent that these costs are too large, some of these plans may cease to exist or choose to offer investment vehicles such as ETFs or CITs.
- To the extent that not all investors have a choice of intermediary, such as those in employer-provided retirement plans, the costs stemming from the proposed hard close requirement may be borne . . .by investors (i.e., plan participants) . . .
- Investors may end up with either less diversified portfolios, or experience higher costs of investing.
- The hard close may disadvantage certain investors that do not have a choice of their intermediary, if it precludes them from responding to market events after a specific cut-off time that is either earlier than 4 p.m. ET or lengthens the time for completing certain types of transactions compared to investors that submit orders directly to funds –

[122] Investment Company Institute, ICI Research Perspective, *The Economics of Providing 401(k) Plans: Services, Fees, and Expenses, 2021*, Vol. 28, No. 6, June 2022.

potential increase a market risk for investors that trade via intermediaries with earlier cut-off times."[123]

In addition, a number of comment letters to the SEC describe the substantial undertaking that would be required to reengineer systems to comply with the SEC proposal (emphasis added in bold):

- Fidelity: "Requiring swing pricing (with or without a hard close) will thus **force the retirement recordkeeping industry to spend an enormous amount of resources and time to rearchitect their systems** to enable the swing pricing factor determination to be made and the NAV to be calculated."[124]
- SPARK Institute: "While there have been developments in recordkeeping and trade processing technology in the 20 years since the Committee first proposed – but eventually abandoned – a hard close requirement in 2003, those developments have been in service of improving omnibus recordkeeping and making front-end web-based systems easier to use, not developing technology to completely unbundle the current omnibus recordkeeping system. Ultimately, the same operational difficulties that existed 20 years ago still exist today, and there is no technology that exists now that would facilitate simple compliance with a hard close. A major overhaul of the current system would be required to implement a hard close, and such an overhaul would do away with the resources the retirement plan industry has invested in recent decades to improve recordkeeping for the benefit of participants. **It is also possible that even designing and implementing such a system, considering its complexity and the volume of transactions involved, would not be possible given the computer processing capacity currently economically viable for retirement plans**"[125]
- Brighthouse Financial: "The Proposal is fundamentally irreconcilable with the design of our variable products and the contractual obligations to which we are subject. Of course, **if we were required to build entirely new systems as a result of the proposal, the costs would be astronomical** and completely unjustified."[126]
- Vanguard: "the proposal does not fully consider the economic impact the proposed swing pricing requirements would have on fund investors and intermediaries. Indeed, the proposal would require significant enhancements and rebuilds across all aspects of the mutual fund industry, including intermediaries, retirement plan recordkeepers, custodians, and transfer agents – costs of which we fear would be passed along to investors in the form of higher fees and expenses. Assessing the total costs of implementing the proposal is impossible within the short comment period, but given the extent of necessary enhancements, **the proposal is very likely to cost the industry billions of dollars**. Beyond the initial transition costs, there would be additional, on-going costs that investors transacting through intermediaries would experience because of sustained time out of the market attributable to the hard close requirement…Additionally, most retirement plan transactions are ongoing contributions, withdrawals, or loans tied to life

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[123] Quotations from the SEC analysis, as restated in the ICI Letter to the SEC, *supra...*
[124] Fidelity Investments, Letter to Ms. Vanessa A. Countryman, *Open-End Fund Liquidity Risk Management Programs and Swing Pricing: Form N-PORT Reporting: File Number S7-26-22*, February 14, 2023, at p. 15.
[125] SPARK Institute *Letter to SEC*, *supra,* p.10.
[126] Brighthouse Financial, *Letter to Vanessa A. Countryman, Open-End Fund Liquidity Risk Management Programs and Swing Pricing; Form N-PORT Reporting (File No. S7-26-22), Release Nos. 33-11130; IC-24746 (the "Proposal"),* February 13, 2023, p. 19.

event and individuals' economic needs. The long-term savers the SEC is trying to protect would face ongoing costs of delay on each of these transactions – a persistent drag on main street investors that could overwhelm the economic benefit swing pricing is designed to produce."[127]

- Paychex: "The proposal would impose substantial costs to implement because our current system relies on knowing the net asset value to process transactions because many of our transactions are for a specific dollar amount (e.g., $100 per pay period). The Proposal would require us to rebuild all of our systems. **Our initial estimate is that such a system rebuild would be in the multiple millions of dollars.** However, the relevant costs are not limited to rebuilding our systems. **We expect to incur additional staffing costs relating to client service, administration, legal and compliance** because the Proposal will require additional personnel in those areas given the other changes that we would need to make to agreements and services.
  All of the additional costs will mean that the cost of providing recordkeeping services will similarly increase. **Some or all of those additional costs will, of necessity, be added to current recordkeeping costs borne by plan sponsors and/or participants. As a result, the increased costs could lead fewer small businesses to make 401(k) retirement plans available to their employees**."[128]
- Vedder Price: "…we understand that a transition to this new process would **require both a significant one-time investment across the industry in order to build the necessary infrastructure as well as higher ongoing administrative and recordkeeping costs** at plans (and other intermediaries) in light of the shift from a one-step to a two-step daily process. It would be reasonable to expect these initial and ongoing costs to be imposed on plan participants to the detriment of their investment outcomes."[129]
- American Retirement Association: "…the reprogramming required to adapt to a Hard Close, for example, creating an estimate or using the previous day's NAVs, would introduce great operational risk and **be very costly to implement**. Extensive intermediary system enhancements would be required, for example, because current systems have controls in place to prevent the use of prior day NAVs. The costs of making these changes will appear as higher costs for DC plans and participants."[130]
- ACLI: "The SEC's hard close proposal would set the system back by **requiring a complete restructuring of plan operations, the cost of which will be borne by the retirement plan system and its participants, with no discernable benefit** to balance out the harm. . .
  While the logistical challenges would be extraordinary, the monetary and resource costs would be exponentially worse and completely unjustifiable. Insurance companies and financial intermediaries would have to build entirely new systems and trading ecosystems…a complete overhaul of the existing systems and ecosystems…could cost any given insurance company millions upon millions of dollars. On an industry wide

