IN THE COURT OF CHANCERY OF THE STATE OF DELAWARE

SHAREHOLDER REPRESENTATIVE SERVICES LLC solely in its capacity as representative of the Securityholders,	)	
Plaintiff,	)	
v.	)	C.A. No. 2020-1069-MTZ
ALEXION PHARMACEUTICALS, INC.,	)	
Defendant.	)	

MEMORANDUM OPINION

Date Submitted: March 4, 2025
Date Decided: June 11, 2025

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ZURN, Vice Chancellor.

Defendant Alexion Pharmaceuticals, Inc. purchased nonparty Syntimmune, Inc. to develop a drug to treat rare diseases. The merger agreement promised discrete lump sum payments to Syntimmune's former stockholders upon the achievement of development milestones, and obligated Alexion to use commercially reasonable efforts to achieve those milestones. The agreement designated plaintiff Shareholder Representative Services, LLC ("SRS") as the former Syntimmune stockholders' representative.

Alexion terminated the drug development program. SRS sued for breach of the efforts obligation. After trial, I concluded Alexion had breached its efforts obligation by terminating the drug development program.

With the benefit of supplemental briefing, this opinion addresses the expectation damages Alexion owes for that breach. Because the earnout provision provides for lump sum payments for contingent events, this decision employs an expected value approach. It calculates damages by weighting each milestone's earnout payment by its probability of success, discounted to present value at the time of breach. It calculates that SRS is entitled to $180,944,915.32 in damages for Alexion's breach of its efforts obligation, plus pre- and post-judgment interest.

I. BACKGROUND

This decision relies on the factual findings set forth in the post-trial opinion on liability (the "September Opinion") and the trial record.[1] The facts set forth herein were proven by a preponderance of the evidence at trial.

A. The Syntimmune Merger And Earnout Agreement

In September of 2018, Alexion acquired Syntimmune to develop and commercialize a monoclonal antibody that became known as ALXN1830.[2] The purchase price included $400 million up front and $800 million in earnout payments tied to eight development milestones.[3] Milestone 1 provided for a $130 million payment upon the completion of a successful Phase 1 Clinical Trial, as defined by the Merger Agreement.[4] The September Opinion concluded Milestone 1 had been

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[1] *S'holder Representative Servs. LLC v. Alexion Pharms., Inc.*, 2024 WL 4052343 (Del. Ch. Sept. 5, 2024) [hereinafter "Sept. Op."]. This opinion assumes familiarity with the September Opinion and uses its defined terms and citation formats.

Citations in the form "SRS Op. Suppl. Br. —" refer to SRS's post-trial opening supplemental damages brief, available at docket item ("D.I.") 384. Citations in the form "ALXN Ans. Suppl. Br. —" refer to Alexion's post-trial answering supplemental damages brief, available at D.I. 392. Citations in the form "SRS Reply Suppl. Br. —" refer to SRS's post-trial supplemental damages reply brief, available at D.I. 398.

A leading treatise on damages observes, "Only so much judicial time can be used to investigate the precise losses suffered or the gains received from a contract breach." 3 Dan B. Dobbs, *Law of Remedies: Damages—Equity—Restitution* § 12.1(2), at 18 (2d ed. 1993) [hereinafter "Dobbs"]. This opinion has probably exceeded whatever that amount of time should be.

[2] Merger Agr. §§ 1.1, 3.8(b).

[3] *Id.* § 3.8(b).

[4] *Id.* § 3.8(a)(i).

achieved, held Alexion breached its contractual obligation to pay SRS $130 million upon achievement of that milestone, and awarded damages in that amount.[5]

Under the Merger Agreement, Alexion promised earnout payments for the successful completion of Milestones 2 through 8, as follows[6]:

Earnout Provision Summary for Milestones 2 Through 8		
Milestone	**Milestone Amount**	**Triggering Event**
2	$ 120,000,000.00	First dosing of the first patient in a Pivotal Clinical Trial for any first Indication.
3	$ 120,000,000.00	First dosing of the first patient in a Pivotal Clinical Trial for a second Indication.
4	$ 150,000,000.00	Receipt of Regulatory Approval from the FDA for any first Indication.
5	$ 150,000,000.00	Receipt of Regulatory Approval from the FDA for a second Indication.
6	$ 25,000,000.00	Receipt of Regulatory Approval from the EMA for any first Indication.
7	$ 25,000,000.00	Receipt of Regulatory Approval from the EMA for a second Indication.
8	$ 80,000,000.00	The determination at the end of Alexion's fiscal year that the Net Sales for such fiscal year across all Indications equals or exceeds One Billion Dollars ($1,000,000,000).

The Merger Agreement provides that Milestones 6 and 7 "shall be achieved upon receipt of the applicable reimbursement and/or pricing approval from the applicable Governmental Entity in three (3) out of the following five (5) countries: United

[5] Sept. Op. at *48.

[6] Merger Agr. § 3.8(a)(ii)–(viii).

Kingdom, France, Italy, Germany or Spain."[7] Each milestone payment is due forty-five days after the milestone's achievement.[8]

To propel ALXN1830 toward those milestones, the Merger Agreement required Alexion to use Commercially Reasonable Efforts ("CREs" and the "CRE Obligation"), as defined by the agreement for seven years.[9]

This opinion defines a "Milestone Event" as the achievement of each milestone, noted in the form M_i, where *i* represents a given Milestone Event number. This opinion notates the probability of a Milestone Event (each a "Milestone Probability") as $P(M_i)$. This opinion also deals with conditional probabilities, that is, the probability that an event will occur given that some other event occurred. It notates the probability that a later Milestone Event will occur given that an earlier Milestone Event occurred as $P\left(M_i \middle| M_j\right)$. For example, the conditional probability of M_3 given M_2 is notated $P(M_3|M_2)$.

B. Syntimmune's Largest Former Stockholder Values Its Right To Milestone Payments.

Shortly after Alexion acquired Syntimmune, Syntimmune's largest former stockholder Apple Tree Partners ("ATP") valued its right to future distributions from Milestones 2 through 8 based on the milestone amounts and probabilities of

[7] *Id.* § 3.8(c).

[8] *Id.* § 3.8(e).

[9] *Id.* § 3.8(f).

achievement.[10] ATP estimated the Milestone Probabilities "[b]ased on discussions with management and considering the current status of clinical trials" as well as "observed clinical trial success rates."[11]

ATP Milestone Probability Estimates	
Milestone Event	**Probability**
M_2	0.80
M_3	0.75
M_4	0.53
M_5	0.45
M_6	0.53
M_7	0.45
M_8	0.10[12]

[10] JX 2962; Hall Tr. 107, 109–16.

