

# EXHIBIT F



# CORNERSTONE RESEARCH

Economic and Financial Consulting and Expert Testimony

## Securities Class Action Settlements

2023 Review and Analysis

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Analyses in this report are based on nearly 2,200 securities class actions filed after passage of the Private Securities Litigation Reform Act of 1995 (Reform Act) and settled from 1996 through year-end 2023. See page 17 for a detailed description of the research sample. For purposes of this report and related research, a settlement refers to a negotiated agreement between the parties to a securities class action that is publicly announced to potential class members by means of a settlement notice.

# 2023 Highlights

In 2023, while the number of settled securities class actions declined 21% relative to the 15-year high in 2022, the median settlement amount, median “simplified tiered damages,” and median total assets of issuer defendants all remained at historically elevated levels.<sup>1</sup>

- There were 83 securities class action settlements in 2023 with a total settlement value of approximately \$3.9 billion, compared to 105 settlements in 2022 with a total settlement value of approximately \$4.0 billion. (page 3)
- The median settlement amount of \$15 million is the highest level since 2010 and represents an increase of 11% from 2022, while the average settlement amount (\$47.3 million) increased by 25% over 2022. (page 4)
- There were nine mega settlements (equal to or greater than \$100 million), with a total settlement value of \$2.5 billion. (page 3)
- In 2023, 34% of cases settled for more than \$25 million, the highest percentage since 2012. (page 4)
- Median “simplified tiered damages” declined 16% from the record high in 2022, but remained at elevated levels compared to the prior nine years.<sup>2</sup> (page 5)
- Issuer defendant firms involved in cases that settled in 2023 were 19% larger than defendant firms in 2022 settlements as measured by median total assets, which reached its highest level since 1996. (page 5)
- The median duration from the case filing to the settlement hearing date of 3.7 years in 2023 was unusually high. Since the Reform Act’s passage, the time to settle reached this level in only one other year (2006). (page 14)

**Figure 1: Settlement Statistics**

(Dollars in millions)

	2018–2022	2022	2023
Number of Settlements	420	105	83
Total Amount	\$19,545.7	\$3,974.7	\$3,927.3
Minimum	\$0.4	\$0.7	\$0.8
Median	\$11.7	\$13.5	\$15.0
Average	\$46.5	\$37.9	\$47.3
Maximum	\$3,640.9	\$842.9	\$1,000.0

Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented.

# Author Commentary

## Insights and Findings

Continuing an increase observed in 2022, the size of settled cases in 2023 (measured by the median settlement amount) reached the highest level in over a decade. This occurred despite a decline in median “simplified tiered damages,” a measure of potential shareholder losses that our research finds to be the single most important factor in explaining individual settlement amounts.

The size of the issuer defendant firms involved in cases settled in 2023 (measured by median total assets) also increased. Indeed, median total assets for defendants in 2023 settlements reached an all-time high among post-Reform Act settlements and was 19% higher than in 2022. Issuer defendant assets serve, in part, as a proxy for resources available to fund a settlement and are highly correlated with settlement amounts. Thus, the increase in defendant assets likely contributed to the growth in settlement amounts in 2023.

One factor causing the increase in asset size of defendant firms in cases settled in 2023 may be that, overall, these firms were more mature than in prior years. Specifically, the median age as a publicly traded firm was 16 years, compared to the median age of 11 years for cases settled from 2014 to 2022. In addition, the percentage of cases settled in 2023 that involved firms in the financial sector (over 15%) was higher than the prior nine-year average. Firms in the financial sector involved in securities class action settlements have consistently reported higher total assets than other issuer firm defendants.

In 2023, cases took longer to settle. They also reached more advanced stages prior to resolution, including a smaller proportion of cases settled before a ruling on class certification compared to prior years. Since longer periods to reach settlement are also correlated with higher settlement amounts, this increase is consistent with the higher overall median settlement value.

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*Securities class actions settled in 2023 continued to take longer to resolve—disruptions associated with the COVID-19 pandemic may have contributed to this increase.*

*Dr. Laarni T. Bulan  
Principal, Cornerstone Research*

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Longer times to reach a settlement and more advanced litigation stages are also typically correlated with greater case activity, as measured by the number of entries on the court dockets. Surprisingly, the median number of docket entries increased only slightly compared to 2022. This, and the fact that over 80% of cases settled in 2023 had been filed by the end of 2020, suggests that the lengthened time to settlement can potentially be explained by delays related to the COVID-19 pandemic.

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*The size of issuer defendants in 2023 settlements surpassed even the previous record in 2022, in part due to an increase in the number of financial sector defendants to the highest level in the last decade.*

*Dr. Laura E. Simmons  
Senior Advisor, Cornerstone Research*

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## Looking Ahead

While we do not necessarily expect new record highs in settlement dollars in the upcoming years, it is possible that settlement amounts will remain at relatively high levels, based on recent trends in securities class action filings, including elevated levels of Disclosure Dollar Loss and Maximum Dollar Loss. (See Cornerstone Research’s *Securities Class Action Filings—2023 Year in Review*.)

Further, the most recent emergence of case filings related to the 2023 bank failures, combined with a relatively high proportion in the last few years of settled cases involving financial firms, may result in a continued rise in the asset size of issuer defendants involved in settlements. This may also contribute to high settlement amounts.

Additionally, considering the levels of filing activity in recent years, we do not anticipate dramatic increases in the number of cases settled in the upcoming years.

—Laarni T. Bulan and Laura E. Simmons

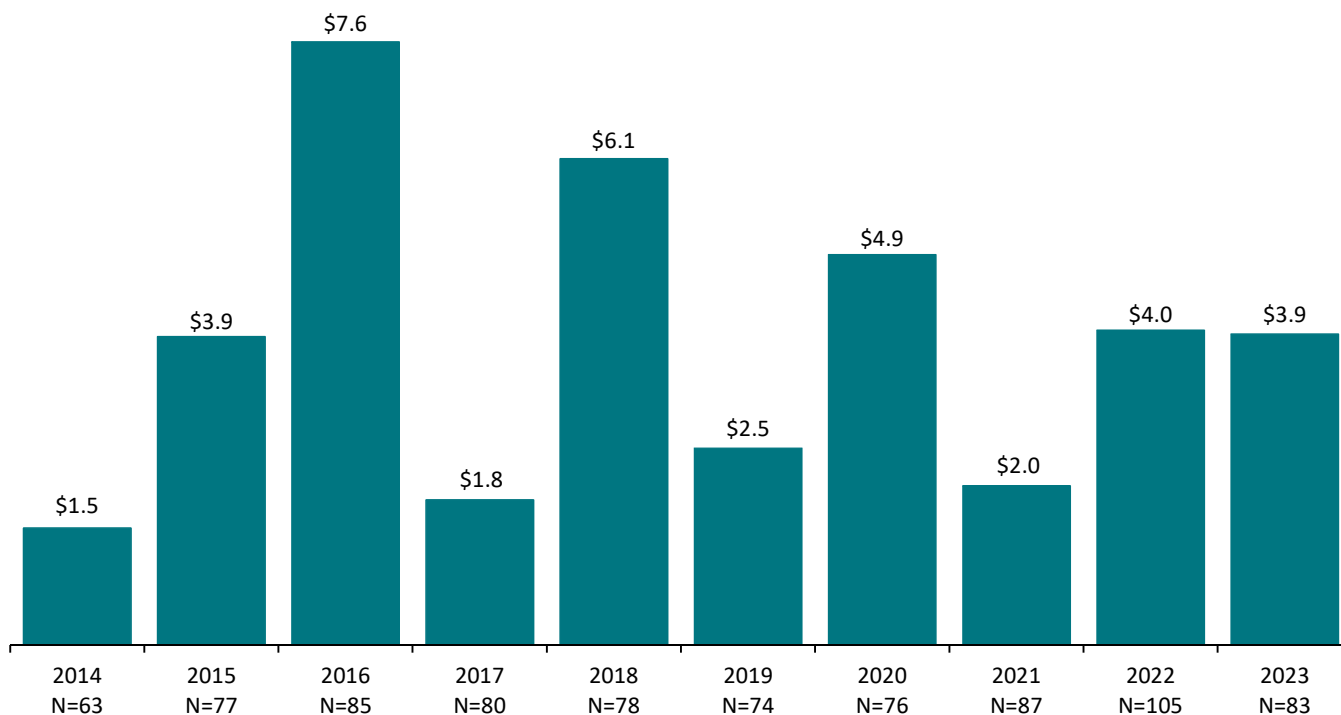
# Total Settlement Dollars

- While the number of settlements in 2023 declined by more than 20% from 2022, 2023 total settlement dollars were roughly the same as in 2022.
- The nine mega settlements in 2023—the highest number since 2016—ranged from \$102.5 million to \$1 billion. (See Appendix 4 for an analysis of mega settlements.)
- Cases involving institutional investors as lead plaintiffs represented 86% of total settlement dollars in 2023, in line with the percentage in 2022.

*Mega settlements accounted for nearly two-thirds of 2023 total settlement dollars, up from 52% in 2022.*

**Figure 2: Total Settlement Dollars  
2014–2023**

(Dollars in billions)



Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented. “N” refers to the number of cases.