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[127] Vanguard, *Letter to Vanessa A. Countryman, Secretary, Open-End Fund Liquidity Risk Management Programs and Swing Pricing: Form N-PORT; File No. S7-26-22*, February 14, 2023, p. 12.
[128] Paychex *Letter to SEC*, *supra*, at p. 4.
[129] Vedder Price, *Letter to Ms. Vanessa A. Countryman, Investment Company Act Release No. 34746 (File No. S7-26-22); Open-End Fund Liquidity Risk Management Programs and Swing Pricing; Form N-PORT Reporting*, February 14, 2023.
[130] American Retirement Association Letter to the SEC, *supra.* at p. 5.

basis, the costs would easily be in the billions, costs which would likely be passed on to retail investors in some manner."[131]

- College Savings Foundation: **"**…the [SEC] analysis completely ignores the proposal's impact on the more than 15 million 529 Plan accounts and over $400 billion in assets held in 529 plans. Nor does the Commission make any attempt to assess the cost of implementing the hard close on states that administer these programs. We believe that the cost **will be substantial**…Ultimately, these costs will be absorbed either by taxpayers, or more likely, by Americans trying to provide an education for their child or a better life for a disabled relative."[132]

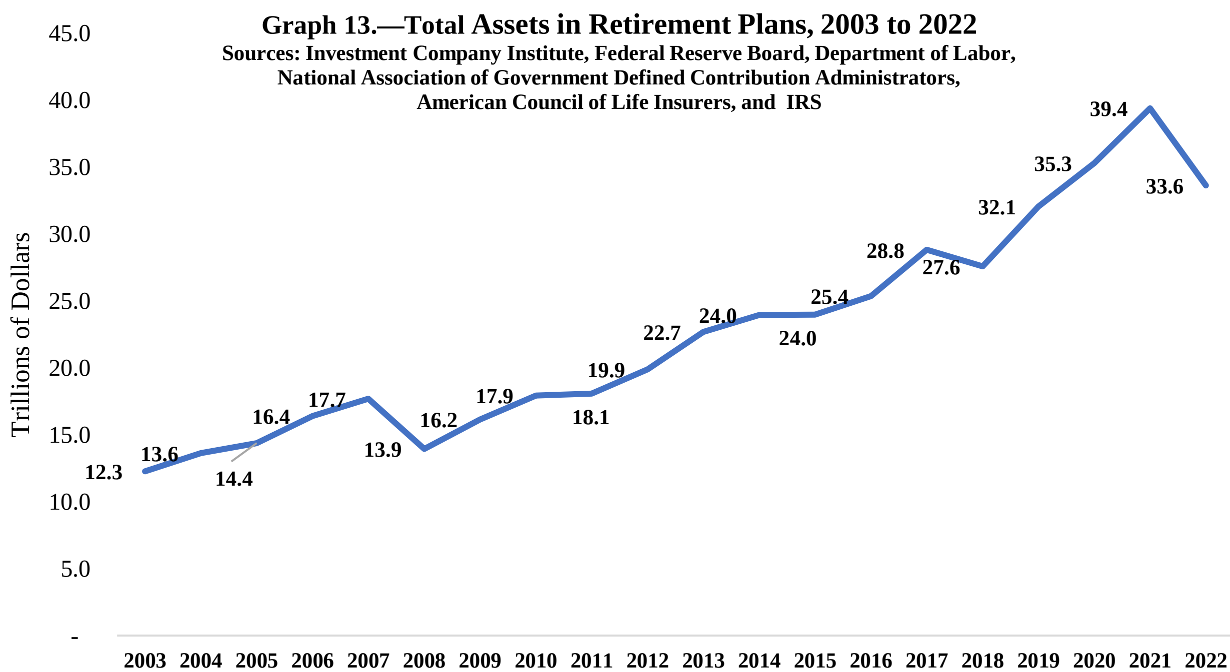
[131] ACLI, *Letter to SEC*, *supra*, at p. 5 and p. 27.
[132] College Savings Foundation, *Letter to SEC*, *supra*, at p. 5.

APPENDIX C – OVERVIEW OF THE U.S. RETIREMENT SYSTEM AND MUTUAL FUND OWNERSHIP

The U.S. retirement system is comprised of the plan sponsors and participants and includes both defined benefit and defined contribution plans. Many defined contribution plans have investments that are participant directed. Managing these assets requires a complex system of intermediaries to support and serve these plans and participants. This section describes the retirement system in terms of the overall asset size and characteristics of plan participants holding mutual funds. In addition, we provide an overview of the market structure of the system that facilitates plan investments, recordkeeping, and general operations.