[11] JX 2962 at 22–26. ATP discounted to present value based on estimates of when the milestones would be achieved. ATP's probabilities for Milestones 4 through 7 assume the probability of EMA approval is the same as the probability of FDA approval for a given indication. *See id.* at 23.

[12] ATP's valuation report does not directly estimate $P(M_8)$ as 0.10. ATP valued its Milestone 8 distribution using a repeated random sampling technique called a Monte Carlo simulation, using 100,000 simulation paths. *Id.* at 24–25, 30 n.2, 32, 34. The 0.10 probability can be inferred from ATP's report.

ATP calculated that if Milestone 8 were achieved, it would receive $57,886,923. ATP assumed that if the milestone were achieved, it would be achieved in 2026. *Id.* at 24. In Monte Carlo "simulation paths where the total simulated sales across the three indications was shown to be equal to or greater than $1 billion," ATP's projected distribution "was discounted back to present value using a discount rate" of 4.49% over 8.16 years. *Id.* at 25, 32. Based on those figures, the present value of ATP's distributions in successful simulations was $40,451,131.57.

ATP's report states the "average present value across 100,000 different simulation paths" was $4,047,941. *Id.* at 25. Because unsuccessful simulation paths have a present value of $0 (and because ATP always discounted to present value using the same discount rate and timing for successful paths), the average present value of ATP's distributions is

C. The ALXN1830 Program

Alexion initially focused the ALXN1830 program on the PV, gMG, and WAIHA indications.[13] But ALXN1830 faced significant development obstacles after the merger, including a contaminated drug supply and adverse patient reactions that forced it to pause several clinical trials.[14] The emergence of COVID-19 halted all of Alexion's trials, while its competitors were able to push ahead.[15] In April 2020, Alexion shifted funding away from ALXN1830, further delaying its development.[16] The next month, Alexion decided the PV indication was not worth pursuing.[17]

But the program regained some momentum. In March 2021, Alexion began dosing in a Phase 1 trial in healthy volunteers called HV-108.[18] Alexion also

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equal to the success rate multiplied by the present value of a successful simulation path, as follows:

$$\$4{,}047{,}941 = R \cdot \$40{,}431{,}131.57,$$

where R is the success rate. *See* Joseph K. Blitzstein & Jessica Hwang, *Introduction to Probability* 149–50 (2015). Solving that equation yields a success rate of about 10%, which corresponds to the probability of success for Milestone 8.

[13] JX 1229 at 1–2; JX 1424 at 1–2; JX 609 at 2, 12; JX 697 at 1.

[14] Ledwith Tr. 1029–31, 1038; *see* JX 923 at 39; JX 1139.04 at 25.

[15] *See* Ledwith Tr. 1063, 1070; JX 1333 at 3; JX 1337; JX 1659; JX 1994; JX 2272; JX 2296; JX 2302; JX 2349; JX 2359; JX 2388; JX 2415; JX 2451; JX 2486; JX 2569; JX 2570; JX 2583; JX 2745; JX 2791.

[16] JX 1451 at 2–4; Orloff Tr. 862.

[17] JX 1477.

[18] JX 2367 at 1; Pirozzi Tr. 1460.

planned Phase 2 studies in gMG and WAIHA, even though it was clear ALXN1830 would be later to market than originally anticipated relative to its competitors.[19]

In July 2021, Alexion was acquired by AstraZeneca plc.[20] AstraZeneca had promised its shareholders $500 million in recurring synergies from the acquisition, so Alexion launched a full portfolio review of its drug programs.[21] Soon after the merger, Alexion deprioritized the ALXN1830 gMG and WAIHA programs in favor of TED and cAMR.[22] None of Alexion's competitors were pursuing TED or cAMR treatments, so Alexion believed it could be the first to market in these indications.[23]

Alexion used an internal metric for probability of technical and regulatory success ("PTRS") "as a guide" to assess its programs.[24] PTRS has two components: probability of technical success, and probability of regulatory success given technical success.[25] Overall PTRS is found by multiplying the two components and

[19] JX 2298 at 1–2, 8; JX 2299 at 1–2, 8; JX 1699 at 7; JX 609 at 12.

[20] JX 1865 at 3.

[21] *See* JX 1946 at 3, 7–9; JX 1933 at 1; JX 1997; Washburn Tr. 638.

[22] *See* JX 1928; JX 1933 at 1; JX 2021 at 1; JX 2042 at 1; JX 2065 at 1; Lee Tr. 445, 457; *see also* JX 1948; Russell Tr. 732.

[23] *See* JX 2226 at 2; JX 1955 at 7; Russell Tr. 772.

[24] Lee Tr. 476.

[25] *See* Borboroglu Tr. 1403. The technical success component is further broken into the conditional probabilities of success at each stage of preclinical and clinical testing. *See* JX 1863 at 53.

maps onto the probability of FDA approval from the outset.[26] Shortly before receiving HV-108 data, Alexion estimated its cAMR program had a 50% chance of a successful Phase 2 study.[27] Alexion set the cAMR program's overall PTRS at 34%.[28] As for the TED program, Alexion estimated a 43% chance of a successful Phase 2 study[29] and an overall PTRS of 30%.[30]

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[26] Borboroglu Tr. 1403 ("Technical success assigned by our clinical teams; regulatory success assigned by our regulatory teams. You multiply the two. That's PTRS."); Washburn Tr. 645 ("[PTRS] is a way to assess at different stages of a development program what the probability is that you will be successful in getting *a regulatory approval* as well as a compound . . . that can be manufactured and delivered." (emphasis added)).

The preponderance of the evidence at trial showed an industry understanding of near-universal overlap in approval by the FDA and EMA, supporting the assumption that FDA and EMA approval go hand in hand. SRS's antibody development expert assumed EMA approval was guaranteed upon FDA approval, and Alexion assumed the same in its internal projections. Kinch Tr. 353–54, 413; JX 2498 at 73; *see* JX 690 at 276; JX 2962 at 23. So overall PTRS may be thought of as the probability of FDA approval, the probability of EMA approval, or the probability of FDA and EMA approval.

Neither the record nor the parties suggest that "regulatory success" requires obtaining the "reimbursement and/or pricing approval[s]" for Milestones 6 and 7. Merger Agr. § 3.8(c).

[27] JX 1863 at 53. The PTRS data show a 100% chance of a successful Phase 1 study and a 50% chance of a successful Phase 2 study given a successful Phase 1 study. Therefore, the data show a 50% chance of a successful Phase 2 study from the outset. *See id.*

[28] *Id.*

[29] *See* JX 2608 at 4; JX 2225 at 5. The PTRS data show a 100% chance of a successful Phase 1 study and a 43% chance of a successful Phase 2 study given a successful Phase 1 study. Therefore, the data show a 43% chance of a successful Phase 2 study from the outset. *See* JX 2608 at 4.

[30] *See* JX 2608 at 4; JX 2225 at 5.

