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Lead Counsel for Plaintiff

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

In re ALPHABET, INC. SECURITIES LITIGATION This Document Relates To: ALL ACTIONS.	Master File No. 3:18-cv-06245-TLT CLASS ACTION DECLARATION OF JASON A. FORGE IN SUPPORT OF LEAD PLAINTIFF'S MOTION FOR FINAL APPROVAL OF SETTLEMENT AND APPROVAL OF PLAN OF ALLOCATION AND LEAD COUNSEL'S MOTION FOR AN AWARD OF ATTORNEYS' FEES AND EXPENSES

I, JASON A. FORGE, declare as follows:

1. I am an attorney duly licensed to practice in the State of California and before this Court. I am a member of the law firm of Robbins Geller Rudman & Dowd LLP ("Robbins Geller" or "Lead Counsel"), Court-appointed lead counsel for Lead Plaintiff State of Rhode Island, Office of the Rhode Island Treasurer on behalf of the Employees' Retirement System of Rhode Island ("Rhode Island" or "Lead Plaintiff") and the Settlement Class,[1] in the above-captioned action pending in this Court.[2] My knowledge of the matters stated herein is based on my active participation in all material aspects of the prosecution and settlement of this action (hereinafter, the "Litigation"), as well as my discussions and communications with other members of Lead Counsel's prosecution team. Unless otherwise noted, I could and would competently testify that the following facts are true and correct.

2. I submit this declaration in support of Rhode Island's motion for approval of: (a) the $350 million cash settlement on behalf of the Settlement Class (the "Settlement"); and (b) the proposed Plan of Allocation (the "Plan"). I also submit this declaration in support of Lead Counsel's motion for attorneys' fees and expenses.

I. PRELIMINARY STATEMENT

3. This declaration is not intended to detail every event that occurred since the commencement of this Litigation in 2018. Rather, it provides the Court with key highlights of the Litigation, Lead Counsel's successful appeal of the District Court's dismissal of all claims, the

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[1] Pursuant to this Court's April 9, 2024 Order (ECF 232), for the purpose of effectuating the Settlement, the Settlement Class is defined as:

> [A]ll Persons that purchased or otherwise acquired Alphabet Class A and/or Class C stock during the period from April 23, 2018, through April 30, 2019, inclusive. Excluded from the Settlement Class are Defendants and their families, the officers, directors, and affiliates of Defendants, at all relevant times, members of their immediate families and their legal representatives, heirs, successors or assigns, and any entity in which Defendants have or had a controlling interest. Also excluded from the Settlement Class is any Person who timely and validly seeks exclusion from the Settlement Class.

[2] Capitalized terms not otherwise defined herein have the same meanings as those ascribed to them in the Stipulation of Settlement (ECF 222-2) ("Stipulation").

novel damages methodology developed by Lead Counsel and its experts, the extensive fact discovery, Lead Counsel's unwavering preparation for trial, the events leading up to the Settlement, and the bases upon which Lead Counsel and Rhode Island recommend the Settlement's approval.

4. The $350 million proposed Settlement is the culmination of more than five years of tireless, hard-fought litigation. It represents the largest cybersecurity-related PSLRA settlement in history, and the Ninth Circuit's largest securities class action recovery following a complete dismissal of the case. The recovery will rank within the top 60 largest securities class action settlements of all time, and within the top five in the Northern District of California. *See* ISS Sec. Class Action Servs., The Top 100 U.S. Class Action Settlements of All-Time (as of December 31, 2023) at 6-9, attached hereto as Exhibit A. The Settlement is nearly ***50 times*** larger than the $7.5 million consumer class action settlement arising out of the same two October 2018 and December 2018 data breaches that were at issue in this case. *In re Google Plus Profile Litig.*, Case No. 5:18-cv-06164-EJD (N.D. Cal.).

5. The Settlement is an astounding result for a case where Defendants (and multiple plaintiff's firms) credibly pressed their view that "***Damages Are Zero***." ECF 130 at 2 (emphasis added). Indeed, under conventional methodologies, there were no damages in this case. Even if conventional norms were set aside to get a maximum reasonably recoverable damages estimate, it would amount to $1.405 billion in total, and the $350 million recovery would amount to just under 25% of such a best-case scenario estimate. By way of comparison, this is more than 12 times the median percentage recovery for cases settled with estimated damages of $1 billion or more in 2023, and nearly 10 times the median recovery (2.6%) of similar cases settled between 2014 and 2022. *See, e.g.*, Laarni T. Bulan & Laura E. Simmons, *Securities Class Action Settlements: 2023 Review and Analysis* at 6 (Cornerstone Research 2024), attached hereto as Exhibit B. This percentage also greatly exceeds the median settlement as a percentage of estimated damages in the Ninth Circuit from 2014 through 2023 (4.6%). *Id*. at 20.

6. Lead Counsel zealously prosecuted Rhode Island's and the Settlement Class's claims at every stage of the Litigation and defended these claims against Defendants' repeated attacks, including in the Ninth Circuit Court of Appeals and the Supreme Court. But as detailed

herein, achieving class certification and proceeding to summary judgment and a jury trial presented substantial risks. In agreeing to settle the Litigation, Rhode Island and Lead Counsel were fully informed about the various strengths of their case, as well as the substantial risks they would face at class certification, summary judgment, and trial. In opting to settle, Rhode Island and Lead Counsel concluded that settlement on the terms they obtained was in the Settlement Class's best interest and in fact was a remarkable recovery for the Settlement Class. Rhode Island remained well-informed throughout the Litigation and settlement negotiations and ultimately approved the Settlement. *See* Declaration of Eileen Ki Cheng in Support of Rhode Island's Motion for Final Approval of Settlement and Award of Attorneys' Fees and Expenses (ECF 235) ("Cheng Decl.").

7. Lead Counsel achieved the proposed Settlement after more than five years of litigation, during which time Lead Counsel, among other things:

- successfully moved for appointment of Rhode Island as Lead Plaintiff and Robbins Geller as Lead Counsel in January 2019, in addition to consolidation of the related action before this Court;
- conducted an extensive investigation, culminating in the filing of the Consolidated Amended Complaint for Violation of the Federal Securities Laws on April 26, 2019 (ECF 62);
- prepared extensive briefing and conducted oral argument culminating in an historic Ninth Circuit reversal of the District Court's Order Granting Motion to Dismiss;
- fended off Defendants' petition for a writ of certiorari, despite Defendants being supported by amicus briefs filed by the Chamber of Commerce of the United States and Washington Legal Foundation, leading to the Supreme Court's denial of Defendants' petition for a writ of certiorari;
- engaged in multiple lengthy and contentious discovery-related disputes concerning the scope of fact discovery and document production, depositions of Defendants themselves, Defendants' privilege log and assertions of privilege over various materials, and several other issues discussed below;
- developed additional key allegations pertaining to the Litigation and briefed a Motion to Supplement the Consolidated Amended Complaint (ECF 136), resulting in Judge White's order granting the motion and Rhode Island's filing of the Supplement to the Consolidated Amended Complaint for Violations of the Federal Securities Laws (ECF 154);
- fully briefed a motion to certify the class on two occasions, developing novel theories of statistical significance and damages; and

- conducted extensive party and third-party fact discovery, including: (a) review of over 270,000 pages (more than 63,000 documents) from over 100 Alphabet custodians; (b) taking two fact depositions (and preparing for tens more); (c) responding to Defendants' various discovery requests; and (d) issuing subpoenas to 15 third parties, which yielded the production of an additional 6,000 documents.

8. The substantial fact and expert discovery, motion practice, and appellate practice outlined herein informed Lead Counsel of the case's many strengths, but also potential weaknesses. Lead Counsel considered this information in determining the best course of action for the Settlement Class.

9. Lead Counsel prosecuted the Litigation on a wholly contingent and "at risk" basis, advancing and incurring substantial litigation expenses, charges, and costs over the years. Lead Counsel shouldered substantial risk in doing so, and, to date, have not received any compensation for its efforts. Accordingly, in consideration of Lead Counsel's extensive efforts on behalf of the Settlement Class, Lead Counsel is applying for an award of attorneys' fees in the amount of 19% of the Settlement Amount and an award of $1,540,059.57 in litigation expenses, and any interest on such amounts at the same rate and for the same period as earned by the Settlement Fund.

10. As set forth in the Memorandum of Points and Authorities in Support of Motion for an Award of Attorneys' Fees and Expenses (ECF 234) (the "Fee Memorandum"), the requested fee is within the range of fees awarded in large Private Securities Litigation Reform Act of 1995 ("PSLRA") securities class action settlements, is well below the Ninth Circuit's presumptively reasonable 25% benchmark rate, and is justified in light of the exceptional result achieved for the Settlement Class and the significant risks undertaken by Lead Counsel in this complex litigation. Lead Counsel submits that the fee application is fair to the Settlement Class, under all applicable standards, and warrants the Court's approval.

11. Lead Counsel also seeks an award in the amount of $1,540,059.57 (plus interest accrued thereon) for expenses, costs, and charges reasonably and necessarily committed to the prosecution of the Litigation over the last five years. These expenses include: (a) the substantial fees and expenses of experts and consultants whose services were required for the successful prosecution and resolution of this case; (b) photocopying, imaging, shipping, and managing a

database of over a half million pages of documents; (c) online factual and legal research; and (d) mediation expenses.

12. Rhode Island faced an unwavering opponent in one of the largest companies in the world, Google. With a market capitalization of about $2 ***trillion***, there was never a doubt that Defendants would spare no expense defending this lawsuit. Throughout the Litigation, Google staffed their defense team with highly respected (and expensive) attorneys from renowned defense firms Wilson Sonsini Goodrich & Rosati, P.C., Freshfields Bruckhaus Deringer US LLP, and Swanson & McNamara LLP. On appeal, Google brought in Supreme Court specialists at Hogan Lovells. At every step of this Litigation, Rhode Island faced staunch opposition. The Settlement was earned after more than five years of contentious litigation.

13. Settlement was not reached until Lead Counsel had: (i) drafted and filed a detailed Complaint; (ii) successfully appealed Judge White's decision to grant Defendants' motion to dismiss the Complaint in its entirety; (iii) filed and fully briefed motions for class certification on two separate occasions; (iv) engaged in extensive written discovery; (v) litigated multiple discovery disputes; (vi) been denied the opportunity to depose the primary individual defendants without unprecedented delays, restrictions, and conditions (including the six-month post-remand *sua sponte* discovery stay); (vii) been denied the opportunity to conduct important discovery before moving for class certification; and (viii) participated in a mediation process with Judge Phillips for over a year, culminating in a mediator's proposal that both sides accepted.

14. Rhode Island dedicated considerable time overseeing this Litigation, including time spent discussing litigation strategy, case development, and settlement negotiations with Lead Counsel. Rhode Island actively monitored the Litigation and supervised Lead Counsel. Rhode Island also dedicated time and resources to discovery, which included gathering documents and information responsive to Defendants' discovery requests. Moreover, Rhode Island negotiated the 19% below-market fee agreement with Lead Counsel. After detailed discussions with Lead Counsel, Rhode Island approved the Settlement. Rhode Island also approves Lead Counsel's fee request.

II. PROCEDURAL HISTORY OF THE CASE

A. The Initiation of the Action and Rhode Island's Appointment as Lead Plaintiff

15. This action commenced on October 11, 2018, with a lawsuit entitled *Wicks v. Alphabet, Inc., et al.*, No. 3:18-cv-06245-JSW, which was filed against Alphabet, Page, Pichai, and Google's CEO, Ruth Porat in the United States District Court for the Northern District of California. The action was assigned to Judge Jeffrey S. White. Thereafter, an additional complaint was filed in the United States District Court for the Eastern District of New York based upon similar allegations, *El Mawardy v. Alphabet, Inc., et al.*, No. 1:18-cv-05704 (E.D.N.Y.). On November 7, 2018, the *El Mawardy* action was transferred to this District. ECF 14 at 5.

16. On December 10, 2018, Rhode Island moved the Court to consolidate the *Wicks* and *El Mawardy*-related actions, appoint Rhode Island as the lead plaintiff, and appoint Robbins Geller as lead counsel. ECF 18. As noted in its memorandum of law, Rhode Island claimed a substantial financial interest and otherwise satisfied the typicality and adequacy requirements of Rule 23 of the Federal Rules of Civil Procedure. *Id.* The other three individuals and funds that moved for appointment as lead plaintiff either withdrew or did not oppose Rhode Island's motion. ECF 40.

17. On January 25, 2019, Judge White consolidated the *Wicks* and *El Mawardy* actions, appointed Rhode Island as lead plaintiff, and approved Rhode Island's selection of Robbins Geller as lead counsel.

18. On February 15, 2019, Rhode Island and Defendants filed their first Joint Case Management Statement. Therein, Rhode Island detailed its position that "it is designating the complaint in the *Wicks* action to be the operative complaint in this matter, while expressly preserving its right to amend the complaint as a matter of course under Fed. R. Civ. P. 15(1)(B)." ECF 47 at 4. On February 22, 2019, Lead Counsel and Defendants appeared for an Initial Case Management Conference where they discussed next steps for the Litigation, including the briefing schedule for the anticipated filing of Defendants' motion to dismiss.

B. Defendants' First Motion to Dismiss, Rhode Island's Investigation, Filing of the Consolidated Amended Complaint, and Briefing Defendants' Second Motion to Dismiss

19. Following Rhode Island's designation of the *Wicks* complaint as the operative complaint, on March 22, 2019, Defendants filed their first Motion to Dismiss Class Action Complaint for Violation of Federal Securities Laws. ECF 54. Defendants argued that the claims should be dismissed because: (1) "[t]he bug already had been remediated by the time the April and July 2018 Form 10-Qs were filed" thus rendering the alleged misleading risk disclosures not false or misleading; (2) "Plaintiff fails to allege materiality"; and (3) "[t]here are . . . no allegations of scienter." *Id.* All discovery in the matter was stayed pursuant to the PSLRA. *See* 15 U.S.C. §78u-4(b)(3)(B).

20. Rather than respond to Defendants' Motion to Dismiss, Rhode Island elected to amend the operative complaint. Based on an analysis of the Company's SEC filings, public statements, media, analyst reports, and independent research and investigation, on April 26, 2019, Rhode Island filed the Consolidated Amended Complaint. ECF 62. The Consolidated Amended Complaint alleged violations of §§10(b) and 20(a) of the Exchange Act against Alphabet, Page, Pichai, Google LLC, Enright, and Walker.

21.

22. A briefing schedule for motions to dismiss was established by order dated April 3, 2019. ECF 58. Following Rhode Island's April 26, 2019 submission of the Consolidated Amended Complaint, on May 31, 2019, Defendants filed their Motion to Dismiss the Consolidated Amended Complaint. ECF 71. On July 8, 2019, Rhode Island filed its opposition brief to the motion to dismiss. ECF 76. On August 9, 2019, Defendants filed their reply in support of the motion to dismiss. ECF 78. On August 19, 2019, the motion to dismiss hearing scheduled for August 23, 2019 was vacated.

23. On February 5, 2020, Judge White issued an order dismissing the Consolidated Amended Complaint in its entirety. Rhode Island was given until March 13, 2020 to file an amended complaint.

24. On March 12, 2020, Rhode Island filed a notice informing the Court and Defendants of "its decision not to amend the Consolidated Amended Complaint that was the subject of the Court's February 5, 2020 Order Granting Motion to Dismiss" and that Rhode Island "intends to pursue its appellate rights after the Court enters judgment." ECF 83.

25. On March 13, 2020, Judge White entered judgment "in favor of Defendants and against Plaintiff." ECF 84.

C. The Appeal

26. On April 9, 2020, Rhode Island provided notice of its appeal to the United States Court of Appeals for the Ninth Circuit from:

(a) the March 13, 2020 Judgment (ECF 84, entered on March 13, 2020);

(b) the February 5, 2020 Order Granting Motion to Dismiss (ECF 82, entered on February 5, 2020); and

(c) *See* ECF 85. *In re Alphabet, Inc. Sec. Litig.*, No. 20-15638, Dkt. 1 (9th Cir. Apr. 10, 2020).[3]

27. Lead Counsel filed Rhode Island's 50-page opening brief on July 20, 2020. Rhode Island argued that: (i) Defendants failed to "challenge the adequacy of the allegations regarding the rest of the iceberg – that is, the majority of the alleged scheme: the overarching Privacy Bug and the shift from a professed policy of 'disclosure and transparency' to one of 'concealment and opacity' (Dkt. 7 at 10); (ii) the District Court erroneously "accepted Defendants' narrative that the [Consolidated Amended] Complaint solely alleged statement-based liability limited to the Three-Year Bug" (*Id.* at 13); (iii) the District Court failed to "acknowledg[e] and accept[] the [Consolidated Amended] Complaint's allegations as to the scheme itself . . . which led to a correspondingly narrow materiality analysis" (*Id.* at 16); (iv) the District Court erred by "not acknowledg[ing] the [Consolidated Amended] Complaint's allegations regarding the context and motivation for the scheme," including the Consolidated Amended Complaint's allegations that in

[3] All "Dkt. __" references are to the Ninth Circuit docket (*In re Alphabet, Inc. Sec. Litig.*, No. 20-15638 (9th Cir.)).

the wake of Facebook's Cambridge Analytica scandal, "Google [was f]ac[ing] [u]nprecedented [p]ublic and [r]egulatory [s]crutiny for [i]ts [d]ata [c]ollection and [p]rivacy [p]ractices," "Google was also facing heightened scrutiny from the European Union and was operating under a Consent Order with the Federal Trade Commission related to past violations of its privacy promises," "[o]ne of the reasons Pichai approved this concealment plan was because he wanted to avoid any additional regulatory scrutiny, including having to testify before Congress," other individual defendants had direct knowledge and were involved in the scheme, and Defendants' memorialized their scienter in a memorandum that was ultimately leaked to the *Wall Street Journal*. *Id.* at 19-20.

28. On September 21, 2020, Defendants filed their answering brief, arguing, among other things: (i) the Consolidated Amended Complaint failed to plead materiality because the Three Year Bug was found and fixed before Alphabet made the challenged risk statements, "Plaintiff never alleged that the user data made accessible by the Bug contained sensitive information," and "Plaintiff [did not] plead that the Bug materially affected Alphabet's earnings" (Dkt. 16 at 13-14); and (ii) Rhode Island failed to allege scienter because the Cambridge Analytica "scandal did not involve Google or Alphabet," "two Individual Defendants in fact provided testimony to Congress," and Plaintiff did not allege "suspicious stock sales or confidential witness statements." *Id.* at 14-15.

29. On October 12, 2020, Rhode Island filed its reply brief, reiterating its opening arguments and taking the opportunity to point out inconsistencies in Defendants' recasting of the Consolidated Amended Complaint with the allegations in the Consolidated Amended Complaint itself. Dkt. 24. Specifically, Rhode Island detailed the substantial scheme allegations in the Consolidated Amended Complaint, contrary to Defendants' assertion that "no 'scheme' was alleged or argued below." *Id.* at 2-6. As Rhode Island asserted (and Defendants fought hard to avoid), the Consolidated Amended Complaint's allegations went well beyond the Three-Year Bug that affected Google+. Rhode Island stated:

> After the removal of a single malignant tumor, it would be grossly misleading for doctors to report merely that they had discovered and successfully removed a tumor while concealing that the cancer had metastasized and was terminal with a life expectancy under a year. Yet, that is analogous to what Defendants did here, except Defendants concealed the tumor (the Three-Year Bug) ***and*** the terminal illness (the

> Privacy Bug) ***and*** the short life expectancy (the decision to shut down Google+), while simply persisting with the generic warnings that anyone can get cancer.

Id. at 8-9.

30. In response to Rhode Island's reply brief, Defendants filed a "Notice of Errata in Answering Brief" on October 13, 2020, recanting their previous representation that "the only mention of the word 'scheme' in the Complaint was in ER21:¶95, where Plaintiff simply parroted the text of Rule 10b-5(a)-(c)." Dkt. 27 at 1.

31. Oral argument was held on February 4, 2021, before Judges Sidney R. Thomas, Sandra S. Ikuta, and Jacqueline H. Nguyen. I presented the argument on behalf of Rhode Island.

32. On June 16, 2021, the Ninth Circuit issued its unanimous, published opinion reversing in part and affirming in part. *In re Alphabet, Inc. Sec. Litig.*, 1 F.4th 687 (9th Cir. 2021). Specifically, the Ninth Circuit opinion found that the Consolidated Amended Complaint adequately alleged misleading omissions related to two risk statements made in Alphabet's April and July 10-Qs that "warned, among other things, that even unfounded concerns about Alphabet's 'practices with regard to the collection, use, disclosure, or security of personal information or other privacy related matters' could damage the company's 'reputation and adversely affect [its] operating results.'" *Id.* at 702.

33. The Ninth Circuit further held that the Consolidated Amended Complaint adequately alleged scienter, finding that "[t]he complaint alleges with particularity that the [Privacy Bug] memo informed senior executive leadership at Google of the scope of the problem, warned of the consequences of disclosure, and presented Google leadership with a clear decision on whether to disclose those problems." *Id.* at 706. The Consolidated Amended Complaint created a strong inference that "armed with this knowledge, Alphabet intentionally did not disclose the cybersecurity information to the public in order to avoid or delay the impacts disclosure could have on regulatory scrutiny, public criticism, and loss of consumer confidence. The complaint also alleges that Pichai approved a cover-up to avoid regulatory scrutiny and testimony before Congress." *Id.* at 706-07.

34. The Ninth Circuit went on to revive Rhode Island's scheme liability claims, finding that "because Alphabet's motion to dismiss did not target Rhode Island's Rule 10b-5(a) and (c)

claims, Rhode Island did not waive those claims by failing to address them in opposition to the motion to dismiss. A party's failure to oppose an argument that was not made does not constitute a waiver." *Id.* at 709.

35. Finally, the Ninth Circuit also reversed the dismissal of Rhode Island's Section 20(a) claims based on the April and July 2018 misleading risk statements and scheme liability claims. *Id.* at 707, 709.

36. The Ninth Circuit's opinion was a huge success for Rhode Island and the Class. Though the Ninth Circuit affirmed the District Court's judgment finding ten statements non-actionable, the practical effect of the Ninth Circuit's opinion revived all counts against all defendants alleged in the Consolidated Amended Complaint. As discussed more below (*see infra* §IV.A.1.), the Ninth Circuit's opinion in this case been influential for investors seeking to hold public companies accountable for fraud.

37. On June 30, 2021, Defendants filed a petition for rehearing and petition for rehearing *en banc*. Dkt. 45. On July 23, 2021, the Ninth Circuit filed an order notifying parties that "[t]he panel has unanimously voted to deny appellees' petition for rehearing. The petition for rehearing en banc was circulated to the judges of the court, and no judge requested a vote for en banc consideration." Dkt. 46.

38. On August 6, 2021, the Ninth Circuit filed an order staying the mandate to permit Defendants to file a writ of certiorari to the Supreme Court (Dkt. 50) and on October 21, 2021, Defendants filed a petition for a writ of certiorari in the Supreme Court. Defendants enlisted the help of Supreme Court appellate specialists at Hogan Lovells US LLP, led by Neal Katyal.

39. On November 24, 2021, the Chamber of Commerce of the United States of America, the Securities Industry and Financial Markets Association, and Business Roundtable filed an amicus brief in support of Defendants' position that companies should not have to disclose "past events." Then, on December 13, 2021, another amicus brief was filed in support of Defendants' position, this time by Washington Legal Foundation.

40. On February 2, 2022, Rhode Island filed its brief in opposition, employing the services of experienced Supreme Court litigation firm, Kellogg, Hansen, Todd, Figel & Frederick, P.L.L.C. On February 16, 2022, Alphabet filed its reply brief.

41. On March 7, 2022, the Supreme Court denied Defendants' petition for a writ of certiorari, thereby letting stand the Ninth Circuit's opinion and returning the case back to the District Court after nearly two years of appellate litigation. *Alphabet, Inc., et al. v. Rhode Island*, 142 S. Ct. 1227, 212 L. Ed. 2d 233 (2022).

42. On March 23, 2022, Defendants filed their answer to the Consolidated Amended Complaint, denying the allegations and asserting certain affirmative defenses thereto. ECF 93.

D. First Motion to Certify Class

43. In accordance with the then-operative scheduling order (ECF 95), which the Court imposed over Rhode Island's objection, Rhode Island filed its Motion to Certify Class on June 21, 2022, pursuant to Fed. R. Civ. P. 23(a) and 23(b)(3). ECF 102. Rhode Island moved to certify a class consisting of all persons and entities who purchased or otherwise acquired Class A and/or Class C stock of Alphabet during the Class Period and requested that the Court appoint it and Robbins Geller to serve as Class Representative and Class Counsel, respectively. Rhode Island argued that the proposed class satisfied the requirements of Rule 23, including numerosity, commonality, typicality, and adequacy. In support of its motion, Rhode Island submitted the expert report of Joseph R. Mason, Ph.D., which offered two alternative methodologies for the calculation of class wide damages: (1) the share price reaction method; and (2) the fundamental valuation method.

44. Rhode Island's atypical use of the fundamental valuation method and its significance to the class as a method by which to measure class-wide damages cannot be overstated. It would have allowed the class to assess damages without sole reliance on an event study, which dramatically increased the class's potential recovery.

45. Defendants filed their Opposition to Plaintiff's Class Certification Motion on August 22, 2022. ECF 130. First, Defendants argued that the disclosures alleged in the Complaint had no impact on Alphabet's stock price and that damages were, in effect, zero. Second, Defendants

disputed Rhode Island's assertion that the *Affiliated Ute* presumption of reliance applied to this case because, as Defendants argued, the Complaint is based on affirmative statements (as opposed to omissions). Third, Defendants argued that Rhode Island could not satisfy Rule 23(b)(3)'s predominance requirement with its fundamental valuation method because it is not a reliable measure of damages on a class-wide basis in securities class actions. With their motion, Defendants submitted the rebuttal report of Professor Allen Ferrell to support their assertion that damages in this case were zero.

46. In its Reply Memorandum filed on October 6, 2022, Rhode Island submitted the rebuttal expert report of Professor Jonah B. Gelbach and the reply expert report of Joseph R. Mason, Ph.D., which: (1) rebutted Professor Ferrell's assertion that the omissions alleged in the Consolidated Amended Complaint did not impact Alphabet's stock price; and (2) reiterated that class-wide damages are capable of being measured under the share price reaction method or fundamental valuation method.