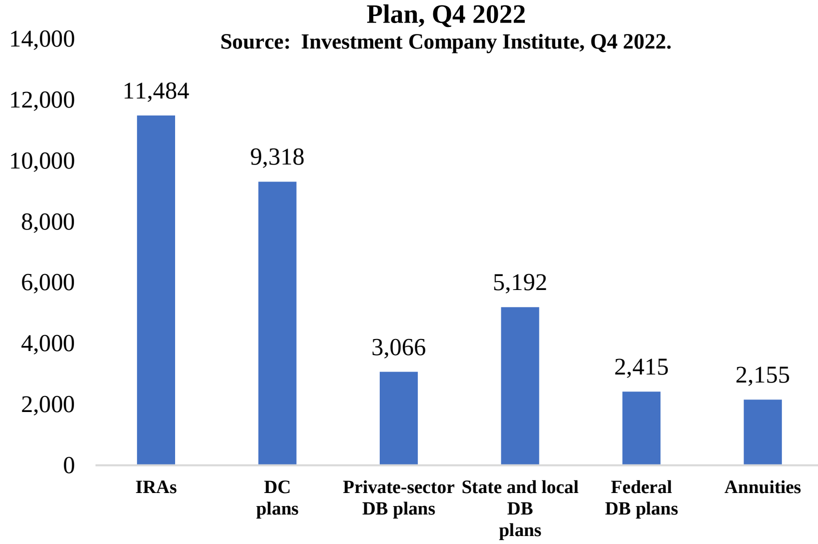
A. Magnitude of the Retirement System

As of December 2022, the U.S. retirement system reached $33.6 trillion dollars in assets attributable to approximately 740,000 retirement plans and 142.3 million individual accounts.[133] The assets in retirement plans continue to grow steadily over time. With the exception of specific market downturns, the assets in retirement plans increased each year over the past twenty years. Graph 13 displays the total assets, in trillions of dollars. As shown in Graph 13, in December of 2003, retirement assets were $12.3 trillion dollars. Twenty years later the total assets nearly tripled to $33.6 trillion dollars.



[133] This is down from a high of $39.4 trillion in December 2021. Included in the total are IRAs, defined contribution (DC) plans, defined benefit (DB) plans (private sector and government), IRAs, and annuity reserves.

Graph 14.—U.S. Total Retirement Assets, by Type of Plan, Q4 2022
Source: Investment Company Institute, Q4 2022.



Graph 14 displays total retirement assets distributed by the type of retirement arrangement. Individual retirement arrangements (IRAs) hold the largest share of retirement assets, due in large part to the rollover of assets from defined contribution plans.[134]

Prevalence of Certain Plans – According to the Department of Labor (DOL), defined contribution plans are the most common form of workplace retirement savings, representing 93.8 percent of all plans. Within defined contribution plans, 401(k) plans are the most common with 83.2 percent of total retirement plans or 89 percent of all defined contribution plans. Defined contribution plans receive approximately $600 billion each year in contributions.[135] Therefore, these plans will continue to dominate both the retirement plan market and play an important role in mutual funds.

Collectively, IRAs and defined contribution (DC) plans comprise 61.9 percent of the assets held in retirement plans.[136] Defined benefit (DB) plans (private sector, state and local plans, and Federal plans) comprise another 31.7 percent of the total assets, with the remaining 6.4 percent of assets held in annuities.

Employer Size – Participant characteristics tend to depend upon several conditions, including the employer size and income and age of the participant. Generally, as the employer size (based on total employment) increases, the likelihood of a workplace retirement plan increases. Access to plans is an important component to retirement savings and overall retirement income security. Access to workplace retirement plans has been fairly stable over time. However, the movement toward automatic enrollment for eligible workers (with the ability to affirmatively opt-out of retirement savings), has increased participation in workplace retirement plans.[137]

According to the Bureau of Labor Statistics National Compensation Survey (BLS NCS), 72 percent of civilian workers have access to workplace retirement savings, with more than half of all those offered a plan participating (56 percent). However, the rates vary considerably by the employer size.

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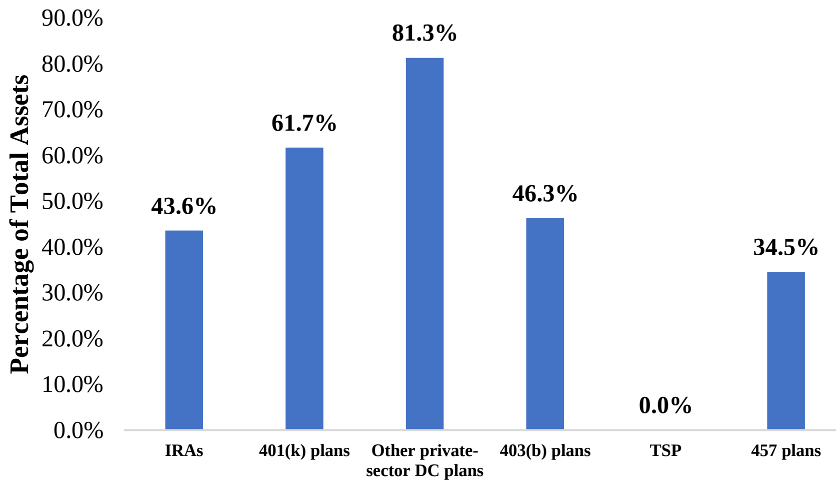
[134] On average, IRAs receive approximately $500 to $600 billion in rollovers from defined contribution plans.
[135] *Ibid.*
[136] Defined contribution plans typically refer to tax-qualified retirement plans that maintain individual accounts for eligible employees, under which an employee is entitled upon retirement or certain other events to the vested assets in the employee's individual account. Defined contribution plans can be contrasted with defined benefit plans in which eligible employees are entitled to a specified benefit based on a formula, such as years of service times a multiplier, final average pay, or career average pay that is not tied to the amount of plan assets.
[137] According to Vanguard, *How America Saves, 2022*.

Participants in Qualified Plans – According to the 2020 Internal Revenue Service Statistics of Income (IRS SOI), there were approximately 65 million taxpayers with IRAs.[138] At the end of 2020, approximately 83 million workers were active participants in more than 700,000 defined contribution plans in the United States.[139]

B. Investment Holdings in Retirement Plans – Mutual Funds

Mutual funds play an important role in defined contribution retirement plan investments. Graph 15 displays the share of mutual funds held in these retirement plan assets, as a percentage of total assets. As shown, 401(k) plans and other defined contribution plans rely heavily on mutual funds, with the vast majority of their assets held in these funds (401(k) plans held nearly 62 percent of their total assets in mutual funds, and other DC plans held more than 81 percent). IRAs and 403(b) plans also held significant shares of total assets in mutual funds with 43.6 and 46.3 percent, respectively.[140]