In August 2021, HV-108 was paused due to a COVID-19 outbreak.[31] Alexion received preliminary data from the paused study in September. The data showed a high immunogenicity rate,[32] but that was not news to Alexion.[33] A preliminary assessment from the day the data was received showed there was no impact on an important efficacy indicator, and the "safety profile remain[ed] unchanged."[34] But by the next day, "the current view [at Alexion was] that development of 1830 [was] going to be stopped."[35]

Alexion received additional HV-108 data in November. An outside consultant Alexion hired to analyze the data concluded that the "detected ADA response d[id] not appear to compromise overall benefit vs. risk," and there was "an adequate weight of evidence to resume study HV-108."[36] But Alexion had made up its mind about ALXN1830. In response to the HV-108 data, Alexion reduced TED's probability of a successful Phase 2 study from 43% to 20%,[37] and reduced TED's

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[31] JX 1972.02.

[32] Immunogenicity rates were determined based on the presence of antidrug antibodies in study subjects. *See* Kinch Tr. 248–49.

[33] JX 1987 at 3; JX 2006 at 1.

[34] JX 1990 at 2.

[35] *Id.* at 1.

[36] JX 2189 at 26.

[37] JX 2608 at 4. The 20% figure was the conditional likelihood of a successful Phase 2 study given a successful Phase 1 study. But the probability of a successful Phase 1 study continued to be 100%. *Id.*

overall PTRS from 30% to 10%.[38] Alexion also reduced cAMR's overall PTRS to 10%.[39]

Alexion decided to terminate the program on December 14, 2021.[40] The September Opinion held that breached Alexion's CRE Obligation.[41] The September Opinion determined "[t]he preponderance of the evidence supports the conclusion that the decision was influenced, motivated by, or driven by AstraZeneca's pursuit of merger synergies."[42]

D. Dr. Michael Kinch's Testimony

At trial, SRS's antibody development expert Dr. Michael Kinch opined about the probability of achieving Milestones 2 through 5 had Alexion used CREs. Kinch offered calculations based on his open-source database "of experimental medicines and their likelihood of being approved" called the Clinical Drug Experience Knowledgebase ("CDEK").[43] Kinch built CDEK to provide a database for academics who could not afford the high subscription costs of the private databases pharmaceutical companies use to evaluate the probability of success for drug

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[38] JX 2225 at 13–14.

[39] *Id.* at 4, 13–14. The record does not indicate how much Alexion reduced cAMR's probability of a successful Phase 2 study.

[40] JX 2226 at 2.

[41] Sept. Op. at *41.

[42] *Id.* at *48.

[43] *E.g.*, Kinch Tr. 207–09, 218–19, 341–42, 349–54, 361–65; *see* JX 2498 at 66–76.

development programs.[44] CDEK only includes publicly available information based on the reported progress of drug molecules.[45] Kinch acknowledged failed clinical trials are often underreported and that including that missing data "would increase, potentially, the likelihood of failure" predicted using CDEK.[46]

Based on his comparisons to similar molecules in CDEK, Kinch estimated the probability of M_2 was between 0.582 and 1.[47] He opined that the probability of M_4 given that M_2 occurred was 0.684.[48]

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[44] Kinch Tr. 208–10, 385–86.

[45] *Id.* at 376.

[46] *Id.* at 377–79; *see also* Jagannathan Tr. 1336–37.

[47] Kinch Tr. 348; *see* JX 2498 at 68–69. Kinch understood that estimating $P(M_2)$ required him to estimate ALXN1830's likelihood of reaching a PCT in *any* first indication, as opposed to estimating a given indication's likelihood of advancing to a PCT. Kinch Tr. 220 ("Q. So taking a look at milestone No. 2, Dr. Kinch, what do you understand that to require in order to trigger the payment of milestone No. 2? A. Well, as indicated here, it's the first dosing of the first patient in a pivotal clinical trial for *any* first indication." (emphasis added)).

[48] Kinch Tr. 348; JX 2498 at 68–69 (estimating the probability of "receiving FDA approval for a first indication, and therefore, reaching Milestone 4" by multiplying the probability of reaching Milestone 2 by 0.684). This is an estimate of ALXN1830's likelihood of receiving FDA approval in *any* first indication given that it reached a PCT in some first indication. Built into this probability is the possibility that ALXN1830 might achieve Milestone 4 with the following sequence: (1) reach a PCT in indication X; (2) reach a PCT in indication Y; (3) receive FDA approval for indication Y.

Kinch opined the probability of M_3 given that M_2 occurred was equal to the initial probability of M_2.[49] Similarly, he opined the probability of M_5 given that M_4 occurred was equal to the probability of M_4.[50]

Kinch's relevant opinions are summarized below:

Kinch's Opinions Based on CDEK	
Opinion	**Notation**
The probability of M_2 is between 0.582 and 1.	$0.582 \leq P(M_2) \leq 1.$
The probability of M_4 given that M_2 occurred is 0.684.	$P(M_4 \mid M_2) = 0.684.$
The probability of M_3 given that M_2 occurred is equal to the probability of M_2.	$P(M_3 \mid M_2) = P(M_2).$
The probability of M_5 given that M_4 occurred is equal to the probability of M_4.	$P(M_5 \mid M_4) = P(M_4).$

Regarding Milestones 6 and 7, Kinch's opinion was "limited to an assessment of the likelihood of regulatory approval from the EMA and d[id] not consider the likelihood of reimbursement and/or pricing approval from the EMA."[51] Kinch

[49] *See* Kinch Tr. 349–50 (indicating he assumed that for all relevant metrics, ALXN1830's probability of success in a second indication given success in a first indication was equal to the molecule's probability of success in a first indication); JX 2498 at 76 n.3.

Importantly, this is very different than suggesting M_2 was just as likely as M_3 from the outset. If M_2 and M_3 had the same probability, that would mean ALXN1830's chances of reaching a PCT in at least two indications were the same as its chances of reaching a PCT in at least one indication. In other words, it would imply that a second indication was guaranteed to reach a PCT upon a first indication doing so. That would have been great news for monoclonal antibody research.

[50] *See* Kinch Tr. at 349–50; JX 2498 at 76 n.5.

[51] JX 2498 at 10 n.22; Kinch Tr. 413.

testified to a near-universal overlap between FDA and EMA approval.[52] He made partial calculations for $P(M_6)$ and $P(M_7)$ based on the assumption that EMA approval was guaranteed for any indication that received FDA approval.[53] Kinch noted Alexion made the same assumption in its internal projections.[54] Kinch's calculations did not account for the requisite country-specific approvals for Milestones 6 and 7.