47. Nearly three weeks after Rhode Island filed its reply, Defendants submitted the reply report of Professor Allen Ferrell on October 24, 2022. ECF 148-1. Professor Ferrell's report asserted that after reviewing Professor Gelbach's rebuttal report and Dr. Mason's reply report, his opinions had not changed.

48. On October 25, 2022, Rhode Island objected to Defendants' supplementary material for violating Judge White's scheduling order and Local Rule 7-3(d). ECF 149.

49. While briefing on the motion to certify class was ongoing, on August 29, 2022, Judge White issued an order *sua sponte* staying discovery in the case "pending this Court's determination of the precise scope of the [Ninth Circuit] remand in this case." ECF 134. The dispute regarding scope is discussed below. *See infra* §III.C.

50. In the midst of ongoing briefing regarding the scope of discovery, on February 28, 2023, Judge White granted Rhode Island's motion to supplement the Consolidated Amended Complaint (discussed below) and struck Rhode Island's pending motion to certify the class. ECF 153.

E. Supplementing the Consolidated Amended Complaint

51. On September 8, 2022, while briefing for the motion to certify the class and several discovery disputes were ongoing, in response to Judge White's order staying all discovery in the case to determine the scope of the case on remand (ECF 134; discussed *infra* §III.C), Rhode Island filed its Motion to Supplement the Consolidated Amended Complaint. ECF 136. In its motion, Rhode Island noted that supplementation of the complaint was proper under Rule 15(d) and that "supplementing now will minimize any additional delays due to defendants' contrived questions regarding the scope of the Complaint on remand." *Id.* Rhode Island sought to supplement the Consolidated Amended Complaint with, among other things, allegations that: (1) on April 29, 2019 (three days after the filing of the Consolidated Amended Complaint), "Alphabet announced that 'product changes' had an adverse effect on its business"; (2) "[t]hese product changes and resulting adverse effect on Alphabet's revenues were the direct result of the remedial measures related to 'the events described in the *WSJ* article' (of which the Google+ disaster was the tipping point) to stave off a legislative or regulatory response, which defendants announced on October 8, 2018 – but the corresponding risks of these remedial measures did not materialize until after October 2018"; and (3) "[o]n April 30, 2019, Alphabet's Class A and Class C shares fell $4.86 and $4.96 per share, respectively, which drop was caused, in whole or in part, by the materialization of the risks posed by the remedial measures related to 'the events described in the *WSJ* article,' led by the Google+ catastrophe. On May 1, 2019, as the market continued to absorb the materialization of these risks, Alphabet's Class A and Class C shares declined $1.28 and $1.02 per share, respectively." *Id.*

52. Defendants filed their opposition on September 22, 2022, arguing that Rhode Island's "attempt to supplement is futile because no facts support it" and "is also untimely, and granting it would prejudice Defendants." ECF 138. Defendants noted that after Judge White issued the order staying discovery, they provided two declarations to Rhode Island which purportedly made clear that "the product changes that were described by Ruth Porat in April 2019 as having contributed to the slowdown in revenue growth had no connection to data privacy." *Id.* Defendants finally argued that the April 2019 Alphabet stock drops had no connection to the "Google+ Bug or

with any of the Company's alleged privacy changes in other products" and thus "was not corrective of the fraud that Plaintiff alleges." *Id.*

53. On reply, Rhode Island reiterated that its motion to supplement satisfies the liberally construed Rule 15(d). ECF 142. Rhode Island further noted that it "has consistently made clear that the damages here result from both immediate ***and belated*** stock price declines," "Rhode Island's motion for class certification expressly identified price drops on October 8-10, 2018 (the immediate price drops) and another on April 30, 2019 (the belated price drop)," and "defendants' biased and untested declarations lend no support to their bad-faith [(and futility)] argument." *Id.*

54. On February 28, 2023, Judge White granted Rhode Island's motion to supplement the Consolidated Amended Complaint, finding that there was no undue delay, the supplement was not proposed in bad faith, was not futile, and Defendants' recently disclosed set of declarations could not be considered by the Court when assessing the sufficiency of a complaint. ECF 153. Judge White's order also struck the pending motion to certify class and lifted the stay on discovery that had been in place for nearly six months. *Id.*

55. On the same day, Rhode Island filed its supplement to the Consolidated Amended Complaint. ECF 154. On March 14, 2023, Defendants answered the supplement, denying the allegations. ECF 155.

F. Second Motion to Certify Class

56. On March 31, 2023, over Rhode Island's objections, Judge White entered an order setting the case schedule, including briefing on Rhode Island's second motion to certify class. ECF 159. Rhode Island's motion to certify class was due May 2, 2023, Defendants' opposition was due June 30, 2023, and Rhode Island's reply was due August 14, 2023. *Id.* Judge White set the fact discovery deadline for June 3, 2024, and trial for August 18, 2025. *Id.*

57. On May 2, 2023, Rhode Island filed its second Motion to Certify Class, pursuant to Fed. R. Civ. P. 23(a) and 23(b)(3). ECF 165. Rhode Island also moved to appoint Rhode Island as Class Representative and Robbins Geller as Class Counsel. Rhode Island sought to certify a class of all persons and entities who purchased or otherwise acquired Class A and/or Class C stock of Alphabet during the period from April 23, 2018 through October 7, 2018, inclusive. *Id.* Rhode

Island argued that the proposed class satisfied the requirements of Rule 23, including numerosity, commonality, typicality, and adequacy. In support of its motion, Rhode Island submitted the expert report of Professor Frank Partnoy, which established that the market for Alphabet Class A and Class C stock was efficient and offered two alternative methodologies for the calculation of class wide damages: (1) the event study method; and (2) the discounted cash flow ("DCF") method. ECF 174.

58. Like the development of the fundamental valuation method, the development of the DCF method was critical to the ultimate recovery in this case. It allowed the Class to assess damages without consideration of whether alleged stock drops were statistically significant, greatly increasing the Class's potential recovery. During the class-certification process, Lead Counsel undertook considerable efforts to prepare for and defend the deposition of Professor Partnoy.

59. Rhode Island again argued that the Class was entitled to a presumption of reliance under *Affiliated Ute* because the Complaint, as the Ninth Circuit opinion agreed, was based entirely on material omissions. ECF 165.

60. Defendants filed their opposition on June 30, 2023, arguing that: (1) the Complaint challenged affirmative statements, not pure omissions, so Rhode Island could not rely on the *Affiliated Ute* presumption of reliance and would have to rely on the *Basic* presumption of reliance, which Defendants' argued could be rebutted by a showing of lack of price impact at class certification; (2) the April 2019 revenue decline and resulting stock drops were caused not by product changes related to data security and privacy, but due to the "lapping" of a previously introduced product called "Burpee," among several other purported product changes—a proposition that was supported by Defendants' expert, Anindya Ghose (ECF 181-6); (3) Rhode Island could not establish price impact, supported by the expert report of Professor Allen Ferrell (ECF 181-5); and (4) Rhode Island's damages model was not capable of measuring damages on a class-wide basis. ECF 181.

61. On July 24, 2023, Judge White issued an order recusing himself from the case. ECF 188. On July 25, 2023, the case was reassigned to the Honorable Trina L. Thompson. ECF 189. On August 1, 2023, the Court issued a case management scheduling order maintaining the

previously set briefing schedule on Rhode Island's second motion to certify class and setting fact discovery cut-off for June 3, 2024 and trial for August 18, 2025.

62. On August 14, 2023, Rhode Island filed its reply brief, arguing that it is entitled to the *Affiliated Ute* presumption of reliance because the "statements" at issue were really omissions (not affirmative misrepresentations); even if the *Basic* presumption applied, Defendants could not prove a complete lack of price impact; and, both the event study model and DCF model are universally accepted methodologies that are naturally applied on a classwide basis. ECF 198. Rhode Island submitted the rebuttal expert report of Professor Gelbach, which supported Rhode Island's argument that Defendants failed to show a lack of price impact. ECF 199-1.

63. In his rebuttal report, Professor Gelbach utilized an innovative theory (developed with Lead Counsel) to prove price impact. In his rebuttal report, Professor Gelbach explains that Professor Farrell's event study was flawed because he failed to address contamination bias that resulted from bad news related to Alphabet's alleged privacy scheme which indicated that more regulation and consumer backlash were headed towards companies besides Alphabet. "[N]ews related to Alphabet's alleged privacy scheme could be expected to affect not just Alphabet but also most, if not all, other internet-related firms." ECF 199-1. To account for this bias, Professor Gelbach utilized an index of "Non-Internet" companies. Using that index, Professor Gelbach found the alleged October 2018 drops were statistically significant. Lead Counsel's utilization of this method along with the addition of the April 2019 stock drops via the supplement added potentially hundreds of millions of dollars in damages to this case.

64. On August 23, 2023, Defendants sought leave to file supplemental memorandum on the Second Circuit's decision in *Arkansas Teacher Retirement System v. Goldman Sachs Group, Inc.*, 2023 WL 5112157 (2d Cir. Aug. 10, 2023), stating that "[t]he opinion provides persuasive appellate authority on the meaning and operation of *Goldman I* — an issue on which most federal circuits, including the Ninth Circuit, have not yet had occasion to opine." ECF 201.

65. On the same day, Rhode Island filed its opposition to Defendants' motion, noting that Defendants' motion failed to provide new authority, and even if it did, Defendants' motion did not comply with Local Rule 7-3(d)(2). ECF 204.

66. On August 24, 2023, the Court denied Defendants' motion to file a supplemental memorandum. ECF 205.

67. On October 3, 2023, Professor Joseph A. Grundfest, "among the most highly regarded and prominent securities and corporate law scholars, teachers, and practitioners in the nation," filed a motion seeking leave to file a brief as amicus curiae. ECF 210. Professor Grundfest, who had previously submitted an amicus brief on behalf of defendants in *Goldman Sachs Grp., Inc. v. Ark. Tchrs. Ret. Sys.*, 141 S. Ct. 1951 (2021), sought to introduce briefing to support the proposition that "[b]ecause the Alphabet mismatch is at least as significant as the *Goldman I* and *II* mismatch, and because that mismatch precluded certifying the *Goldman* class, this class, *a fortiori*, cannot be certified." ECF 210-2.

68. The next day, before Rhode Island had an opportunity to respond, the Court granted Professor Grundfest's motion seeking leave to file a brief as amicus curiae. ECF 212.

69. Rhode Island filed an objection to Professor Grundfest's motion, arguing that Professor Grundfest's motion was untimely under Local Rule 7-3(d). ECF 213. Rhode Island also attached an exhibit demonstrating "Joseph A. Grundfest's longstanding partnership with defendants' lawyers." *Id.*; *see* ECF 213-1.

70. On October 5, 2023, the Court issued an order rescinding its previous order granting Professor Grundfest's motion for leave to brief as amicus curiae. ECF 216. The Court explained, "Upon further review, docket 210 was untimely filed and did not comply with Civil Local Rule 7-3(d). The Court rescinds the Order at 212 and will not consider supplemental brief 214." *Id.*

71. On October 20, 2023, the Court vacated the hearing on Rhode Island's second motion to certify class scheduled for October 24, 2023 at the request of counsel. ECF 218.

72. On February 4, 2024, before a ruling on Rhode Island's second motion to certify class, the parties announced they reached a settlement agreement.

III. PREPARING THE CASE FOR TRIAL

A. Case Management

73. On May 10, 2022, the parties submitted competing proposals in a joint case management statement. ECF 94. Defendants argued that discovery should be bifurcated, focusing

first on issues only relevant to class certification. *Id.* Rhode Island argued that Defendants' request to bifurcate discovery had no basis because there is substantial overlap between merits discovery and class certification discovery and that bifurcating discovery would delay resolution of class certification or degrade judicial economy. *Id.* On May 11, 2022, the case schedule was set. ECF 95. Judge White did not bifurcate discovery between class certification and merits stages. *Id.* Rhode Island's class certification and expert reports was set for June 21, 2022. The fact discovery cut-off date was set for September 15, 2023. The Court set a trial date of October 28, 2024.

B. Discovery Efforts

74. Rhode Island formally initiated fact discovery shortly after Defendants answered the Consolidated Amended Complaint on March 23, 2022 (ECF 93) and continued earnestly pursuing discovery throughout this litigation. During that time, despite Defendants' repeated attempts to prevent Rhode Island's discovery efforts, Lead Counsel obtained, reviewed, and analyzed the electronic equivalent of more than 270,000 pages of documents from Defendants and over 3,000 pages of documents produced by six third parties (and were in discussions to obtain additional third party discovery when the Settlement was reached), took two fact depositions (and noticed, formed teams to prepare, and was preparing for more than a dozen additional fact depositions). Lead Counsel helped Rhode Island gather and produce over 136,000 pages of discovery.

75. Months of negotiations and motion practice were necessary for Rhode Island to obtain documents responsive to its discovery requests. Lead Counsel undertook the substantial task of reviewing the electronic equivalent of over 400,000 pages of documents, organizing, and analyzing the documents in preparation for depositions, class certification, expert reports, summary judgment, and trial. This effort was critical to Rhode Island's ability to ready the case for trial.

1. Initial Disclosures

76. On May 6, 2022, all parties served their initial disclosures.

2. Protective Order for Confidential Documents and Testimony

77. Given the subject matter of the allegations in this case, the parties anticipated that document productions were likely to contain confidential, proprietary, and/or private information. Over the course of several weeks, the parties negotiated the terms of a proposed protective order to

govern the confidential treatment of evidence produced in the case. The parties exchanged multiple drafts of a proposed order and held telephonic meet and confer conferences concerning certain disputed language, including language regarding the manner and timing of confidentiality designations. On July 15, 2022, the parties agreed to the Stipulated [Proposed] Protective Order, which Judge Ryu approved on July 20, 2022. ECF 109, 111.

78. Due to the volume and complexity of the information at issue, Robbins Geller took care to establish an effective and efficient method for searching and collecting electronically-stored information ("ESI") in the parties' possession. After an extensive meet and confer process, the parties came to a final agreement regarding ESI on October 24, 2022 (the "ESI Protocol"). ECF 146. The ESI Protocol contained configurations of appropriate search terms, document custodians, date ranges, and other relevant data points to be used in the collection process for each subset of information relevant to Defendants' alleged conduct. The parties undertook enormous effort in crafting this agreement to enable Rhode Island to meaningfully develop its claims without imposing an undue burden on Defendants. Judge Ryu entered the ESI Protocol on October 27, 2022. ECF 150.

3. Requests for Production of Documents

79. Documents related to the various aspects of Alphabet's data security and management and disclosure policies were critical evidence in this Litigation.

80. Rhode Island served three sets of document requests on Defendants on April 26, 2022, May 16, 2022, and June 3, 2022, respectively. Among other things, these requests sought documents concerning: (1) Defendants' affirmative defenses; (2) identification of witnesses with relevant information; (3) Alphabet's actions and policies regarding disclosures; (4) product changes related to user privacy and safety; (5) Alphabet's actions regarding the decision not to disclose the Three-Year Bug and shutdown Google+; and (6) the Privacy Bug Memo.

81. On May 26, 2022, Defendants served their Responses and Objections to Plaintiff's First Set of Requests for Production of Documents, objecting to every request, including on grounds of relevance, overbreadth, and privilege. Defendants refused to produce documents on the grounds of attorney-client privilege and work product protection in response to Document Request No. 3

which sought "The Legal and Policy Staff Memorandum and all documents related thereto." In response to all other requests, Defendants stated they "will meet and confer with Plaintiff regarding conducting a reasonable search that is proportional to the needs of the case in response to this Request."

82. On June 28, 2022, Defendants served their Corrected Responses and Objections to Rhode Island's Second Set of Requests for Production of Documents, objecting to every request, including on grounds of relevance, overbreadth, and privilege. In response to each request, Defendants stated they "will meet and confer with Plaintiff regarding conducting a reasonable search that is proportional to the needs of the case in response to this Request."

83. On July 5, 2022, Defendants served their Responses and Objections to Rhode Island's Third Set of Requests for Production of Documents, objecting to every request, including on grounds of relevance, overbreadth, and privilege. In response to each request, Defendants stated they "will meet and confer with Plaintiff regarding conducting a reasonable search that is proportional to the needs of the case in response to this Request."

84. Over the course of the first weeks of discovery, it became clear that gathering responsive documents from Defendants was going to be a challenge. Lead Counsel and Defendants exchanged dozens of emails and held several meet and confers regarding, among other things, the scope of discovery generally, Fed. R. Civ. P. 30(b)(6) depositions, depositions of defendants, including Pichai and Page, and Defendants' assertion of privilege over certain documents identified as responsive, leading to several discovery disputes being briefed before Judge Ryu.

85. On March 24, 2023, Rhode Island served its Fourth Set of Requests for Production of Documents. This request sought documents and communications concerning Alphabet's policies regarding litigation holds, the use of "history on" and "history off" chats and also sought documents produced in concurrent litigation that Alphabet was involved in.

86. On April 25, 2023, Defendants served their Responses and Objections to Rhode Island's Fourth Set of Requests for Production of Documents, objecting to every request, including on grounds of relevance, overbreadth, and privilege. In response to each request, Defendants stated

they "will meet and confer with Plaintiff regarding conducting a reasonable search that is proportional to the needs of the case in response to this Request."

87. Rhode Island served its Fifth, Sixth, and Seventh Set of Requests for Production of Documents on Defendants on August 2, 2023, August 4, 2023, and September 18, 2023, respectively. Among other things, these requests sought discovery concerning: (1) documents sufficient to identify the members of Alphabet's Privacy and Data Protection Office ("PDPO"); (2) discussions relevant to the allegations of the Complaint at Alphabet's "TGIF" meetings; (3) the basis for the assertions in Defendants' expert report of Anindya Ghose submitted with their opposition to Rhode Island's second motion to certify class; (4) A/B tests performed by Alphabet in the testing of their products; and (5) any documents and communications produced to the SEC, U.S. Attorney's Office for the Southern District of New York, or any other governmental agency or department regarding the facts and events detailed in the October 8, 2018 blog post and *Wall Street Journal* article.

88. Defendants served their Responses and Objections on September 1, 2023, September 5, 2023, and October 18, 2023, respectively. Defendants' objected to every request, including on grounds of relevance, overbreadth, privilege, burden, and cumulativeness. In response to each request, Defendants stated they "will meet and confer with Plaintiff regarding conducting a reasonable search that is proportional to the needs of the case in response to this Request."

89. After each request for production of documents was served and Defendants' responses and objections received, the parties met and conferred pursuant to Defendants' requirement that they would not conduct a reasonable search until after their self-imposed procedural hurdle. The parties engaged in various disputes that were not put before the Court, including regarding search terms and custodians for electronically-stored information. In each of those instances, Rhode Island endeavored to seek responsive materials while moving the Litigation toward a resolution.

90. In total, these requests sought 65 categories of documents and ultimately resulted in the production of over 250,000 pages. Given the number of defendants present in this Litigation, the necessary tailoring of specific requests to particular parties, and the sheer size of Alphabet

(making it difficult to identify individual custodians on certain issues), Rhode Island expended significant time and expense engaging in meet and confer efforts throughout discovery in attempt to resolve various issues, including negotiations regarding the proper scope of discovery, Defendants' objections and responses to requests, confidentiality designations, and the sufficiency of productions.

4. Discovery Dispute Motion Practice, Briefing Regarding the Scope of Discovery, and *Sua Sponte* Discovery Stay

a. Scheduling Depositions of Named Defendants

91. On April 22, 2022, Lead Counsel made its intention clear to depose Pichai and Page and offered to schedule their depositions well in advance to avoid conflicts. On May 10, 2022, in the parties' joint case management statement, Defendants made clear of their position that discovery should occur in stages, with only discovery relevant to class certification commencing first, previewing their position that the depositions of Pichai and Page should not occur. ECF 94. On May 11, 2022, Lead Counsel noticed the depositions of defendants Pichai and Page, as well as Alphabet employees Ben Smith and David Thacker. Lead Counsel engaged in several meet and confers with Defendants over the depositions of Pichai, Page, and Smith, but Defendants were unwilling to schedule their depositions. On June 17, 2022, the parties submitted a joint discovery letter brief on the issue to Judge White. ECF 101. Defendants argued that Pichai, Page, and Smith were protected from depositions under the so-called "apex doctrine." They argued that because Pichai, Page, and Smith are "apex deponents," Rhode Island had to first exhaust efforts to obtain relevant information from other sources before seeking their depositions. Defendants further argued that Pichai, Page, and Smith had no unique, first-hard knowledge of the facts of the case.

92. Rhode Island argued that: (1) the apex doctrine is a made-up doctrine that unjustifiably provides special treatment to those who least need it and is particularly inapt to named defendants in a securities fraud class action like this one where the Ninth Circuit had already determined that the Complaint sufficiently alleged that Page and Pichai were aware of the Three-Year Bug, the Privacy Bug, and the Privacy Bug Memo and decided not to disclose this information; (2) Page and Pichai were personally charged with perpetrating securities fraud, thus their states of

mind were directly in issue; and (3) no court had ever applied the apex doctrine to shield individual alleged perpetrator-defendants from being deposed in a §10(b) case.

93. After engaging in further meet and confers to no avail, pursuant to Judge Ryu's June 29, 2022 order dismissing without prejudice the joint discovery letter brief filed on June 17, 2022 (ECF 106), the parties filed another joint discovery letter brief on the topic of apex depositions on July 15, 2022. ECF 107. Defendants reiterated their position that depositions of Pichai, Page, Smith, and (now) Alphabet CFO, Ruth Porat, were premature before briefing Rhode Island's motion to certify class and that there were other means to obtain relevant information that Rhode Island had not exhausted. Rhode Island argued that Pichai and Page's own states of mind (scienter) were directly at issue in the case, Pichai and Page had first-hand knowledge of other critical issues like the scope of Google's data-security crisis and its response, and that Alphabet's executives should not be able to yield this "new form of 'sword-and-shield' injustice where 'senior controlling officers' use their unique positions of power to commit securities fraud, and then use the same positions to shield themselves from discovery and accountability." *Id.*

94. On August 11, 2022, Judge Ryu held a hearing on the pending discovery disputes regarding apex depositions and 30(b)(6) depositions. Judge Ryu denied the joint discovery letter brief regarding apex depositions without prejudice and took the unprecedented step of requiring Rhode Island to build a record by providing facts relevant to the apex deponents "in front of [Judge Ryu] with a sworn declaration."

95. On August 25, 2022, following additional meet and confer efforts, the parties submitted their joint discovery letter brief regarding apex depositions for a third time. ECF 133. Defendants reiterated their position that depositions of Page, Pichai, and Smith should not proceed because "non-apex discovery should occur first" and that they had no unique knowledge that could not be obtained from other sources. *Id.* Rhode Island reiterated that the so-called apex doctrine was a made-up doctrine that was antithetical to the bedrock principle that everyone is equal under the law, and it was particularly inappropriate here, where the Ninth Circuit had already determined the sufficiency of Rhode Island's allegations and Pichai, Page, and Smith were all personally

involved in the allegations and may have relevant information to which Rhode Island was entitled. *Id.*

96. On August 29, 2022, Judge White issued an order staying all discovery in the case to determine the scope of the case on remand from the Ninth Circuit. ECF 134. This *sua sponte* stay lasted approximately six months.

97. Following Judge White's order lifting the discovery stay (ECF 153), the parties again filed a joint discovery letter brief on their dispute concerning Rhode Island's depositions of Pichai, Page, Smith, and Porat on April 21, 2023. ECF 162. Defendants agreed to produce Ben Smith for a deposition with no restrictions and Porat for a deposition "for 2.5 hours on the topics of the 'product changes' and other drivers of the first-quarter 2019 revenue deceleration . . . . Plaintiff can seek leave of the Court for a second session . . . upon the necessary showing under the apex doctrine." *Id.* Defendants refused to produce Pichai and Page before substantial completion of document discovery in January 2024. *Id.* Rhode Island argued that there is no provision in Rule 26 regarding "apex depositions" and Defendants had not met their burden for a protective order under Rule 26(c). *Id.* Rhode Island also noted that Pichai and Page had direct knowledge about the allegations in the case and that "***most*** of the witnesses Page and Pichai have identified and reserved the right to call at trial regarding multiple critical subjects are supposed apex witnesses, ***including themselves***." *Id.* Rhode Island offered to agree to a deposition of Porat starting with a 3.5-hour deposition without artificial subject-matter limitations and subject to completing the remaining 3.5 hours upon justified request. *Id.*

98. On June 22, 2023, Judge Ryu held a hearing regarding the apex deposition dispute. ECF 175. At the hearing, Judge Ryu acknowledged that the apex doctrine was "sort of a caste system" that "do[es]n't feel entirely fair." ECF 177 at 8:18-19. Nevertheless, Judge Ryu applied it, granting defendants Page and Pichai an automatic protective despite no evidentiary showing whatsoever beyond their status as important people. In an order that followed, Judge Ryu ordered a 3-hour time limit for the deposition of Porat and a strict subject-matter limitation confined to questions related to her knowledge as to product changes and other drivers of the first quarter of 2019 revenue deceleration. *Id.* Judge Ryu denied Rhode Island's request to depose Porat regarding

the issue of Sarbanes-Oxley certifications she personally signed, finding that the present record did not sufficiently establish whether that discovery could be obtained from other sources. *Id.* Judge Ryu further ordered that Rhode Island could immediately take the depositions of Pichai and Page regarding their states of mind, but critically ordered the parties to further meet and confer on the topics and length of the Pichai and Page depositions, preventing Rhode Island from deposing the two principal defendants in this case without significant restrictions and hurdles that no Court had ever previously applied to the deposition of a named defendant in a case under the PSLRA. *Id.*

99. On July 6, 2023, Rhode Island moved for relief from Judge Ryu's June 22, 2023 order arguing that Judge Ryu failed to apply the legal standard required for a protective order under Rule 26(c). ECF 185. On July 20, 2023, Judge White denied Rhode Island's motion. ECF 187. This was two business days before Judge White found himself "disqualified" from a case over which he had presided for nearly five years, offering no further details or explanation. ECF 188.