Graph 15.—Mutual Funds as a Percentage of Total Assets Held in IRAs and Defined Contribution Plans, 2022
Source: Investment Company Institute



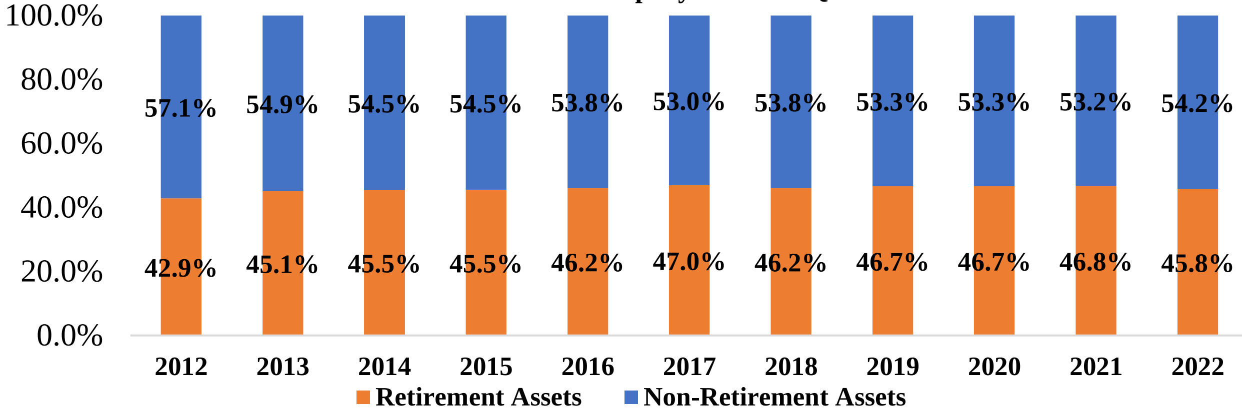
Retirement assets are an important component of the mutual fund market. Retirement assets consistently total over 40 percent of the total mutual fund assets and edge toward half of all assets. See Graph 16, for the distribution of mutual fund assets by retirement and nonretirement sources. Graph 18 shows the distribution of these assets in dollar amounts since 2012.

[138] Internal Revenue Service Statistics of Income, Matched file of Forms 1040, *U.S. Individual Income Tax Returns*, Forms 1099-R, *Distributions from Pensions, Annuities, Retirement or Profit-Sharing Plans, IRAs, Insurance Contracts, etc*., and Forms 5498, *IRA Contribution Information* for Tax Year 2020, Individual Retirement Arrangements Study, April 2023.

[139] United States Department of Labor, *Private Pension Plan Bulletin, Abstract of 2020 Form 5500 Annual Reports,* October 2022, *supra*. The 2020 IRS W-2 data indicates that there were nearly 80 million individuals with defined contribution plan indicators reported on their Form W-2.

[140] Estimates of mutual fund assets in DB plans have been excluded from ICI data on mutual funds because of incomplete reporting. Federal Reserve Board data indicate that mutual fund assets held in private-sector DB plans accounted for $397 billion at year-end 2022, or less than 2 percent of the U.S. retirement market. In addition, the Federal Reserve Board reports that state and local government (DB) employee retirement funds held $75 billion in mutual fund assets at year-end 2022, or less than 1 percent of the U.S. retirement market.

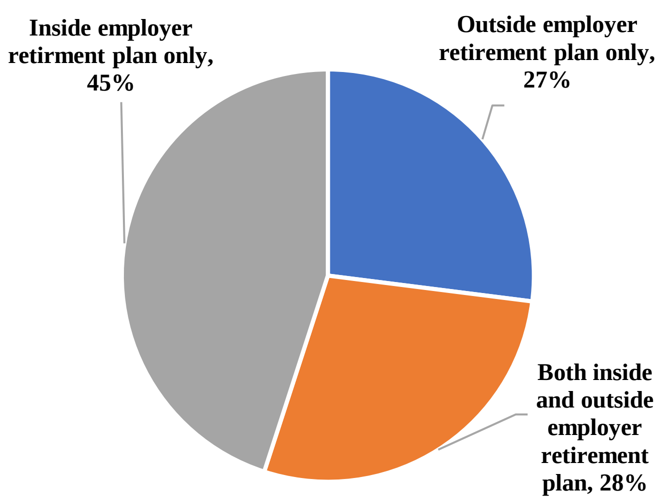
Graph 16.—Mutual Fund Assets, Shares of Retirement and Non-Retirement Holdings, 2012 to 2022
Source: Investment Company Institute. Q4 2022



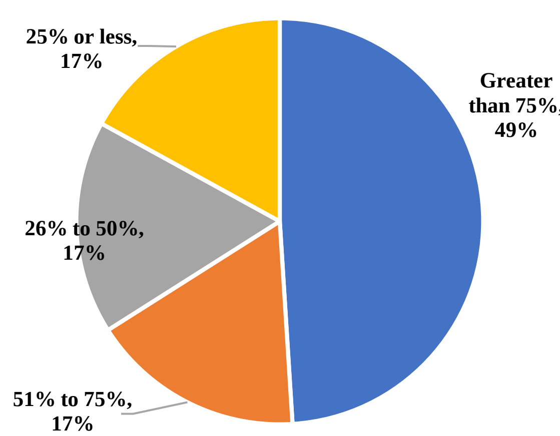
C. Mutual Fund Owners in Retirement Plans

As noted above, retirement assets hold a significant share of all mutual fund investments. Data show that employer-sponsored retirement funds create an important gateway to mutual fund ownership.[141] Of all mutual fund-owning households, 68 percent of households that purchased their first mutual fund assets since 2010 did so through an employer retirement plan. Moreover, 90 percent of mutual fund-owning households reported that saving for retirement was a goal of their mutual fund investments.