# Settlement Size

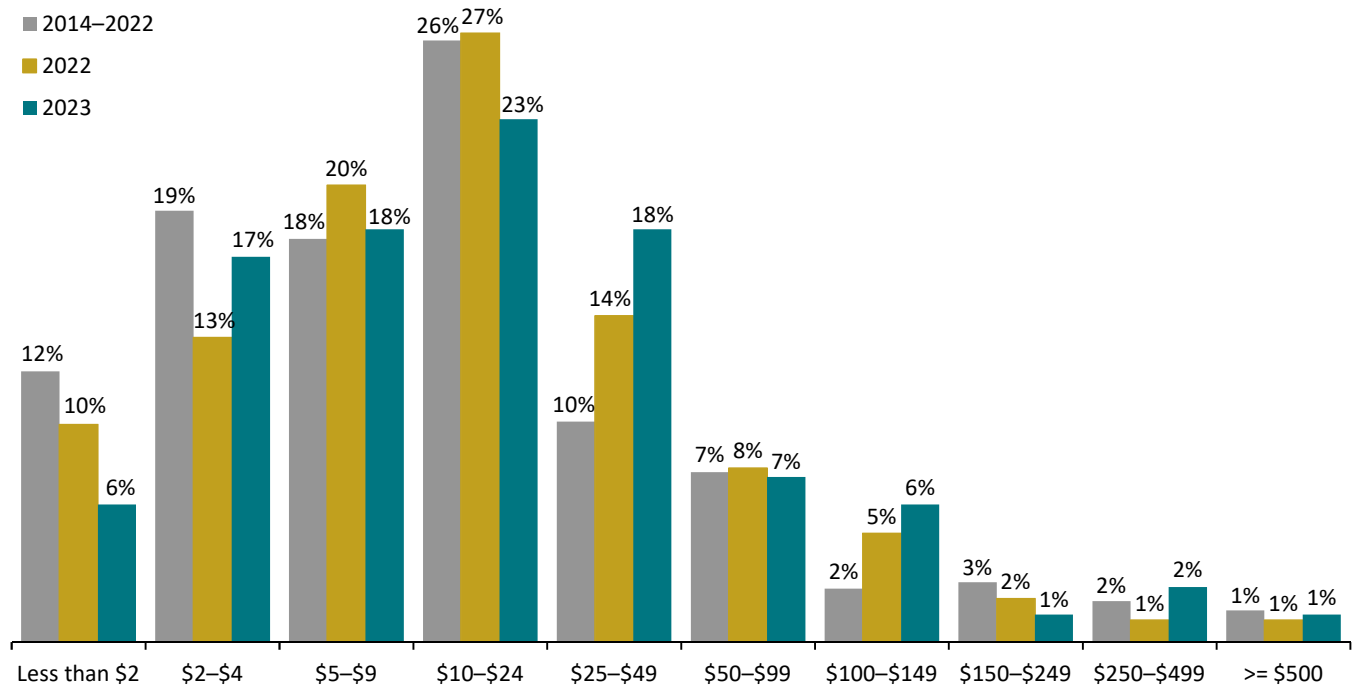
- The median settlement amount in 2023 was \$15 million, an 11% increase from 2022 and 44% higher than the 2014–2022 median (\$10.4 million). Median values provide the midpoint in a series of observations and are less affected than averages by outlier data.
- The average settlement amount in 2023 was \$47.3 million, a 25% increase from 2022. (See Appendix 1 for an analysis of settlements by percentiles.)
- In 2023, 6% of cases settled for less than \$2 million, the lowest percentage since 2013.

*The median settlement amount in 2023 reached the highest level since 2010.*

- The percentage of settlement amounts greater than \$25 million (34%) was the highest since 2012, driven in part by the continued increase in settlement amounts in the \$25 million to \$50 million range.
- Issuers that have been delisted from a major exchange and/or declared bankruptcy prior to settlement are generally associated with lower settlement amounts. The number of such issuers declined from 10% in 2022 to a new all-time low of 7% in 2023, contributing to the higher overall median settlement amount in 2023.<sup>3</sup>

Figure 3: Distribution of Settlements  
2014–2023

(Dollars in millions)



Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented. Percentages may not sum to 100% due to rounding.



# Type of Claim

## Rule 10b-5 Claims and “Simplified Tiered Damages”

“Simplified tiered damages” uses simplifying assumptions to estimate per-share damages and trading behavior for cases involving Rule 10b-5 claims. It provides a measure of potential shareholder losses that allows for consistency across a large volume of cases, thus enabling the identification and analysis of potential trends.<sup>4</sup>

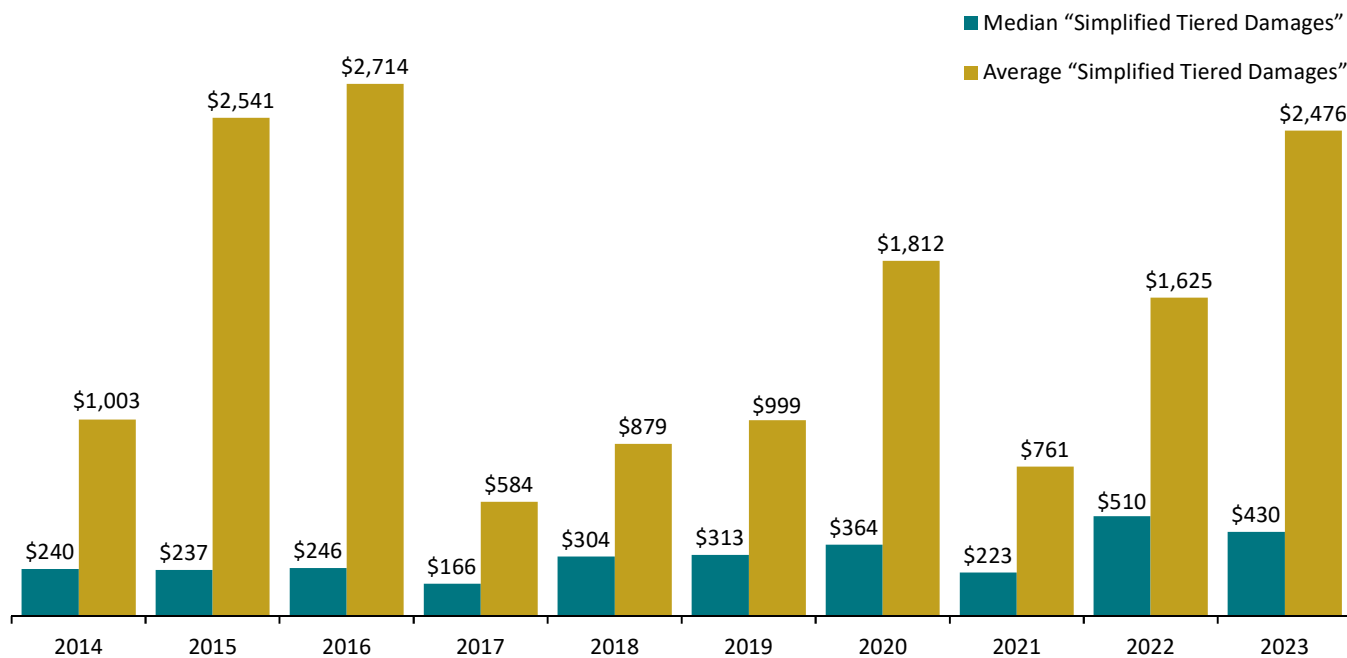
Cornerstone Research’s analysis finds this measure to be the most important factor in estimating settlement amounts.<sup>5</sup> However, this measure is not intended to represent actual economic losses borne by shareholders. Determining any such losses for a given case requires more in-depth economic analysis.

*Median “simplified tiered damages” remained at elevated levels in 2023.*

- In 2023, the average “simplified tiered damages” was nearly six times as large as the median, the largest difference since 2016. This difference was primarily driven by seven cases with “simplified tiered damages” exceeding \$5 billion.
- Higher “simplified tiered damages” are typically associated with larger issuer defendants. Consistent with the elevated levels of “simplified tiered damages,” the median total assets of issuer defendants among settled cases in 2023 was \$3.1 billion—154% higher than the prior nine-year median and higher than any other post-Reform Act year.
- Higher “simplified tiered damages” are also generally associated with larger Maximum Dollar Loss (MDL).<sup>6</sup> In 2023, the median MDL fell only slightly from the historical high in 2022. (See Appendix 7 for additional information on median and average MDL.)

Figure 4: Median and Average “Simplified Tiered Damages” in Rule 10b-5 Cases 2014–2023

(Dollars in millions)

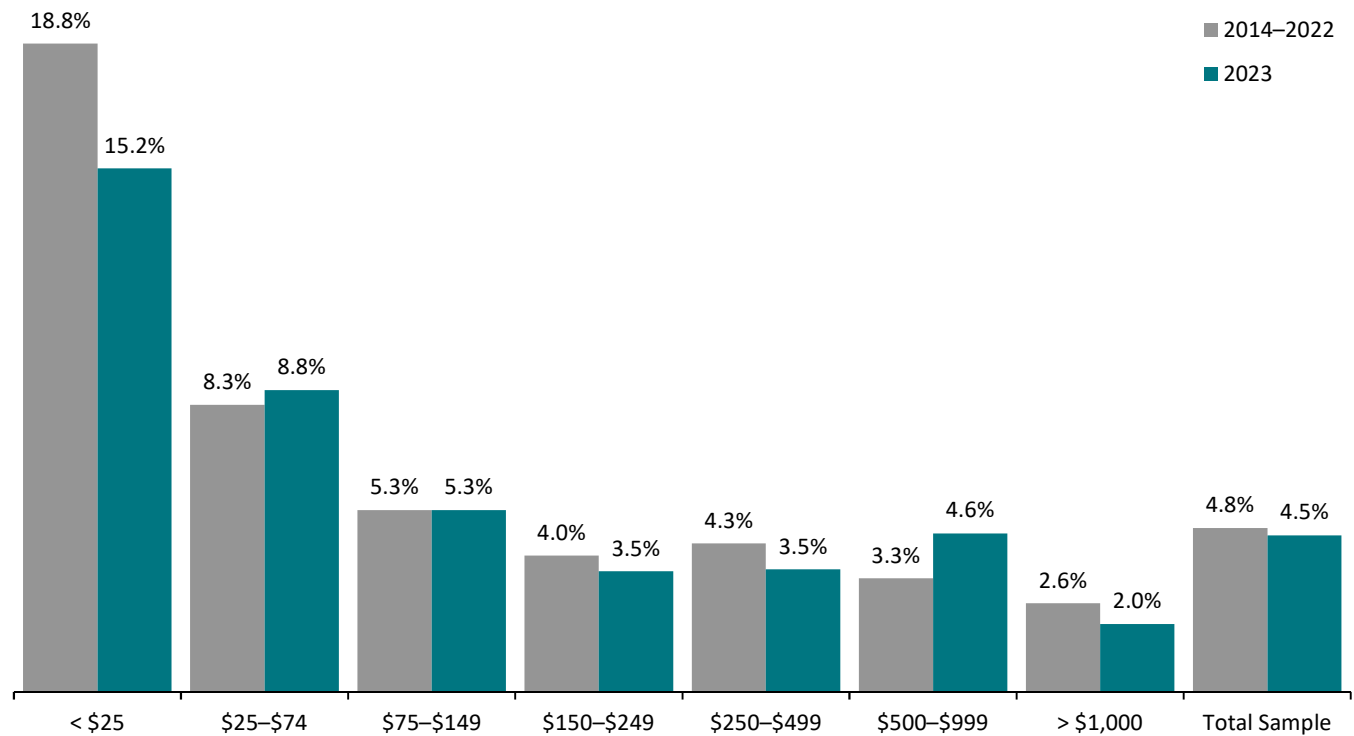


Note: “Simplified tiered damages” are adjusted for inflation based on class period end dates and are estimated for common stock only; 2023 dollar equivalent figures are presented. Damages are estimated for cases alleging a claim under Rule 10b-5 (whether alone or in addition to other claims).

- Larger cases, as measured by “simplified tiered damages,” typically settle for a smaller percentage of damages.
- In 2023, the overall median settlement as a percentage of “simplified tiered damages” of 4.5% increased 27% from 2022, but was in-line with the prior nine-year average percentage. (See Appendix 5 for additional information on median and average settlement as a percentage of “simplified tiered damages.”)
- The median settlement as a percentage of “simplified tiered damages” of 4.6% for cases with “simplified tiered damages” from \$500 million to \$1 billion reached a five-year high in 2023.

