

The Perils of Peer Benchmarking in Public D&O

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Over-dependence on Peer Benchmarking is Problematic

Estimating a public company's D&O coverage needs can be a fraught task. Stakeholders can find themselves inundated with jargon-laden mathematical models boasting of technical sophistication, but whose inputs and methodologies are essentially "black boxes" without empirical track records that permit objective statistical validation. A tempting alternative is to rely on peer company benchmarking: essentially, to estimate a company's D&O insurance needs by looking at the recently purchased limits of similar-sized peers in the same industry sector. While attractive in its simplicity, relying solely on "benchmarking" is an unreliable approach for estimating the right amount of D&O coverage because the potential risk exposures are different for each U.S.-listed company.

Over-dependence on peer benchmarking ignores the company-specific nature of D&O risk exposures facing insureds in a rapidly evolving securities litigation risk landscape. Over three decades of complex securities litigation outcomes with firm U.S. Supreme Court guidance have established that event study analysis is instrumental to properly quantify such exposures and related corporate liability.¹ Each securities claim is

different, and so are D&O risk exposures and potential liabilities for each publicly traded corporation. Given today's risk exposure landscape facing U.S. public companies, peer benchmarking is wholly unsuitable to effectively determine optimum D&O coverage sufficiency and corresponding attachment points.

High severity risk exposures are driven by company-specific stock price declines due to the remarkable amount of shares traded in response to **Adverse Corporate Events ("ACEs")** that may be alleged as corrective disclosures by investor plaintiffs.² These are factors that vary greatly by company (*and time*) even for U.S.-listed companies within a similar range of market capitalization and homogenous industry sectors. Ignoring these factors is perilous and may likely lead to mismatched coverages and an industry-wide "lemming behavior," in which many companies adopt the same coverage limits for no other reason than those same limits were adopted by peers. It is not surprising that public company D&O, as a highly specialized insurance segment, continues to face notable rate inadequacy further straining sustainable profitability in what appears to be a softening market.

All U.S. public companies and their Directors and Officers ("D&Os") are not similarly situated when it comes to assessing securities litigation risk exposures and evaluating potential corporate liability.

¹ According to the ruling in *Goldman Sachs Group Inc. v. Arkansas Teacher Retirement System*, 141 S. Ct. 1951 (2021) and applied in *Arkansas Teacher Retirement System v. Goldman Sachs Group, Inc.*, 77 F.4th 74 (2d Cir. 2023), residual stock price reaction of alleged corrective disclosures is essential for the U.S. Federal Judiciary to evaluate price impact in class certification contests.

² In general, Adverse Corporate Events ("ACEs") are events that are viewed negatively by participants in the market and may potentially be alleged as corrective disclosures in private securities-fraud class action lawsuits. SAR's Risk Tool technology uses a documented operative definition of ACEs and draws upon publicly available legal and financial databases to identify them using cloud-based technology that applies the court-accepted event study methodology. See Footnote No. 8 for greater detail about SAR's operative definition of ACEs.

SCA Loss Severity Inputs Based on Empirical Analysis in Accordance with Legal Precedent

Fortunately, specialized innovation in D&O data analytics offers alternatives to sub-optimal peer benchmarking, “black box” statistical models, and dated actuarial models. U.S. Supreme Court precedent has established a standardized methodology for estimating the amount of potential stock price inflation that investor plaintiffs may try to link to alleged violations of Rule 10b-5 (or Section 11) by D&Os (or IPO/SPO underwriters) of a public company on U.S. exchanges. According to the standing Solicitor General of the United States, Elizabeth Prelogar, “[w]hen event studies reveal no statistically significant movement in a company’s stock price at either the time that an alleged misstatement was made or the time when it was corrected, it is relatively straightforward to conclude that the alleged misstatement had no price impact.”³

Securities class action settlement discussions are increasingly centering around the magnitude of the stock drops and the portion that is deemed to be implicated by plaintiffs’ alleged misbehavior of D&Os or due to unforeseen adverse corporate events. Economically rational insurers and their executive risk advisors should enhance underwriting workflows and risk transfer solutions by adopting specialized use of event study analysis in harmony with both the U.S. Federal Judiciary and academia to quantify the potential loss from high severity shareholder class actions.