Graph 17.—Source of Mutual Funds Owned by U.S. Households
Source: ICI, Characteristics of Mutual Fund Investors, 2022



Graph 18.—Mutual Funds' Share of Household Financial Assets
Source: ICI, Characteristics of Mutual Fund Investors, 2022



[141] Investment Company Institute (ICI), *ICI Research Perspective, Characteristics of Mutual Fund Investors, 2022*, Vol. 28, No. 10, October 2022.

Graph 17 shows that 73 percent of mutual fund-owning households held mutual fund assets at least partially through employer retirement plans, with 45 percent holding mutual fund assets only in employer retirement plans.

Mutual fund investments represent a significant component of most household financial assets in the United States. Graph 18 shows the breakdown of mutual fund investments as a percentage of total household financial assets (including retirement assets but excluding primary residence). As shown in Graph 18, for 66 percent of households (17 plus 49 percent), mutual funds represent more than half of their total financial assets.

Table 18 provides the household mutual fund ownership patterns distributed by household income; the data are consistent with past surveys of household mutual fund ownership patterns.[142] The current ICI analysis of mutual fund owners show that 60 percent of individuals with mutual funds in retirement accounts only, and those outside of retirement plans have household income of less than \$100,000.[143] The greatest distinction in ownership patterns is for those investors owning mutual funds both inside and outside a retirement plan, with 66 percent of households having incomes of \$100,000 or more.[144] Based on the data, it is clear that mutual funds play an important role in investment decisions for those saving for future needs.

Table 18.— Households Owning Mutual Funds, Inside and Outside Employer Retirement Plans, Distributed by Household Income
Source: ICI, Q4, 2022 Database

Household Income	Inside Employer Retirement Plans		Outside Employer Retirement Plans		Inside and Outside Plans
	Total	Only Inside	Total	Only Outside	Total
Less than $25,000	5	7	5	9	3
$25,000 less than $50,000	10	15	12	19	7
$50,000 less than $75,000	14	21	13	18	10
$75,000 less than $100,000	15	17	14	14	14
$100,000 less than $150,000	23	20	22	18	25
$150,000 or more	33	20	34	22	41

142 *Ibid.* A 2015 FINRA survey examined how U.S. households invested their assets and found consistent results. FINRA Investor Education Foundation, *Insights: Financial Capability, A Snapshot of Investor Households in America,* September 2015.
143 *Ibid.*
144 This is borne out in savings data generally. Savings is correlated positively with income, and increases with higher earnings. Therefore, it would be expected that those investors with higher incomes are more likely to hold assets in both inside and outside workplace retirement plans.

D. Importance of Open-End Funds

Open-end funds serve as intermediaries between investors seeking to allocate capital and issuers seeking to raise capital by pooling a portfolio of investments and selling the shares of this portfolio to investors. According to the Federal Reserve, as of the second quarter of 2021, there were 9,183 open-end mutual funds in the United States.[145]

The Federal Reserve reported total assets held in all open-end funds of approximately $17.4 trillion in assets at the end of 2022 (fourth quarter, 2022).[146] As mentioned, approximately $5 trillion in retirement assets hold these open-end mutual funds (i.e., about a third of the overall mutual market, but about half of all retirement assets).[147]

Most retirement plans extend multiple mutual fund offerings to their plan participants. Vanguard reported that, in 2022, on average, their plans offered 27.2 mutual funds (17.4 funds, when each target date risk series was counted as one offering).[148] However on average, participants held only 2.4 funds. Consistent with EBRI data, target date funds are becoming the most common fund held in a retirement plan.[149]

E. Intermediaries that Support the Retirement System

Intermediaries play a critical role in the operations of retirement plans and management of retirement plan investment options and assets. As Spark Institute noted in their letter to the SEC: "This system also provides enormous benefits to the capital markets as a whole. Because of the sheer volume of trading that is processed by defined contribution recordkeepers, mutual funds and their transfer agents do not need to maintain detailed records for the millions of savers in retirement plans. Funds receive a "batch" trade from recordkeepers, and do not need to have systems designed to comply with the complex tax, the Employee Retirement Income Security Act of 1974 (ERISA), and plan rules that govern defined contribution plans."[150]

Since defined contribution retirement plans comprise the largest holdings of mutual funds, it is important to understand the parties that support the plans and facilitate the investment process. The overall market for managing and investing retirement plans relies on plan administrators, retirement plan record-keepers, broker-dealers, and registered investment advisers.[151]

The retirement plan and plan participants conduct all business transactions through one or more intermediaries, which provide several benefits.[152] Intermediaries provide plans and plan participants with a convenient single point of contact for financial planning expertise and other

[145] Refer to the Federal Reserve, FEDS Notes, January 11, 2023, available online: The Fed - New Insights from N-CEN: Liquidity Management at Open-End Funds and Primary Market Concentration of ETFs (federalreserve.gov)
[146] *Ibid.*
[147] Vanguard*, How America Saves 2023, Section 2 Managing Participant Accounts,* June 2023.
[148] *Ibid.*
[149] Target date funds automatically adjust the asset and risk allocation according to the life-cycle of the plan participant.
[150] Spark Institute, *Letter to SEC, supra.*
[151] In addition, banks, insurance companies, and other registered investment companies also play a role in retirement plans.
[152] Investment Company Institute, *Navigating Intermediary Relationships*, December 2022.

services for all their investments. This allows the plan participants to build a one-on-one relationship with the intermediary to obtain personalized service. Intermediaries typically provide an array of investment choices such as stocks, bonds, options, exchange-traded funds (ETFs) and mutual funds. Further, intermediaries also deploy technology to enhance the investor experience, providing cost-effective trade, account maintenance, and communications support for all securities owned. And finally, intermediaries offer a variety of service models, providing investors with many choices among types and levels of service in line with their individual needs.

Several types of intermediaries offer services to retirement plans and plan participants.