Figure 5: Median Settlement as a Percentage of “Simplified Tiered Damages” by Damages Ranges in Rule 10b-5 Cases 2014–2023

(Dollars in millions)



Note: Damages are estimated for cases alleging a claim under Rule 10b-5 (whether alone or in addition to other claims).

## Plaintiff-Estimated Damages

In their motions for settlement approval, plaintiffs typically report an estimate of aggregate damages (“plaintiff-estimated damages”).<sup>7</sup>

As explained in Cornerstone Research’s *Approved Claims Rates in Securities Class Actions* (2020), “plaintiff-estimated damages” are often represented as plaintiffs’ “best-case scenario” or the “maximum potential recovery” calculated by plaintiffs. However, the authors highlight a “selection bias” present in these data due to potential plaintiff counsel incentives to report “the lower end of the range of estimated total aggregate damages” to be able “to demonstrate to the court a high settlement amount relative to potential recovery.” To the extent such incentives exist, their impact may vary across cases. Detailed information on plaintiffs’ methodology to determine the reported amount is not disclosed. Hence, it is not possible to determine from the settlement documents the degree to which the methodologies employed are consistent across cases.

With the significant caveats above, “plaintiff-estimated damages” represent an additional measure of potential shareholder losses that may be used alongside “simplified tiered damages” in conjunction with settlement analyses.

## '33 Act Claims and "Simplified Statutory Damages"

For Securities Act of 1933 ('33 Act) claim cases—those involving only Section 11 and/or Section 12(a)(2) claims—potential shareholder losses are estimated using a model in which the statutory loss is the difference between the statutory purchase price and the statutory sales price, referred to here as "simplified statutory damages."<sup>8</sup>

- There were 10 settlements for cases with only '33 Act claims in 2023, with the majority of those cases filed in federal court (7) as opposed to state court (3).<sup>9</sup>
- In 2023, the percentage of cases with an underwriter defendant was 70%, down from the prior nine-year average of 88%.

- The median length of time from case filing to settlement hearing date for '33 Act claim cases was greater than four years—the longest observed duration in any post-Reform Act year for this type of case.

*In 2023, the median settlement amount for cases with only '33 Act claims was \$13.5 million, an 85% increase from 2022.*

Figure 6: Settlements by Nature of Claims  
2014–2023

(Dollars in millions)

	Number of Settlements	Median Settlement	Median "Simplified Statutory Damages"	Median Settlement as a Percentage of "Simplified Statutory Damages"
Section 11 and/or Section 12(a)(2) Only	84	\$9.9	\$158.1	7.5%

	Number of Settlements	Median Settlement	Median "Simplified Tiered Damages"	Median Settlement as a Percentage of "Simplified Tiered Damages"
Both Rule 10b-5 and Section 11 and/or Section 12(a)(2)	123	\$14.7	\$307.4	6.6%
Rule 10b-5 Only	596	\$10.3	\$291.7	4.5%

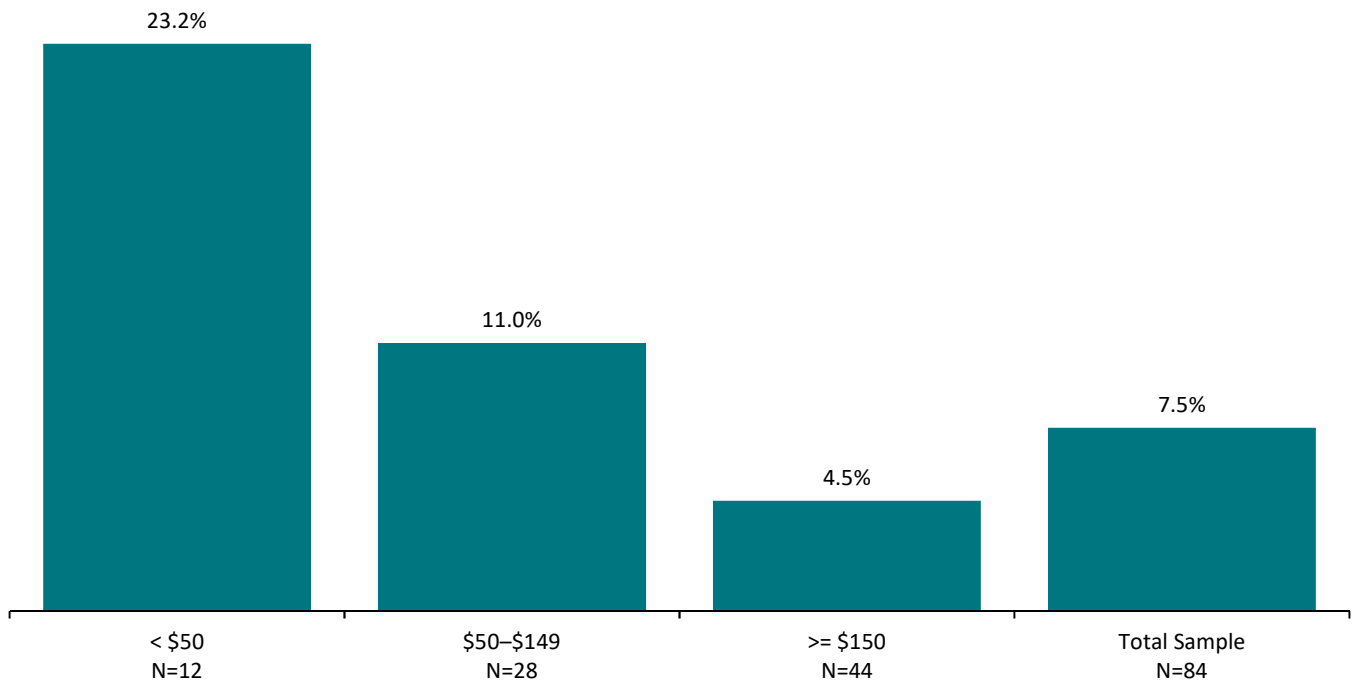
Note: Settlement dollars and damages are adjusted for inflation; 2023 dollar equivalent figures are presented.

- Over 2014–2023, the median size of issuer defendants (measured by total assets) was 40% smaller for cases with only '33 Act claims relative to those that also included Rule 10b-5 claims.
- The smaller size of issuer defendants in cases with only '33 Act claims is consistent with most of these cases involving initial public offerings (IPOs). From 2014 through 2023, 80% of all cases with only '33 Act claims have involved IPOs.
- In 2023, however, the median total assets for settled cases with only '33 Act claims (\$2.5 billion) was over four times as large as the median total assets for such cases in 2014–2022 (\$580 million).

*The median “simplified statutory damages” in 2023 increased by 115% from the 2022 median and represents the third highest since 1996.*

Figure 7: Median Settlement as a Percentage of “Simplified Statutory Damages” by Damages Ranges in '33 Act Claim Cases 2014–2023

(Dollars in millions)



Jurisdictions of Settlements of '33 Act Claim Cases

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
State Court	0	2	4	5	4	4	7	6	6	3
Federal Court	2	2	6	3	4	5	1	10	3	7

Note: “N” refers to the number of cases. This analysis excludes cases alleging Rule 10b-5 claims.

# Analysis of Settlement Characteristics

## GAAP Violations

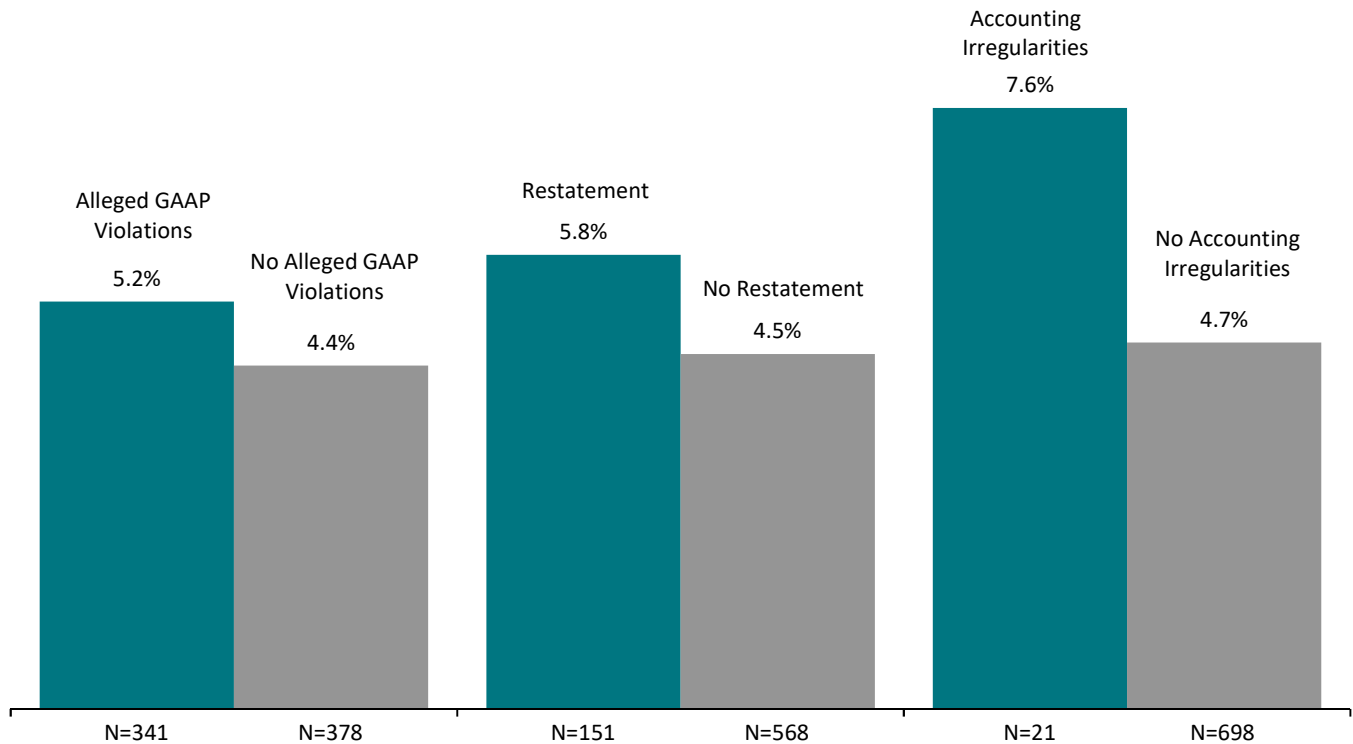
This analysis examines allegations of GAAP violations in settlements of securities class actions involving Rule 10b-5 claims, including two sub-categories of GAAP violations—financial statement restatements and accounting irregularities.<sup>10</sup> For further details regarding settlements of accounting cases, see Cornerstone Research’s annual report on *Accounting Class Action Filings and Settlements*.<sup>11</sup>

- The percentage of settled cases in 2023 alleging GAAP violations (37%) remained well below the prior nine-year average (49%).
- Contributing to the low number of GAAP cases settled in 2023 were continued low levels of cases involving financial statement restatements and accounting irregularities. In particular, 14% of settled cases in 2023 involved a restatement of financial statements, compared to 22% for the prior nine years. Only 1% of settled cases in 2023 involved accounting irregularities.