E. John Russell's Testimony

John Russell was SRS's expert on the evaluation of the pharmaceutical competitive landscape, market opportunities, and commercial potential and pricing and reimbursement.[55] Russell testified that if ALXN1830 received EMA approval, it was likely to receive the country-specific approvals to satisfy Milestones 6 and 7.[56]

Russell also testified, based on Alexion's 2021 global revenue projections, that ALXN1830 had the potential to achieve Milestone 8 if it obtained approval.[57]

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[52] Kinch Tr. 353–54.

[53] *See id.* at 413; JX 2498 at 76.

[54] Kinch Tr. 352–54; *see* JX 690 at 276.

[55] Russell Tr. 669.

[56] *Id.* at 672.

[57] *Id.* at 744–45 ("Q. So did you form an opinion as to whether ALXN1830 still had the potential to achieve up to a billion dollars in net sales? A. Yes, it did, based on looking at this data and analyzing it, yes. Q. And was Alexion's internal forecasting consistent with that? A. Yes, it was. Yes.").

The Alexion model he relied on forecasted a peak of $1.35 billion in combined annual revenues for TED and cAMR, and revenues over $1 billion for the same two indications in four more years.[58]

II. ANALYSIS

SRS pursues two alternative paths to damages regarding Milestones 2 through 8. SRS seeks damages for Alexion's breach of its CRE Obligation.[59] It also seeks damages under another breach of contract theory: SRS contends Alexion breached its obligation under Section 3.8(f) of the Merger Agreement not to take any action the primary purpose of which is to avoid the achievement of any milestone (the "Non-Avoidance Obligation").[60] I begin with SRS's first theory.

A. Alexion Owes Expectation Damages For Breach Of Its CRE Obligation.

SRS proved Alexion breached its CRE Obligation, as the September Opinion explained. "Under Delaware law, the standard remedy for breach of contract is based on the reasonable expectations of the parties that existed before or at the time of the breach."[61] "This principle of expectation damages is measured by the amount of money that would put the promisee in the same position as if the promisor had

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[58] JX 1953.

[59] SRS Op. Suppl. Br. 1–5, 9–31; *see* D.I. 155 ¶¶ 252–65 [hereinafter "Compl."].

[60] SRS Op. Suppl. Br. 5–6, 32–39; Merger Agr. § 3.8(f); *see* Compl. ¶¶ 272–78.

[61] *PharmAthene, Inc. v. Siga Techs., Inc.* ("*Siga I*"), 2014 WL 3974167, at *7 (Del. Ch. Aug. 8, 2014), *aff'd*, 132 A.3d 1108 (Del. 2015).

performed the contract."[62] To recover expectation damages, the plaintiff must prove the fact of damage—that the breach "caused it injury"—to a reasonable certainty, and an estimate of the amount of damage.[63] The measure of expectation damages is informed by the nature of the contractual right.[64] My analysis breaks SRS's burden into three parts: injury, causation, and an estimate of damage.

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[62] *Duncan v. Theratx, Inc.*, 775 A.2d 1019, 1022 (Del. 2001).

[63] *Fortis Advisors LLC v. Johnson & Johnson*, 2024 WL 4048060, at *35 (Del. Ch. Sept. 4, 2024); *Siga Techs., Inc. v. PharmAthene, Inc.* ("*Siga II*"), 132 A.3d 1108, 1111 (Del. 2015) ("[W]hen a contract is breached, expectation damages can be established as long as the plaintiff can prove the fact of damages with reasonable certainty." (emphasis omitted)); *see also Cura Fin. Servs. N.V. v. Elec. Payment Exch., Inc.*, 2001 WL 1334188, at *19–20 (Del. Ch. Oct. 22, 2001) ("[R]easonable certainty is not equivalent to absolute certainty; rather, the requirement that plaintiff show defendant's breach to be the cause of his injury with 'reasonable certainty' merely means that the fact of damages must be taken out of the realm of speculation." (quoting *Tanner v. Exxon Corp*., 1981 WL 191389 (Del. Super. July 23, 1981))); *cf. Holland Loader Co. v. FLSmidth A/S*, 769 F. App'x 40, 42 (2d Cir. 2019) (upholding ruling that the fact of damages based on lost earnout payments calculated as a percentage of gross sales during the earnout period—as opposed to a fixed value based on the achievement of milestones—had not been proven because the evidence "failed to indicate with reasonable certainty that, but for [defendant's] breach, *any* sales would have been made during the five-year earnout period" (emphasis added)).

[64] *See* Dobbs § 12.2(1), at 25 ("In some cases expectancy is measured by the market value of the performance promised at the date performance was due. In others, the plaintiff's actual cost of getting a substitute performance, is the measure. In still others, expectancy may be protected only by the award of consequential or special damages such as lost profits or collateral expenses incurred because of the breach." (footnotes omitted)). *Compare Fortis*, 2024 WL 4048060, at *35, *50–53 (measuring expectation damages for breaches that interfered with promisee's ability to achieve contingent earnout payments by the expected value of the earnout payments at the time of breach), *with Duncan*, 775 A.2d at 1020–22 (measuring expectation damages where an issuer's breach prevented stock trading "by calculating the difference between (1) the highest intermediate price of the shares during a reasonable time at the beginning of the restricted period, which functions as an estimate of the price that the stockholders would have received if they had been able to sell their shares, and (2) the average market price of the shares during a reasonable period after the restrictions were lifted").

1. Injury

"If a breach is of a promise conditioned on a fortuitous event and it is uncertain whether the event would have occurred had there been no breach, the injured party may recover damages based on the value of the conditional right at the time of breach."[65] As recently observed in *Fortis Advisors LLC v. Johnson & Johnson*, earnout provisions coupled to an efforts clause are contingent in nature: they require the buyer to pay additional consideration if the buyer or target achieves specified goals, buttressed by a standard to which the buyer must perform.[66] This design allocates risk between the buyer and seller. The buyer reduces its risk of overpaying for a business with uncertain prospects, and the seller takes on the risk that the earnout payment may not be owed.[67] Because an earnout payment is contingent, it is uncertain what the injured party would have received absent the defendant's breach.

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[65] Restatement (Second) of Contracts § 348(3); *see Fortis*, 2024 WL 4048060, at *35, *50–53; *Maverick Therapeutics, Inc. v. Harpoon Therapeutics, Inc.*, 2021 WL 1592473, at *2, *10–11 (Del. Ch. Apr. 23, 2021) (measuring expectation damages for breach that interfered with a risky investment based on the diminution of value of the "chance of winning" on the investment); *Kansas City, M. & O. Ry. Co. v. Bell*, 197 S.W. 322, 323 (Tex. Civ. App. 1917) (holding the plaintiff was entitled to the value of the chance that his hogs would have won a competition if delivered on time and that "the probability that the plaintiff would be successful in the competition would be admissible" evidence).

[66] *Fortis*, 2024 WL 4048060, at *21–23.