Indeed, as long as the potential ACEs that may trigger a securities class action (“SCA”) can be identified, the severity of potentially related settlement losses may be reasonably estimated with significantly greater accuracy than peer benchmarked loss estimates and inapplicable actuarial models. As such, all stakeholders in the D&O

space—the insureds, carriers, brokers, and reinsurers—can benefit from company-specific (and time-specific) SCA loss severity modeling that is appropriately based on the court-approved event study methodology.

Since June 2018, SAR has analyzed filed SCA claims against U.S. issuers by applying the court-established event study methodology to estimate the implied Estimate of Maximum Potentially Available Rule 10b-5 Aggregate Damages, or the magnitude of SCA loss severity, of each claim based on its identified parameters. Filtering to the appropriate sample of settled claims⁴, it is clear that the estimated SCA loss severity as of the time of filing of the operative complaint—alone—is a better predictor of final settlement valuations than a model that relies on market capitalization with industry controls to predict final settlements.

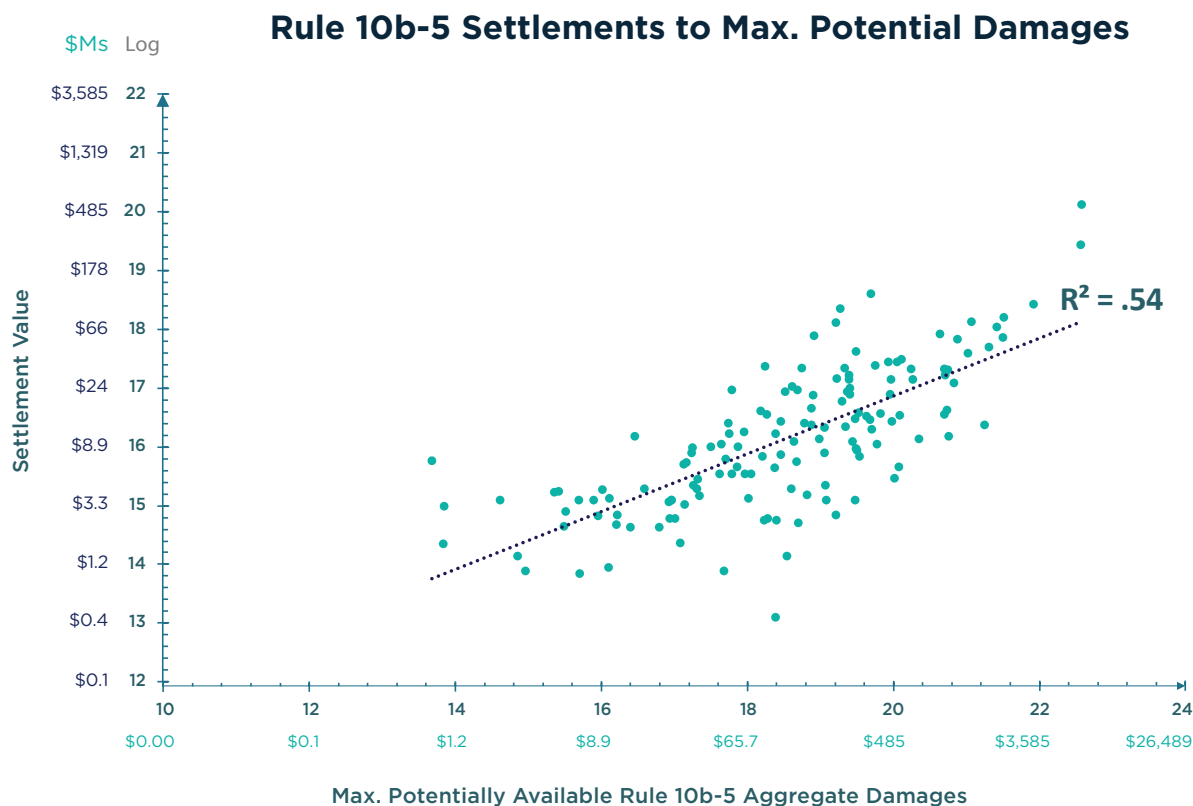
SAR has relied on its exclusive historical databases of SCA claim analyses and aggregation of ACEs for U.S.-listed companies based on the court-accepted event-study methodology to develop company-specific, and time-specific, D&O risk and severity loss models to estimate potential D&O settlement losses based on the frequency and magnitude of identified ACEs. SCA settlement rates vary significantly and inversely with the magnitude of estimated claim-specific loss severity. Empirical estimates of settlement rates and their gradient with respect to related loss severity allows SAR to meaningfully forecast potential settlement losses to limit unfavorable loss reserve developments that hinder sustainable profitability in the public D&O segment. More importantly, our approach—undoubtedly—enhances D&O risk selection to optimize underwriting performance to augment data-driven insights on a company and risk-specific basis.