- Auditor codefendants were involved in only 2% of settled cases, consistent with the past few years but substantially lower than the average from 2014 to 2022.

*In 2023, the median settlement as a percentage of “simplified tiered damages” for cases with alleged GAAP violations increased nearly 25% from 2022.*

Figure 8: Median Settlement as a Percentage of “Simplified Tiered Damages” and Allegations of GAAP Violations 2014–2023



Note: “N” refers to the number of cases. This analysis is limited to cases alleging Rule 10b-5 claims (whether alone or in addition to other claims).

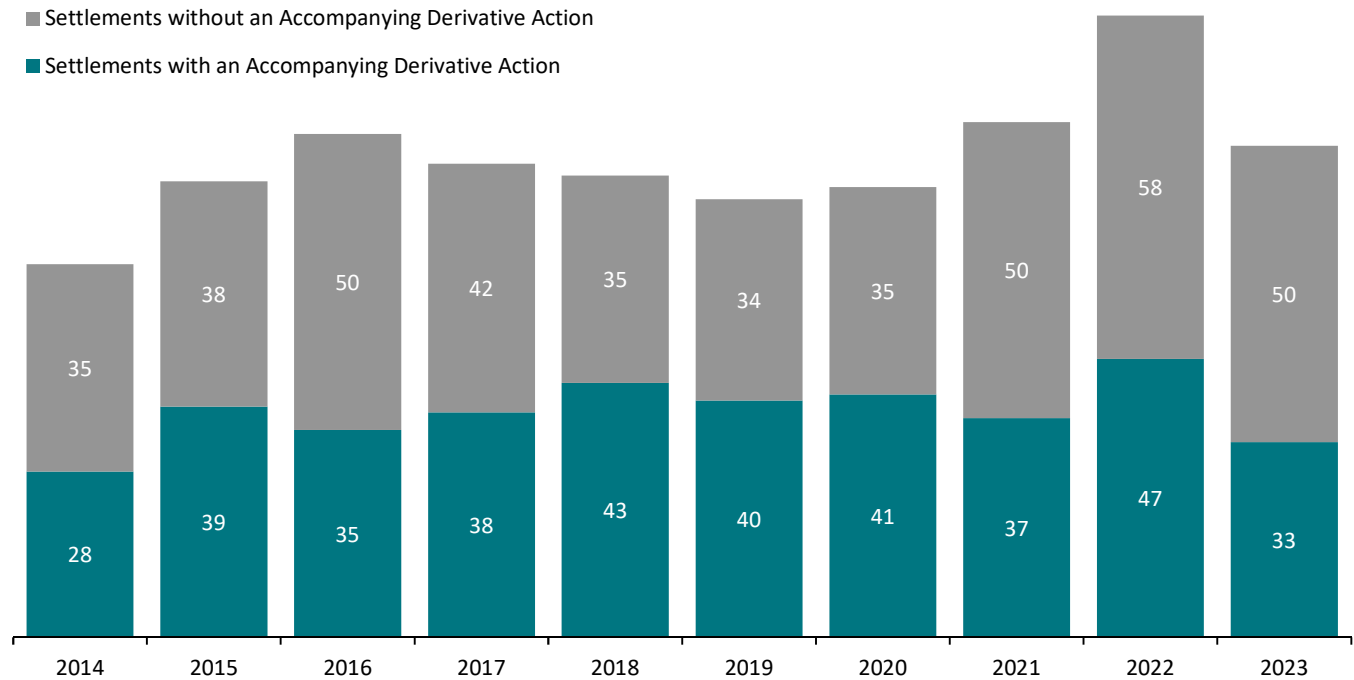
## Derivative Actions

- Securities class actions often involve accompanying (or parallel) derivative actions with similar claims, and such cases have historically settled for higher amounts than securities class actions without accompanying derivative matters.<sup>12</sup>
- The percentage of cases involving accompanying derivative actions in 2023 (40%) was the lowest since 2011, in part driven by a reduction in the number of cases filed in Delaware (13) compared to the prior four-year average (17).
- For cases settled during 2019–2023, 40% of parallel derivative suits were filed in Delaware. California and New York were the next most common venues, representing 19% and 17% of such settlements, respectively.

*In 2023, the median settlement amount for cases with an accompanying derivative action was \$21 million, over 40% higher than in 2022.*

- It is commonly understood that most parallel derivative actions do not settle for monetary amounts (other than plaintiffs’ attorney fees). However, the likelihood of a monetary settlement among parallel derivative actions is higher when the securities class action settlement is large, as shown in Cornerstone Research’s *Parallel Derivative Action Settlement Outcomes*.<sup>13</sup>

Figure 9: Frequency of Derivative Actions 2014–2023



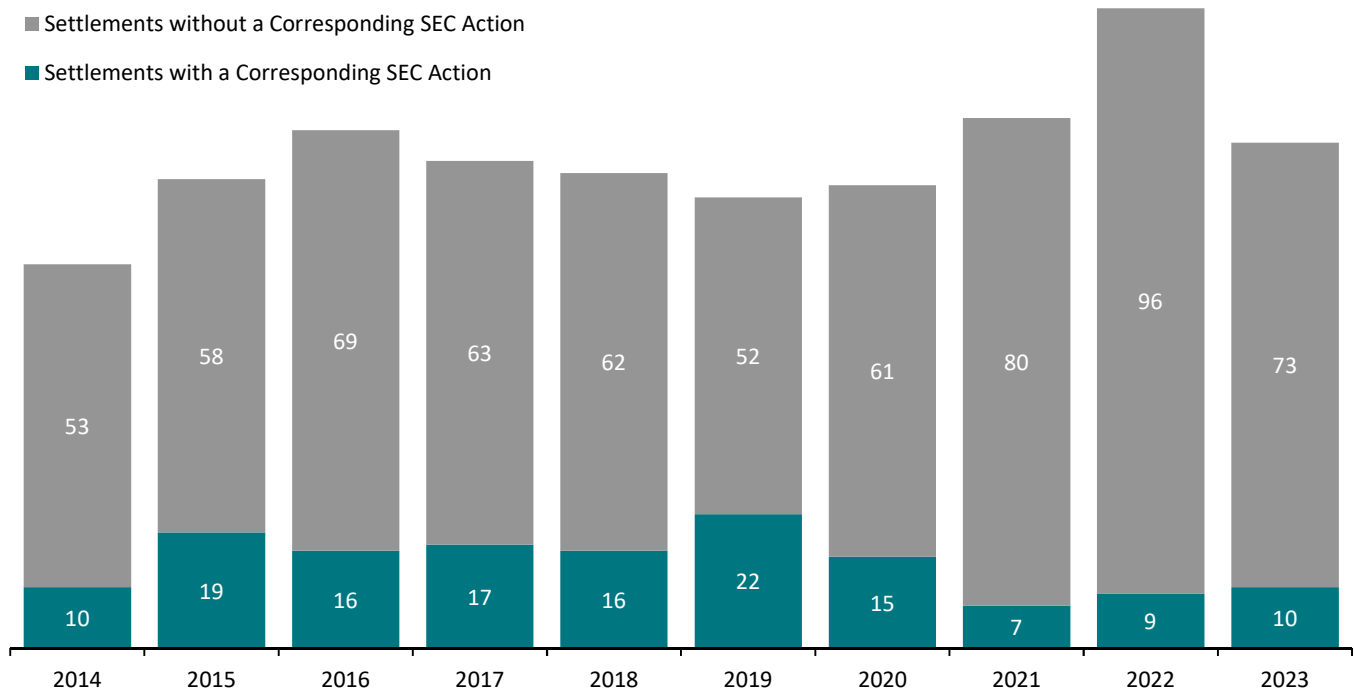
## Corresponding SEC Actions

- The percentage of settled cases in 2023 involving a corresponding SEC action was 12%. This represents a slight rebound from 2021 and 2022, when this percentage was less than 10%, but is still well below the prior nine-year average of 19%.

*Over the past 10 years, nearly 75% of settled cases involving SEC actions also involved a restatement of financial statements or alleged GAAP violations.*

- Historically, cases with a corresponding SEC action have typically been associated with substantially higher settlement amounts.<sup>14</sup> However, this pattern did not hold in 2023 when, for the third time in the past 10 years, the median settlement amount for cases with a corresponding SEC action was less than that for cases without such an action.
- Among 2023 settled cases that involved a corresponding SEC action, 70% also had an institutional investor as a lead plaintiff, up from 33% in 2022.

Figure 10: Frequency of SEC Actions  
 2014–2023





## Institutional Investors

As discussed in prior reports, increasing institutional investor participation as lead plaintiff in securities litigation was a focus of the Reform Act.<sup>15</sup> Indeed, in years following passage of the Reform Act, institutional investor involvement as lead plaintiffs did increase, particularly in cases with higher “simplified tiered damages.”