[67] Brian JM Quinn, *Putting Your Money Where Your Mouth Is: The Performance of Earnouts in Corporate Acquisitions*, 81 U. Cin. L. Rev. 127, 140–41 (2012); *Fortis*, 2024 WL 4048060, at *21.

In *Fortis*, the buyer's breach of its efforts obligation to pursue earnout milestones made it impossible to achieve certain milestones.[68] *Fortis* identified a cognizable, and compensable, injury in the decreased expected value of the right to earnout payments, reasoning damages based on that injury would "put the promisee in the same position as if the promisor had performed the contract."[69] *Fortis* calculated expected value at the time of breach by weighting each milestone by the proven likelihood it would be achieved.[70]

That logic holds here. SRS's injury is best understood as the lost expected value of each milestone as compared before and after Alexion's breach of its CRE Obligation.[71] As in *Fortis*, an expected value approach reflects the theory behind expectation damages, which aim to put "the nonbreaching party in as good a position as he would have been in had the contract been performed, and no better."[72] Compensating for lost expected value, rather than with full value whenever earnout payments are likely and zero value whenever earnout payments are unlikely, strives

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[68] *See Fortis*, 2024 WL 4048060, at *35–45, *50–53.

[69] *Id.* at *51 (quoting *Comrie v. Enterasys Networks, Inc.*, 837 A.2d 1, 17 (Del. Ch. 2003)).

[70] *Id*.

[71] *See id.* at *35, *50–53.

[72] Dobbs § 12.2(1), at 23 (footnote omitted); *see Duncan*, 775 A.2d at 1022 n.6.

to hit the mark on the parties' reasonable expectations, rather than award windfalls for some promisees and goose eggs for others.[73]

Here, each milestone had an expected value of zero after Alexion's breach. The ALXN1830 program was terminated. To show a decrease in expected value for a given milestone, SRS must prove, to a degree of reasonable certainty, that the expected value was above zero immediately before the breach.[74] To demonstrate an

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[73] SRS calls this approach the "loss of chance" approach. SRS Op. Suppl. Br. 26–31. The terminology makes no difference. What matters is that the approach avoids overcompensation "on the assumption that the [fortuitous condition] would have occurred" and undercompensation "on the ground of uncertainty." Restatement (Second) of Contracts § 348 cmt. d. This is done by calculating damages "based on the value of [the] conditional contract right at the time of breach." *Id.*

Delaware law does not prohibit this approach in this context, contrary to Alexion's suggestions. Alexion's pretrial brief cites *Sherman v. Ellis* for the proposition that "Delaware law does not recognize the 'Loss of Chance' theory in breach of contract cases." D.I. 313 at 58 (citing *Sherman v. Ellis*, 246 A.3d 1126, 1132 (Del. 2021)). *Sherman* declined to apply an "increased risk of harm" theory (typically used in medical malpractice cases) in a legal negligence action because causation for that claim "requires proof that, but for the attorney's negligence, the plaintiff would have obtained a more favorable result." *Sherman*, 246 A.3d at 1132–33 (quoting *Sherman v. Ellis*, 2020 WL 30393, at *13 (Del. Super. Ct. Jan. 2, 2020)). In other words, for a legal negligence claim, the causation standard precludes loss of expected value associated with the pursuit of an unlikely favorable result as a compensable injury. *Sherman* does not suggest an analogous principle applies in the breach of contract context. *See generally id.*

The medical malpractice context uses the related, but different, "increased risk of harm" and "loss of chance" theories. *United States v. Anderson*, 669 A.2d 73, 75–76 (Del. 1995). Increased risk allows recovery for the increased risk of a future harm before that harm occurs. Loss of chance allows recovery only after the harm occurs. *Id.*

[74] Restatement (Second) of Contracts § 348 cmt. d ("The value of that right must itself be proved with reasonable certainty, as it may be if there is a market for such rights or if there is a suitable basis for determining the probability of the occurrence of the event.").

injury, it is sufficient to show each milestone had a nonzero probability of being achieved.

The trial record offers four views of the Milestone Probabilities. First, ATP's analysis provides estimates around the time of the Syntimmune merger.[75] Next, Alexion's PTRS estimates establish Alexion's view of the probabilities both before and after receiving the HV-108 data.[76] Finally, Kinch's opinions based on his CDEK data, paired with Russell's opinions, provide estimates at the time of breach.[77]

ATP, PTRS, and CDEK all show each milestone had a nonzero probability of being achieved. The probabilities based on PTRS and CDEK require some adjustments.[78] Those adjustments are based on probabilistic reasoning and must be explained through mathematical notation. A brief primer follows.

a. Mathematical Primer

The definitions and principles utilized in this opinion apply to arbitrary events, A and B. The probability of any event E is denoted $P(E)$. This opinion follows the

[75] JX 2962 at 22–26; Hall Tr. 107, 109–16.

[76] *See* JX 1863 at 53; JX 2225 at 4–5, 13–14; JX 2608 at 4.

[77] Kinch Tr. 207–09, 218–19, 341–42, 349–54, 361–65, 385–86; *see* JX 2498 at 72–76; Russell Tr. 672, 744–45.

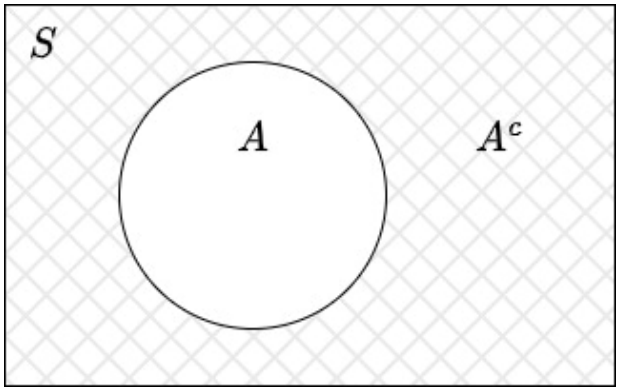
[78] Explaining these adjustments requires noting rounded numbers. All calculations are performed using exact values.

standard convention of explaining mathematics using the first-person plural.[79]

i. Conceptual Framework

An introductory text on probability provides a framework.[80]

> The mathematical framework for probability is built around sets. Imagine that an experiment is performed, resulting in one out of a set of possible outcomes. Before the experiment is performed, it is unknown which outcome will be the result; after, the result "crystallizes" into the actual outcome. . . .
>
> The *sample space* S of an experiment is the set of all possible outcomes of the experiment. An *event* A is a subset of the sample space S, and we say that A *occurred* if the actual outcome is in A. . . .
>
> [T]he complement A^c is the event that occurs if and only if A does not occur.[81]



[79] Steven G. Krantz, *A Primer of Mathematical Writing: Being a Disquisition on Having Your Ideas Recorded, Typeset, Published, Read, and Appreciated* 33 (2d. ed. 2016).