100. On September 19, 2023, the parties filed another joint discovery letter brief regarding the topic of apex depositions. ECF 208. Rhode Island argued that Defendants' status as executives of a large company should not alone relieve them of their burden of proof to establish good cause under Rule 26(c)(1). *Id.* Defendants argued that they offered to produce Pichai for two hours and Page for 1.5 hours on the court-ordered topics and the parties should continue their meet and confer process. *Id.*

101. The parties reached a settlement agreement before this dispute could be decided.

b. Federal Rule of Civil Procedure 30(b)(6) Deposition

102. On June 23, 2022, Rhode Island filed a discovery letter brief regarding Alphabet's refusal to schedule and failure to appear for its noticed Rule 30(b)(6) deposition. ECF 104. Lead Counsel explained that Defendants refused to agree to file a joint discovery letter on the issue, so Lead Counsel filed its own letter. The dispute arose over weeks of attempting to schedule Alphabet's Rule 30(b)(6) deposition. Specifically, on April 26, 2022, Lead Counsel first noticed Alphabet's 30(b)(6) deposition, providing Alphabet with six topics to be covered. Alphabet refused to engage and on May 11, 2022, pursuant to Judge White's Standing Order, Rhode Island identified a date (June 9, 2022) and served the notice of deposition. After exchanges of emails and several

meet and confers on the topic, Alphabet refused to produce a witness to testify on the six topics identified by Lead Counsel. Rhode Island asked the court to impose sanctions under Rule 37 if Alphabet refused to produce a responsive witness within 14 days of the Court's order.

103. On June 24, 2022, the case was referred to Magistrate Judge Donna M. Ryu for discovery.

104. Alphabet responded to Rhode Island's discovery letter brief on June 24, 2022. ECF 105. Alphabet argued that Rhode Island failed to adequately negotiate the timing and scope of the noticed deposition, Alphabet is not obligated to produce witnesses on all topics on a single day, and sanctions should not be imposed.

105. On June 29, 2022, Judge Ryu denied without prejudice the pending apex doctrine and 30(b)(6) deposition disputes, noting that if any disputes remain after meaningful meet and confers, the parties may submit new stand-alone joint discovery letters on apex depositions and 30(b)(6) depositions. ECF 106. Judge Ryu further set out her procedures for responding to discovery disputes.

106. On July 15, 2022, following additional meet and confers, the parties filed a joint discovery letter brief again on the topic of Alphabet's 30(b)(6) deposition. ECF 108. Rhode Island argued that Alphabet refused to produce a responsive witness and were simply attempting to unilaterally limit the scope of discovery in the case. Rhode Island reiterated that Rule 37 sanctions must be imposed on Alphabet for failing to produce a witness. *Id.* Defendants argued that Rhode Island was attempting to expand the scope of discovery and Rule 37 sanctions were not warranted. *Id.*

107. On August 11, 2022, Judge Ryu held a hearing on the pending discovery disputes regarding apex depositions and 30(b)(6) depositions. Judge Ryu denied the joint discovery letter brief without prejudice and told the parties that a "fundamental scoping problem was sort of half buried in your letter and not fleshed out, and that's something that needs to get decided if you can't come to an agreement among yourselves."

108. Now a nearly four-month-old dispute, on August 25, 2022, following additional meet and confer efforts, the parties filed a joint discovery letter brief regarding 30(b)(6) depositions

for the third time. ECF 132. Rhode Island reiterated that the topics selected for a 30(b)(6) deposition directly tie to the allegations of the Consolidated Amended Complaint, which alleges that the most critical component of Alphabet's business is user trust, and that while "Defendants' data-privacy crisis may have started with Google+, [] the Complaint expressly alleges that [D]efendants' response transcended all products." *Id.* Rhode Island further offered to limit the scope of 30(b)(6) depositions to just four topics. *Id.* Defendants argued that the Consolidated Amended Complaint's allegations did not go beyond the Google+ product and that Rhode Island could not articulate a connection between requested discovery and its claims. *Id.* Defendants contended that "If Plaintiff Wants to Expand the Case Beyond Google+, It Must Seek Leave to Amend." *Id.*

c. Privilege Disputes

109. On July 22, 2022, Rhode Island filed a joint discovery letter brief regarding Defendants' claim of privilege over the Privacy Bug Memo. ECF 112. Rhode Island argued that Defendants produced a deficient privilege log that failed to: "(1) identify everyone who prepared and edited the [Privacy Bug] Memo; (2) identify who had access to or received the [Privacy Bug] Memo; (3) identify to whom the [Privacy Bug] Memo was sent; or (4) provide a sufficiently detailed description to enable the Court or Rhode Island to assess whether the [Privacy Bug] Memo was prepared primarily for business purposes (which appears to be the case, based on *The Wall Street Journal* article and the apparent lack of involvement of outside counsel) rather than a primarily legal purpose." *Id.* Rhode Island noted that despite not being able to come to an agreement after several meet and confers, "Defendants would rather continue their meet-and-confer charade than simply comply with the Court's privilege-log requirements." *Id.* Defendants argued that their privilege log was sufficient and Rhode Island failed to point to specific deficiencies in the privilege log.

110. On July 25, 2022, Judge Ryu denied the discovery letter brief without prejudice and ordered Defendants to provide an amended privilege log by July 29, 2022 that "fully complies with Judge Ryu's standing order." ECF 114. Judge Ryu further ordered the parties to continue to meet

and confer and file a new standalone joint letter by August 5, 2022 that attaches the amended privilege log. *Id.*

111. Rhode Island and Defendants filed another joint discovery letter brief on August 5, 2022 following further meet and confer efforts. ECF 115. Rhode Island argued that: (1) Defendants failed to identify all recipients of the Privacy Bug Memo, only identifying those who were furnished the document via Google Docs sharing; and (2) Defendant failed to log all previous versions of the Privacy Bug Memo and authors. *Id.* Defendants argued that their privilege log complied with Judge Ryu's standing order, providing the necessary information and Rhode Island was "using this manufactured dispute as a shortcut to seek substantive discovery." *Id.*

112. On August 29, 2022, following Judge White's order staying discovery in the case, Judge Ryu vacated the hearing over the disputed privilege log. ECF 135.

113. On September 22, 2023, the parties submitted a joint discovery letter brief regarding Defendants' assertion of attorney-client privilege over the Privacy Bug Memo. ECF 209. Rhode Island argued that attorney-client privilege does not apply because the Privacy Bug Memo was created primarily for a business purpose, and even if it was privileged, that privilege was waived by Defendants because they made clear that they would intend to rely on a reliance of counsel defense regarding why Defendants did not disclose the Three Year Bug. *Id.* Defendants argued that privilege applies because the Privacy Bug Memo was created to provide legal advice and Alphabet never put the Privacy Bug Memo's legal advice at issue in this case. *Id.*

114. The parties reached a settlement agreement before this dispute could be decided.

C. Briefing Concerning the Scope of Discovery and *Sua Sponte* Stay

115. Over the background of ongoing discovery disputes related to apex depositions, 30(b)(6) depositions, and privilege assertions, on August 18, 2022, Defendants filed a request for supplemental case management conference regarding the scope of the case. ECF 128. Defendants asserted that following Judge Ryu's comments at the August 11, 2022 hearing regarding the scope of the case, they sought a ruling from Judge White "confirming the scope of claims at issue in this case as being about Google+ and not any other Google product." *Id.* Defendants argued that the scope of the case should be limited to only the Google+ product.

116. The following day, Rhode Island filed its Opposition to Defendants' Request for an Advisory Opinion. ECF 129. Rhode Island argued that it is inappropriate for the Court to issue an order where "there is no issue formally before the Court that requires any sort of examination of the scope of the 34-page [Consolidated Amended] Complaint." *Id.* Rhode Island further pointed out that the scope of the Consolidated Amended Complaint went well beyond just Google+ and "transcended all products," as Alphabet made significant non-Google+ product privacy changes in response to the events described in the *Wall Street Journal* article. *Id.*

117. On August 29, 2022, Judge White stayed the entirety of discovery in the case to resolve "this Court's review of the matter on remand." ECF 134. Judge White ordered the parties to provide additional briefing "addressing the scope of the case upon remand that remains for this Court to decide." *Id.*

118. Rhode Island filed its brief per the Court's schedule on September 9, 2022. ECF 137. Rhode Island argued that the Ninth Circuit's opinion left virtually all aspects of the Consolidated Amended Complaint intact and, in any event, Rhode Island filed a motion to supplement the Consolidated Amended Complaint on September 8, 2022, which should moot the issue regarding the scope of the case. Further the question on remand from the Ninth Circuit was a narrow one: reconsidering Pichai and Page's liability under Section 20(a). Rhode Island also asserted that a Special Master would be valuable in this case to help get the Litigation on track. *Id.*

119. On September 23, 2022, Defendants filed their response, arguing that from the beginning this case was focused solely on Alphabet's decision not to disclose the Google+ bug and Rhode Island attempted to recast the Litigation as involving data privacy broadly across all Google products. ECF 140. Defendants further argued that Rhode Island's motion to supplement the Consolidated Amended Complaint does not broaden the scope of the case to include non-Google+ products and a Special Master was unnecessary in this case. *Id.*

120. Rhode Island filed its reply on September 30, 2022, arguing that Defendants failed to respond to the only question the Court posed: what is the scope of the case upon remand that remains for the Court to decide? ECF 144. Rhode Island further argued that Defendants ignored large swaths of the Consolidated Amended Complaint's allegations to come to the conclusion that

this Litigation is solely about Google+. *Id.* Rhode Island further reiterated the need for a Special Master to facility the just, speedy, and inexpensive disposition of the action. *Id.*

121. On February 28, 2023, Judge White granted Rhode Island's motion to supplement the Consolidated Amended Complaint and lifted the stay on discovery that had been pending for nearly six months. ECF 153.

D. Additional Discovery Efforts

122. Nothing about discovery was straightforward in this Litigation. Even what would normally be considered routine discovery of email and loose documents required Lead Counsel to confront novel technological and legal challenges. Alphabet uses the Google Suite for email and document creation and storage. The Google Suite is a cloud-based email and document system that is increasingly used in business today. These systems do not rely on attachments to emails, but more routinely uses hyperlinks to cloud-based documents. In fact, Google email requires hyperlinks to be used in lieu of attachments if the attachment is too large.

123. The use of cloud-based documents creates a novel discovery issue in terms of document collection and production. Unlike traditional attachments to email, cloud-based documents attached via hyperlink do not always automatically export along with the cover email upon collection. When applying search terms to email, the search terms will not automatically hit on a document that is hyperlinked within an email, which means missing out on relevant documents where search terms are only in the hyperlinked attachments. Compounding this issue, because there may be no automated way to reverse engineer which emails included hyperlinks to a relevant document found in an independent search of a Google Drive, there would be no way to determine who was sent a link to a relevant document and when or what commentary may have been included in a corresponding email. In addition, when hyperlinked documents are collected with the cover email, it may not be the version of the document that existed at the time the email was sent, even though that version and other earlier versions may still exist with the Google Drive. These are just some of the novel issues that Lead Counsel had to navigate when negotiating discovery with Alphabet. In doing so, Lead Counsel had to conduct extensive research on the available options

when collecting and producing documents from the Google Suite and consult with internal and external electronic discovery experts.

124. In this Litigation and other unrelated litigations, Alphabet used this practice of hyperlinking, rather than attaching, documents referenced in emails to its strategic advantage to limit its discovery obligations by vehemently resisting the production of hyperlinked documents in the same way that traditional attachments are produced.

125. Lead Counsel's diligent research and use of internal electronic discovery experts uncovered that Alphabet's position on hyperlinks ignored the availability of a tool – Metaspike's Forensic Email Collector – which vendors routinely use to collect Google based hyperlinked documents along with its cover email. In addition, Lead Counsel found that Alphabet's position was contrary to a discovery approach that Google had taken in an ongoing antitrust litigation where in a January 15, 2021 letter, Google's counsel represented that it was able to "conduct an automated search to identify all links within emails that are linked to shared G Suite documents (Google Docs, Google Sheets, and Google Slides), . . . Google will process and produce the documents corresponding with the email links as though they were separate documents. . . . [B]oth the parent document and linked-to-document would be produced with sufficient metadata to tie the documents together." Joint Status Report at 8-9, n.4, *United States v. Google LLC*, No. 1:20-cv-03010-APM (D.D.C. June 16, 2022). Lead Counsel also consulted with external electronic discovery experts to confirm its understanding of Alphabet's systems and available options.

126. Had Lead Counsel not had internal experts who understood the complicated electronic discovery issues and available solutions and did not have counsel with the sophistication to negotiate with Alphabet about discovery from a system that Alphabet itself created, Lead Counsel may have been unable to overcome the technological challenges and existing contrary case law on this issue and forced to merely accept Alphabet's position that hyperlinked documents should not be produced.

127. Being forced to accept emails or other communications without hyperlinked documents would be detrimental to Rhode Island's discovery efforts. This would be akin to accepting emails be produced without attachments. As with traditional attachments, hyperlinked

documents add crucial context to the email and vice versa. Failure to receive hyperlinked documents, along with the emails in which they were hyperlinked, would have rendered the production deficient and hampered Rhode Island's ability to fully understand and utilize the documents produced in discovery.

128. After receiving Alphabet's document production, it was also essential for Lead Counsel to develop a custom workflow to ensure that Alphabet had produced hyperlinked attachments in the agreed upon manner and identify any emails where hyperlinked documents were not produced or where additional versions of a document may be required. As one court recently recognized, "contemporaneous versions of hyperlinked documents can support an inference regarding 'who knew what, when.' An email message with a hyperlinked document may reflect a logical single communication of information at a specific point in time, even if the hyperlinked document is later edited. Thus, important evidence bearing on claims and defenses may be at stake, but the ESI containing that evidence is not readily available for production in the same manner that traditional email attachments could be produced." *In re Uber Techs., Inc. Passenger Sexual Assault Litig.*, 2024 WL 1772832, at *2 (N.D. Cal. Apr. 23, 2024). In early 2024, after Alphabet's production was complete, some of the issues presented by the use of hyperlinks was alleviated when Google changed its posture by altering its technology to allow hyperlinked documents to be collected along with their corresponding cover emails when using Google Vault, however, a third party application is still required to collect the version of the document that existed at the time the email was sent. *Id*. These changes, along with other advances sure to come, will allow future litigants to have less barriers to the production of relevant documents from companies who use Google email.

1. Review and Analysis of Documents Produced in Discovery

129. Ultimately, Defendants and 15 third parties produced the electronic equivalent of over 275,000 pages of documents. The size of the production in this case required expending significant time and expense on document hosting, storage, review and analysis. Lead Counsel employed state-of-the-art Relativity software, which enabled Lead Counsel to search, prioritize, sort, de-duplicate, categorize, highlight, annotate, and tag documents in preparation for mediation,

depositions, motions, summary judgment, and trial. Lead Counsel also employed artificial intelligence tools to make their review more efficient. Still, document review in this case was a massive undertaking. The sheer number of individuals and Alphabet departments involved as well as the complexity underlying Alphabet's business operations required attorneys and support staff to spend thousands of hours in Relativity to review documents, understand them, and then ultimately to identify relevant documents supporting key evidentiary issues. Furthermore, Lead Counsel also dedicated substantial time in its review to assessing the sufficiency of document production in addition to identifying integral non-party entities, which in turn helped Lead Counsel identify third parties to whom it would issue subpoenas.

2. Interrogatories and Requests for Admission

130. Rhode Island served interrogatories and requests for admission on Defendants during this Litigation to aid in the identification of relevant documents and to garner evidence in support of its claims. The topics of these interrogatories and requests for admission included the market efficiency of Alphabet stock and product changes undertaken by Alphabet during the 2018 calendar year.

3. Discovery Taken from Non-Parties

131. Lead Counsel undertook substantial efforts to obtain relevant evidence from non-parties, including those described below. In total, Rhode Island served 15 subpoenas for production on third parties located across the United States to obtain evidence needed to prepare this case for trial. Rhode Island uncovered evidence in the case from these 15 third parties.

4. Fact Depositions

132. During the course of fact discovery, Rhode Island took two fact depositions of David Thacker (Vice President of Product Management & User Experience at Alphabet) and Ruth Porat (CFO of Alphabet). Additional deposition notices were served to Ben Smith, Larry Page, Sundar Pichai, and Atanas Vlahov. Defendants either refused to produce those witness or depositions were scheduled to commence after the date upon which the parties reached a settlement agreement. Lead Counsel spent hundreds of hours preparing questions and identifying and analyzing documents to use in their examinations both at deposition and trial. At the time the settlement agreement was

reached, Lead Counsel was in the process of analyzing and identifying relevant documents and preparing for the depositions of at least a dozen other individuals, including all named defendants.

5. Defendants' Discovery

133. Over the course of the fact discovery period, Rhode Island provided thorough discovery responses. Rhode Island provided responses to 20 documents requests, affirmatively stating the full extent of its document production, and confirming (after its collection and production of over 160,000 pages of discovery) that it had produced all such materials so described that were locatable after it diligently searched all locations at which such materials might plausibly exist.

134. Rhode Island also responded in great detail to 18 interrogatories on topics that included, among others: (i) Rhode Island's transactions in Alphabet securities; (ii) the information upon which Rhode Island relied in its investment decisions; and (iii) the bases, facts, and statements relating to Rhode Island's contentions (*i.e.*, "contention interrogatories").

E. Experts

135. Rhode Island retained experts in the fields of statistics, valuations, and damages, each of whom worked a significant number of hours on this case analyzing the facts and preparing reports.

1. Professor Jonah B. Gelbach

136. Rhode Island retained Professor Gelbach, an economist and the Herman F. Selvin Professor of Law at the University of California Berkeley School of Law, to research, analyze, and provide expert opinions on issues relating to loss causation, price impact, and the statistical significance of the alleged stock drops. Professor Gelbach has researched and written extensively on the use of event studies in securities litigation. *See, e.g.*, Jill E. Fisch & Jonah B. Gelbach, *Power and Statistical Significance in Securities Fraud Litigation*, 11 Harv. Bus. L. Rev. 55 (2021); Andrew Baker & Jonah B. Gelbach, *Machine Learning and Predicted Returns for Event Studies in Securities Litigation*, 5 J. of L., Fin., & Acct. 231 (2020); Jonah B. Gelbach & Jenny R. Hawkins, *A Bayesian Approach to Event Studies for Securities Litigation*, 176 J. of Inst. & Theor. Econ. 86 (2020). Rhode Island utilized Professor Gelbach's expertise in these areas to support both of its motions for class certification. Professor Gelbach explained that he based his opinions on his

expertise, knowledge, and scholarship in the areas of statistical methods, event study econometrics, and securities litigation; a review of case documents and other relevant information; and after conducting various studies. This information, and an event study constructed by Professor Gelbach, formed the basis of his opinion that Alphabet stock exhibited declines for both classes of stock on October 8-10, 2018 and on April 30-May 1, 2019 that were statistically significant above the 95% level.

137. Professor Gelbach's novel event study played a crucial role in this Litigation. Specifically, in collaboration with Lead Counsel, and based on his extensive research into the field, Professor Gelbach developed an innovative event study to evaluate the statistical significance of the alleged stock drops. As Professor Gelbach noted in his report, "Professor Ferrell's report suffers from what can best be called contamination bias. This bias arises from including in his event-study-regression model stock indexes that include companies whose share prices are sensitive, in the same ways that are true for Alphabet, to news about future industry-wide profitability and regulatory risks of internet-related firms. Including these internet-related firms causes Professor Ferrell's event study model to treat industry-wide effects of Alphabet's bad news as if they instead reflected causes of Alphabet's price changes unrelated to Alphabet's bad privacy news. By including those internet-related firms in his stock index regressors, Professor Ferrell thereby erroneously treats any industry-wide effects of Alphabet's bad news as a basis for reducing the magnitude of the calculated abnormal returns for Alphabet." ECF 199-1 at 5.

138. To eliminate this contamination bias, Professor Gelbach created a "'Non-Internet Index' based on those firms in the S&P 500 that can reasonably be thought to be non-internet firms." *Id.* at 36. Professor Gelbach's index is comprised of over 300 firms that never had an industry code on the internet industry code list. *Id.* After performing his event study analysis using the Non-Internet Index, Professor Gelbach found that:

(a) "the evidence in favor of price impact over the three-day period of October 8-10, 2018 is strong enough to reject the Ferrell null hypothesis at conventional scholarly levels of statistical significance, including the 5% significance level that Professor Ferrell advocates" (*Id.* at 59); and

(b) "for both Alphabet's Class A stock and Class C stock, the Ferrell null hypothesis is overwhelmingly rejected in favor of price impact over the two-day period of April 30 and May 1, 2019." *Id.* at 68.

139. In the event the Court determined that the *Basic* presumption applied (as opposed to the *Affiliated Ute* presumption), Professor Gelbach's analysis and opinions would be crucial to responding to Defendants' attempts to rebut the price impact presumption.

140. Lead Counsel also extensively consulted Professor Gelbach on the issues of loss causation and damages. His analyses helped inform theories to pursue in discovery, alternative calculations of damages given factual proof, and the strengths and weaknesses of the parties' positions on these two elements. These analyses assisted Rhode Island in negotiating an appropriate settlement. In addition, Professor Gelbach played a vital role in the development and negotiation of the Plan of Allocation, which governs how claims will be calculated. Professor Gelbach's services in these proceedings were critical and contributed materially to the benefits achieved for the Settlement Class.

2. Professor Frank Partnoy

141. Lead Counsel retained Professor Frank Partnoy as a market efficiency and damages expert. Professor Partnoy is the Adrian A. Kragen Professor of Law at the UC Berkeley School of Law and he has written extensively on the fields of securities markets and regulation, including finance, accounting, and valuation. Rhode Island utilized Professor Partnoy's opinions on market efficiency and the ability to prove class-wide damages in its motion to certify class. Professor Partnoy explained that Alphabet's Class A and Class C stock traded in an efficient market and that damages in this case were capable of class-wide calculation under two methods: (1) the event study method; and (2) the DCF model.

142. Professor Partnoy's DCF model was critical to Rhode Island's argument that damages were capable of class-wide calculation without reliance on market price, which was the linchpin to establishing damages where a conventional approach would have shown none. Specifically, while event studies are often used to estimate damages on a class-wide basis, there was risk that the Court would accept Defendants' argument that an event study could not be used

to reliably measure class-wide damages (notwithstanding Professor Gelbach's analysis). In that event, Professor Partnoy's DCF model would be important to showing that class-wide damages could be calculated.

143. Professor Partnoy explained that "DCF analysis is well-established as the 'gold standard' in valuation," "[a]cademic acceptance of DCF analysis is widespread," and "[c]ourts and experts routinely rely on DCF analysis in numerous contexts, particularly when it is alleged, as in a securities class action, that market prices do not accurately represent 'true' values." ECF 166-2 at 11-12. "The DCF methodology involves two concepts, each of which is reflected in the price of a stock." *Id.* at 13. Those two concepts are:

(a) "First, a stock's price is based on expected future cash flows. Accordingly, the initial step using the DCF methodology is for experts to project those future cash flows, based on accounting information, industry estimates, internal corporate projections, banker and analyst valuations, or other sources. These projections are transparent: experts would create spreadsheets showing future cash flow estimates periodically into the future, along with the bases for these estimates." (*Id.*); and

(b) "The second step in the DCF analysis is to discount the expected future cash flows to obtain their present value. Discounting and present value are two common and reliable concepts in finance and are widely used by experts in valuing securities. These calculations also are transparent: experts would estimate the expected return on the stock, an appropriate cost of capital, and then apply this rate of return using a standard mathematical formula to calculate the present value of each expected future cash flow. The result would be the sum of those present values." *Id.*

144. Professor Partnoy further explained that "[i]n this case, experts could apply DCF analysis to assess the above three issues [(cash flow projections, terminal value estimates, and discount rate calculations)] as of particular dates, based on publicly available data as well as evidence obtained in this litigation, potentially including management, investor, and analyst assessments and projections." *Id.* at 15. As such, Professor Partnoy concluded that "like event study analysis, DCF analysis can address questions about confounding information, and take into

account negative non-fraud related information. Moreover, as with event study analysis, DCF analysis would be class-wide, meaning that it would not differ for individual members of the class." *Id.* at 18.

145. Professor Partnoy's opinion materially contributed to the benefits achieved for the Settlement Class.

3. Joseph R. Mason, Ph.D.

146. Lead Counsel retained Mr. Mason as a damages expert. Dr. Mason is a Professor of Finance at the Ourso School of Business, Louisiana State University, Fellow at the Wharton School, the University of Pennsylvania, and Senior Advisor at BVA Group LLC. Dr. Mason holds a Ph.D. and a M.S. in Economics from the University of Illinois at Urbana-Champaign. Rhode Island utilized Dr. Mason's opinion in support of its first motion to certify class. Dr. Mason opined that widely accepted financial and economic methods such as event studies and fundamental valuation methods can be used to arrive at damages for every member of the proposed Class using a common technique grounded in Rhode Island's theory of liability.

IV. LEAD COUNSEL'S APPLICATION FOR ATTORNEYS' FEES AND EXPENSES IS REASONABLE

A. Lead Counsel's Application for Attorneys' Fees and Expenses Is Reasonable

147. The Supreme Court has long recognized that "a litigant or a lawyer who recovers a common fund for the benefit of persons other than himself or his client is entitled to a reasonable attorney's fee from the fund as a whole." *Boeing Co. v. Van Gemert*, 444 U.S. 472, 478 (1980). In a common fund case, the district court can determine the amount of attorneys' fees to be drawn from the fund by employing a "percentage" method. *See Staton v. Boeing*, 327 F.3d 938, 968 (9th Cir. 2003) (citation omitted). The Ninth Circuit has established 25% of the common fund as a benchmark for attorneys' fees. *Id*. Lead Counsel committed more than 23,000 hours of work and incurred $1,540,059.57 in expenses, as detailed in my declaration (ECF 234-1) ("Robbins Geller Declaration"). Based on the extensive efforts on behalf of the Settlement Class, as described above, Lead Counsel is applying for compensation from the Settlement Fund on a percentage basis, and has requested a fee in the amount of $66,500,000, which is 19% of the Settlement Amount, plus

interest. To be sure, there was nothing "benchmark" about this case. Lead Counsel battled through roadblock after roadblock, including the full dismissal of all claims, appellate litigation all the way up to the Supreme Court, an unprecedented six-month stay of discovery, and Defendants' arguments that the case was worthless.

1. The Requested Fee Is Reasonable

148. There are several factors that suggest the fee requested is fair, reasonable, and adequate. First is the risk faced by Lead Counsel in pursuing this Litigation, who undertook representation of the Settlement Class on a wholly contingent basis, knowing that the Litigation could last for years, would require substantial attorney time and significant expenses, and provide no guarantee of compensation. Lead Counsel's assumption of this huge contingency-fee risk, and its unwavering tenacity in the face of numerous litigation challenges and risks, as detailed herein, strongly supports the reasonableness of the requested fee.