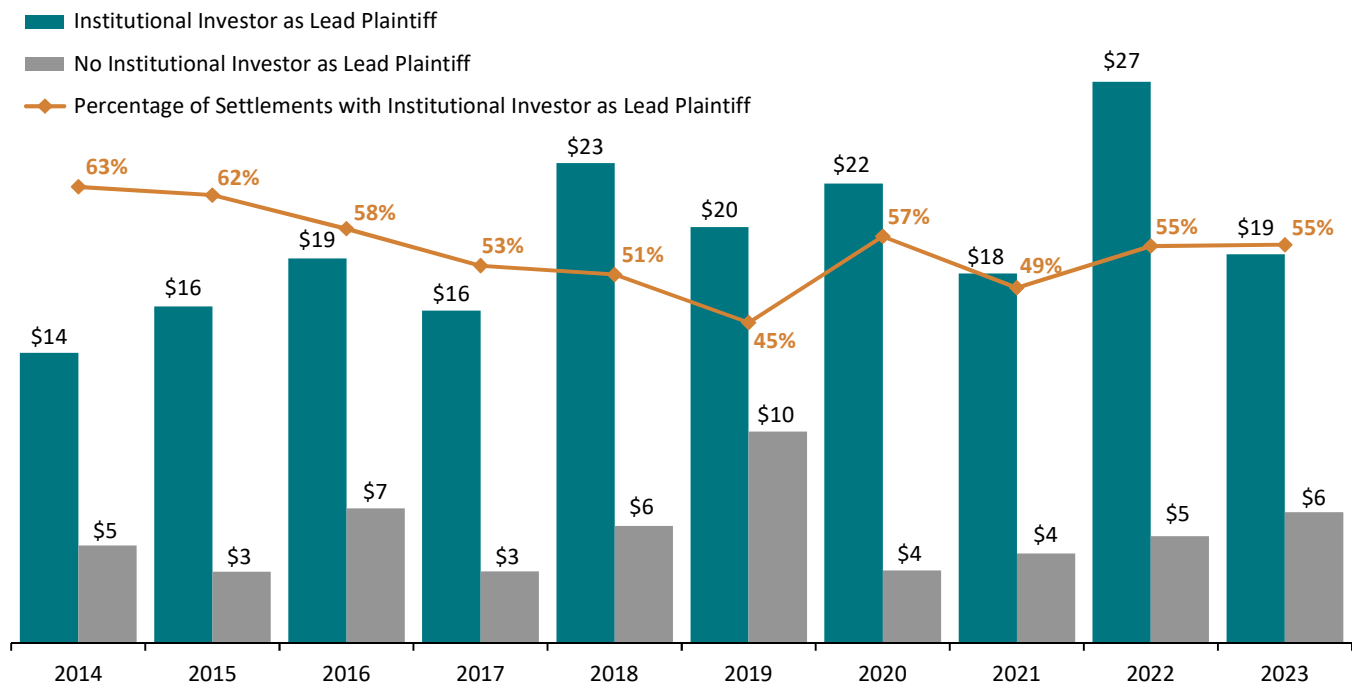
- In 2023, for cases involving an institutional investor as lead plaintiff, median “simplified tiered damages” and median total assets were two times and nine times higher, respectively, than the median values for cases without an institutional investor as a lead plaintiff.

- In 2023, a public pension plan served as lead plaintiff in nearly two-thirds of cases with an institutional lead plaintiff.
- Institutional investor participation as lead plaintiff continues to be associated with particular plaintiff counsel. For example, in 2023 an institutional investor served as a lead plaintiff in over 88% of settled cases in which Robbins Geller Rudman & Dowd LLP (“Robbins Geller”) and/or Bernstein Litowitz Berger & Grossmann LLP (“Bernstein Litowitz”) served as lead or co-lead plaintiff counsel. In contrast, institutional investors served as lead plaintiff in 21% of cases in which The Rosen Law Firm, Pomerantz LLP, or Glancy Prongay & Murray LLP served as lead or co-lead plaintiff counsel.

*All nine mega settlements in 2023 included an institutional investor as lead plaintiff.*

Figure 11: Median Settlement Amounts and Institutional Investors 2014–2023

(Dollars in millions)



Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented.

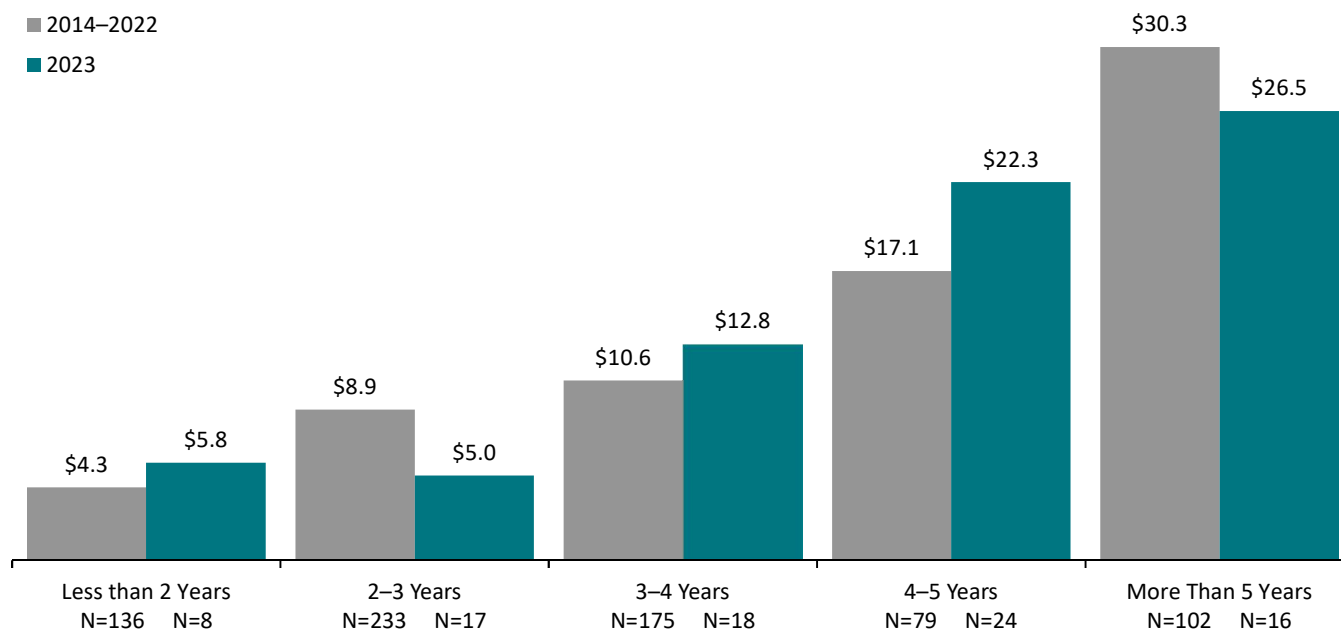
# Time to Settlement and Case Complexity

- Overall, less than one-third of cases settled in 2023 settled within three years of filing.
- Cases involving an institutional lead plaintiff continued to take longer to settle. In particular, cases settled in 2023 with an institutional lead plaintiff had a median time to settle of over 4.2 years compared to 3.4 years for cases without an institutional lead plaintiff.
- In 2023, the median time to settle for cases with GAAP allegations was almost a year longer than the median for cases without GAAP allegations.
- Historically, cases with The Rosen Law Firm, Pomerantz LLP, or Glancy Prongay & Murray LLP as lead or co-lead plaintiff counsel settled within three years of case filing. However, cases settled in 2023 with these firms acting as plaintiff counsel collectively took 3.9 years to settlement, a level reached in only one other year (2009). These three law firms were lead or co-lead plaintiff counsel in approximately 30% of cases in 2023.
- The presence of Robbins Geller as lead or co-lead plaintiff counsel is associated with a longer duration between filing and settlement. Cases settled in 2023 with Robbins Geller acting as lead or co-lead plaintiff counsel (28% of settled cases) had a median time to settle of 4.1 years compared to 3.5 years for cases in which the law firm was not involved.<sup>16</sup>
- The number of docket entries can be viewed as a proxy for the time and effort expended by plaintiff counsel and/or case complexity. Median docket entries in 2023 (142) increased only slightly from 2022 (138).

*The median time from filing to settlement hearing date in 2023 (3.7 years) was up nearly 17% from 2022.*

Figure 12: Median Settlement by Duration from Filing Date to Settlement Hearing Date 2014–2023

(Dollars in millions)



Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented. “N” refers to the number of cases.

# Case Stage at the Time of Settlement

Using data obtained through collaboration with Stanford Securities Litigation Analytics (SSLA), this report analyzes settlements in relation to the stage in the litigation process at the time of settlement.

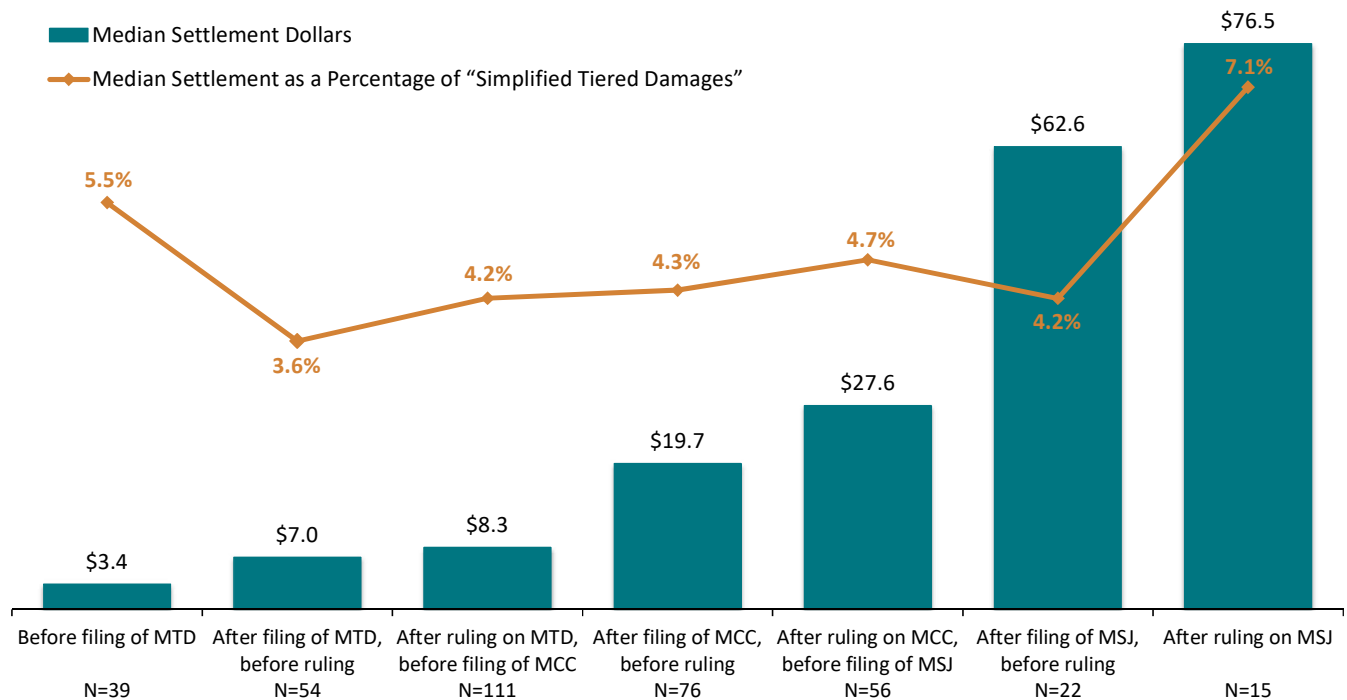
- Cases settling at later stages continue to be larger in terms of total assets and “simplified tiered damages.”
- For example, both median total assets and median “simplified tiered damages” for cases that settled in 2023 after the ruling on a motion for class certification were over two times the respective medians for cases that settled in 2023 prior to such a motion being ruled on.
- In the five-year period from 2019 through 2023, over 90% of cases settled prior to the filing of a motion for summary judgment.

- In 2023, cases settling at later stages continued to include an institutional lead plaintiff at a higher percentage. Specifically, 68% of cases that settled after the filing of a motion for class certification involved an institutional lead plaintiff compared to 41% of cases that settled prior to the filing of such a motion.