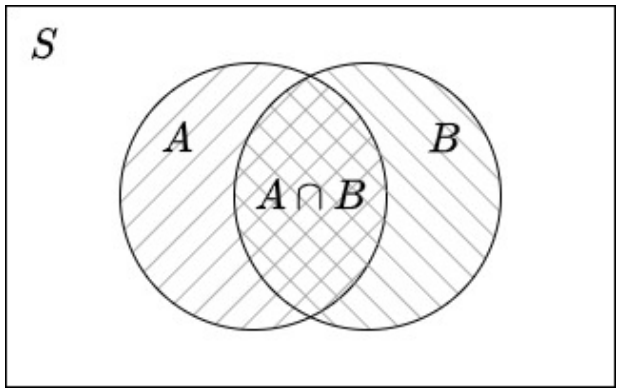
[80] Blitzstein & Hwang, *supra* note 12.

[81] *Id.* at 3–4.

The probability of an event either occurring or not occurring is equal to one. So the probability that A does not occur is equal to one minus the probability that it does occur:

$$P(A^c) = 1 - P(A).$$ [82]

If another event B is also a subset of the sample space S, then "the intersection $A \cap B$ is the event that occurs if and only if *both* A and B occur."[83]

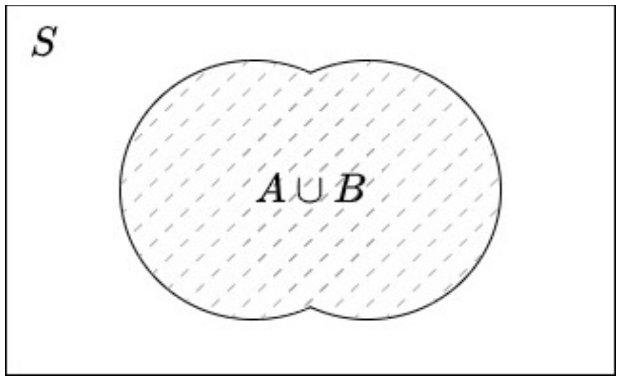


"[T]he union $A \cup B$ is the event that occurs if and only if *at least one* of A [or] B occurs."[84]

[82] *Id.* at 21–23.

[83] *Id.* at 4.

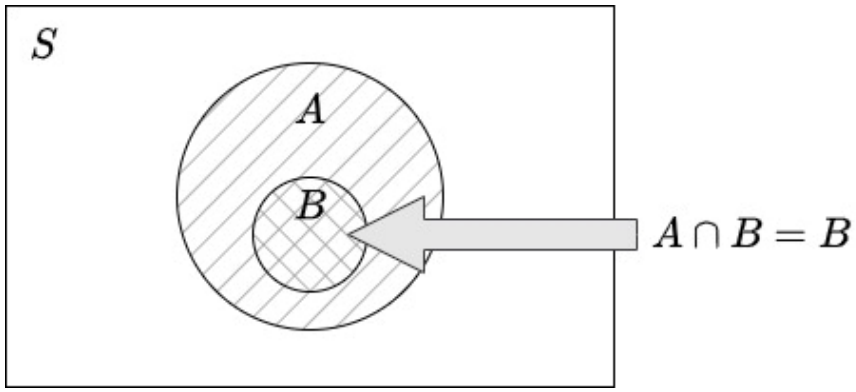
[84] *Id.*



The area of the dashed region relative to the area of S may be thought of as $P(A \cup B)$. In the previous diagram for $A \cap B$, the areas of the circles representing A and B correspond to $P(A)$ and $P(B)$.[85] Notice that adding those areas yields a value greater than $P(A \cup B)$ because the overlapping portion is counted twice. We may find $P(A \cup B)$ by subtracting one of those instances from that sum:

$$P(A \cup B) = P(A) + P(B) - P(A \cap B).$$[86]

Lastly, in some cases, B is a subset of A. We denote this $B \subseteq A$.



[85] *See id.* at 24.

[86] *Id.* at 21–23.

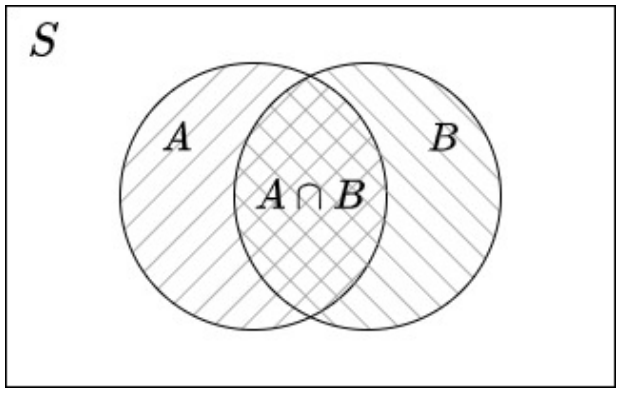
The area of B relative to the area of S represents $P(B)$. The area of $A \cap B$ represents $P(A \cap B)$. But because B and $A \cap B$ are the same region, their areas are the same. So, if $B \subseteq A$, then $P(A \cap B) = P(B)$.[87]

ii. Conditional Probability

The milestones also introduce the concept of conditional probability. The conditional probability of B given A is denoted by $P(B|A)$. If A and B are events with $P(A) > 0$, then the conditional probability of B given A is defined as

$$P(B|A) = \frac{P(A \cap B)}{P(A)}.$$[88]

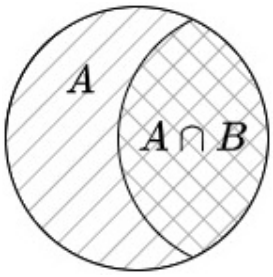
The definition is illustrated by the diagram for $A \cap B$.



Zooming in on the outcomes covered by A:

[87] *Id.*

[88] *See id.* at 46.



B occurs only in the doubly shaded region $A \cap B$. The area of that doubly shaded region as a proportion of the area of A represents the probability that B occurs *given* that A occurs. That is captured in the definition of conditional probability:

$P(B|A) = \frac{P(A \cap B)}{P(A)}$, where $P(A) > 0$.[89]

This expression may be rewritten by multiplying both sides by $P(A)$. Doing so yields the following rule: for any events A and B with $P(A) > 0$, $P(A \cap B) = P(A) \cdot P(B|A)$.[90]

iii. Definition Of Independent Events

This opinion also utilizes the definition of independent events. A and B are independent if learning that A "occurred gives us no information that would change the likelihood of B occurring (and vice versa)."[91] Events A and B are said to be independent where $P(A \cap B) = P(A) \cdot P(B)$.[92]

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[89] $P(A)$ is restricted to values greater than zero to avoid a zero in the denominator.