149. Lead Counsel committed over 23,000 hours of attorney, accountant, and paraprofessional time and incurred $1,540,059.57 in expenses in the prosecution of the Litigation, as set forth in the Robbins Geller Declaration. Lead Counsel fully assumed the risk of an unsuccessful result. Lead Counsel has received no compensation for its services during the course of the Litigation and has incurred very significant expenses in litigating for the benefit of the Settlement Class. Any fees or expenses awarded to Lead Counsel have always been at risk and are completely contingent on the result achieved. Because the fee to be awarded in this matter is entirely contingent, the only certainty from the outset was that there would be no fee without a successful result, and that such a result would be realized only after a lengthy and difficult effort.

150. Lead Counsel took on this contingency risk in the face of determined opposition. Alphabet is one of the largest, most powerful, and most tech-savvy companies in the world. Lead Counsel understood that obtaining any positive outcome from such an adversary would be a herculean task. Alphabet put its enormous resources to work by employing three of the highest regarded defense firms in the country and/or locally: (1) Wilson Sonsini Goodrich & Rosati, P.C.; (2) Freshfields Bruckhaus Deringer US LLP; and (3) Swanson & McNamara LLP. For briefing before the Supreme Court, Alphabet brought in Supreme Court specialists, Hogan Lovells, led by

Neal Katyal. And it was not just Alphabet's arguments that Lead Counsel had to respond to. As detailed above, amicus briefs were filed at the Supreme Court supporting Alphabet's position by the Chamber of Commerce of the United States of America, the Securities Industry and Financial Markets Association, Business Roundtable, and Washington Legal Foundation. At class certification, Professor Joseph A. Grundfest attempted to file an amicus brief in support of Alphabet, but Lead Counsel successfully argued the brief was barred by Local Rule 7-3(d).

151. Lead Counsel's efforts on appeal have had a lasting impact. In the three years since the Ninth Circuit first issued its opinion in this case reversing the complete dismissal, it has racked up 425 "Citing References" on Westlaw, including in 70 opinions issued by federal courts across the country and eight Courts of Appeal decisions (including in opinions of three circuits other than the Ninth Circuit). And in December 2023, the Ninth Circuit heavily relied on its opinion in this case to reverse the complete dismissal of claims brought by investors in Facebook. Specifically, the Ninth Circuit found that "[a]s in *In re Alphabet*, the shareholders here adequately pleaded falsity as to the statements in Facebook's 2016 10-K that represented the risk of third parties improperly accessing and using Facebook users' data as purely hypothetical." *In re Facebook, Inc. Sec. Litig.*, 87 F.4th 934, 948-49 (9th Cir. 2003).[4]

[4] "Our recent decision in *In re Alphabet* is instructive. We held that falsity allegations were sufficient to survive a motion to dismiss when the complaint plausibly alleged that a company's SEC filings warned that risks "could" occur when, in fact, those risks had already materialized. *In re Alphabet*, 1 F.4th at 702-05. This juxtaposition of a "could occur" situation with the fact that the risk had materialized mirrors the allegations in the Facebook scenario. In its 2017 Form 10-K, Alphabet warned of the risk that public concerns about its privacy and security practices "could" harm its reputation and operating results. *Id.* at 694. The following year, Alphabet discovered a privacy bug that had threatened thousands of users' personal data for three years. *Id.* at 695. Nonetheless, in its April and July 2018 Form 10-Q filings, Alphabet repeated the 2017 statement that public concern about its privacy and security "could" cause harm. *Id.* at 696. In the 10-Qs, Alphabet also stated that there had "been no material changes" to its "risk factors" since the 2017 10-K. *Id.* Although news of the privacy bug had not become public at the time of the 10-Qs, we reasoned that the risks of harm to Alphabet "ripened into actual harm" when Alphabet employees discovered the privacy bug and the "new risk that this discovery would become public." *Id.* at 703. The plaintiffs thus "plausibly allege[d] that Alphabet's warning in each Form 10-Q of risks that 'could' or 'may' occur [was] misleading to a reasonable investor when Alphabet knew that those risks had materialized." *Id.* at 704.

As in *In re Alphabet*, the shareholders here adequately pleaded falsity as to the statements in Facebook's 2016 10-K that represented the risk of third parties improperly accessing and using Facebook users' data as purely hypothetical. The shareholders pleaded with particularity that Facebook employees flagged Cambridge Analytica in September 2015 for potentially violating

152. Even at the time, the importance of the appeal was understood by defense firms. Indeed, major defense firms prepared client memoranda discussing the Ninth Circuit's opinion and recognized that the "Ninth Circuit Decision Highlights Importance of Updating Risk Factors to Address Material Developments, including those relating to Cybersecurity Risks." *See* https://www.whitecase.com/insight-alert/time-revisit-risk-factors-periodic-reports (White & Case discussing the case) (accessed September 19, 2024); *see also* https://www.davispolk.com/insights/client-update/ninth-circuit-revives-alphabet-securities-fraud-lawsuit-undisclosed-social (DavisPolk) (accessed September 19, 2024); https://sle.cooley.com/2021/07/06/hypothetical-risk-factors-misleading/ (Cooley) (accessed September 19, 2024); https://www.mofo.com/resources/insights/210622-de-risking-your-risk-disclosures (Morrison Foerster) (accessed September 19, 2024). Thus, the benefits provided by Lead Counsel in this case will continue to inure in the future to investors claiming they were harmed by securities fraud.

153. I have personally conducted and supervised scores of trials, and I am confident that our prosecution team here was well on the way to building a compelling case for trial. Defendants' counsel also included experienced trial lawyers, and I have no doubt that their team would have been a formidable foe at trial. This raised Lead Counsel's risk, and there is only a small pool of lawyers who could credibly meet this challenge at trial. I believe the amount of this Settlement demonstrates that Defendants accurately viewed our prosecution team as being among that select group of plaintiffs' lawyers. Nevertheless, a 19% fee award is well below the benchmark for fees in the Ninth Circuit. This below-market rate is a product of Rhode Island's negotiation of its retainer agreement with Robbins Geller.

Facebook's terms, that Kogan taught Facebook in November 2015 about the dataset Cambridge Analytica had compiled, and that a Facebook executive told Cambridge Analytica in December 2015 that the firm had violated Facebook's user data policies. The shareholders also alleged that after Facebook learned in June 2016 that Cambridge Analytica lied in December 2015 about deleting the data derived from Facebook "likes," Cambridge Analytica's chief executive refused to certify that the data had actually been deleted. These allegations, if true, more than support the claim that Facebook was aware of Cambridge Analytica's misconduct before February 2017, so Facebook's statements about risk management "directly contradict[ed]" what the company knew when it filed its 2016 10-K with the SEC. *Glazer II*, 63 F.4th at 764." *Id.*

154. The attorneys' fees sought here are also appropriate if viewed as a multiple of lodestar. The schedules attached as Exhibits A and B to the Robbins Geller Declaration summarize the total time of partners, attorneys, and professional support staff of my firm who were involved in this Litigation, based on their current billing rates. The total number of hours expended on this Litigation by Lead Counsel is 23,026.30 hours. The resulting lodestar is $14,514,240.00, representing a multiplier of approximately 4.58 for the $66,500,000 requested fee. The lodestar cross-check supports the requested fee.

2. The Requested Litigation Expenses Is Fair and Reasonable

155. As detailed in the attached Exhibit C to the Robbins Geller Declaration, Lead Counsel seeks a total of $1,540,059.57 in expenses in connection with the prosecution of this Litigation. These expenses were reasonably and actually incurred by Lead Counsel in connection with commencing and prosecuting the claims against Defendants.

156. From the beginning of the case, Lead Counsel was aware that it might not recover any of its expenses, and, at the very least, would not recover anything until the Litigation was successfully resolved. Lead Counsel also understood that, even if the case was ultimately successful, an award of expenses would not compensate it for the lost use of funds advanced while this Litigation was ongoing – basically an interest-free, no-recourse loan to the Class. Therefore, Lead Counsel was motivated to, and did, take steps to minimize expenses wherever practicable without jeopardizing the vigorous and efficient prosecution of the case.

157. The expenses for which Lead Counsel is seeking payment are detailed in Exhibit C to the Robbins Geller Declaration, which identifies the specific category of expense, *e.g.*, expert fees, travel costs, document management, and other costs actually incurred. As set forth therein, these expenses and charges are reflected on the books and records maintained by Robbins Geller, and are prepared from receipts, expense vouchers, check records, and other documents, and are an accurate record of the expenses.

158. A large portion of the expenses for which payment is sought were incurred for professional expert fees. Of the total amount of expenses, $1,335,158.93, was expended on experts in the areas of market efficiency, price impact, damages, and to assist with the Plan of Allocation.

The expertise and assistance provided by these experts was critical to the prosecution and successful resolution of this Litigation.

159. In addition, Lead Counsel was required to travel in connection with prosecuting and mediating this matter, and thus incurred the related costs of travel tickets, meals, and lodging. Included in the expense request is $4,466.55 for out-of-town travel expenses necessarily incurred for the prosecution of this Litigation. Robbins Geller Decl., Ex. E.

160. The other expenses for which payment is sought are the types of expenses that are necessarily incurred in litigation and routinely charged to clients billed by the hour. These expenses include, among others, online legal and financial research and filing fees.

161. All of Lead Counsel's litigation expenses for which payment is sought were necessary to the successful prosecution and resolution of the claims against Defendants. Rhode Island has approved Lead Counsel's request for payment of expenses. In addition, the Notice apprised Settlement Class Members that Lead Counsel would seek payment of litigation expenses not to exceed $1,750,000, which is less than 1% of the Settlement Amount. To date, there are no objections to the request for payment of expenses.

162. In view of the complex nature of the Litigation, the Litigation expenses were incurred were reasonable and necessary to pursue the interests of the Settlement Class. Accordingly, Lead Counsel respectfully submits that the expenses are reasonable in amount and should be paid in full.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on September 26, 2024, at San Diego, California.

JASON A. FORGE

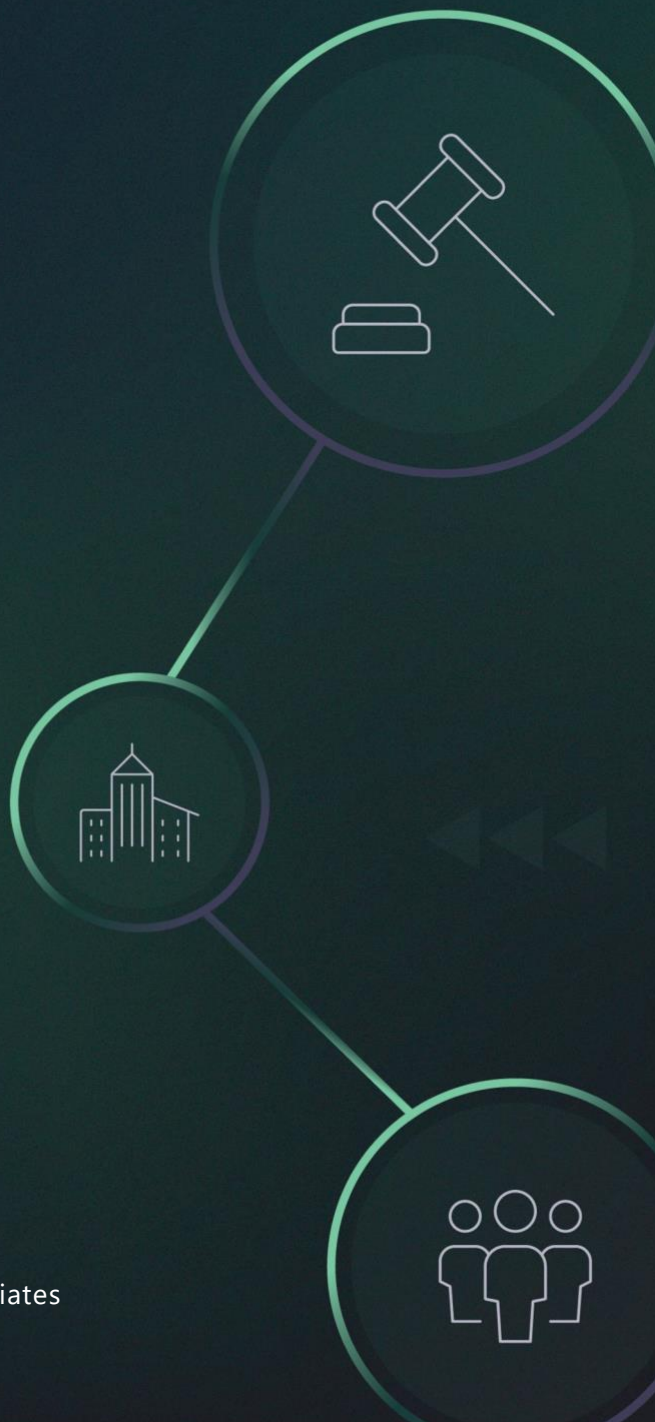
EXHIBIT A

ISS SCAS
SECURITIES CLASS ACTION SERVICES

THE TOP 100

U.S. CLASS ACTION SETTLEMENTS OF ALL-TIME

AS OF DECEMBER 31, 2023



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EXECUTIVE SUMMARY

2023 delivered a banner year for investor recoveries. The $7.9 billion in settlement proceeds across the globe was the highest total in the past five years.[1] Recorded settlement funds in 2023 surpassed last year's robust year by approximately $600 million.

In the U.S. alone, $5.8 billion was secured in securities-related class action settlements[2] for eligible class members in 2023, up 18% from 2022. ISS Securities Class Action Services ("ISS SCAS") verified 127 approved monetary securities-related class action settlements in the United States in 2023. While the number of approved settlements decreased by 10% from last year, the average value of the settlement increased significantly to $45.4 million or by 18%.

The record year was driven in part by thirteen mega settlements (equal to or greater than $100 million), which amounted to more than $4.4 billion for investors. For the first time since 2020, four settlements in the calendar year delivered significant enough value to be included within this Top 100 publication of the largest U.S. settlements of all-time. These four settlements in the aggregate amounted to $3.4 billion in shareholder recoveries or over 59% of the total value from all U.S. class action settlements in 2023.

These four class action resolutions include:

- **Wells Fargo – $1 Billion**: The $1 billion settlement against Wells Fargo & Co. resolves allegations that the bank concealed its inability to clean up its act in the wake of years of scandal. In 2018 and 2019, Wells Fargo is alleged to have repeatedly told investors that it was implementing governance reforms imposed by federal regulators after a decades-long history of "reckless" and "unsound" practices. In reality, however, Wells Fargo's compliance overhaul allegedly failed to get off the ground and was nowhere near meeting the federal regulators' requirements.

- **Dell – $1 Billion:** The $1 billion settlement with shareholders of Dell Technologies Inc. resolves allegations that they were short-changed billions of dollars for their Class V stock in connection with a 2018 transaction that turned Dell into a public company. In the asserted transaction valued at $24 billion, Dell's controlling shareholders—Michael Dell, Egon Durban, and the private equity firm Silver Lake—allegedly expropriated $10.7 billion from public Class V shareholders by forcing them to convert their shares into cash or privately held shares of Class C common stock at an unfair price.

[1] This figure includes shareholder-related class actions across the globe, as well as investor-related antitrust settlements and SEC fair funds.
[2] This figure excludes antitrust settlements, SEC fair funds and settlements outside the United States.

- **Kraft Heinz – $450 Million:** The $450 million settlement against Kraft Heinz Co. resolves allegations that the company misled investors about cost-savings following the 2015 merger that created the company. For years following the merger, 3G Capital Partners and Kraft purportedly touted $1.5 billion in cost-savings to the market, reiterating that they were committed to sustainable cost-cutting and brand investment. However, there allegedly were fewer savings to be had, and Kraft Heinz had instead implemented extreme cost-cutting measures that decimated its supply chain and innovation. This allegedly led to a massive $15.4 billion impairment write-down in 2019.

- **Wells Fargo - $300 Million:** This settlement against Wells Fargo resolves allegations that the bank hid from investors that it was unnecessarily charging thousands of customers for auto-collision protection insurance. The practices allegedly pushed approximately 274,000 of its customers into delinquency and resulted in 27,000 vehicle repossessions. The complaint alleges that Wells Fargo was aware of the illicit practices by 2016 but concealed these issues from investors for more than a year.

Of the 127 U.S. settlements in 2023, 96 cases received judgment in federal courts amounting to $3.9 billion, while cases that received judgment in state courts amounted to $1.9 billion. There was a significant rise in the value of state court settlements in 2023, as the $1.9 billion total in state court is the highest recorded by ISS SCAS in a calendar year.

In reviewing the average length of litigation, the average time it took for the settlement to be reached was up over last year. The 127 settlements averaged 3.8 years from the initial filed complaint to final approval of the settlement, compared to 3.65 years in 2022. However, on a case-by-case basis, the time it took to reach resolution often varied widely.

NUMBER OF SETTLEMENTS	DOLLAR VALUE OF SETTLEMENTS	AVERAGE SETTLEMENT VALUE	AVERAGE LIFECYCLE
127	$5,852,385,745	$45,212,139	3.8 Years

ISS SCAS also identified the following insights into the 127 settlements during 2023:

- 33 class action complaints alleged stock sales by company insiders.
- 18 alleged violations of Generally Accepted Accounting Principles ("GAAP").
- 10 companies allegedly restated their financials.
- 29 alleged violations of Section 11 of the Securities Act of 1933 and 85 alleged violations of Section 10(b) under the Securities Exchange Act of 1934.
- 12 of the 85 cases concurrently asserted Section 11 and 10(b) claims.
- 17 companies are (or were) listed in the S&P 500 index, representing $2.8 billion in aggregate settlement value.

In addition to the significant settlements, 2023 was a robust year for disbursements, that is the funds distributed to eligible investors. Class action settlements representing $6.5 billion in aggregate value made initial disbursements in 2023 across the globe ($4.9 billion in the US). Both the global and U.S.

figures are the highest recorded in a calendar year since 2019, where the $3 billion Petrobras settlement initially disbursed.[3] Notable disbursements in 2023 include the $1.6 billion global Steinhoff settlement and the $1.2 billion settlement with Valeant Pharmaceuticals.

Looking ahead, ISS SCAS expects that 2024 will continue to deliver meaningful shareholder recoveries. A few significant settlements have already been announced and await court approval including: Rite Aid ($192.5 million) and Envision ($177.5 million). In addition, a $612.4 million jury verdict against the Federal Housing Finance Agency was secured on behalf of Fannie Mae and Freddie Mac shareholders in September 2023. There are also several noteworthy settlements that may be disbursed back to investors in 2024, including the $809.5 million Twitter settlement and the $200 million SEC fair fund on behalf of shareholders of General Electric Company.

As with all of this continued activity within the securities litigation landscape, institutional investors and members of the financial and legal community can count on ISS Securities Class Action Services to continue to monitor these developments and/or manage the claim filing process.

# # # # #

[3] Disbursements generally take 16-to-18 months on average from the claim deadline to make their way back to investors.

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THE TOP 100 SETTLEMENTS

RANK	COMPANY NAME	COURT	SETTLEMENT YEAR	TOTAL SETTLEMENT AMOUNT
1	Enron Corp.	S.D. Tex.	2010	$7,242,000,000
2	WorldCom, Inc.	S.D.N.Y.	2012	$6,194,100,714
3	Cendant Corp.	D. N.J.	2000	$3,319,350,000
4	Tyco International, Ltd.	D. N.H.	2007	$3,200,000,000
5	Petroleo Brasileiro S.A. - Petrobras	S.D.N.Y.	2018	$3,000,000,000
6	AOL Time Warner, Inc.	S.D.N.Y.	2006	$2,500,000,000
7	Bank of America Corporation	S.D.N.Y.	2013	$2,425,000,000
8	Household International, Inc.	N.D. Ill.	2016	$1,575,000,000
9	Valeant Pharmaceuticals International, Inc.	D. N.J.	2021	$1,210,000,000
10	Nortel Networks Corp.	S.D.N.Y.	2006	$1,142,775,308
11	Royal Ahold, N.V.	D. Md.	2006	$1,100,000,000
12	Nortel Networks Corp.	S.D.N.Y.	2006	$1,074,265,298
13	Merck & Co., Inc.	D. N.J.	2016	$1,062,000,000
14	McKesson HBOC Inc.	N.D. Cal.	2013	$1,052,000,000
15	American Realty Capital Properties, Inc.	S.D.N.Y.	2020	$1,025,000,000
16	American International Group, Inc.	S.D.N.Y.	2013	$1,009,500,000
17	Wells Fargo & Company	S.D.N.Y.	2023	$1,000,000,000
17	Dell Technologies, Inc.	Del. Chancery Court	2023	$1,000,000,000
19	American International Group, Inc.	S.D.N.Y.	2015	$970,500,000
20	UnitedHealth Group, Inc.	D. Minn.	2009	$925,500,000
21	Twitter, Inc.	N.D. Cal.	2022	$809,500,000
22	HealthSouth Corp.	N.D. Ala.	2010	$804,500,000
23	Xerox Corp.	D. Conn.	2009	$750,000,000
24	Lehman Brothers Holdings, Inc.	S.D.N.Y.	2014	$735,218,000

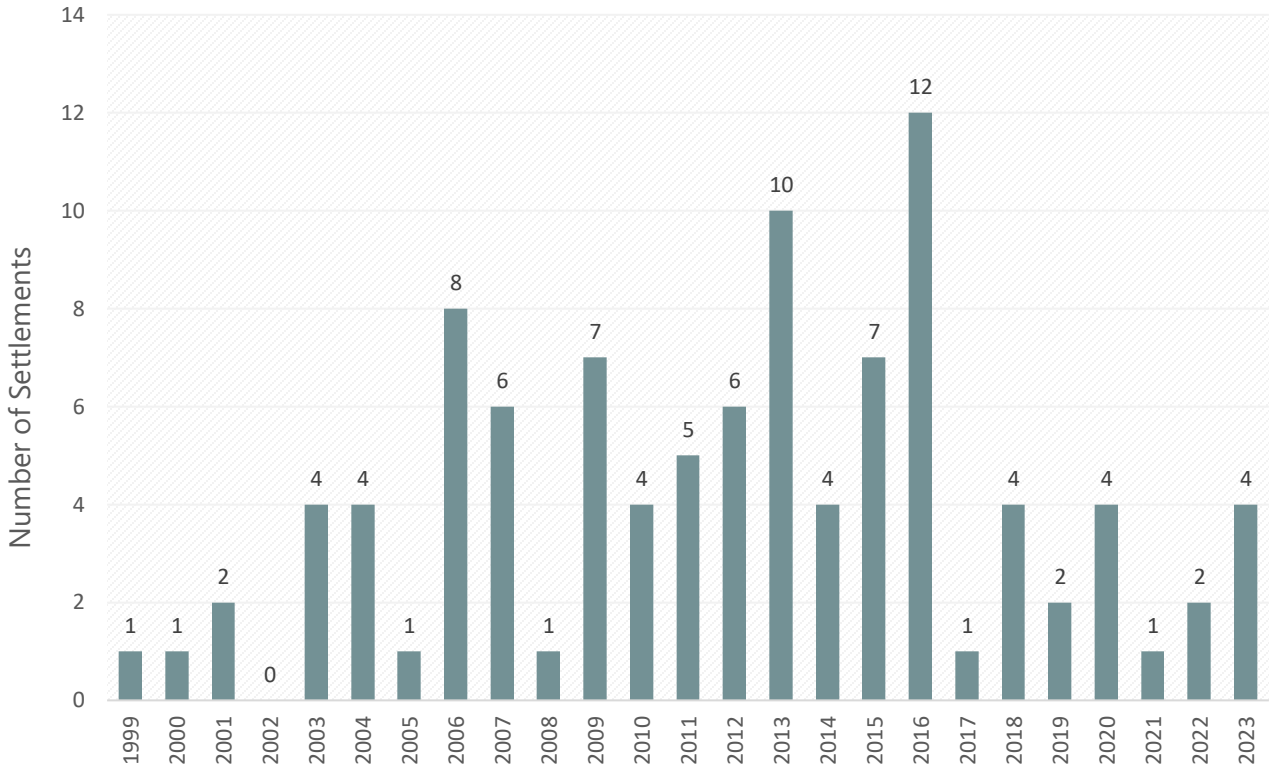
25	Citigroup Bonds	S.D.N.Y.	2013	$730,000,000
26	Lucent Technologies, Inc.	D. N.J.	2003	$667,000,000
27	Wachovia Preferred Securities and Bond/Notes	S.D.N.Y.	2011	$627,000,000
28	Countrywide Financial Corp.	C.D. Cal.	2011	$624,000,000
29	Cardinal Health, Inc.	S.D. Ohio	2007	$600,000,000
30	Citigroup, Inc.	S.D.N.Y.	2013	$590,000,000
31	IPO Securities Litigation (Master Case)	S.D.N.Y.	2012	$585,999,996
32	Bear Stearns Mortgage Pass-Through Certificates	S.D.N.Y.	2015	$500,000,000
32	Countrywide Financial Corp.	C.D. Cal.	2013	$500,000,000
34	BankAmerica Corp.	E.D. Mo.	2004	$490,000,000
35	Pfizer, Inc.	S.D.N.Y.	2016	$486,000,000
36	Wells Fargo & Company	N.D. Cal.	2018	$480,000,000
37	Adelphia Communications Corp.	S.D.N.Y.	2013	$478,725,000
38	Merrill Lynch & Co., Inc.	S.D.N.Y.	2009	$475,000,000
39	Dynegy Inc.	S.D. Tex.	2005	$474,050,000
40	Schering-Plough Corp.	D. N.J.	2013	$473,000,000
41	Raytheon Company	D. Mass.	2004	$460,000,000
42	Waste Management Inc.	S.D. Tex.	2003	$457,000,000
43	The Kraft Heinz Company	N.D. Ill.	2023	$450,000,000
44	Global Crossing, Ltd.	S.D.N.Y.	2007	$447,800,000
45	Qwest Communications International, Inc.	D. Colo.	2009	$445,000,000
46	Teva Pharmaceutical Industries Limited	D. Conn.	2022	$420,000,000
47	Federal Home Loan Mortgage Corp. (Freddie Mac)	S.D.N.Y.	2006	$410,000,000
48	Marsh & McLennan Companies, Inc.	S.D.N.Y.	2009	$400,000,000
48	Pfizer, Inc.	S.D.N.Y.	2015	$400,000,000
50	Cobalt International Energy, Inc.	S.D. Tex.	2019	$389,600,000
51	J.P. Morgan Acceptance Corp. I (Mortgage Pass-Through Certificates)	S.D.N.Y.	2015	$388,000,000