*In 2023, the percentage of cases settling prior to the filing of a motion to dismiss continued to decline—from 14% of cases in 2019 to 7% of cases in 2023.*

Figure 13: Median Settlement Dollars and Resolution Stage at Time of Settlement 2019–2023

(Dollars in millions)



Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented. “N” refers to the number of cases. MTD refers to “motion to dismiss,” MCC refers to “motion for class certification,” and MSJ refers to “motion for summary judgment.” This analysis is limited to cases alleging Rule 10b-5 claims (whether alone or in addition to other claims).

# Cornerstone Research's Settlement Analysis

This research applies regression analysis to examine the relations between settlement outcomes and certain securities case characteristics. Regression analysis is employed to better understand the factors that are important for estimating what cases might settle for, given the characteristics of a particular securities class action.

## Determinants of Settlement Outcomes

Based on the research sample of cases that settled from January 2006 through December 2023, important determinants of settlement amounts include the following:

- “Simplified tiered damages”
- Maximum Dollar Loss (MDL)—the dollar-value change in the defendant issuer’s market capitalization from its class period peak to the first trading day without inflation
- The most recently reported total assets prior to the settlement hearing date for the defendant issuer
- Number of entries on the lead case docket
- Whether there were accounting allegations
- Whether there was an SEC action with allegations similar to those included in the underlying class action complaint, as evidenced by a litigation release or an administrative proceeding against the issuer, officers, directors, or other defendants
- Whether there were criminal charges against the issuer, officers, directors, or other defendants with allegations similar to those included in the underlying class action complaint
- Whether there was a derivative action with allegations similar to those included in the underlying class action complaint

- Whether, in addition to Rule 10b-5 claims, Section 11 claims were alleged and were still active prior to settlement
- Whether the issuer has been delisted from a major exchange and/or has declared bankruptcy (i.e., whether the issuer was “distressed”)
- Whether an institutional investor acted as lead plaintiff
- Whether securities other than common stock/ADR/ADS were included in the alleged class

Cornerstone Research analyses show that settlements were higher when “simplified tiered damages,” MDL, issuer defendant asset size, or the number of docket entries was larger, or when Section 11 claims were alleged in addition to Rule 10b-5 claims.

Settlements were also higher in cases involving accounting allegations, a corresponding SEC action, criminal charges, an accompanying derivative action, an institutional investor lead plaintiff, or securities in addition to common stock included in the alleged class.

Settlements were lower if the issuer was distressed.

More than 75% of the variation in settlement amounts can be explained by the factors discussed above.

## Research Sample

- The database compiled for this report is limited to cases alleging Rule 10b-5, Section 11, and/or Section 12(a)(2) claims brought by purchasers of a corporation's common stock. The sample contains only cases alleging fraudulent inflation in the price of a corporation's common stock.
- Cases with alleged classes of only bondholders, preferred stockholders, etc., cases alleging fraudulent depression in price, and mergers and acquisitions cases are excluded. These criteria are imposed to ensure data availability and to provide a relatively homogeneous set of cases in terms of the nature of the allegations.
- The current sample includes 2,199 securities class actions filed after passage of the Reform Act (1995) and settled from 1996 through 2023. These securities class actions correspond to approximately \$141.2 billion in total settlement dollars, adjusted for inflation and expressed in 2023 dollars. These settlements are identified based on a review of case activity collected by Securities Class Action Services LLC (SCAS).<sup>17</sup>
- The designated settlement year, for purposes of this report, corresponds to the year in which the hearing to approve the settlement was held.<sup>18</sup> Cases involving multiple settlements are reflected in the year of the most recent partial settlement, provided certain conditions are met.<sup>19</sup>

## Data Sources

In addition to SCAS, data sources include Dow Jones Factiva, Bloomberg, the Center for Research in Security Prices (CRSP) at University of Chicago Booth School of Business, Standard & Poor's Compustat, Refinitiv Eikon, court filings and dockets, SEC registrant filings, SEC litigation releases and administrative proceedings, LexisNexis, Stanford Securities Litigation Analytics (SSLA), Securities Class Action Clearinghouse (SCAC), and public press.

# Endnotes

- <sup>1</sup> Reported dollar figures and corresponding comparisons are adjusted for inflation; 2023 dollar equivalent figures are presented in this report.
- <sup>2</sup> “Simplified tiered damages” are calculated for cases that settled in 2006 or later, following the U.S. Supreme Court’s 2005 landmark decision in *Dura Pharmaceuticals Inc. v. Broudo*, 544 U.S. 336. “Simplified tiered damages” is based on the stock-price declines associated with the alleged corrective disclosure dates that are described in the settlement plan of allocation.
- <sup>3</sup> Comparison to “all-time” refers to the inception of Cornerstone Research’s database of post–Reform Act settlements beginning in 1996.
- <sup>4</sup> The “simplified tiered damages” approach used for purposes of this settlement research does not examine the mix of information associated with the specific dates listed in the plan of allocation, but simply applies the stock price movements on those dates to an estimate of the “true value” of the stock during the alleged class period (or “value line”). This proxy for damages utilizes an estimate of the number of shares damaged based on reported trading volume and the number of shares outstanding. Specifically, reported trading volume is adjusted using volume reduction assumptions based on the exchange on which the issuer defendant’s common stock is listed. No adjustments are made to the underlying float for institutional holdings, insider trades, or short-selling activity during the alleged class period. Because of these and other simplifying assumptions, the damages measures used in settlement benchmarking may differ substantially from damages estimates developed in conjunction with case-specific economic analysis.
- <sup>5</sup> Laarni T. Bulan, Ellen M. Ryan, and Laura E. Simmons, *Estimating Damages in Settlement Outcome Modeling*, Cornerstone Research (2017).
- <sup>6</sup> MDL is the dollar-value change in the defendant issuer’s market capitalization from its class period peak to the first trading day without inflation.
- <sup>7</sup> Catherine J. Galley, Nicholas D. Yavorsky, Filipe Lacerda, and Chady Gemayel, *Approved Claims Rates in Securities Class Actions: Evidence from 2015–2018 Rule 10b-5 Settlements*, Cornerstone Research (2020). Data on “plaintiff-estimated damages” is made available to Cornerstone Research through collaboration with Stanford Securities Litigation Analytics (SSLA). SSLA tracks and collects data on private shareholder securities litigation and public enforcements brought by the SEC and the U.S. Department of Justice (DOJ). The SSLA dataset includes all traditional class actions, SEC actions, and DOJ criminal actions filed since 2000. Available on a subscription basis at <https://sla.law.stanford.edu/>.
- <sup>8</sup> The statutory purchase price is the lesser of the security offering price or the security purchase price. Prior to the first complaint filing date, the statutory sales price is the price at which the security was sold. After the first complaint filing date, the statutory sales price is the greater of the security sales price or the “value” of the security on the first complaint filing date. For purposes of “simplified statutory damages,” the “value” of the security on the first complaint filing date is assumed to be the security’s closing price on this date. Similar to “simplified tiered damages,” the estimation of “simplified statutory damages” makes no adjustments to the underlying float for institutional holdings, insider trades, or short-selling activity.
- <sup>9</sup> As noted in prior reports, the March 2018 U.S. Supreme Court decision in *Cyan Inc. v. Beaver County Employees Retirement Fund (Cyan)* held that ‘33 Act claim securities class actions could be brought in state court. While ‘33 Act claim cases had often been brought in state courts before *Cyan*, filing rates in state courts increased substantially following this ruling. This trend reversed, however, following the March 2020 Delaware Supreme Court decision in *Salzberg v. Sciabacucchi* upholding the validity of federal forum-selection provisions in corporate charters. See, for example, *Securities Class Action Filings—2021 Year in Review*, Cornerstone Research (2022).
- <sup>10</sup> The two sub-categories of accounting issues analyzed in Figure 8 of this report are (1) restatements—cases involving a restatement (or announcement of a restatement) of financial statements, and (2) accounting irregularities.
- <sup>11</sup> *Accounting Class Action Filings and Settlements—2023 Review and Analysis*, Cornerstone Research, forthcoming in spring 2024.
- <sup>12</sup> To be considered an accompanying (or parallel) derivative action, the derivative action must have underlying allegations that are similar or related to the underlying allegations of the securities class action and either be active or settling at the same time as the securities class action.
- <sup>13</sup> *Parallel Derivative Action Settlement Outcomes*, Cornerstone Research (2022).
- <sup>14</sup> As noted in prior reports, it could be that the merits in such cases are stronger, or simply that the presence of a corresponding SEC action provides plaintiffs with increased leverage when negotiating a settlement. For purposes of this research, an SEC action is evidenced by the presence of a litigation release or an administrative proceeding posted on [www.sec.gov](http://www.sec.gov) involving the issuer defendant or other named defendants with allegations similar to those in the underlying class action complaint.
- <sup>15</sup> See, for example, *Securities Class Action Settlements—2006 Review and Analysis*, Cornerstone Research (2007); Michael A. Perino, “Have Institutional Fiduciaries Improved Securities Class Actions? A Review of the Empirical Literature on the PSLRA’s Lead Plaintiff Provision,” St. John’s Legal Studies Research Paper No. 12-0021 (2013).
- <sup>16</sup> Although Robbins Geller is associated with a longer duration to settlement, its presence as lead or co-lead plaintiff counsel is not associated with significantly higher settlements as a percentage of “simplified tiered damages.”
- <sup>17</sup> Available on a subscription basis. For further details see <https://www.issgovernance.com/securities-class-action-services/>. Bullet updated in July 2024 to include additional detail.
- <sup>18</sup> Movements of partial settlements between years can cause differences in amounts reported for prior years from those presented in earlier reports.
- <sup>19</sup> This categorization is based on the timing of the settlement hearing date. If a new partial settlement equals or exceeds 50% of the then-current settlement fund amount, the entirety of the settlement amount is re-categorized to reflect the settlement hearing date of the most recent partial settlement. If a subsequent partial settlement is less than 50% of the then-current total, the partial settlement is added to the total settlement amount and the settlement hearing date is left unchanged.

# Appendices

## Appendix 1: Settlement Percentiles

(Dollars in millions)

Year	Average	10th	25th	Median	75th	90th
2014	\$23.5	\$2.2	\$3.7	\$7.7	\$17.0	\$64.4
2015	\$50.6	\$1.7	\$2.8	\$8.4	\$20.9	\$120.9
2016	\$89.6	\$2.4	\$5.3	\$10.9	\$41.9	\$185.4
2017	\$22.9	\$1.9	\$3.2	\$6.5	\$19.0	\$44.0
2018	\$78.7	\$1.8	\$4.4	\$13.7	\$30.0	\$59.6
2019	\$33.6	\$1.7	\$6.7	\$13.1	\$23.8	\$59.6
2020	\$64.9	\$1.6	\$3.8	\$11.5	\$23.8	\$62.8
2021	\$23.1	\$1.9	\$3.5	\$9.3	\$20.1	\$65.9
2022	\$37.9	\$2.1	\$5.2	\$13.5	\$36.4	\$74.8
2023	\$47.3	\$3.0	\$5.0	\$15.0	\$33.3	\$101.0

Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented.