1. **Plan Administrators –** The plan administrator is the person or entity that is responsible for overall management and operation of the retirement plan on behalf of the plan participants and beneficiaries (e.g., plan sponsor (the employer or organization), committee of employees, company executive, or a third-party administrator).[153]

2. **Plan Recordkeepers –** A plan recordkeeper is essentially a bookkeeper for the plan and keeps a record of plan participants and their investments and tracks and handles investment elections, contributions to the plan, and withdrawals from the plan. Recordkeepers assist plan administrators, plan trustees and third-party administrators (TPAs) carry out their compliance responsibilities under ERISA.[154]

According to the 2022 PLANSPONSOR Defined Contribution Recordkeeping Survey, retirement plan recordkeepers provided administrative services for more than $10 trillion of defined contribution plan assets at the end of 2021, representing approximately 83 percent of the overall defined contribution plan market.[155] Plan recordkeepers include (1) fund companies, which manage investments but also provide recordkeeping services, (2) payroll companies, under which the recordkeeping services may be outsourced to another company but available on the payroll company's website or offered as an in-house service, (3) insurance companies, which offer recordkeeping services in addition to selling insurance and investment products, and (4) independent recordkeepers, which support the backend of retirement plan administration work and are often paired with another platform or service provider.[156]

In its comment letter to the SEC, SPARK Institute noted that defined contribution plan recordkeeping developed with two goals, driven by the fiduciary obligations under ERISA: "(a) prioritizing prompt and continuous investment of funds dedicated to retirement savings, with the goal of providing the best possible chance for earnings and/or capital appreciation, and (b) ensuring that plan benefits are distributed promptly to provide retirement income."[157] Plan recordkeepers assist plan administrators and plan sponsors with compliance with the many

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[153] Chang, Jeff, *Differences Between Plan Administrators, Third-Party Plan Administrators, and Recordkeepers,* March 15, 2022, accessed at https://focusonpublicbenefits.com/differences-between-plan-administrators-third-party-plan-administrators-and-recordkeepers/. Plan administrators have fiduciary obligations under ERISA.
[154] *Id.*
[155] PLANSPONSOR, *2022 Recordkeeping Survey,* July 21, 2022.
[156] Ramirez, David, *401(k) Recordkeeper: What They Do for Your Retirement Plan,* February 21, 2020, accessed at: https://www.forusall.com/401k-blog/401k-recordkeeper-what-they-do-and-what-to-look-for.
[157] Spark Institute, *Letter to SEC, supra*, at 3.

requirements for retirement plans, as well as provide the infrastructure to help manage the many transactions and operations of the plans.

Over the past decade, the universe of retirement plan recordkeepers has decreased from 400 to approximately 150.[158] Yet, this smaller number of recordkeepers supported $10.35 trillion in 401(k) assets in 2022, representing approximately 83 percent of total assets according to the 2022 Plan Sponsor Recordkeeping Survey.[159]

3. Brokers and Dealers – Many broker-dealers provide a full range of services to their clients. Under this arrangement, the shareholder has no interaction with the fund complex. The shareholder only interacts with the broker-dealer, and the registered representative of the broker-dealer serves as the primary point of contact with the shareholder. Other broker-dealers provide more streamlined services, such as processing trades or providing statements, while the fund complex provides shareholder accounting and tax reporting. In these instances, the shareholder may interact with either the registered representative of the broker-dealer, the fund complex, or both.

There are two types of broker-dealers: a wirehouse (firm selling its own products and other outside products) and independent broker-dealers (firm selling products only from outside sources).

Wirehouses – A wirehouse is a term used to describe a **full-service broker-dealer**. Wirehouse brokers typically provide a full range of services to their clients, ranging from research, investment advice, and execution of orders. These brokers can range from smaller regional brokerage firms to large national firms. Wirehouses often have proprietary products that they offer to their clients and in addition to these products, must maintain data on adviser compensation and implement new policies to ensure compliance of all their brokers.

Independent broker-dealers – Independent broker-dealers range from large national brokerage houses to small broker-dealers. These firms assist investors by providing comprehensive financial services. There is also a distinction between the activities and roles of the broker and dealer. The broker acts as an agent of the client, while the dealer acts as principal.[160] The vast majority of broker-dealers serve smaller clients, with just over 4 percent of broker-dealers represent 98.6 percent of assets.

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[158] Defined Contribution (DC) Record-Keepers - 401k Plan Optimization, Compliance, Investment & Partners (401ktv.com). The article points to cost sensitivity, as well as the emergence of automation and technology as factors driving this consolidation. The retirement plan space has also experienced significant fee compression and many vendors (where recordkeeping is an ancillary business) may find that it is no longer profitable. Through the divestiture of recordkeeping, they can instead focus on their primary business line (e.g., banking, insurance, asset management, etc.). Because today's recordkeeping business requires significant investment in technology, those vendors that have not achieved enough scale, may need to partner with another organization to ensure viability.

[159] PLANSPONSOR, *2022 Recordkeeping Survey*, *supra*.

[160] The Securities Exchange Act of 1934 (Pub. L. 73-291, June 6, 1934) defines a dealer as "any person engaged in the business of buying and selling securities…for such person's own account through a broker or otherwise." Refer to Section 3(a)(5)(A) of the Securities Exchange Act of 1934. Individuals and firms may be a broker, or a dealer, or both a broker and dealer (broker-dealer).

APPENDIX D – PROCESSING RETIREMENT PLAN TRANSACTIONS

A. Introduction

The processing of transactions for employer retirement plans reflects the unique importance of the private retirement plan system in the United States. ERISA provides important guidelines for governing retirement plans, including fiduciary standards for individuals who: (1) are a named fiduciary designated by the plan; (2) exercise discretion with respect to management or administration of the plan; (3) exercise discretion with respect to the management or disposition of plan assets; or (4) provide investment advice for a fee.[161]

Over the years since ERISA was enacted, employers have shifted from offering defined benefit pension plans, under which participants are entitled to a promised retirement benefit when they retire, to defined contribution plans under which each participant has an individual account and is entitled to the assets in that account. The massive growth in 401(k) plans, which have become the predominant form of defined contribution plan, helped to fuel this switch. Employers often match the contributions that employees make to the 401(k) plan. Most of these plans allow participants to direct the investment in their individual accounts through a variety of investment options.