[90] Blitzstein & Hwang, *supra* note 12, at 52.

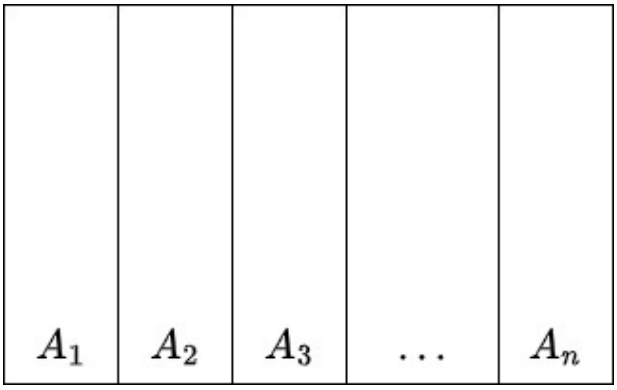
[91] *Id.* at 63.

[92] *Id.*

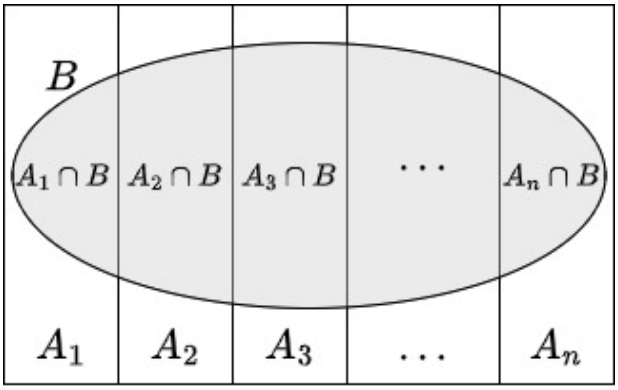
iv. The Law Of Total Probability

The final concept needed here is the "law of total probability." The law of total probability "relates conditional probability to unconditional probability,"[93] allowing us to use conditional probability "to decompose complicated probability problems into simpler pieces."[94]

Let $A_1, \ldots, A_n$ be a partition of the sample space S, as shown.



Then overlay event B.



[93] *Id.* at 54.

[94] *Id.*

The shaded region B is equal to $(A_1 \cap B) + (A_2 \cap B) + \cdots + (A_n \cap B)$. This illustrates that $P(B) = P(A_1 \cap B) + P(A_2 \cap B) + \cdots + P(A_n \cap B)$. We know that $P(A_i \cap B) = P(A_i) \cdot P(B|A_i)$, where A_i denotes a given component of the partition $A_1, \ldots, A_n$.[95] Thus, we may rewrite $P(B)$ as

$$P(B) = P(A_1) \cdot P(B|A_1) + P(A_2) \cdot P(B|A_2) + \cdots + P(A_n) \cdot P(B|A_n).$$

The following chart summarizes the relevant expressions above.

Relevant Expressions	
Total of one	$P(A^c) = 1 - P(A)$.
Either A or B	$P(A \cup B) = P(A) + P(B) - P(A \cap B)$.
B as subset of A	If $B \subseteq A$, then $P(A \cap B) = P(B)$.
Definition of conditional probability	If A and B are events with $P(A) > 0$, $P(B|A) = \frac{P(A \cap B)}{P(A)}$.
Both A and B (regardless of independence)	For any events A and B with $P(A) > 0$, $P(A \cap B) = P(A) \cdot P(B|A)$.
Definition of independent events	A and B are independent if and only if $P(A \cap B) = P(A) \cdot P(B)$.
Law of total probability	Let $A_1, \ldots, A_n$ be a partition of the sample space S. Then, for any event B, $P(B) = P(A_1) \cdot P(B|A_1) + P(A_2) \cdot P(B|A_2) + \cdots + P(A_n) \cdot P(B|A_n)$.

b. Milestone Probabilities Using Pre-HV-108 PTRS Data

Alexion's PTRS estimates do not themselves offer Milestone Probabilities. To determine whether Alexion's pre-HV-108 estimates of ALXN1830's success

[95] For any events A and B with $P(A) > 0$, $P(A \cap B) = P(A) \cdot P(B|A)$.

demonstrate an expected value for each milestone, that raw data must be translated first into the milestone concepts, then into Milestone Probabilities.

I take these calculations in stages: first M_2 through M_5, then M_6 and M_7, and finally M_8.

i. $P(M_2)$ Through $P(M_5)$

The PTRS data supplies the probability of a successful Phase 2 trial. Milestones 2 and 3 call for dosing in a PCT. A Phase 3 trial qualifies as a PCT.[96] The parties characterize a successful Phase 2 trial as one that leads to dosing in a Phase 3 trial.[97] So for a given indication, the probability of a successful Phase 2 trial is equivalent to the probability that a patient will be dosed in a PCT, mapping onto M_2 and M_3. The overall PTRS supplies the probability of FDA approval.[98] This maps onto M_4 and M_5.[99]

Based on these observations, Alexion's PTRS before receipt of the HV-108 data yields the following probabilities for TED and cAMR[100]:

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[96] *See* Kinch Tr. 246–47; Merger Agr. §§ 1.1, 3.8(a)(ii)–(iii).

[97] *See* SRS Op. Suppl. Br. 17 (citing JX 1863 at 53); ALXN Ans. Suppl. Br. 23.

[98] *See* Borboroglu Tr. 1403; Washburn Tr. 645; Kinch Tr. 353–54, 413; JX 2498 at 73; JX 690 at 276.

[99] Merger Agr. § 3.8(a)(iv)–(v).

[100] JX 1863 at 53; JX 2608 at 4; JX 2225 at 5. Alexion was not pursuing other indications at the time of breach. *See* JX 1928; JX 1933 at 1; JX 2021 at 1; JX 2042 at 1; JX 2065 at 1; Lee Tr. 445, 457; *see also* JX 1948; Russell Tr. 732.

Pre-HV-108 Data		
	TED	**cAMR**
Probability of a successful Phase 2 Trial (Probability of a first dosing in a PCT)	0.43	0.50
Overall PTRS (Probability of FDA approval)	0.30	0.34

These data account for the dependencies among different stages of clinical development and regulatory approval.[101]

Calculating $P(M_2)$ through $P(M_5)$ requires breaking the Milestone Events down into probability inquiries. Let PCT_{TED} and FDA_{TED} be the events that TED reaches a PCT and receives FDA approval, respectively. Let PCT_{cAMR} and FDA_{cAMR} be the events that cAMR reaches a PCT and receives FDA approval, respectively.