## Appendix 2: Settlements by Select Industry Sectors

2014–2023

(Dollars in millions)

Industry	Number of Settlements	Median Settlement	Median “Simplified Tiered Damages”	Median Settlement as a Percentage of “Simplified Tiered Damages”
Financial	91	\$17.8	\$313.3	5.3%
Technology	106	\$9.4	\$318.2	4.3%
Pharmaceuticals	122	\$8.5	\$242.5	3.9%
Telecommunication	28	\$11.4	\$381.0	4.4%
Retail	51	\$15.2	\$350.4	4.6%
Healthcare	21	\$10.1	\$240.4	6.0%

Note: Settlement dollars and “simplified tiered damages” are adjusted for inflation; 2023 dollar equivalent figures are presented. “Simplified tiered damages” are calculated only for cases involving Rule 10b-5 claims (whether alone or in addition to other claims).

**Appendix 3: Settlements by Federal Circuit Court  
2014–2023**

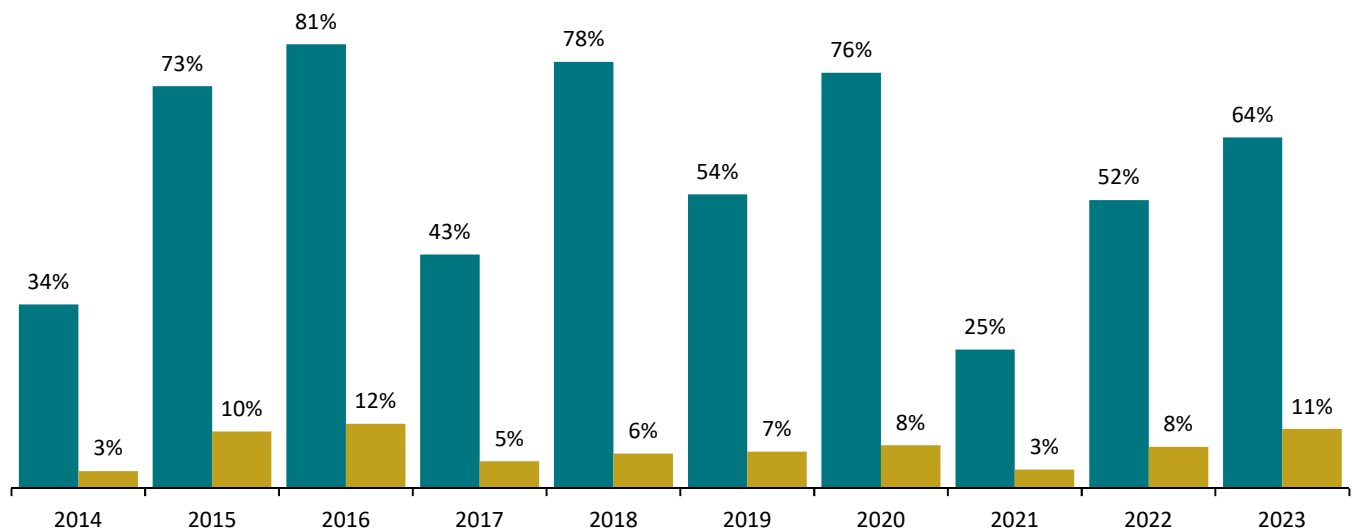
(Dollars in millions)

Circuit	Number of Settlements	Median Settlement	Median Settlement as a Percentage of “Simplified Tiered Damages”
First	20	\$14.1	2.8%
Second	212	\$8.9	4.9%
Third	85	\$7.3	4.9%
Fourth	23	\$24.5	3.9%
Fifth	38	\$11.7	4.7%
Sixth	35	\$15.8	6.7%
Seventh	40	\$18.0	3.7%
Eighth	14	\$48.3	4.6%
Ninth	190	\$9.0	4.4%
Tenth	19	\$12.4	5.3%
Eleventh	36	\$13.7	4.7%
DC	4	\$27.9	2.2%

Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented. Settlements as a percentage of “simplified tiered damages” are calculated only for cases alleging Rule 10b-5 claims (whether alone or in addition to other claims).

**Appendix 4: Mega Settlements  
2014–2023**

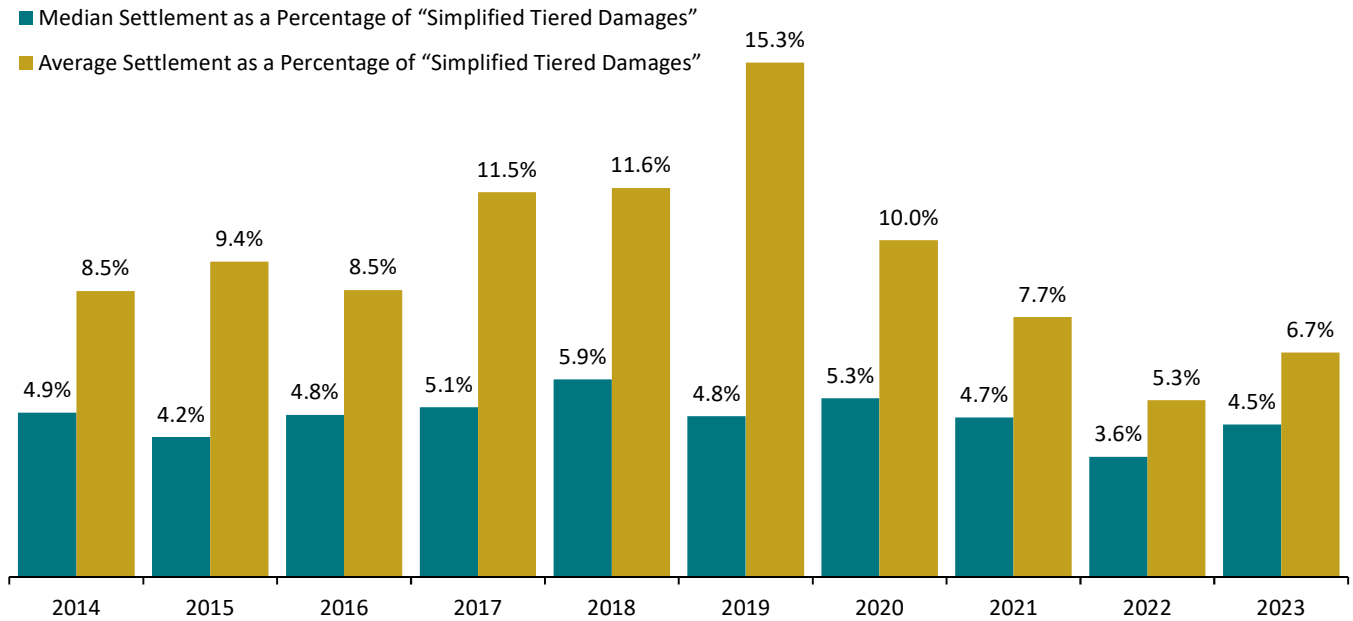
- Total Mega Settlement Dollars as a Percentage of All Settlement Dollars
- Number of Mega Settlements as a Percentage of All Settlements



Note: Mega settlements are defined as total settlement funds equal to or greater than \$100 million.

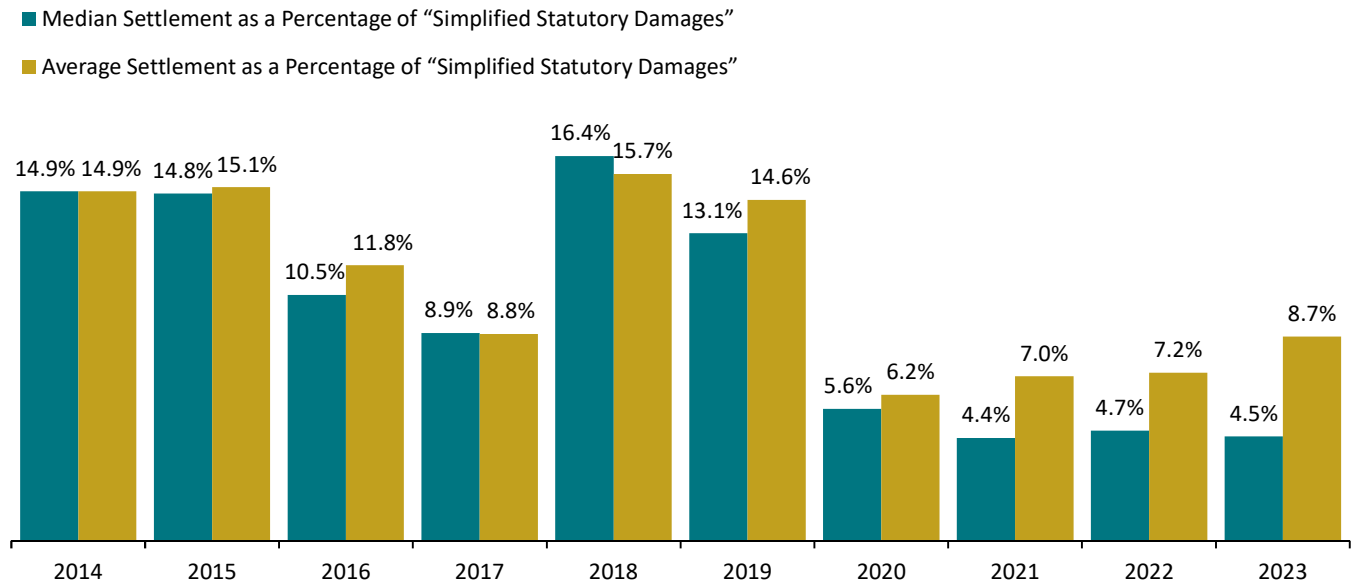


**Appendix 5: Median and Average Settlements as a Percentage of “Simplified Tiered Damages”  
2014–2023**



Note: “Simplified tiered damages” are calculated only for cases alleging Rule 10b-5 claims (whether alone or in addition to other claims).