52	Cendant Corp. (PRIDES)	D. N.J.	2006	$374,000,000
53	Refco, Inc.	S.D.N.Y.	2011	$358,300,000
54	First Solar, Inc.	D. Ariz.	2020	$350,000,000
55	IndyMac Mortgage Pass-Through Certificates	S.D.N.Y.	2015	$346,000,000
56	RALI Mortgage (Asset-Backed Pass-Through Certificates)	S.D.N.Y.	2015	$335,000,000
56	Bank of America Corporation (MERS and MBS)	S.D.N.Y.	2016	$335,000,000
58	Rite Aid Corp.	E.D.Pa.	2003	$319,580,000
59	Merrill Lynch Mortgage Investors, Inc. (Mortgage Pass-Through Certificates)	S.D.N.Y.	2012	$315,000,000
60	Williams Companies, Inc.	N.D. Ok.	2007	$311,000,000
61	Caremark, Rx, Inc. f/k/a MedPartners, Inc.	Alabama Circuit Court	2016	$310,000,000
62	General Motors Corp.	E.D. Mich.	2009	$303,000,000
63	Oxford Health Plans Inc.	S.D.N.Y.	2003	$300,000,000
63	DaimlerChrysler AG	D. Del.	2004	$300,000,000
63	Bristol-Myers Squibb Co.	S.D.N.Y.	2004	$300,000,000
63	General Motors Company	E.D. Mich.	2016	$300,000,000
63	Wells Fargo & Company	N.D. Cal.	2023	$300,000,000
68	Bear Stearns Companies, Inc.	S.D.N.Y.	2012	$294,900,000
69	El Paso Corporation	S.D. Tex.	2007	$285,000,000
70	Tenet Healthcare Corp.	C.D. Cal.	2008	$281,500,000
71	J.P. Morgan Acceptance Corp. I (Mortgage Pass-Through Certificates)	E.D.N.Y.	2014	$280,000,000
71	BNY Mellon, N.A.	E.D. OK.	2012	$280,000,000
73	HarborView Mortgage Loan Trust	S.D.N.Y.	2014	$275,000,000
73	Activision Blizzard, Inc.	Del Chancery Court	2015	$275,000,000
75	GS Mortgage Securities Corp.	S.D.N.Y.	2016	$272,000,000
76	Massey Energy Company	S.D. Va.	2014	$265,000,000
77	3Com Corp.	N.D. Cal.	2001	$259,000,000

78	Allergan, Inc.	C.D. Cal.	2018	$250,000,000
78	Alibaba Group Holding Limited	S.D.N.Y.	2019	$250,000,000
80	Signet Jewelers Limited	S.D.N.Y.	2020	$240,000,000
81	Bernard L. Madoff Investment Securities LLC (Greenwich/Fairfield)	S.D.N.Y.	2016	$235,250,000
82	Charles Schwab & Co., Inc. (Schwab YieldPlus Fund)	N.D. Cal.	2011	$235,000,000
83	MF Global Holdings Ltd.	S.D.N.Y.	2016	$234,257,828
84	Comverse Technology, Inc.	E.D.N.Y.	2010	$225,000,000
85	Waste Management Inc.	N.D. Ill.	1999	$220,000,000
86	Bernard L. Madoff Investment Securities LLC (Beacon Associates LLC I and II)	S.D.N.Y.	2013	$219,857,694
87	Genworth Financial, Inc.	E.D. Va.	2016	$219,000,000
88	Washington Mutual, Inc.	W.D. Wash.	2016	$216,750,000
89	Sears, Roebuck & Co.	N.D. Ill.	2006	$215,000,000
89	Merck & Co., Inc.	D. N.J.	2013	$215,000,000
89	HCA Holdings, Inc.	M.D. Tenn.	2016	$215,000,000
92	Salix Pharmaceuticals, Ltd.	S.D.N.Y.	2017	$210,000,000
92	Wilmington Trust Corporation	D. Del.	2018	$210,000,000
94	The Mills Corp.	E.D. Va.	2009	$202,750,000
95	CMS Energy Corp.	E.D. Mich.	2007	$200,000,000
95	Kinder Morgan, Inc.	Kansas District Court	2010	$200,000,000
95	Motorola, Inc.	N.D. Ill.	2012	$200,000,000
95	WellCare Health Plans, Inc.	M.D. Fla.	2011	$200,000,000
99	Safety-Kleen Corp.	D. S.C.	2006	$197,622,944
100	MicroStrategy Inc.	E.D. Va.	2001	$192,500,000
100	SCANA Corporation	D.S.C	2020	$192,500,000

The data herein was prepared by SCAS' research and legal experts via ISS SCAS's fully transparent client platform, RecoverMax, available at https://recovermax.issgovernance.com/recovermax/

NUMBER OF SETTLEMENTS BY YEAR IN THE TOP 100



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TOP 50 SEC DISGORGEMENTS

RANK	SETTLEMENT NAME	SETTLEMENT YEAR	TOTAL SETTLEMENT AMOUNT
1	Stanford International Bank Ltd.	2023	$2,067,080,761
2	American International Group, Inc.	2008	$800,000,000
3	WorldCom, Inc.	2003	$750,000,000
4	Wyeth/Elan Corporation, plc	2016	$601,832,697
5	BP p.l.c.	2012	$525,000,000
6	Wells Fargo & Company	2020	$500,000,000
7	GTV Media Group, Inc.	2021	$455,439,194
8	Enron Corp.	2008	$450,000,000
9	Banc of America Capital Management, LLC	2007	$375,000,000
10	Federal National Mortgage Association	2007	$350,000,001
11	Invesco Funds	2008	$325,000,000
12	Time Warner Inc.	2005	$308,000,000
13	Citigroup Global Markets Inc.	2017	$287,550,000
14	Morgan Stanley & Co. LLC	2014	$275,000,000
15	Prudential Securities	2010	$270,000,000
16	Qwest Communications International Inc.	2006	$252,869,388
17	Alliance Capital Management L.P.	2008	$250,000,000
17	PBHG Mutual Funds	2004	$250,000,000
17	Bear Stearns	2008	$250,000,000
20	NYSE Specialist Firms	2004	$247,557,023
21	Jay Peak Receivership Entities	2019	$236,834,964
22	Massachusetts Financial Services Co.	2007	$225,629,143
23	J.P. Morgan Securities LLC	2017	$222,415,536
24	The Boeing Company (2022) (SEC Fair Fund)	2022	$201,000,000
25	JPMorgan Chase & Co.	2015	$200,000,000
25	General Electric Company	2020	$200,000,000
27	Computer Sciences Corporation	2015	$190,948,984

RANK	SETTLEMENT NAME	SETTLEMENT YEAR	TOTAL SETTLEMENT AMOUNT
28	Millennium Partners, L.P.	2007	$180,575,005
29	ASTA/MAT and Falcon Strategies Funds (SEC Fair Fund)	2015	$179,562,328
30	Soundview Home Loan Trust 2007-OPT1	2013	$153,754,774
31	Putnam Investment Management, LLC	2007	$153,524,387
32	Weatherford International, plc	2016	$152,204,174
33	Bristol-Myers Squibb Co.	2004	$150,000,001
33	Bank of America Corporation	2010	$150,000,001
35	Strong Capital Management, Inc.	2009	$140,750,000
36	Columbia Funds	2007	$140,000,000
37	American International Group, Inc.	2004	$126,366,000
38	Canadian Imperial Holdings, Inc. / CIBC World Markets Corp.	2010	$125,000,000
39	Royal Dutch Petroleum / Shell Transport	2008	$120,000,000
40	Bank of America Mortgage Obligations Distribution Fund (SEC)	2014	$115,840,000
41	Dell Inc. (SEC Fair Fund)	2012	$110,962,734
42	Charles Schwab Investment	2011	$110,000,000
43	Convergex Global Markets	2015	$109,440,738
44	Credit Suisse Securities	2012	$101,747,769
45	Morgan Keegan Funds (SEC Fair Fund)	2013	$100,300,000
46	Capital Consultants, LLC	2002	$100,000,000
46	HealthSouth Corp.	2007	$100,000,000
46	Janus Capital Management LLC	2008	$100,000,000
46	Facebook, Inc.	2019	$100,000,000
50	Adelphia Communications Corp.	2009	$95,000,000

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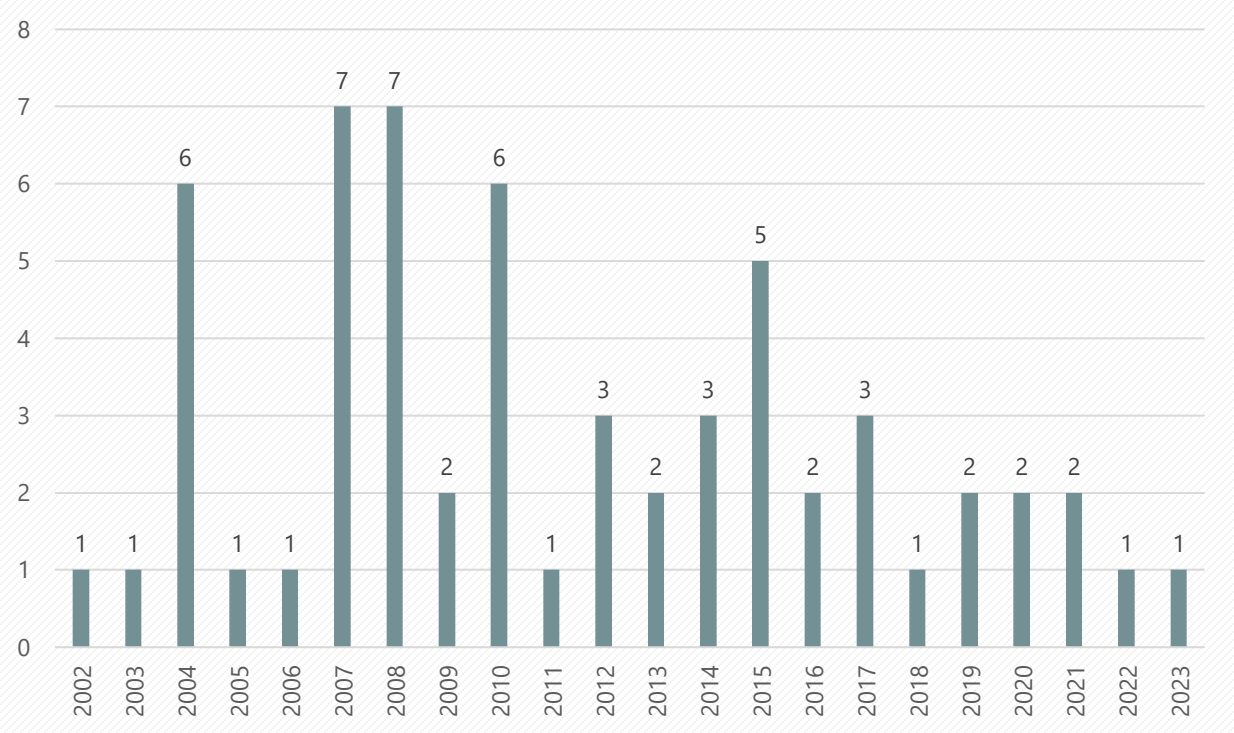
NUMBER OF SETTLEMENTS BY YEAR IN THE TOP 50 SEC DISGORGEMENTS[4]



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[4] ISS SCAS tracks SEC Disgorgements (Fair Fund settlements) in real-time, however does not officially include these cases within the "Settlement" stage until the Plan of Distribution becomes public.

TOP 10 U.S. ANTITRUST CLASS ACTION SETTLEMENTS

RANK	CASE NAME	TOTAL SETTLEMENT AMOUNT
1	Foreign Exchange Benchmark Rates	$2,310,275,000
2	Credit Default Swaps	$1,864,650,000
3	Relevant LIBOR-Based Financial Instruments (U.S. Dollar)	$873,149,000
4	Euro Interbank Offered Rate	$651,500,000
5	ISDAfix Transactions	$504,500,000
6	GSE Bonds	$386,500,000
7	State AG LIBOR/Euribor	$381,350,000
8	Euroyen-Based Derivatives	$329,500,000
9	Relevant LIBOR-Based Financial Instruments (Eurodollar Futures)	$187,000,000
10	Bank Bill Swap Rate Based Derivatives	$185,875,000

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TOP 10 CLASS ACTION DISBURSEMENTS OF 2023

RANK	CASE NAME	INITIAL DISBURSEMENT DATE	TOTAL SETTLEMENT AMOUNT
1	Valeant Pharmaceuticals International, Inc. (2015) (D.N.J.) (Former and Named Defendants)	July 12, 2023	$1,210,000,000
2	Teva Pharmaceutical Industries Limited (2016) (D. Conn.)	July 24, 2023	$420,000,000
3	Relevant LIBOR-Based Fin. Instruments (Eurodollar Futures) (Antitrust) (BB/BOA/CGM/DB/HSBC/JPM/SG)	December 15, 2023	$187,000,000
4	Luckin Coffee Inc. (S.D.N.Y.)	May 26, 2023	$175,000,000
5	NovaStar Mortgage Funding Trusts	April 17, 2023	$165,000,000
6	BlackBerry Limited (BlackBerry)	March 30, 2023	$165,000,000
7	SIBOR- and/or SOR-Based Derivatives (Antitrust) (Citi/JPMorgan)	September 25, 2023	$155,458,000
8	Granite Construction Incorporated (N.D. Cal.)	January 31, 2023	$129,000,000
9	GCI Liberty, Inc.	June 16, 2023	$110,000,000
10	Stamps.com, Inc.	April 5, 2023	$100,000,000

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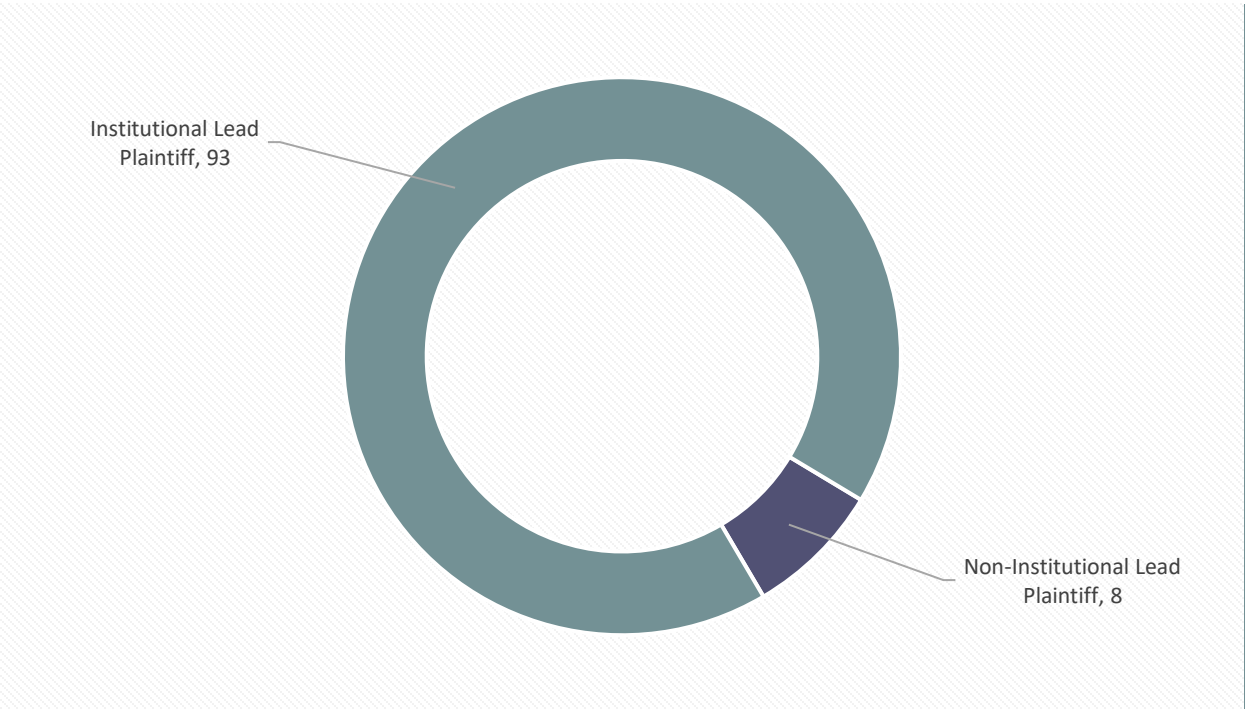
SETTLEMENTS REPRESENTED BY INSTITUTIONAL LEAD PLAINTIFF IN THE SCAS TOP 100



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TOP 5 INSTITUTIONAL LEAD PLAINTIFFS PARTICIPATION IN THE SCAS TOP 100

INSTITUTIONAL LEAD PLAINTIFF | CASE NAME	RANK	TOTAL SETTLEMENT AMOUNT	NUMBER OF SETTLEMENTS
New York State Common Retirement Fund		**$11,025,450,714**	**4**
WorldCom, Inc.	2	$6,194,100,714	
Cendant Corp.	3	$3,319,350,000	
McKesson HBOC Inc.	14	$1,052,000,000	
Raytheon Company	41	$460,000,000	
Regents of the University of California		**$ 7,716,050,000**	**2**
Enron Corp.	1	$7,242,000,000	
Dynegy Inc.	39	$474,050,000	
State Teachers Retirement System of Ohio		**$5,417,300,000**	**7**
Bank of America Corporation (Equity Securities)	7	$2,425,000,000	
American International Group, Inc.	16	$1,009,500,000	
Merrill Lynch & Co., Inc.	38	$475,000,000	
Global Crossing, Ltd.	44	$447,800,000	
Federal Home Loan Mortgage Corp. (Freddie Mac)	47	$410,000,000	
Marsh & McLennan Companies, Inc.	48	$400,000,000	
Allergan, Inc. (Section 14(e))	78	$250,000,000	
Ohio Public Employees Retirement System		**$4,292,300,000**	**4**
Bank of America Corporation (Equity Securities)	7	$2,425,000,000	
American International Group, Inc.	16	$1,009,500,000	
Global Crossing, Ltd.	44	$447,800,000	
Federal Home Loan Mortgage Corp. (Freddie Mac)	47	$410,000,000	
Louisiana State Employees Retirement System		**$4,250,000,000**	**3**
Tyco International, Ltd.	4	$3,200,000,000	
Xerox Corp.	23	$750,000,000	
Bristol-Myers Squibb Co.	63	$300,000,000	

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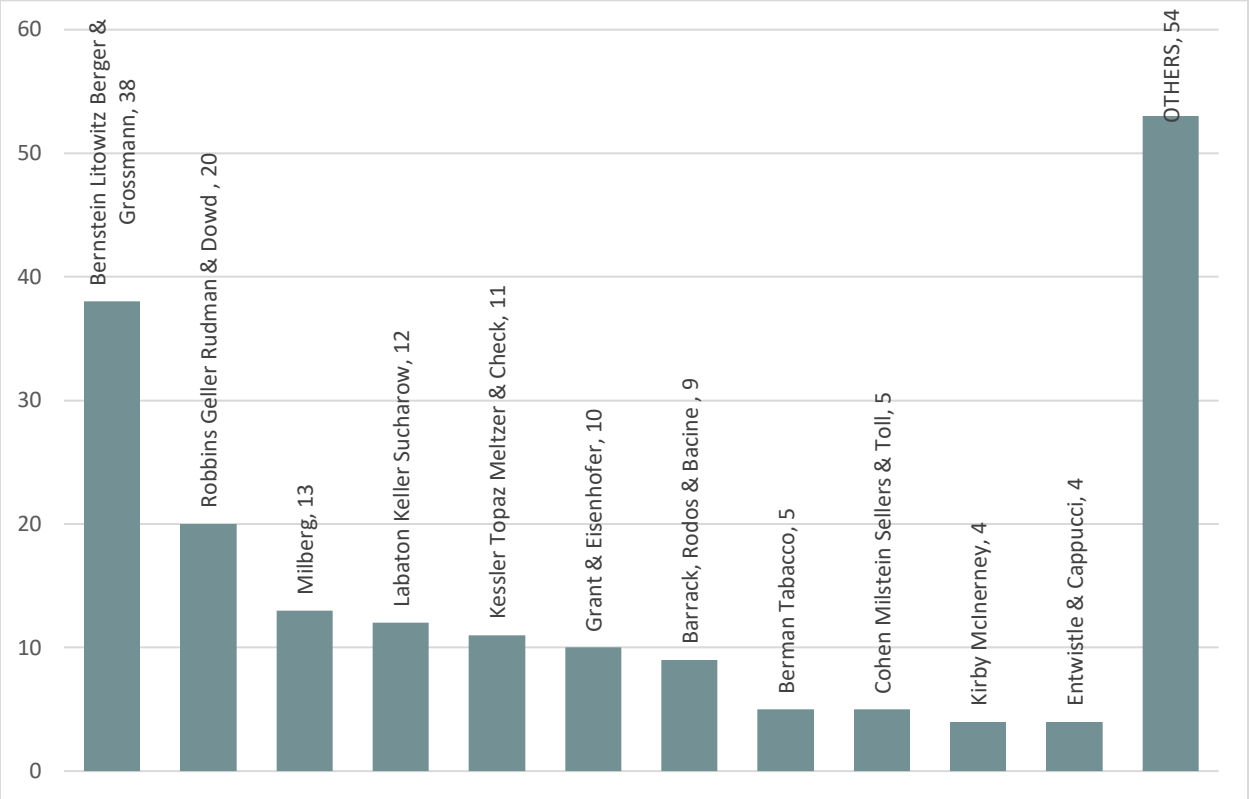
MOST FREQUENT LEAD COUNSEL IN THE SCAS TOP 100



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LEAD COUNSEL PARTICIPATION RANKED BY SETTLEMENT AMOUNT IN THE SCAS TOP 100

LEAD / CO-LEAD COUNSEL | CASE NAME	RANK	TOTAL SETTLEMENT AMOUNT
Bernstein Litowitz Berger & Grossmann		**$27,491,591,840**
WorldCom, Inc.	2	$6,194,100,714
Cendant Corp.	3	$3,319,350,000
Bank of America Corporation	7	$2,425,000,000
Nortel Networks Corp.	12	$1,074,265,298
Merck & Co., Inc.	13	$1,062,000,000
McKesson HBOC Inc.	14	$1,052,000,000
Wells Fargo & Company	17	$1,000,000,000
HealthSouth Corp.	22	$804,500,000
Lehman Brothers Holdings, Inc.	24	$735,218,000
Citigroup Bonds	25	$730,000,000
Lucent Technologies, Inc.	26	$667,000,000
Wachovia Preferred Securities and Bond/Notes	27	$627,000,000
Bear Stearns Mortgage Pass-Through Certificates	32	$500,000,000
Wells Fargo & Company	36	$480,000,000
Schering-Plough Corp.	40	$473,000,000
The Kraft Heinz Company	43	$450,000,000
Federal Home Loan Mortgage Corp. (Freddie Mac)	47	$410,000,000
Cobalt International Energy, Inc.	50	$389,600,000
Refco, Inc.	53	$358,300,000
Merrill Lynch Mortgage Investors, Inc. (Mortgage Pass-Through Certificates)	59	$315,000,000
Williams Companies, Inc.	60	$311,000,000
Bristol-Myers Squibb Co.	63	$300,000,000
General Motors Company	63	$300,000,000
DaimlerChrysler AG	63	$300,000,000

El Paso Corporation	69	$285,000,000
J.P. Morgan Acceptance Corp. I (Mortgage Pass-Through Certificates)	71	$280,000,000
3Com Corp.	77	$259,000,000
Allergan, Inc.	78	$250,000,000
Signet Jewelers Limited	80	$240,000,000
MF Global Holdings Ltd.	83	$234,257,828
Genworth Financial, Inc.	87	$219,000,000
Washington Mutual, Inc.	88	$216,750,000
Merck & Co., Inc.	89	$215,000,000
Salix Pharmaceuticals, Ltd.	92	$210,000,000
Wilmington Trust Corporation	92	$210,000,000
The Mills Corp.	94	$202,750,000
WellCare Health Plans, Inc.	95	$200,000,000
SCANA Corporation	100	$192,500,000
Robbins Geller Rudman & Dowd		**$18,827,550,000**
Enron Corp.	1	$7,242,000,000
Household International, Inc.	8	$1,575,000,000
Valeant Pharmaceuticals International, Inc.	9	$1,210,000,000
American Realty Capital Properties, Inc.	15	$1,025,000,000
UnitedHealth Group, Inc.	20	$925,500,000
Twitter, Inc.	21	$809,500,000
HealthSouth Corp.	22	$804,500,000
Wachovia Preferred Securities and Bond/Notes	27	$627,000,000
Cardinal Health, Inc.	29	$600,000,000
Countrywide Financial Corp.	32	$500,000,000
Dynegy Inc.	39	$474,050,000
Qwest Communications International, Inc.	45	$445,000,000
Pfizer, Inc.	48	$400,000,000
J.P. Morgan Acceptance Corp. I (Mortgage Pass-Through Certificates)	51	$388,000,000
First Solar, Inc.	54	$350,000,000
Wells Fargo & Company	63	$300,000,000

GS Mortgage Securities Corp.	75	$272,000,000
Massey Energy Company	76	$265,000,000
HCA Holdings, Inc.	89	$215,000,000
Kinder Morgan, Inc.	95	$200,000,000
Motorola, Inc.	95	$200,000,000
Barrack, Rodos & Bacine		**$13,107,700,714**
WorldCom, Inc.	2	$6,194,100,714
Cendant Corp.	3	$3,319,350,000
McKesson HBOC Inc.	14	$1,052,000,000
American International Group, Inc.	19	$970,500,000
Merrill Lynch & Co., Inc.	38	$475,000,000
Bank of America Corporation (MERS and MBS)	56	$335,000,000
DaimlerChrysler AG	63	$300,000,000
3Com Corp.	77	$259,000,000
The Mills Corp.	94	$202,750,000
Kessler Topaz Meltzer & Check		**$9,554,575,690**
Tyco International, Ltd.	4	$3,200,000,000
Bank of America Corporation (Equity Securities)	7	$2,425,000,000
Lehman Brothers Holdings, Inc.(Equity/Debt Securities)	24	$735,218,000
Wachovia Preferred Securities and Bond/Notes	27	$627,000,000
IPO Securities Litigation (Master Case)	31	$585,999,996
Countrywide Financial Corp.	32	$500,000,000
The Kraft Heinz Company	43	$450,000,000
Tenet Healthcare Corp.	70	$281,500,000
BNY Mellon, N.A.	71	$280,000,000
Allergan, Inc.	78	$250,000,000
Bernard L. Madoff Investment Securities LLC (Beacon Associates LLC I and II)	86	$219,857,694
Milberg		**$9,353,855,304**
Tyco International, Ltd.	4	$3,200,000,000
Nortel Networks Corp. (I)	10	$1,142,775,308
Merck & Co., Inc.	13	$1,062,000,000