Defined contribution plans can offer plan participants access to investment options that might not be available to an individual investor with limited investment assets. Access to mutual funds further enables individuals to diversify their investments. Intermediaries offer economies of scale for smaller plans that make plan administration costs manageable and help facilitate transactions that could be challenging, if not impossible, for individual employers to handle.

The growth in 401(k) plans also drove a need to develop processes that would facilitate the multitude of plan transactions that can occur on a routine basis, including periodic (typically on a payroll cycle basis) contributions by employees and employers, changes in investment options (exchanges of one investment for another and rebalancing of investments to meet a target investment mix goal), distributions to participants upon job change, retirement, and to meet minimum distribution requirements under the law, and special distributions that make funds available to participants while they are still working (permitted early withdrawals, loans from the plan out of the participant's account balance, withdrawals for home purchase and to meet other expenses, such as education expenses and hardship withdrawals).

B. Advantages of Current System for Retirement Plans and Participants

As the assets in defined contribution plans have grown and become an increasingly important component of overall financial health and retirement assets for plan participants, the need for efficient processing of plan transactions becomes even more important. Over the last 30 years, the development of sophisticated systems for processing retirement plan transactions has enabled retirement plan transactions to be completed over a single trading day, reducing the time that retirement assets may be at risk of erosion due to being "out of the market." These systems are

[161] 29 USC Sec. 1002(21).

price dependent, meaning that the transactions require knowledge of a day's NAV to be completed. Current systems allow plans and participants to submit orders by market close and have the transactions be completed over night, rather than waiting multiple days to be completed, which would lead to "out of the market" risks to the assets.

These systems have helped retirement plans and participants provide the single most important way for average Americans to build wealth outside of home ownership. As noted above, retirement plan assets invested in mutual funds have outperformed overall mutual fund growth since the end of 2008.

In addition to the advantage of allowing overnight processing of plan transactions, the current system also allows the consolidation of trading information at the intermediary level, rather than requiring individual plans to communicate information directly to the multitude of funds permitted as investment options under the plan. Relying on omnibus recordkeeping, in which intermediaries in the system batch trades by fund, creates enormous efficiencies of scale and also makes it possible for smaller plans to offer investment options that would not otherwise be available to plan participants.

C. Processing Retirement Plan Transactions

The majority of mutual fund shareholders, particularly those who are retirement plan participants, invest through intermediaries. Retirement plans have multiple layers of entities involved in the day-to-day operation of the plan; many of the processes utilized by retirement plans are designed to ensure compliance with the many legal and regulatory requirements that apply under ERISA.

In its comment letter to the SEC, the American Bankers Association (ABA) describes the benefits of multiple intermediaries in the retirement plan system, stating "one of the presumed benefits to the first line intermediaries is that they can offer a robust selection of investment options to their clients without having to enter into order transmission agreements with the possibly hundreds of fund companies. Rather, the first line intermediaries need only enter into order transmission agreements with the second line intermediaries. The second line intermediaries can leverage their size and infrastructure to enter into order transmission agreements with the fund companies and efficiently transmit investor purchase and redemption orders without directly servicing the end investors."[162]

The growth of defined contribution plans fueled the need for intermediaries to assist retirement plan participants with activities related to their accounts. The shift toward omnibus recordkeeping also helped to provide greater access to financial products for retirement plan investments, because omnibus accounts could be used to bundle transaction orders to open access to funds that might not otherwise be available to a single participant or small retirement plan. These changes helped to drive significant growth in retirement plan mutual fund assets, with defined contribution plan assets increasing from $3.5 trillion at the end of 2008 to almost

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[162] American Bankers Association (ABA), *Comment letter to Vanessa A. Countryman, Proposed Rule, Open-End Fund Liquidity Risk Management Programs and Swing Pricing; Form N-PORT Reporting, File Number S7-26-22, 87 Federal Register 77172 (Dec. 16, 2022)*, on February 14, 2023 at p. 3.

$11 trillion at the end of 2021. This represented a 214 percent increase in total mutual fund net assets, compared to an overall increase of total mutual fund net assets over the same period of 180 percent.

<u>Current Processing Procedures</u>

The Insured Retirement Institute (IRI) provided a concise explanation of the processing of transactions under current practices:

- "Step 1: Collection of fund trading instructions by the fund and its intermediaries, which includes insurance company separate accounts, broker dealers, and retirement plan recordkeepers, up to 4PM ET ("market close"). This deadline is rigorously applied by the funds themselves and by those intermediaries and allows for intermediaries to accept trade instructions from investors up to the time of market close that would then be traded at that day's market price.
- Step 2: Determination by the fund of its new NAV following the market close, and dissemination of the NAV to those same intermediary agents of the funds.
- Step 3: The overnight batch processing by those many intermediaries of large volumes of transactions received prior to market close, relying exclusively on the fund's new NAV, and transmittal of net trading activity to the funds (also known as omnibus trading)."[163]

The SEC proposal puts Step 3 ahead of Step 2, which many commenters explained would be a highly inefficient way to transact in open-end funds.

<u>Front-End Processing</u>

The front-end processing system maintained by the plan intermediary (typically the plan recordkeeper) accepts plan instructions from plan sponsors and participants that are used to generate investment instructions that are date and time stamped and include the specific transactions. It should be noted that not all trade orders are submitted electronically, but can also be submitted by telephone, mail, fax, or other systems depending on the needs of the individual.[164]

On the defined contribution plan sponsor side, these instructions transmitted to front-end processing would include allocation of periodic plan contributions, requests for exchanges among plan investment options, plan sponsor instructions for the investment of amounts that participants do not direct, plan conversions, and any other sponsor-level transactions. On the participant side, the instructions would include allocation of investments for periodic contributions, requests for exchanges among investment options, requests for loans and hardship withdrawals, and requests for other withdrawals or distributions from the plan (including withdrawals intended to satisfy minimum required distribution (MRD) requirements).