Specialized application of event study analysis delivers superior public company D&O underwriting performance while providing actionable and company-specific insights for insureds.

³ Brief for the United States as Amicus Curiae Supporting Neither Party *In re Goldman Sachs Group Inc. v. Arkansas Teacher Retirement System*, No. 20-222 (2021).

⁴ Sample comprises 154 SCA claims that alleged violations of Rule 10b-5 through settlement.

The Power of Estimating SCA Loss Severity to Optimize Underwriting Performance



A simple univariate regression of SCA settlements on SAR's estimates of the claim-specific settlement losses in the sample of SCA complaints shows a robust statistical relationship between the two.⁵ 54% of settlement variation is explained by variation in SAR's loss severity estimates, with results indicating that a 10% increase in SAR's severity estimate significantly predict a 5.5% increase in settlement. Adding in basic additional controls for circuit court, stock exchange, and plaintiff firm increases the level of explained settlement variation to 82%, with the significant positive relationship between estimated severity and settlements remaining. By contrast, a regression model that uses market capitalization (as of the time of filing of the operative complaint) with industry controls only explains ~39% of settlement variation.

Of course, market capitalization is very broadly positively related to settlement losses, and settlement values may vary significantly by industry, but we know from legal precedent that there is no direct structural relationship between potential loss severity and market capitalization or industry sector. These two factors may serve as inputs in "kitchen-sink" predictive modeling approaches aimed at predicting potential settlement liability, but at best they are relatively weak correlates. Estimating potential SCA loss severity using event study analysis is a superior, direct estimate of potential magnitude of settlement losses based on company-specific risk exposures facing U.S.-listed companies and their D&Os.

⁵ Settlement amounts are reported by Institutional Shareholder Services Securities Class Action Services and tabulated by SAR. They exclude attorney's fees and additional potential settlement losses from shareholder derivative claims.

Our Risk Tool Technology Identifies ACEs and Estimates Potential SCA Loss Severity More Accurately than Peer Benchmarking

In a public company D&O underwriting context, relying on the court-established event study methodology together with industry-accepted modeling techniques for estimating potential shareholder damages in private securities-fraud litigation is clearly a more accurate, sound, and reliable approach than peer benchmarking. With the appropriate publicly available raw data and our highly specialized expertise, SCA loss severity modeling over standardized evaluative periods can provide valuable estimates of potential settlement losses to enhance risk selection, portfolio optimization, and optimum attachment point selection to enhance underwriting performance.

The limitations of peer benchmarking are starkly illustrated in the graphs below, which show the results of applying our Risk Tool to two sets (large cap and mid-cap) of three U.S. public companies.⁶ The illustrative sets of companies were chosen from among all mid-cap and large-cap companies in the Pharma/Biotech sector that had a market capitalization of ~\$3 billion (for the mid-caps) and between \$10 billion and \$100 billion (for the large caps) as of the end of the 3rd quarter of 2023.⁷ All companies operate in the same SIC code category (“Drugs”) and are in the pharmaceuticals industry.

Despite operating in the same industry sector and being very close in market value, there is a great diversity in the population of identified and potentially indemnifiable ACEs and estimated potential SCA loss severity.