Xerox Corp.	23	$750,000,000
Lucent Technologies, Inc.	26	$667,000,000
IPO Securities Litigation (Master Case)	31	$585,999,996
Raytheon Company	41	$460,000,000
Rite Aid Corp.	58	$319,580,000
Oxford Health Plans Inc.	63	$300,000,000
3Com Corp.	77	$259,000,000
Sears, Roebuck & Co.	89	$215,000,000
CMS Energy Corp.	95	$200,000,000
MicroStrategy Inc.	100	$192,500,000
Grant & Eisenhofer		**$6,207,722,944**
Tyco International, Ltd.	4	$3,200,000,000
Pfizer, Inc.	35	$486,000,000
Global Crossing, Ltd.	44	$447,800,000
Marsh & McLennan Companies, Inc.	48	$400,000,000
Refco, Inc.	53	$358,300,000
General Motors Corp.	62	$303,000,000
Oxford Health Plans Inc.	63	$300,000,000
DaimlerChrysler AG	63	$300,000,000
Merck & Co., Inc. (2008)	89	$215,000,000
Safety-Kleen Corp.	99	$197,622,944
Labaton Keller Sucharow		**$5,908,400,000**
American International Group, Inc.	16	$1,009,500,000
Dell Technologies, Inc.	17	$1,000,000,000
HealthSouth Corp.	22	$804,500,000
Countrywide Financial Corp.	28	$624,000,000
Schering-Plough Corp.	40	$473,000,000
Waste Management Inc.	42	$457,000,000
General Motors Corp.	62	$303,000,000
Bear Stearns Companies, Inc.	68	$294,900,000
El Paso Corporation	69	$285,000,000

Massey Energy Company	76	$265,000,000
WellCare Health Plans, Inc.	95	$200,000,000
SCANA Corporation	100	$192,500,000
Pomerantz		**$3,225,000,000**
Petroleo Brasileiro S.A. - Petrobras	5	$3,000,000,000
Comverse Technology, Inc.	84	$225,000,000
Kaplan Fox & Kilsheimer		**$3,159,000,000**
Bank of America Corporation	7	$2,425,000,000
Merrill Lynch & Co., Inc.	38	$475,000,000
3Com Corp.	77	$259,000,000
Cohen Milstein Sellers & Toll		**$2,610,000,000**
Wells Fargo & Company	17	$1,000,000,000
Countrywide Financial Corp.	32	$500,000,000
Bear Stearns Mortgage Pass-Through Certificates	32	$500,000,000
RALI Mortgage (Asset-Backed Pass-Through Certificates)	56	$335,000,000
HarborView Mortgage Loan Trust	73	$275,000,000
Heins Mills & Olson		**$2,500,000,000**
AOL Time Warner, Inc.	6	$2,500,000,000
Stull Stull & Brody		**$2,137,999,996**
Merck & Co., Inc.	13	$1,062,000,000
IPO Securities Litigation (Master Case)	31	$585,999,996
BankAmerica Corp.	34	$490,000,000
Entwistle & Cappucci		**$1,989,600,000**
Royal Ahold, N.V.	11	$1,100,000,000
Cobalt International Energy, Inc.	50	$389,600,000
DaimlerChrysler AG	63	$300,000,000
CMS Energy Corp.	95	$200,000,000
Berman Tabacco		**$1,975,900,000**
Xerox Corp.	23	$750,000,000
IndyMac Mortgage Pass-Through Certificates	55	$346,000,000
Bristol-Myers Squibb Co.	63	$300,000,000

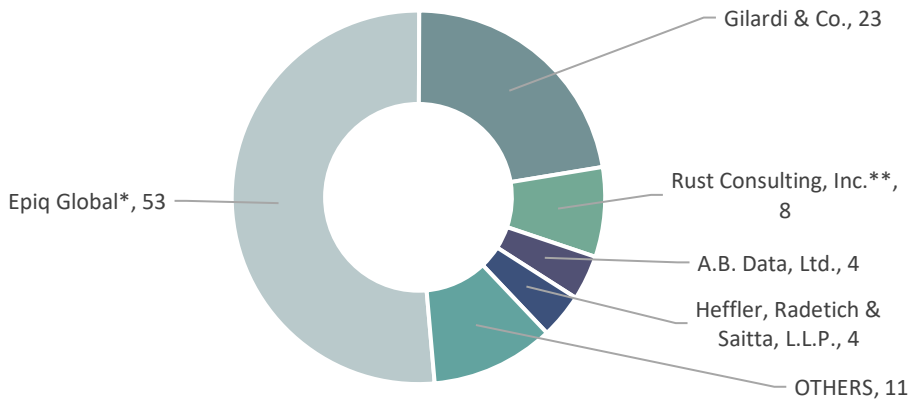
Bear Stearns Companies, Inc.	68	$294,900,000
El Paso Corporation	69	$285,000,000
Kirby McInerney		**$1,662,725,000**
Citigroup, Inc.	30	$590,000,000
Adelphia Communications Corp.	37	$478,725,000
Cendant Corp. (PRIDES) II	52	$374,000,000
Waste Management Inc.	85	$220,000,000
Brower Piven		**$1,062,000,000**
Merck & Co., Inc.	13	$1,062,000,000
Berger & Montague		**$1,014,580,000**
Merrill Lynch & Co., Inc.	38	$475,000,000
Rite Aid Corp.	58	$319,580,000
Waste Management Inc.	85	$220,000,000
Hahn Loeser & Parks		**$1,009,500,000**
American International Group, Inc.	16	$1,009,500,000
Quinn Emanuel Urquhart & Sullivan		**$1,000,000,000**
Dell Technologies, Inc.	17	$1,000,000,000
Bernstein Liebhard		**$985,999,996**
IPO Securities Litigation (Master Case)	31	$585,999,996
Marsh & McLennan Companies, Inc.	48	$400,000,000
The Miller Law Firm		**$970,500,000**
American International Group, Inc.	19	$970,500,000
Abbey Spanier Rodd Abrams & Paradis		**$968,725,000**
BankAmerica Corp.	34	$490,000,000
Adelphia Communications Corp.	37	$478,725,000
Bleichmar Fonti & Auld		**$873,257,828**
Teva Pharmaceutical Industries Limited	46	$420,000,000
MF Global Holdings Ltd.	83	$234,257,828
Genworth Financial, Inc.	87	$219,000,000
Motley Rice		**$809,500,000**
Twitter, Inc.	21	$809,500,000

Cunningham Bounds		**$804,500,000**
HealthSouth Corp.	22	$804,500,000
Chitwood Harley Harnes		**$790,000,000**
BankAmerica Corp.	34	$490,000,000
Oxford Health Plans Inc.	63	$300,000,000
Wolf Haldenstein Adler Freeman & Herz		**$778,499,996**
IPO Securities Litigation (Master Case)	31	$585,999,996
MicroStrategy Inc.	100	$192,500,000
Johnson & Perkinson		**$750,000,000**
Xerox Corp.	23	$750,000,000
Girard Gibbs		**$735,218,000**
Lehman Brothers Holdings, Inc.	24	$735,218,000
Howard B. Sirota, Esq.		**$585,999,996**
IPO Securities Litigation (Master Case)	31	$585,999,996
Wolf Popper		**$515,250,000**
J.P. Morgan Acceptance Corp. I	71	$280,000,000
Bernard L. Madoff Investment Securities LLC	81	$235,250,000
Green Schaaf & Jacobson		**$490,000,000**
BankAmerica Corp.	34	$490,000,000
Barrett & Weber		**$410,000,000**
Federal Home Loan Mortgage Corp. (Freddie Mac)	47	$410,000,000
Waite, Schneider, Bayless & Chesley		**$410,000,000**
Federal Home Loan Mortgage Corp. (Freddie Mac)	47	$410,000,000
Francis Law		**$310,000,000**
Caremark, Rx, Inc. f/k/a MedPartners, Inc.	61	$310,000,000
Somerville		**$310,000,000**
Caremark, Rx, Inc. f/k/a MedPartners, Inc.	61	$310,000,000
Hare, Wynn, Newell & Newton		**$310,000,000**
Caremark, Rx, Inc. f/k/a MedPartners, Inc.	61	$310,000,000
Lite, DePalma, Greenberg & Rivas		**$281,500,000**
Tenet Healthcare Corp.	70	$281,500,000

Nix, Patterson & Roach		**$280,000,000**
BNY Mellon, N.A.	71	$280,000,000
Bragar Eagel & Squire		**$275,000,000**
Activision Blizzard, Inc.	73	$275,000,000
Friedlander & Gorris		**$275,000,000**
Activision Blizzard, Inc.	73	$275,000,000
The Rosen Law Firm		**$250,000,000**
Alibaba Group Holding Limited	78	$250,000,000
Lovell Stewart Halebian Jacobson		**$235,250,000**
Bernard L. Madoff Investment Securities LLC	81	$235,250,000
Boies, Schiller & Flexner		**$235,250,000**
Bernard L. Madoff Investment Securities LLC	81	$235,250,000
Hagens Berman Sobol Shapiro		**$235,000,000**
Charles Schwab & Co., Inc.	82	$235,000,000
Abbey, Gardy & Squitieri		**$220,000,000**
Waste Management Inc.	85	$220,000,000
Lowey Dannenberg Cohen & Hart		**$219,857,694**
Bernard L. Madoff Investment Securities LLC	86	$219,857,694
Saxena White		**$210,000,000**
Wilmington Trust Corporation	92	$210,000,000

The data herein was prepared by SCAS' research and legal experts via ISS SCAS's fully transparent client platform, RecoverMax, available at https://recovermax.issgovernance.com/recovermax/

MOST FREQUENT CLAIMS ADMINISTRATORS IN THE SCAS TOP 100[5]



*Includes settlements under Garden City Group.
**Includes settlements administered by Complete Claims Solution.

The data herein was prepared by SCAS' research and legal experts via ISS SCAS's fully transparent client platform, RecoverMax, available at https://recovermax.issgovernance.com/recovermax/

[5] Totals exceed 100 as several partial settlements were administered by another Claims Administrator.

CLAIMS ADMINISTRATOR PARTICIPATION IN THE SCAS TOP 100

CLAIMS ADMINISTRATOR | CASES	RANK	CASE SETTLEMENT AMT	TOTAL SETTLEMENT AMOUNT
Epiq Global			**$36,190,697,782**
WorldCom, Inc.	2	$6,194,100,714	
Tyco International, Ltd.	4	$3,200,000,000	
Petroleo Brasileiro S.A. - Petrobras	5	$3,000,000,000	
Bank of America Corporation (Equity Securities)	7	$2,425,000,000	
Nortel Networks Corp. (I)	10	$1,142,775,308	
Royal Ahold, N.V.	11	$1,100,000,000	
Nortel Networks Corp. (II)	12	$1,074,265,298	
Merck & Co., Inc. (2003)	13	$1,062,000,000	
Wells Fargo & Company (2020)	17	$1,000,000,000	
Twitter, Inc.	21	$809,500,000	
Lehman Brothers Holdings, Inc. (Equity/Debt Securities)[6]	24	$735,218,000	
Citigroup Bonds	25	$730,000,000	
Lucent Technologies, Inc.	26	$667,000,000	
Wachovia Preferred Securities and Bond/Notes	27	$627,000,000	
Citigroup, Inc.	30	$590,000,000	
IPO Securities Litigation (Master Case)	31	$585,999,996	
Bear Stearns Mortgage Pass-Through Certificates	32	$500,000,000	
Countrywide Financial Corp.	32	$500,000,000	
Pfizer, Inc.	35	$486,000,000	
Wells Fargo & Company (2016)	36	$480,000,000	
Schering-Plough Corp.	40	$473,000,000	
Global Crossing, Ltd.	44	$447,800,000	
Teva Pharmaceutical Industries Limited	46	$420,000,000	
Federal Home Loan Mortgage Corp. (Freddie Mac)	47	$410,000,000	
Cobalt International Energy, Inc.	50	$389,600,000	
Refco, Inc.	53	$358,300,000	
RALI Mortgage (Asset-Backed Pass-Through Certificates)	56	$335,000,000	

[6] Formerly Administered by Garden City Group

Merrill Lynch Mortgage Investors, Inc. (Mortgage Pass-Through Certificates)	59	$315,000,000	
Williams Companies, Inc.	60	$311,000,000	
General Motors Corp.	62	$303,000,000	
Oxford Health Plans Inc.	63	$300,000,000	
Bristol-Myers Squibb Co.[7]	63	$300,000,000	
General Motors Company	63	$300,000,000	
DaimlerChrysler AG	63	$300,000,000	
Bear Stearns Companies, Inc.	68	$294,900,000	
Tenet Healthcare Corp.	70	$281,500,000	
BNY Mellon, N.A.	71	$280,000,000	
J.P. Morgan Acceptance Corp. I (Mortgage Pass-Through Certificates) (2008)	71	$280,000,000	
Allergan, Inc. (Section 14(e))	78	$250,000,000	
MF Global Holdings Ltd.	83	$234,257,828	
Bernard L. Madoff Investment Securities LLC (Beacon Associates LLC I and II)	86	$219,857,694	
Genworth Financial, Inc.	87	$219,000,000	
Washington Mutual, Inc.	88	$216,750,000	
Merck & Co., Inc. (2008)	89	$215,000,000	
Sears, Roebuck & Co.	89	$215,000,000	
Wilmington Trust Corporation	92	$210,000,000	
Salix Pharmaceuticals, Ltd.	92	$210,000,000	
The Mills Corp.	94	$202,750,000	
WellCare Health Plans, Inc.	95	$200,000,000	
CMS Energy Corp.	95	$200,000,000	
Kinder Morgan, Inc.	95	$200,000,000	
Safety-Kleen Corp. (Bondholders)	99	$197,622,944	
SCANA Corporation	100	$192,500,000	
Gilardi & Co.			**$21,158,130,000**
Enron Corp.	1	$7,242,000,000	
AOL Time Warner, Inc.	6	$2,500,000,000	
Household International, Inc.	8	$1,575,000,000	
Valeant Pharmaceuticals International, Inc.	9	$1,210,000,000	
American Realty Capital Properties, Inc.	15	$1,025,000,000	
American International Group, Inc.	19	$970,500,000	

[7] Formerly Administered by Garden City Group

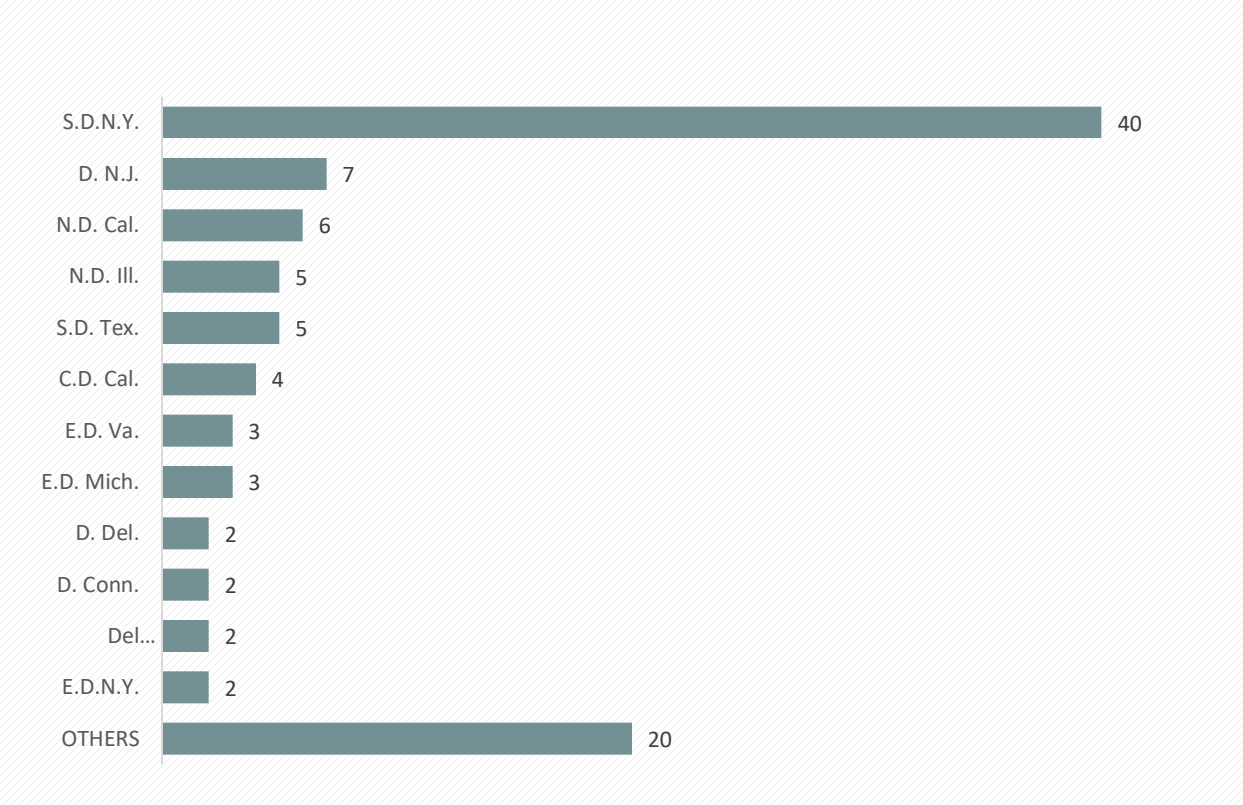
UnitedHealth Group, Inc.	20	$925,500,000	
Xerox Corp.	23	$750,000,000	
Cardinal Health, Inc.	29	$600,000,000	
Dynegy Inc.	39	$474,050,000	
Qwest Communications International, Inc.	45	$445,000,000	
Pfizer, Inc.	48	$400,000,000	
J.P. Morgan Acceptance Corp. I (Mortgage Pass-Through Certificates) (2009)	51	$388,000,000	
First Solar, Inc.	54	$350,000,000	
Rite Aid Corp.	58	$319,580,000	
Caremark, Rx, Inc. f/k/a MedPartners, Inc.	61	$310,000,000	
Wells Fargo & Company	63	$300,000,000	
GS Mortgage Securities Corp.	75	$272,000,000	
3Com Corp.	77	$259,000,000	
Charles Schwab & Co., Inc. (Schwab YieldPlus Fund)	82	$235,000,000	
HCA Holdings, Inc.	89	$215,000,000	
Motorola, Inc.	95	$200,000,000	
MicroStrategy Inc.	100	$192,500,000	
Heffler, Radetich & Saitta, L.L.P.			**$4,364,350,000**
Cendant Corp.	3	$3,319,350,000	
BankAmerica Corp.	34	$490,000,000	
Bank of America Corporation (MERS and MBS)	56	$335,000,000	
Waste Management Inc.	85	$220,000,000	
Rust Consulting, Inc.			**$4,351,250,000**
American International Group, Inc.	16	$1,009,500,000	
HealthSouth Corp.	22	$804,500,000	
Countrywide Financial Corp.	28	$624,000,000	
Merrill Lynch & Co., Inc.	38	$475,000,000	
Waste Management Inc.	42	$457,000,000	
Marsh & McLennan Companies, Inc.	48	$400,000,000	
IndyMac Mortgage Pass-Through Certificates	55	$346,000,000	
Bernard L. Madoff Investment Securities LLC (Greenwich/Fairfield)	81	$235,250,000	
A.B. Data, Ltd.			**$2,285,218,000**
Dell Technologies, Inc.	17	$1,000,000,000	

Lehman Brothers Holdings, Inc. (Equity/Debt Securities)[8]	24	$735,218,000	
El Paso Corporation	69	$285,000,000	
Massey Energy Company	76	$265,000,000	
Analytics, Inc.			**$1,512,000,000**
McKesson HBOC Inc.[9]	14	$1,052,000,000	
Raytheon Company	41	$460,000,000	
BMC Group			**$1,052,000,000**
McKesson HBOC Inc.[10]	14	$1,052,000,000	
Valley Forge Administrative Services, Inc.			**$852,725,000**
Adelphia Communications Corp.	37	$478,725,000	
Cendant Corp. (PRIDES) II	52	$374,000,000	
JND Legal Administration			**$690,000,000**
The Kraft Heinz Company	43	$450,000,000	
Signet Jewelers Limited	80	$240,000,000	
Kurtzman Carson Consultants			**$550,000,000**
Activision Blizzard, Inc.	73	$275,000,000	
HarborView Mortgage Loan Trust	73	$275,000,000	
Strategic Claims Services			**$250,000,000**
Alibaba Group Holding Limited	78	$250,000,000	
Berdon Claims Administration LLC			**$225,000,000**
Comverse Technology, Inc.	84	$225,000,000	

The data herein was prepared by SCAS' research and legal experts via ISS SCAS's fully transparent client platform, RecoverMax, available at https://recovermax.issgovernance.com/recovermax/

[8] Administered part of the case settlement
[9] Administered part of the case settlement
[10] Administered part of the case settlement

MOST FREQUENT COURT VENUES IN THE SCAS TOP 100



The data herein was prepared by SCAS' research and legal experts via ISS SCAS's fully transparent client platform, RecoverMax, available at https://recovermax.issgovernance.com/recovermax/

METHODOLOGY

The ISS Securities Class Action Services' Top 100 Settlements of All-Time is an annual report that identifies the largest securities-related U.S. class action settlements filed after the passage of the Private Securities Litigation Reform Act of 1995, ranked by the total value of the settlement fund. The report includes federal and state securities settlements, as well as settlements resulting from directly asserted fiduciary duty claims. The statistics and totals from this report do not include U.S. antitrust, derivative fiduciary duty nor any securities-related settlements outside the United States. Cases with the same settlement amount are given the same ranking. For cases with multiple partial settlements, the amount indicated in the total settlement amount is computed by combining all partial settlements. The settlement year reflects the year the most recent settlement received final approval from the court. Only court approved final settlements are included.

SETTLEMENT CATEGORIZATION

THE TOP 100

The Top 100 U.S. Settlements of All-Time provides a wealth of information, including the settlement date, filing court, settlement fund, and identifies the key players for each settlement. The report is broken down into the following categories:

INSTITUTIONAL LEAD PLAINTIFF PARTICIPATION

This section displays the number of cases in the Top 100 involving institutional lead plaintiffs. It also identifies the institutional investors serving as institutional lead plaintiff.

LEAD COUNSEL PARTICIPATION

This section lists the law firms that served as lead or co-lead counsel for each litigation in the Top 100 Settlements and identifies the most frequent lead or co-lead counsel in the Top 100 Settlements. Counsel with the same participation are given the same ranking. In addition, the list includes participation in cases where they were litigated under a previous name.

CLAIMS ADMINISTRATION PARTICIPATION

This section lists the claims administrators who handled the Top 100 Settlements and identifies the most frequent claims administrators. It includes settlements administered from old entities.

COURT VENUE

This section lists the settlements by location, specifically federal court vs state court, as well as the district or division (in federal cases) where the litigation and settlement took place.

OTHER SETTLEMENTS

In addition to the Top 100 U.S. Settlements of All-Time, ISS SCAS has ranked the Top 50 SEC Disgorgements, the Top 10 Investor-Related U.S. Antitrust Class Actions, and the Top 10 U.S. Class Action Disbursements of 2023. These rankings are broken down as follows:

TOP 50 SEC DISGORGEMENTS

This section provides a list of the largest SEC Fair Fund settlements, ranked according to the Total Settlement Amount. The Total Settlement Amount reflects the sum of disgorgement and civil penalties in settlements reached with the Securities and Exchange Commission. The Top 50 SEC Disgorgements includes only those where the distribution plan has received final approval from the SEC. Cases with the same settlement amount are given the same ranking.

TOP 10 ANTITRUST CLASS ACTIONS

This section provides a list of the largest U.S. antitrust settlements on behalf of investors, ranked according to the Total Settlement Amount. These antitrust actions typically involve multiple partial settlements reached with defendants at different dates. The Total Settlement Amount reflects the aggregation of all partial settlements that have received final court approval in various years.

DISBURSEMENTS

TOP 10 CLASS ACTION DISBURSEMENTS

This section provides a list of the largest U.S. class action settlements that made initial disbursements to investors during the calendar year, ranked according to the Total Settlement Amount. ISS SCAS notes the initial disbursement may be less than the 100% of the settlement proceeds, as the class action settlements could take multiple rounds to be fully disbursed.

GLOSSARY

CLAIMS ADMINISTRATOR	An entity selected by the Lead Counsel or appointed by the court to manage the settlement notification and claim process.
DISBURSEMENT	The distribution of the settlement fund to eligible claimants in accordance with the plan of allocation.
DISGORGEMENT	A penalty or repayment of ill-gotten gains that is imposed by the United States Securities and Exchange Commission on wrong doers. These are often referred to as Fair Fund settlements.
FINAL SETTLEMENTS	Settlements that received final approval from the court.
INSTITUTIONAL LEAD PLAINTIFF	An institutional shareholder or group of institutional shareholders appointed by the court to represent the interests of a class or classes of similarly situated shareholders.
LEAD COUNSEL	Law firm, or lawyer, appointed by the court, that prosecutes a class action on behalf of the class members.
PARTIAL SETTLEMENT	A preliminary agreement between some of the identified defendants in the action.
PSLRA (PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995)	Legislation passed by Congress that implemented several substantive changes in the United States, affecting certain cases brought under the federal securities laws, including changes related to pleading, discovery, liability, class representation, and awards fees and expenses.
SETTLEMENT YEAR	Corresponds to the year the settlement, or the most recent partial settlement, received final approval from the court.
TOTAL SETTLEMENT AMOUNT	Refers to the sum of the settlement fund or the gross settlement fund approved by the court.

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EXHIBIT B

CORNERSTONE RESEARCH

Economic and Financial Consulting and Expert Testimony

Securities Class Action Settlements

2023 Review and Analysis

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Figures and Appendices

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.[1]

- 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.[2] (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.

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

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.