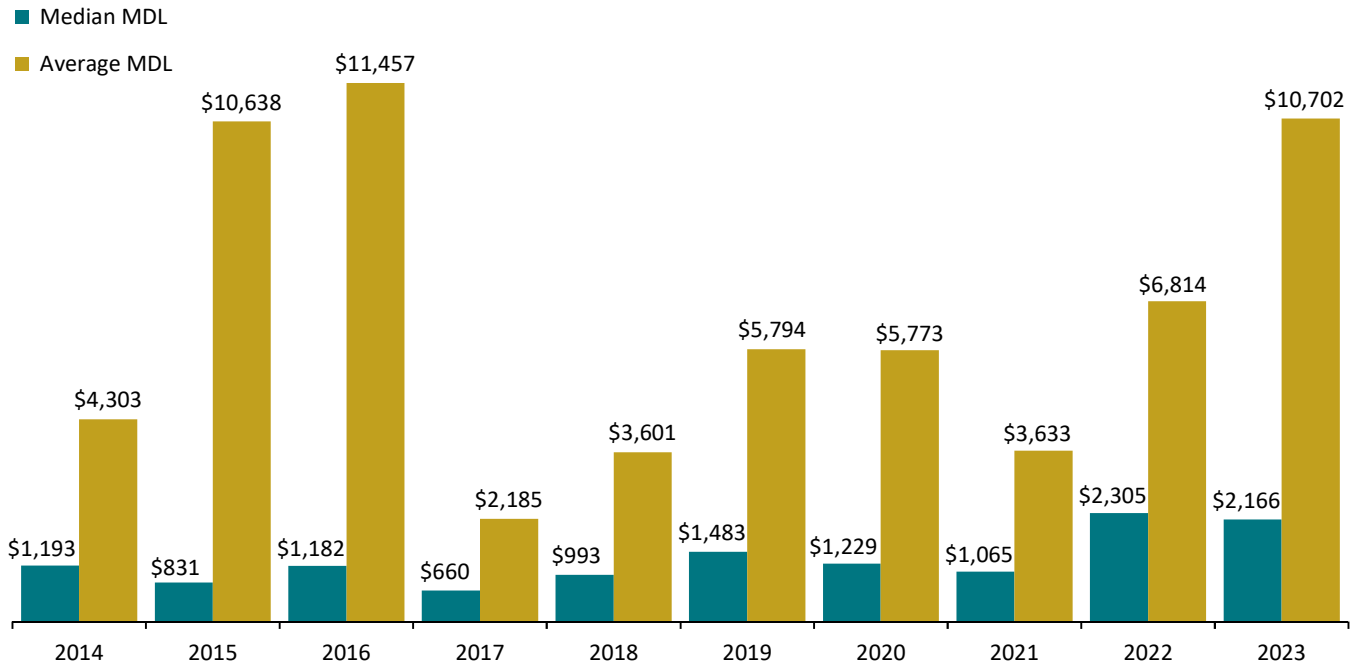
**Appendix 6: Median and Average Settlements as a Percentage of “Simplified Statutory Damages”  
2014–2023**



Note: “Simplified statutory damages” are calculated only for cases alleging Section 11 (’33 Act) claims and no Rule 10b-5 claims.

**Appendix 7: Median and Average Maximum Dollar Loss (MDL)  
2014–2023**

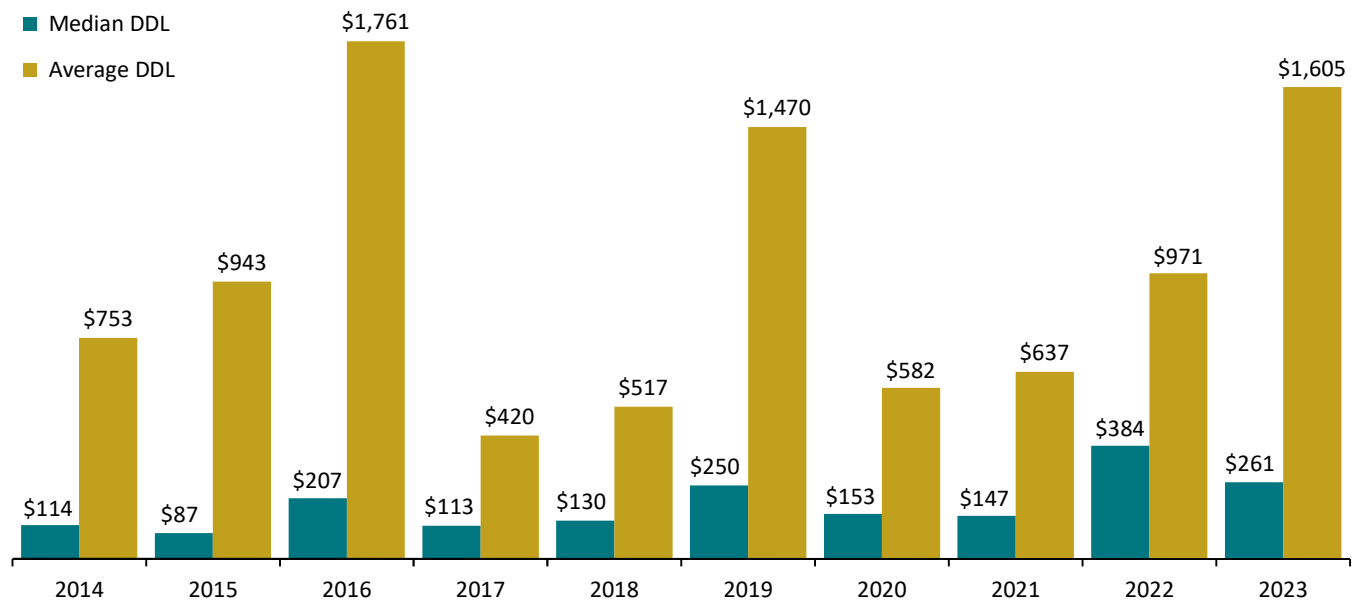
(Dollars in millions)



Note: MDL is adjusted for inflation based on class period end dates; 2023 dollar equivalents are presented. MDL is the dollar-value change in the defendant issuer’s market capitalization from its class period peak to the first trading day without inflation. This analysis excludes cases alleging ‘33 Act claims only.

**Appendix 8: Median and Average Disclosure Dollar Loss (DDL)  
2014–2023**

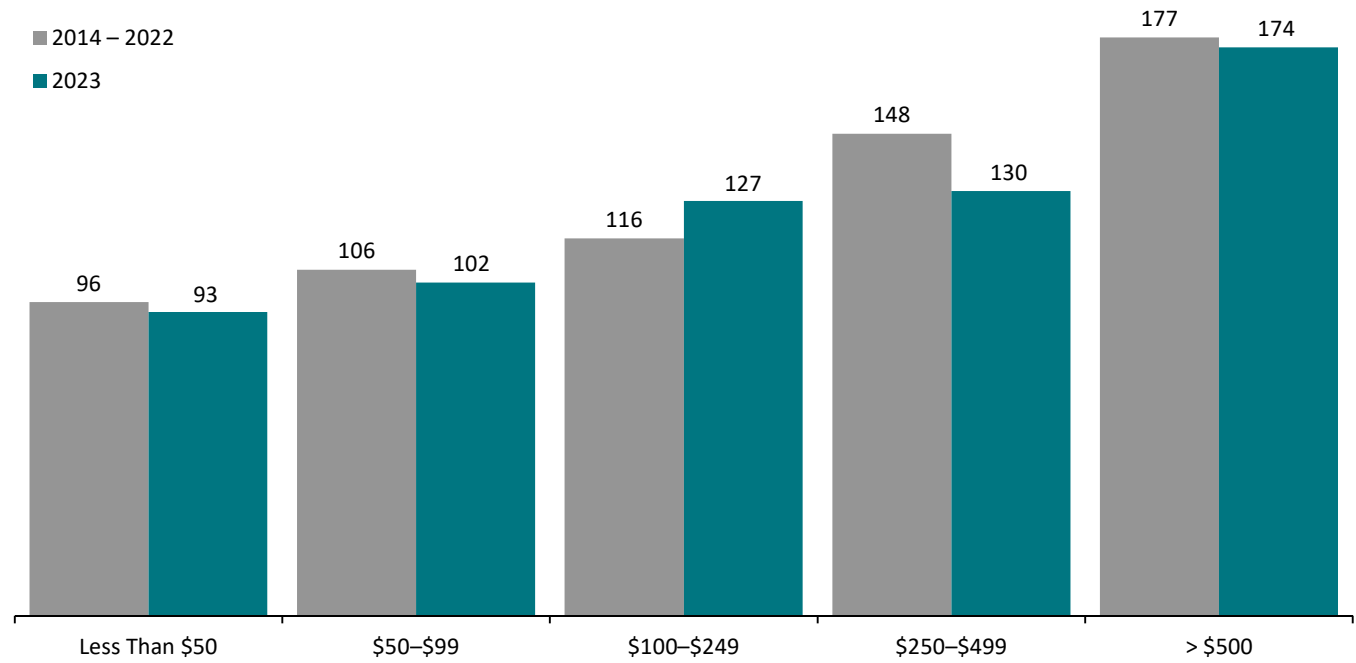
(Dollars in millions)



Note: DDL is adjusted for inflation based on class period end dates; 2023 dollar equivalents are presented. DDL is the dollar-value change in the defendant firm’s market capitalization between the end of the class period to the first trading day without inflation. This analysis excludes cases alleging ‘33 Act claims only.

Appendix 9: Median Docket Entries by “Simplified Tiered Damages” Range  
2014–2023

(Dollars in millions)



Note: “Simplified tiered damages” are calculated only for cases alleging Rule 10b-5 claims (whether alone or in addition to other claims).

# About the Authors

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Laarni Bulan is a principal in Cornerstone Research’s Boston office, where she specializes in finance. Her work has focused on securities and other complex litigation addressing class certification, damages, and loss causation issues; mergers and acquisitions (M&A) and firm valuation; and corporate governance, executive compensation, and risk management issues. She has also consulted on cases related to insider trading, market manipulation and trading behavior, financial institutions and the credit crisis, derivatives, foreign exchange, and securities clearing and settlement.

Dr. Bulan has published notable academic articles in peer-reviewed journals. Her research covers topics in dividend policy, capital structure, executive compensation, corporate governance, and real options. Prior to joining Cornerstone Research, Dr. Bulan had a joint appointment at Brandeis University as an assistant professor of finance in its International Business School and in the economics department.

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Laura Simmons is a senior advisor with Cornerstone Research. She has more than 25 years of experience in economic consulting. Dr. Simmons has focused on damages and liability issues in securities class actions, as well as litigation involving the Employee Retirement Income Security Act (ERISA). She has also managed cases involving financial accounting, valuation, and corporate governance issues. She has served as a testifying expert in litigation involving accounting analyses, securities case damages, ERISA matters, and research on securities lawsuits.

Dr. Simmons’s research on pre– and post–Reform Act securities litigation settlements has been published in a number of reports and is frequently cited in the public press and legal journals. She has spoken at various conferences and appeared as a guest on CNBC addressing the topic of securities case settlements. She has also published in academic journals, including research focusing on the intersection of accounting and litigation. Dr. Simmons was previously an accounting faculty member at the Mason School of Business at the College of William & Mary. From 1986 to 1991, she was an accountant with Price Waterhouse.

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