The instructions are reviewed by the intermediary to ensure compliance with plan rules. For example, the testing will measure whether contributions are within plan contribution limits and any withdrawals or loans are eligible under the plan provisions and whether the transactions

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[163] Insured Retirement Institute, *Comment Letter to SEC, supra.* at p. 3.
[164] *Ibid.*

comply with applicable laws and regulations.[165] All instructions received by the intermediary are held for later processing, generally on a daily basis for "daily-valued" plans, which means that they will receive the current day's NAV for those transactions received by the cut-off time that day. Instructions received after the cut-off time are processed at the next day's NAV.

Primary Recordkeeping System

Transactions that have been accepted and posted to the front-end system by the cut-off time for the day are transferred to the primary recordkeeping system for processing.[166] One large recordkeeper estimates that it typically receives approximately 45 percent of cash flow after 4 pm across its fixed income funds, even though the actual transaction time was prior to the 4 pm cutoff.[167] After the day's NAV is received (typically one to six hours after 4 pm), the primary recordkeeper begins processing the day's orders, which can take several hours or longer depending on the number of transactions processed for a day.[168] The system aggregates activity, performs dividend distribution activities, and builds trade files. After the aggregation occurs, the system executes a nightly batch process that triggers downstream processes to distribute transaction details to asset managers. These processes can mean that the mutual fund trade file will not be submitted until sometime in the early morning (e.g., between 2 and 6 am). Spark Institute noted that one recordkeeper indicated that the system processing can finish by 1-2 am on days with less transaction activity but could take until 5 am on heavy-volume days, meaning that trades could not be submitted until 5:30 am.[169]

Typical reasons that additional time is needed by the intermediary include (1) a higher percentage of share-based transactions require the NAV from the asset manager, (2) many defined contribution plans wrap or unitize holdings creating multiple layers to process, (3) omnibus clients need to process across a wide account base, and (4) many intermediaries trade through a clearing firm that requires extended processing time for orders to flow through the chain of intermediaries.

In essence, the intermediaries act as agents for the mutual funds, which enables retirement plans and participants to submit orders up to the closing time of the fund. Most intermediaries fund omnibus account structures and aggregate all activity after the trading day is closed.

Back-End Processing

The back-end processing system receives the outputs from the primary recordkeeper, which then transmits trade orders directly or through a retirement plan's institutional custodian to the fund's transfer or clearing agent after the market's close on a business day. An institutional custodian

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[165] The Spark Institute letter mentions ensuring that any contributions do not constitute excess contributions and that participants are eligible for requested distributions under the plan provisions. In addition, requests for a plan loan or hardship withdrawal would need to be reviewed to determine whether they are consistent with plan rules and within the permitted limits. Spark Institute, *Letter to SEC, supra.*

[166] The primary recordkeeper keeps plan and participant records, applies plan rules, and performs reconciliations with trade confirmations.

[167] Input provided by industry intermediary.

[168] Input provided by industry intermediary.

[169] Spark Institute, *Letter to SEC, supra.*

might be used by small and medium-sized recordkeepers to aggregate and transmit transaction orders to a fund or the fund's transfer agent.

After the back-end processing is completed, the recordkeeper electronically transmits the trade files and order "flow" information to the mutual fund's inventory system.

The Defined Contribution Clearance and Settlement (DCC&S) was developed to address the need of omnibus intermediaries to ensure delivery of trades in the morning following the trade date. The system leverages Fund/SERV trade files with the fund's activity for the prior day to provide an "efficient, accurate reflection of the fund's books and records and shares outstanding. Trades received through DCC&S are also incorporated into the daily NSCC settlement computation."[170] The process ensures that funds and intermediaries manage only a single net settlement per day. In 2021, the DCC&S system, which was developed specifically to address the needs of retirement plans with participant-directed accounts, but has expanded to include all types of omnibus intermediaries, generated almost 59 percent of all Fund/SERV activity.[171]

Advantages of Current Processing Systems

The size and scope of the U.S. defined contribution retirement plan system results in a massive number of daily transactions, which are settled just once daily after market close. One Spark Institute member (a top 20 provider) reported that, in 2022, an average of 9,000 trades were processed daily, representing $100 million in purchases and redemptions.[172] These transactions represented 1.5-million-unit values calculated every day for this single recordkeeper. Another large recordkeeper reported that they have approximately 10,000 transactions per day for a total volume of approximately $80 million.[173] One top five recordkeeper reported that, in 2022, they handled almost 253,000 exchanges (one type of transaction only) representing 6 percent of plan participants.[174]

The current system for processing retirement plan transactions, in which price information is both necessary and available before transactions are processed, utilizes significant efficiencies in the bundling and processing of daily trades. This omnibus system allows individuals with balances below mutual fund minimums to have access to pooled investments and to institutional shares classes typically requiring significantly higher balances. In addition, omnibus trading can reduce transaction costs for participants, thereby reducing their overall costs and contributing to larger retirement account balances.[175]

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170 ICI, *Navigating Intermediary Relationships, supra.* at p. 30. Fund/SERV refers to the platform used to process and settle purchase, exchange, and redemption orders. NSCC refers to the National Settlement Clearing Corporation.
171 *Ibid.*
172 Spark Institute *Letter to SEC, supra.*
173 Input provided by industry intermediary.
174 Input provided by industry intermediary.
175 The current process of bundling and transmitting trades by mutual funds and their transfer agents means that they do not have to maintain systems that comply with all the rules (ERISA and Federal tax system) that apply to these plans and do not have to maintain detailed records for the millions of individual plan participants.