- + The range of identified and potentially indemnifiable ACEs is especially remarkable among the mid-caps - spanning from 2 to 17.⁸ Also, the average number of identified ACEs is higher among the mid-caps. Any Chief Risk Officer, General Counsel, or Chief Financial Officer would likely want to understand why their company is viewed notably different by shareholders as evidenced by the variability in frequency and severity of identified ACEs.
- + The estimated potential SCA loss severity also varies greatly within the two sets of companies. Company A among the mid-caps has estimated potential SCA loss severity that is 40 times greater than that of Company B; Company X has estimated SCA loss severity that is almost 70 times greater than that of Company Y.
- + This sample of companies highlights the dangers of estimating certain D&O coverage limits, particularly for entity specific coverage (Side C) based on peer benchmarking analytics that rely heavily on market capitalization. There is remarkable diversity in identified ACEs and potential SCA loss severity, even holding market capitalization constant among homogenous industry sectors.

Innovation in D&O data analytics is a sure-footed move to enhance underwriting performance in a volatile D&O market.

⁶ The minimum required market cap of mid-cap companies was \$1.26 billion when sampled; the minimum required for the large-cap companies was \$3.27 billion when sampled.

⁷ The names of the companies are anonymized. The sample of companies are in the same SIC code category (i.e. the 283 “Drugs” category) and traded on either the NYSE or Nasdaq during the last two years.

⁸ The documented protocols of SAR’s Risk Tool technology define ACEs as events that correspond to daily close-to-close residual stock price movements that are negatively statistically significant at the 95% confidence standard and are classified into three categories: *Type I*: events known only due to company-originating news items (not 3rd-party news items or SEC filings); *Type II*: events known only due to identified SEC filings; *High-Risk*: events known both due to company-originating news items and SEC filings.

Market Capitalization and Adverse Corporate Events for Sample of Mid-Cap Companies



Risk Tool Summary of Mid-Cap Pharma/Biotech Companies

Market Cap Category	Anonymized Company Name [1]	Average Market Cap During Evaluative Period (Millions) [2]	ACE Count [3]	SCA Exposure (Millions) [4]	Estimated Potential SCA Loss Severity (Millions) [5]
Mid-Cap	"A"	\$4,081	14	\$7,953	\$1,332
	"B"	\$2,127	2	\$281	\$33
	"C"	\$3,730	17	\$4,637	\$577

[1] Mid-Cap companies randomly selected from among sample Pharma/Biotech companies with market capitalizations of approximately \$3 billion as of the end of 3Q'23.

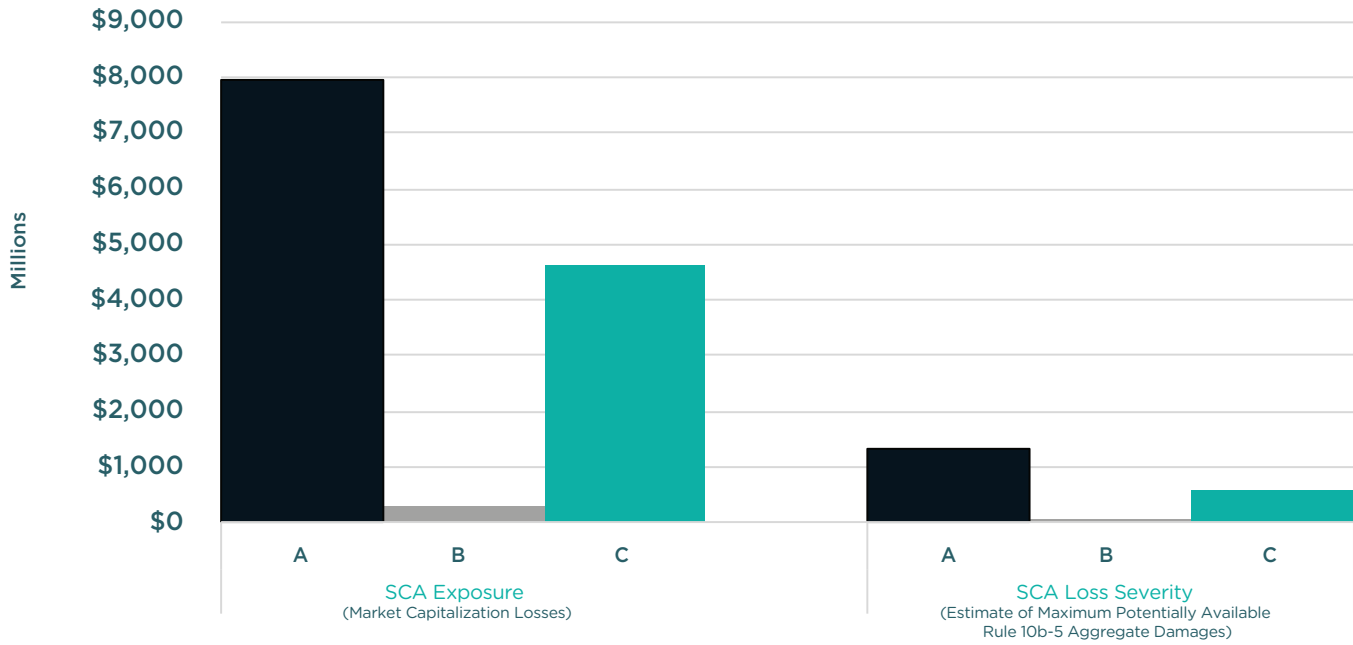
[2] Average Market-Capitalization during Evaluative Period.