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

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

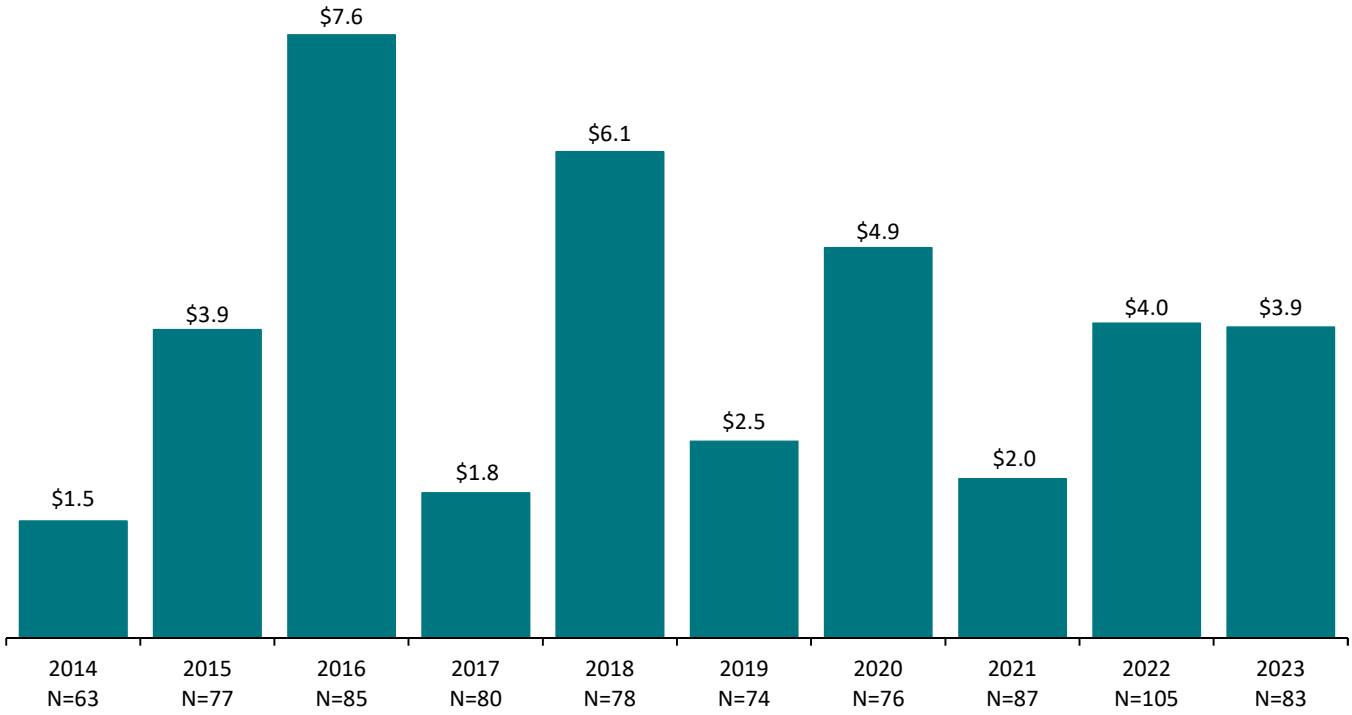
Total Settlement Dollars

- 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.

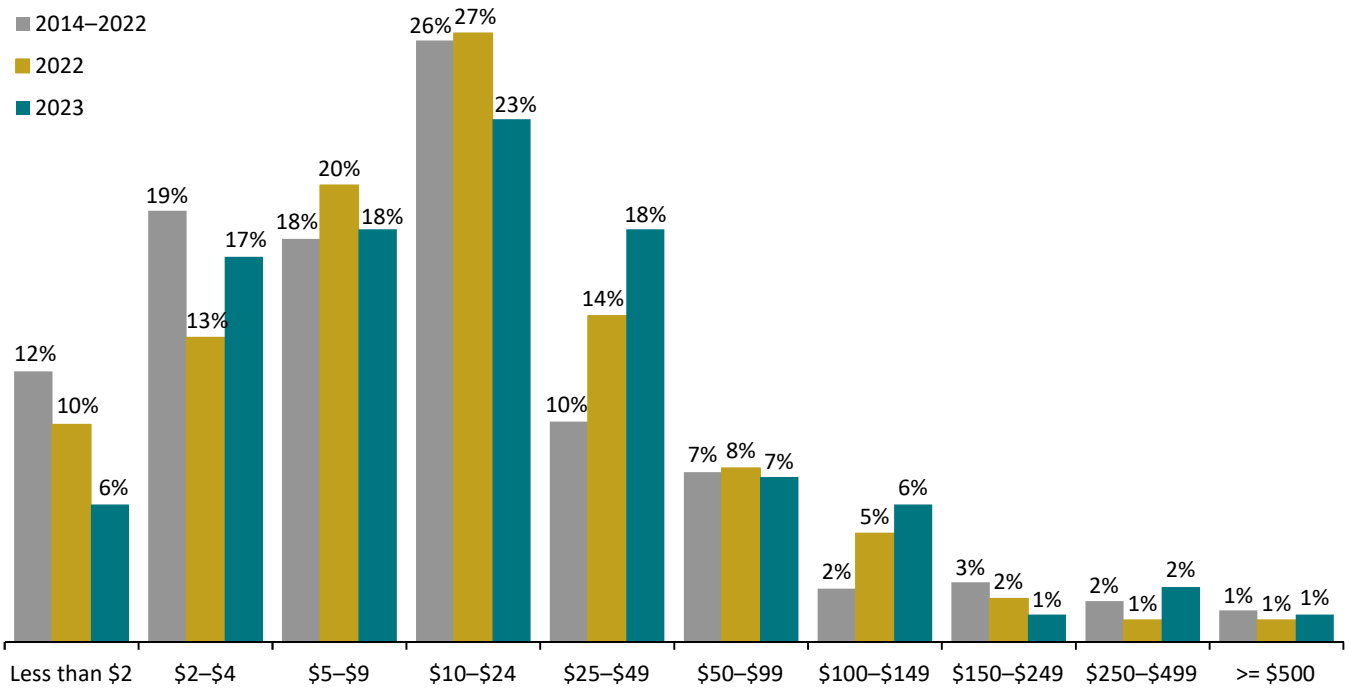
Settlement Size

- 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.[3]

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.[4]

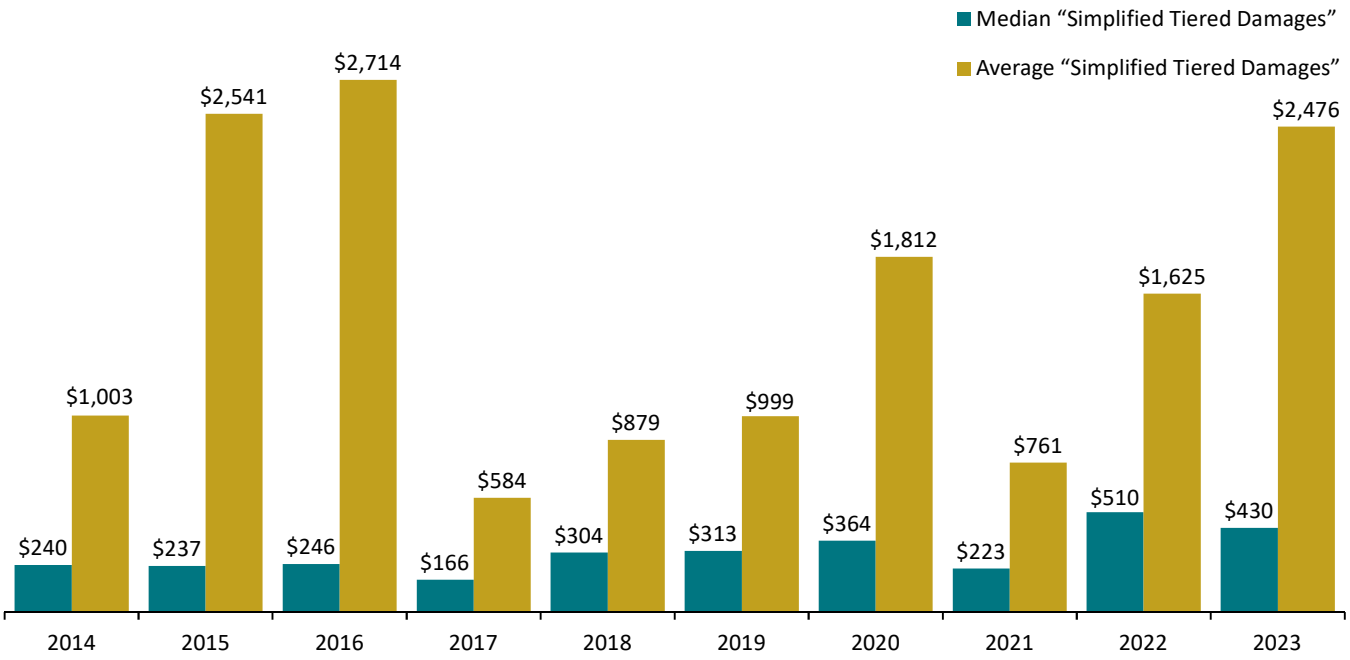
Cornerstone Research's analysis finds this measure to be the most important factor in estimating settlement amounts.[5] However, this measure is not intended to represent actual economic losses borne by shareholders. Determining any such losses for a given case requires more in-depth economic analysis.

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).[6] 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)



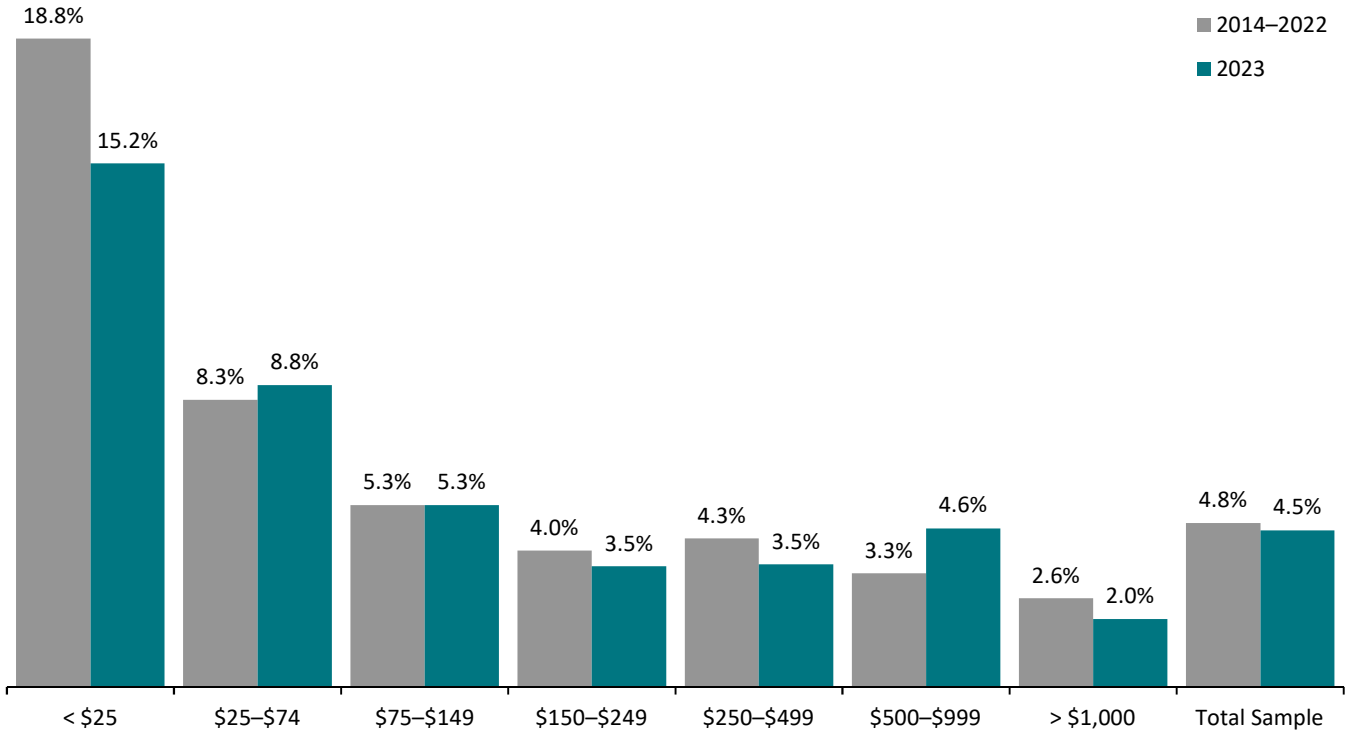
Note: "Simplified tiered damages" are adjusted for inflation based on class period end dates and are estimated for common stock only; 2023 dollar equivalent figures are presented. Damages are estimated for cases alleging a claim under Rule 10b-5 (whether alone or in addition to other claims).

Type of Claim (continued)

- 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").[7]

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.”[8]

- 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).[9]
- 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%

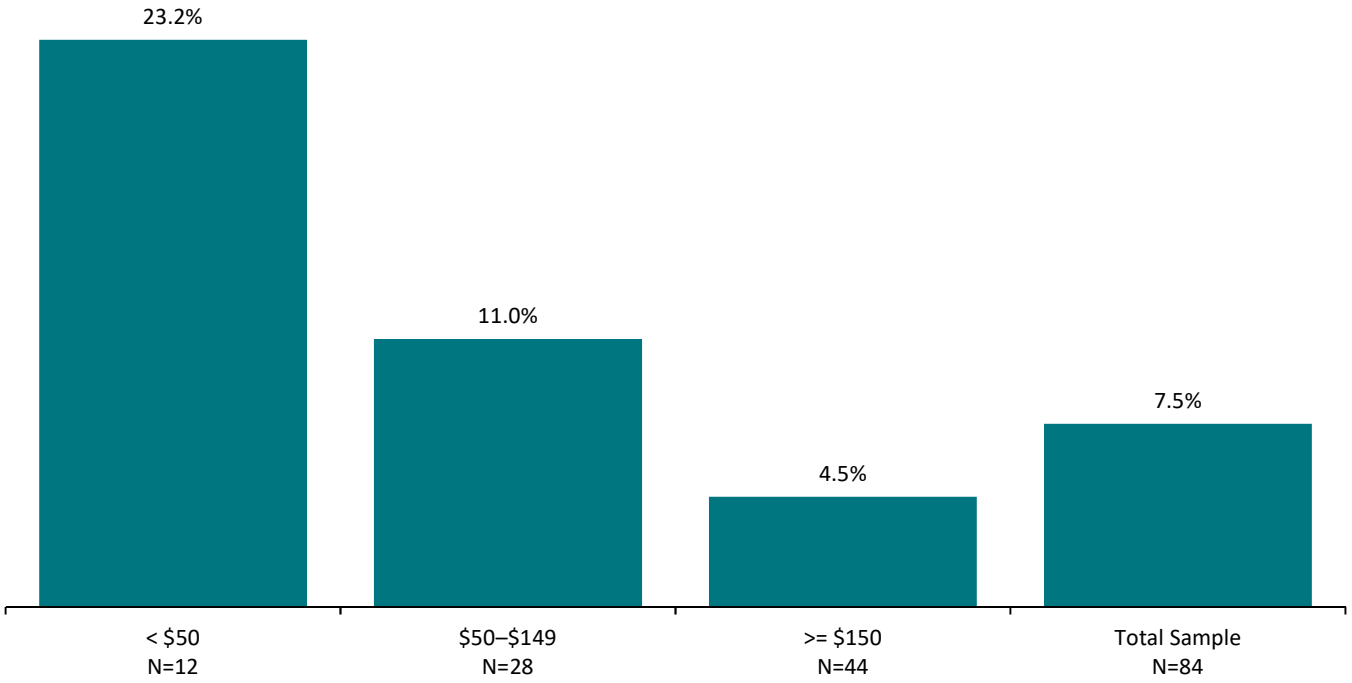
Note: Settlement dollars and damages are adjusted for inflation; 2023 dollar equivalent figures are presented.

- 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

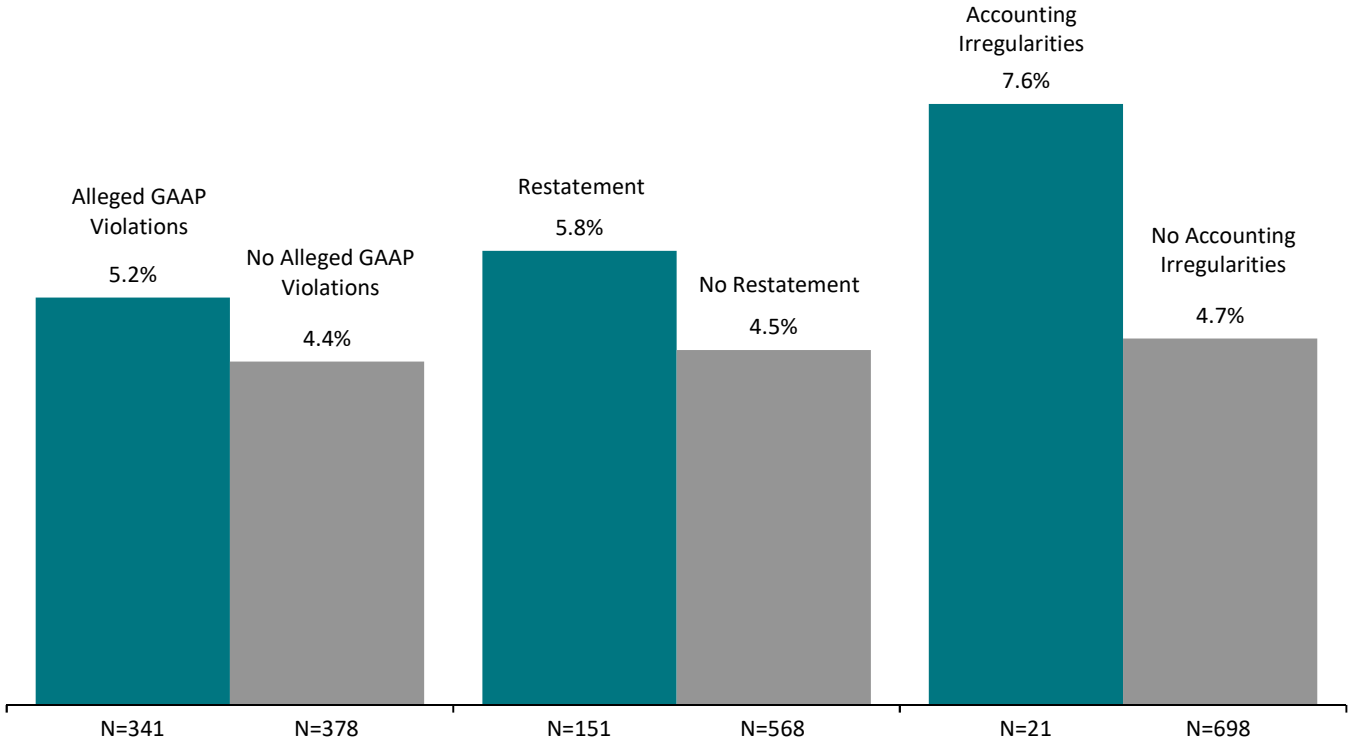
GAAP Violations

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.[10] For further details regarding settlements of accounting cases, see Cornerstone Research's annual report on *Accounting Class Action Filings and Settlements*.[11]

- 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).

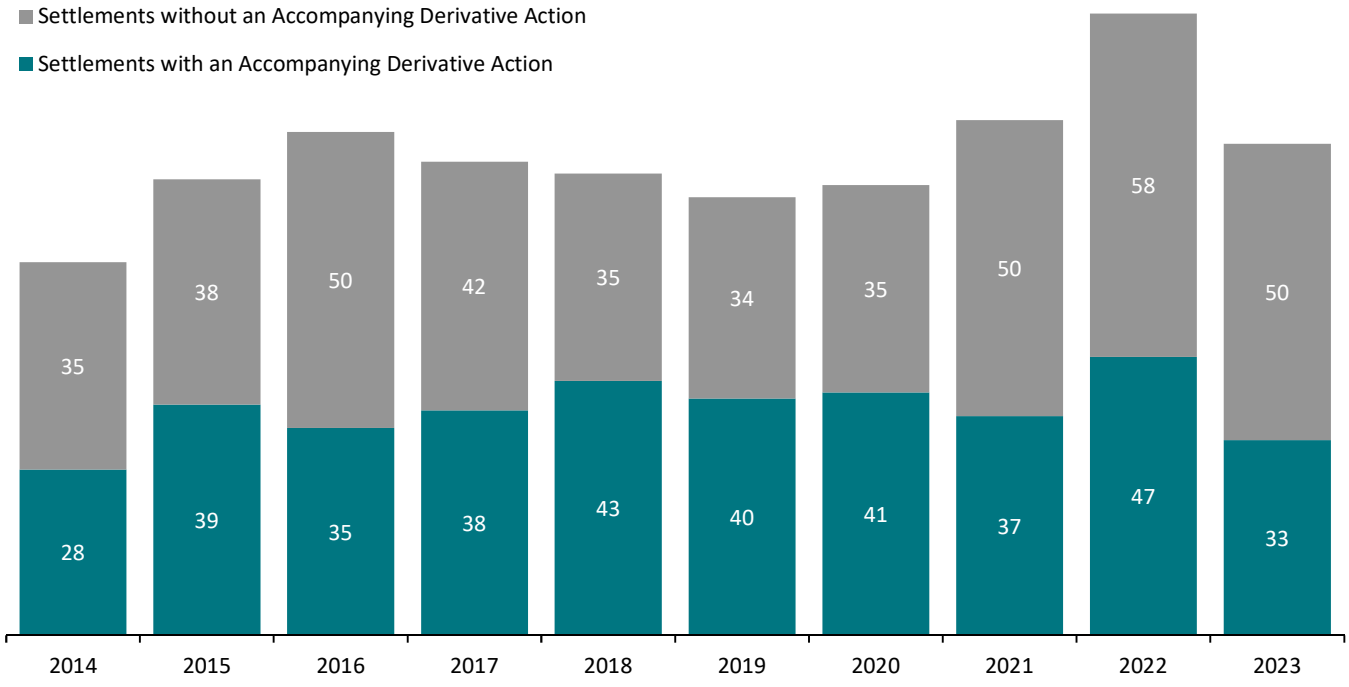
Derivative Actions

- 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.[12]
- 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*.[13]

Figure 9: Frequency of Derivative Actions
2014–2023



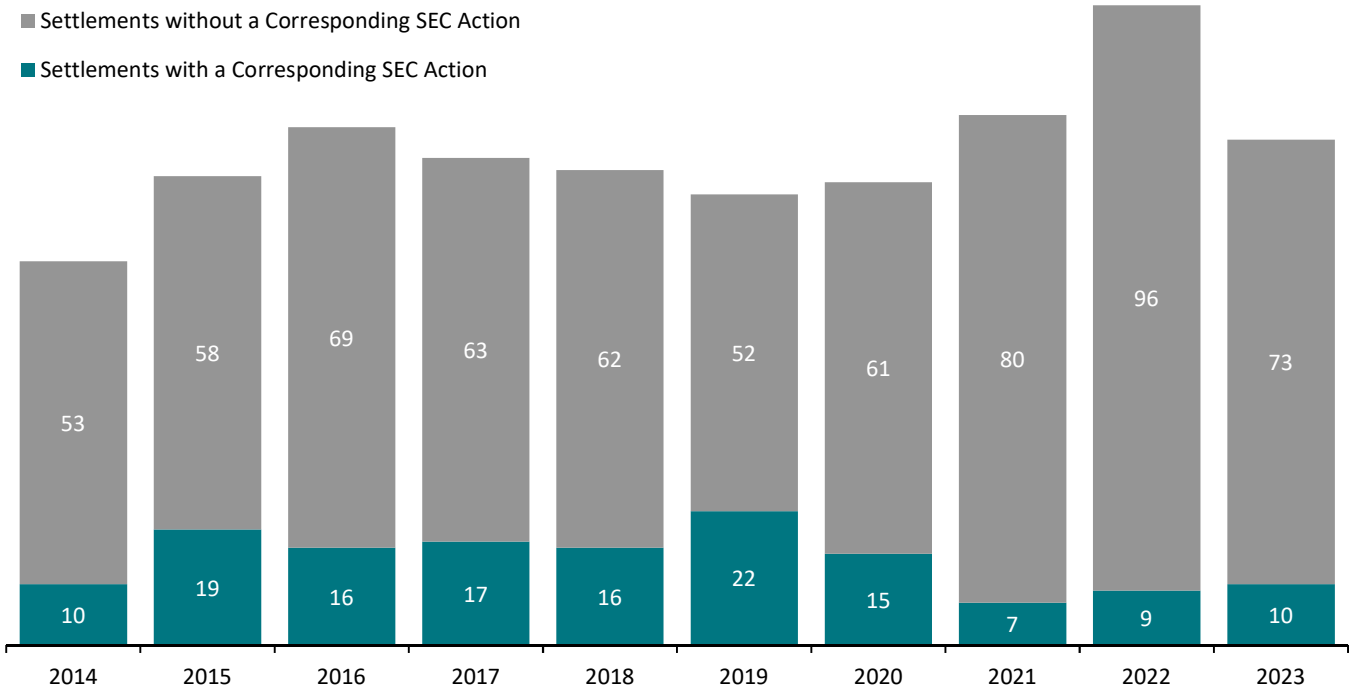
Corresponding SEC Actions

- 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.[14] 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.[15] 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."