[3] Number of ACEs identified during Evaluative Period.

[4] Aggregate market capitalization losses tied to identified high-risk ACE's during Evaluative Period.

[5] Estimated potential SCA Loss severity potentially related to ACEs that surpass severity thresholds of shares traded during a single close-to-close trading session at the 95% confidence standard.

Estimated SCA Exposure and Potential SCA Loss Severity for Sample of Mid-Cap Companies



Market Capitalization and Adverse Corporate Events for Sample of Large-Cap Companies



Risk Tool Summary of Large-Cap Pharma/Biotech Companies

Market Cap Category	Anonymized Company Name [1]	Average Market Cap During Evaluative Period (Millions) [2]	ACE Count [3]	SCA Exposure (Millions) [4]	Estimated Potential SCA Loss Severity (Millions) [5]
Large Cap	"X"	\$65,576	6	\$61,209	\$9,164
	"Y"	\$73,012	4	\$10,809	\$134
	"Z"	\$90,161	13	\$18,815	\$592

[1] Large-Cap companies randomly selected from among sample Pharma/Biotech companies with market capitalizations, between \$10 billion and \$100 billion dollars as of the end of 3Q'23.

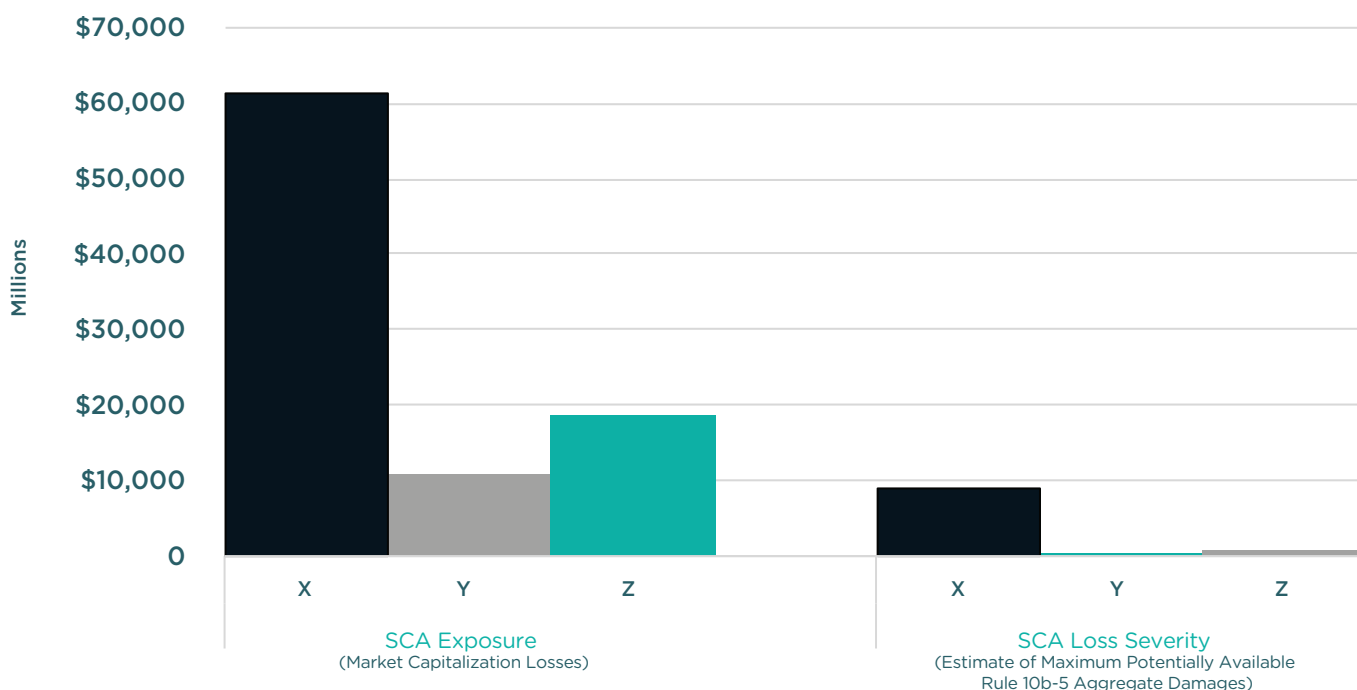
[2] Average Market-Capitalization during Evaluative Period.