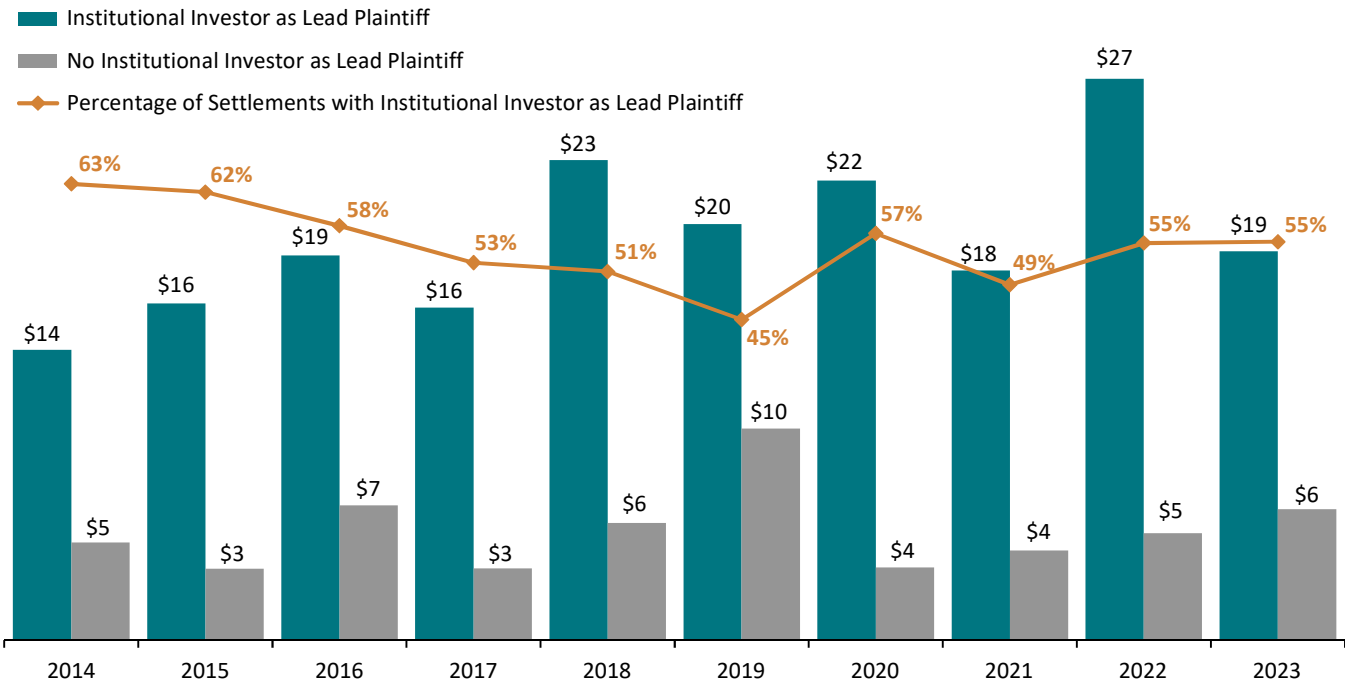
- In 2023, for cases involving an institutional investor as lead plaintiff, median "simplified tiered damages" and median total assets were two times and nine times higher, respectively, than the median values for cases without an institutional investor as a lead plaintiff.

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

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

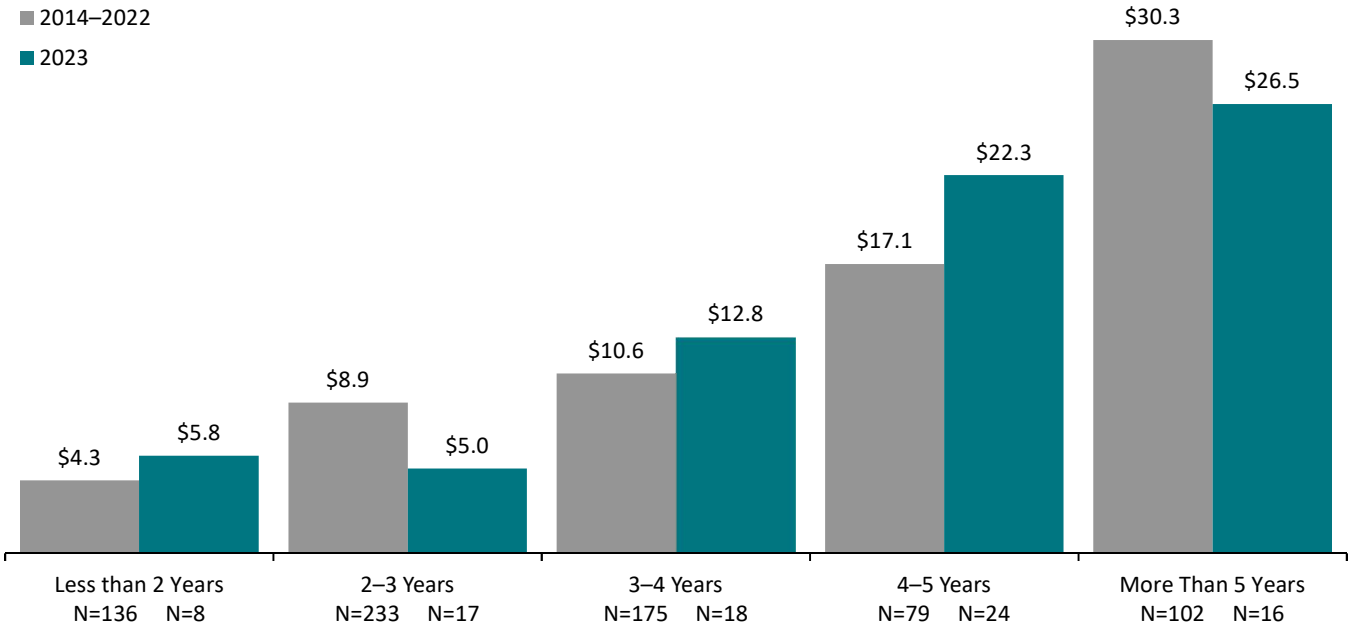
- Overall, less than one-third of cases settled in 2023 settled within three years of filing.
- Cases involving an institutional lead plaintiff continued to take longer to settle. In particular, cases settled in 2023 with an institutional lead plaintiff had a median time to settle of over 4.2 years compared 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.

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

- 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.[16]
- 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).

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

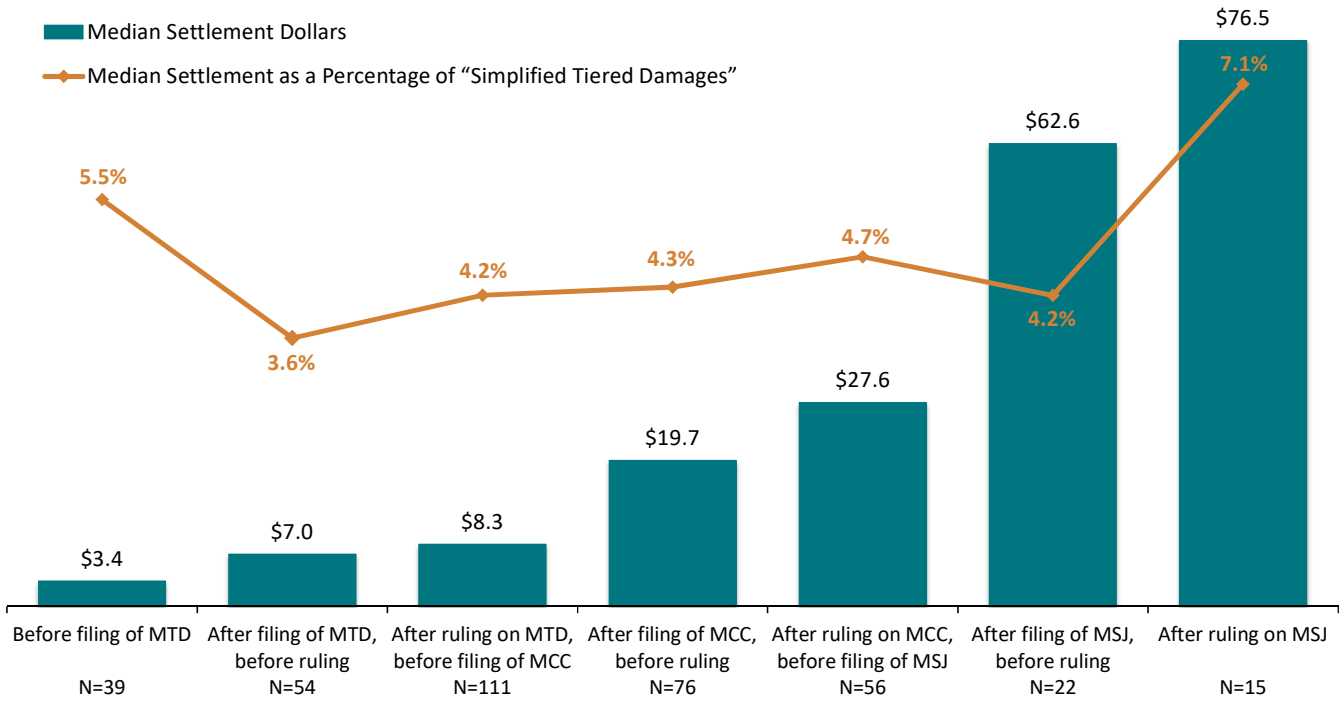
Using data obtained through collaboration with Stanford Securities Litigation Analytics (SSLA), this report analyzes settlements in relation to the stage in the litigation process at the time of settlement.

- 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 nearly 2,200 securities class actions filed after passage of the Reform Act (1995) and settled from 1996 through 2023. These settlements are identified based on a review of case activity collected by Securities Class Action Services LLC (SCAS).[17]
- The designated settlement year, for purposes of this report, corresponds to the year in which the hearing to approve the settlement was held.[18] Cases involving multiple settlements are reflected in the year of the most recent partial settlement, provided certain conditions are met.[19]

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

1 Reported dollar figures and corresponding comparisons are adjusted for inflation; 2023 dollar equivalent figures are presented in this report.

2 "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.

3 Comparison to "all-time" refers to the inception of Cornerstone Research's database of post–Reform Act settlements beginning in 1996.

4 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.

5 Laarni T. Bulan, Ellen M. Ryan, and Laura E. Simmons, *Estimating Damages in Settlement Outcome Modeling*, Cornerstone Research (2017).

6 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.

7 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/.

8 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.

9 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).

10 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.

11 *Accounting Class Action Filings and Settlements—2023 Review and Analysis*, Cornerstone Research, forthcoming in spring 2024.

12 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.

13 *Parallel Derivative Action Settlement Outcomes*, Cornerstone Research (2022).

14 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 involving the issuer defendant or other named defendants with allegations similar to those in the underlying class action complaint.

15 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).

16 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."

17 Available on a subscription basis. For further details see https://www.issgovernance.com/securities-class-action-services/.

18 Movements of partial settlements between years can cause differences in amounts reported for prior years from those presented in earlier reports.

19 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).

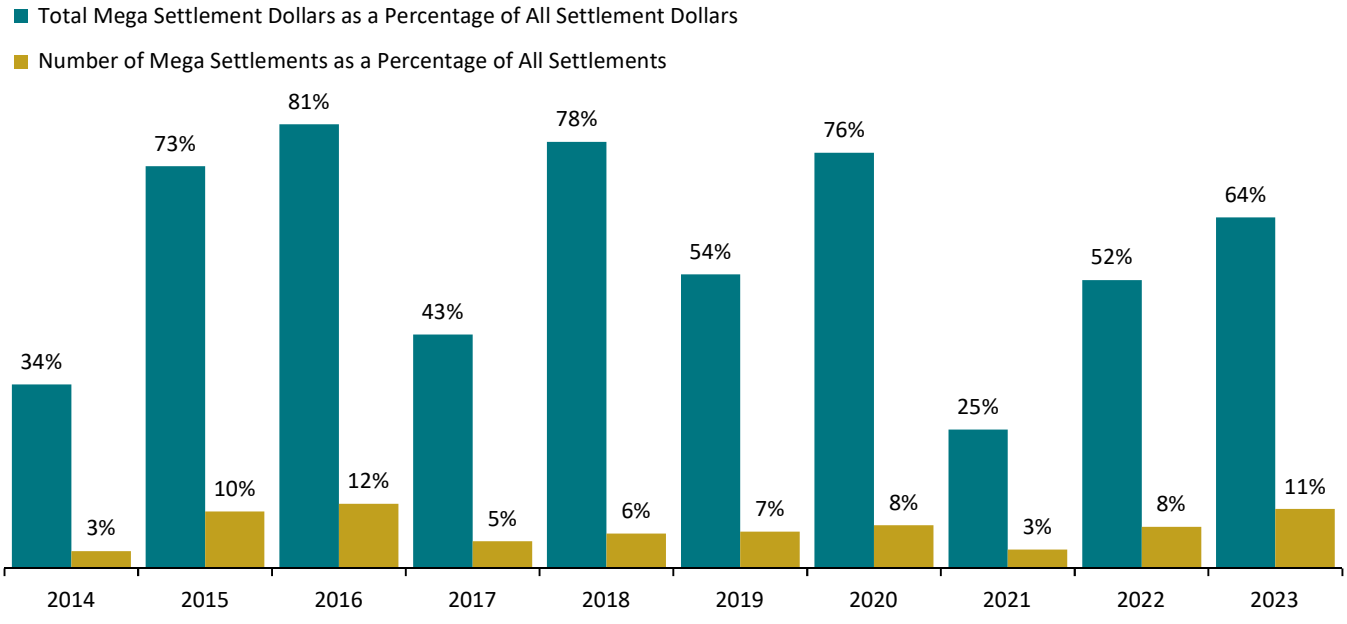
Appendix 3: Settlements by Federal Circuit Court
2014–2023

(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%

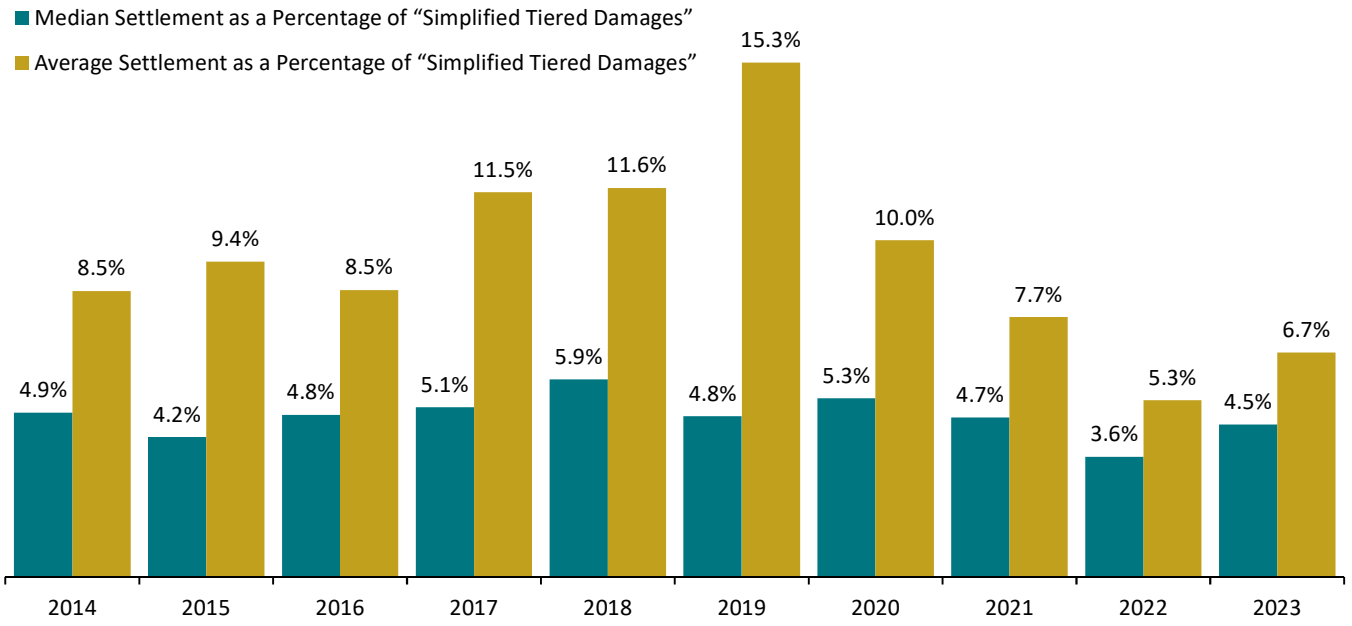
Note: Settlement dollars are adjusted for inflation; 2023 dollar equivalent figures are presented. Settlements as a percentage of "simplified tiered damages" are calculated only for cases alleging Rule 10b-5 claims (whether alone or in addition to other claims).

Appendix 4: Mega Settlements
2014–2023



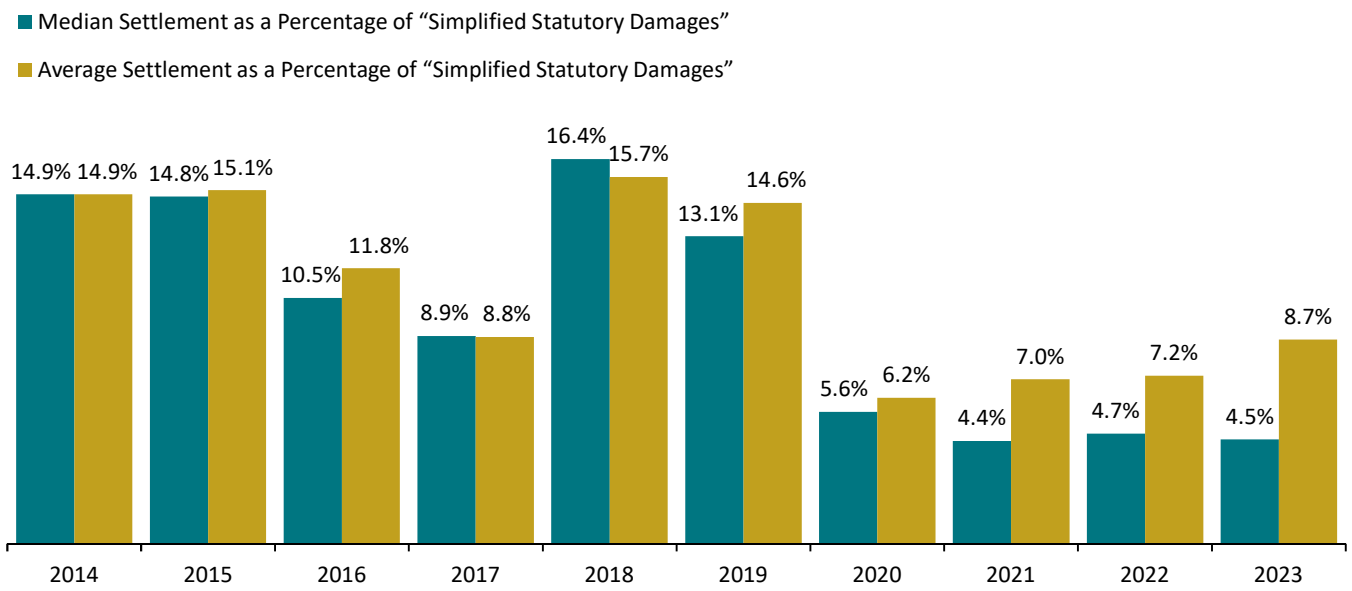
Note: Mega settlements are defined as total settlement funds equal to or greater than $100 million.

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).

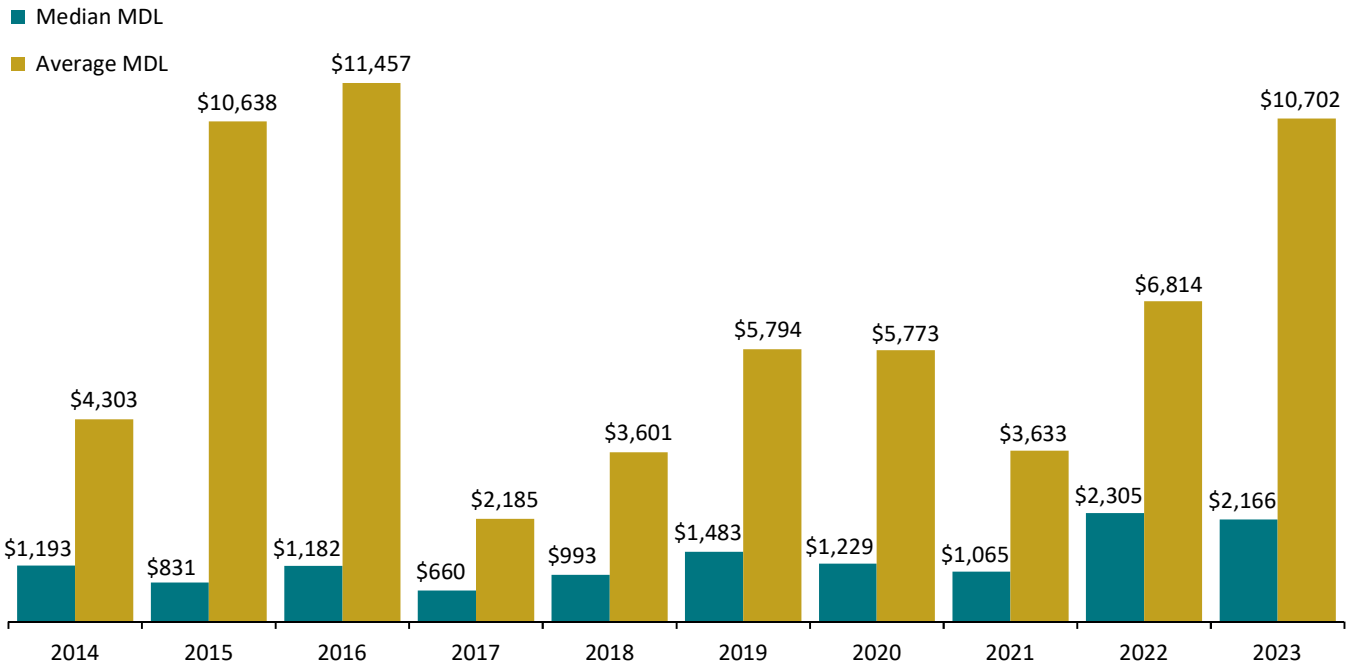
Appendix 6: Median and Average Settlements as a Percentage of "Simplified Statutory Damages"
2014–2023



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

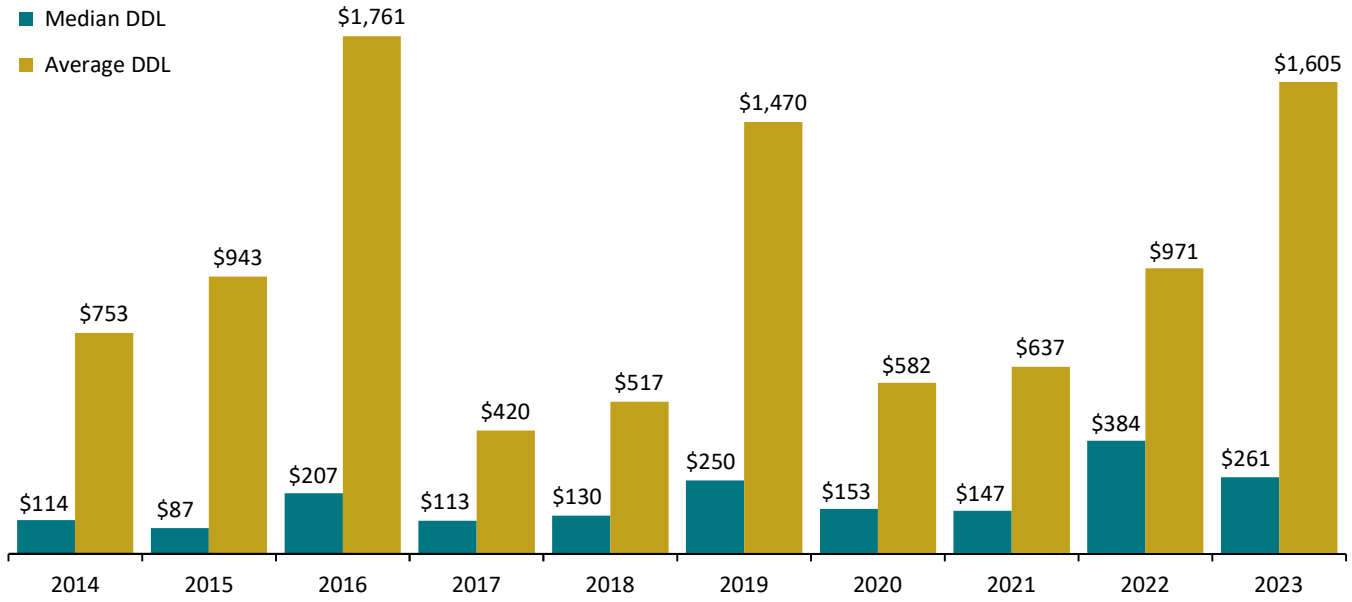
(Dollars in millions)



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

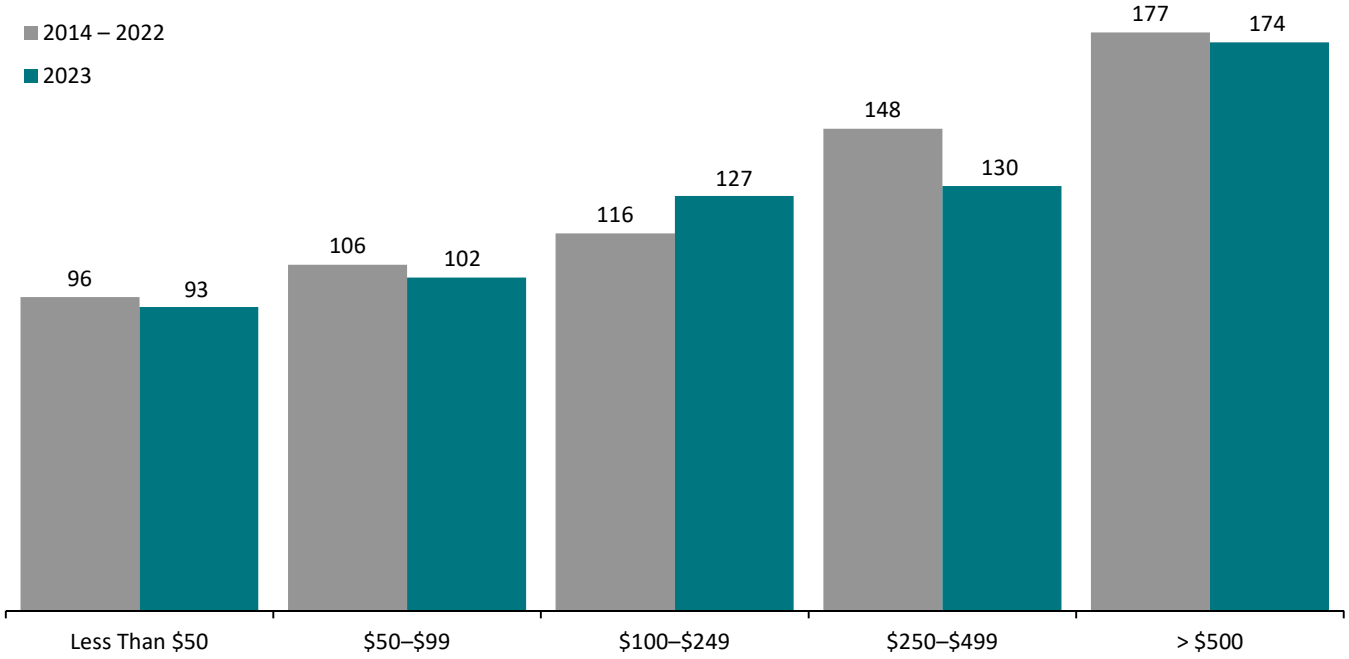
(Dollars in millions)



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).

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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.

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