[3] Number of ACEs identified during Evaluative Period.

[4] Aggregate market capitalization losses tied to identified high-risk ACE's during Evaluative Period.

[5] Estimated potential SCA Loss severity potentially related to ACEs that surpass severity thresholds of shares traded during a single close-to-close trading session at the 95% confidence standard.

Estimated Exposure and Potential SCA Loss Severity for Sample Large-Cap Companies



A larger analysis with our Risk Tool on the sample of all mid-cap and large-cap companies that traded on the NYSE and NASDAQ at the beginning 2023 further confirmed that there is only a notably weak association between peer company characteristics and securities class action exposure as measured by estimated market capitalization losses. For instance, the companies in the lowest sextile by market capitalization had on average more ACEs than those in the 4th sextile and higher average SCA loss severity than those in the 3rd sextile. Clearly, market capitalization, even among companies within the same industry sector, is an extremely weak indicator of relevant measures of potential SCA loss severity.

Statistical back-testing of our Risk Tool technology for U.S. public companies assures us of the soundness of our approach to implementing the court-approved event study methodology to identify ACEs. The most recent back-testing results, which are performed on a quarterly basis, demonstrate that our Risk Tool identified 93% of investor plaintiffs' alleged corrective disclosures that were tied to statistically significantly negative residual stock price reactions on a randomized sample of filed SCA claims. The remaining non identified alleged corrective disclosures were either not tied to statistically significant residual stock price reactions or were based on 3rd-party disclosures (mostly news articles or short-seller reports—not company-originating news items or SEC filings). Overall, our Risk Tool identified 78% of all alleged corrective disclosures in the SCA sample, demonstrating an empirically sound approach to enhancing underwriting workflows by applying the court-approved event study methodology.

V.

Conclusion

The court-approved event study methodology together with industry-accepted modeling techniques are now instrumental for key stakeholders in the D&O ecosystem. During a volatile market where each company carries and is expected to have a dynamic D&O risk profile, specialized D&O data analytics are essential for delivering effective risk transfer solutions. Company-specific evaluation of stock price reaction using the court-approved event study methodology is necessary to determine the magnitude

of potential D&O risk exposures and related coverage sufficiency. Peer benchmarking, by contrast, has limited usefulness because potential SCA loss severity depends on company-specific factors that are only weakly correlated with market capitalization and homogenous industry sectors. As well, peer benchmarking provides no help in identifying potentially indemnifiable ACEs to deliver actionable insights to insureds.

About SAR

SAR is a pioneer in public company D&O data analytics solutions. The Company was founded in 2018 and relies on specialized data science that implements U.S. Federal Court-approved methodologies to identify and track adverse corporate events that impact stock price performance of U.S. and non-U.S. issuers that trade on the NYSE and NASDAQ. Through a cloud-native platform, SAR dispenses comprehensive data-driven insights for leading global insurance companies and their distribution partners. Highly specialized expertise, decades of independent empirical research, and tried and true technologies, have established SAR as an innovation leader in public company D&O data analytics solutions anchored by human accountability.

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