Probability Inquiries for M_2 through M_5		
Event	**Inquiry**	**Notation**
M_2	What is the probability that *either* TED *or* cAMR achieves a first dosing in a PCT?	$P(PCT_{\text{TED}} \cup PCT_{\text{cAMR}})$
M_3	What is the probability that *both* TED *and* cAMR achieve a first dosing in a PCT?	$P(PCT_{\text{TED}} \cap PCT_{\text{cAMR}})$
M_4	What is the probability that *either* TED *or* cAMR obtains FDA approval?	$P(FDA_{TED} \cup FDA_{\text{cAMR}})$
M_5	What is the probability that *both* TED *and* cAMR obtain FDA approval?	$P(FDA_{\text{TED}} \cap FDA_{\text{cAMR}})$

I treat the TED and cAMR programs as entirely independent, meaning the success of one indication does not affect the probability of success in the other

[101] *See supra* Section I.C; Borboroglu Tr. 1403; JX 1863 at 53; JX 2608 at 4.

indication. Kinch's testimony supports this approach. He indicated that while proof of concept in one indication could increase another indication's probability of success, a "more conservative approach" of treating the indications as independent was warranted.[102] I agree the conservative approach is appropriate. I proceed under the assumption that PCT_{TED} and PCT_{cAMR} are independent events and that FDA_{TED} and FDA_{cAMR} are independent events.

The table below summarizes the calculations for $P(M_2)$ through $P(M_5)$.

Pre-HV-108 PTRS Milestone Probability Calculations for M_2 Through M_5		
Probability	**Inquiry**	**Calculation**
$P(M_2)$	$P(PCT_{\text{TED}} \cup PCT_{\text{cAMR}})$	$0.43 + 0.5 - (0.43 \times 0.5) = \mathbf{0.715}$.
$P(M_3)$	$P(PCT_{\text{TED}} \cap PCT_{\text{cAMR}})$	$0.43 \times 0.5 = \mathbf{0.215}$.
$P(M_4)$	$P(FDA_{TED} \cup FDA_{\text{cAMR}})$	$0.3 + 0.34 - (0.3 \times 0.34) = \mathbf{0.538}$.
$P(M_5)$	$P(FDA_{\text{TED}} \cap FDA_{\text{cAMR}})$	$0.3 \times 0.34 = \mathbf{0.102}$.

ii. $P(M_6)$ and $P(M_7)$

Milestones 6 and 7 depend on both EMA approval and country-specific approvals.[103] The probabilities of FDA and EMA approval are assumed to be equal because of the near-universal overlap in approval between the two regulatory entities.[104] Under that assumption, if one of the entities grants approval, the probability that the other entity will grant approval is 1. Therefore, an indication's

[102] Kinch Tr. 349.

[103] Merger Agr. §§ 3.8(a)(vi)–(vii).

[104] Kinch Tr. 353–54; *see also* JX 2962 at 23; JX 1071 at 5.

overall PTRS can be thought of not only as its probability of obtaining FDA approval, but also as its probability of obtaining EMA approval.

As for the country-specific approvals, Russell testified these approvals were likely once an indication received EMA approval.[105] SRS equated "likely" with a 50.1% chance; I do the same.[106] Thus, for a given indication, the probability of achieving both EMA approval and the requisite country-specific approvals may be calculated by multiplying overall PTRS by 0.501. Applied to Alexion's pre-HV-108 overall PTRS figures for TED (probability of 0.3) and cAMR (probability of 0.34), this yields the following[107]:

Pre-HV-108 Deduced Probabilities (for Milestones 6 and 7)		
	TED	**cAMR**
Probability of EMA and country-specific approvals	0.1503	0.17034

As before, applying these indication-specific probabilities to the milestones requires breaking the Milestone Events down into probability inquiries. Let EA_{TED} be the event that TED receives the requisite European approvals. Let EA_{cAMR} be the event that cAMR receives the requisite European approvals.

[105] Russell Tr. 755–56.

[106] SRS Op. Suppl. Br. 27–28.

[107] $0.501 \times 0.3 = 0.1503$; $0.501 \times 0.34 = 0.17034$.

Probability Inquiries for M_6 and M_7		
Event	**Inquiry**	**Notation**
M_6	What is the probability that *either* TED *or* cAMR obtains the requisite European approvals?	$P(EA_{TED} \cup EA_{cAMR})$
M_7	What is the probability that *both* TED *and* cAMR obtain the requisite European approvals?	$P(EA_{TED} \cap EA_{cAMR})$

The table below summarizes the calculations for $P(M_6)$ and $P(M_7)$.

Pre-HV-108 PTRS Milestone Probability Calculations for M_6 And M_7		
Probability	**Inquiry**	**Calculation**
$P(M_6)$	$P(EA_{TED} \cup EA_{cAMR})$	$0.1503 + 0.17034 - 0.1503 \times 0.17034 = \mathbf{0.295}$.
$P(M_7)$	$P(EA_{TED} \cap EA_{cAMR})$	$0.1503 \times 0.17034 = \mathbf{0.0256}$.

iii. $P(M_8)$

Milestone 8, based on $1 billion in net sales in a year across all indications, requires a different approach. When ATP performed its 2018 valuation, it needed a Monte Carlo simulation to value this milestone because at the time, Alexion was pursuing three indications, and there were various combinations of success that could realistically lead to $1 billion in net sales in a single year.[108] That approach is not needed here. At the time of breach, Alexion was only pursuing treatments for TED and cAMR, and SRS has not demonstrated that either could have reached $1

[108] *See* JX 2962 at 24–25.

billion in net sales on its own.[109] Alexion could have achieved Milestone 8 only if it obtained regulatory approval for both TED and cAMR.

Russell testified that ALXN1830 had the potential to achieve the milestone based on Alexion's internal revenue projections for TED and cAMR.[110] Alexion's 2021 model indicates it expected the indications' combined revenues to surpass $1 billion in five years, including a $1.35 billion peak.[111] Put differently, Alexion's peak projection exceeds the $1 billion threshold by 35%. By that margin, the preponderance of the evidence shows it is likely ALXN1830 would have crossed that threshold as long as both TED and cAMR received FDA and EMA approval (even if the indications did not receive all three of the country-specific approvals needed to satisfy Milestones 6 and 7).

Because EMA approval is assumed to be guaranteed upon FDA approval, the probability that both indications would have obtained FDA and EMA approval is equal to the probability that both indications would have obtained FDA approval—*i.e.*, the probability of M_5. From there, M_8 is likely. So, M_8's probability is calculated by multiplying M_5's probability of 0.102 by 0.501.

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[109] *See* JX 1953; *see also* JX 1928; JX 1933 at 1; JX 2021 at 1; JX 2042 at 1; JX 2065 at 1; Lee Tr. 445, 457; JX 1948; Russell Tr. 732.

[110] Russell Tr. 744–45; *see* JX 1953.

[111] JX 1953.

The pre-HV-108 PTRS probability for M_8 is 0.0511.[112]

c. The Post-HV-108 PTRS Data

The record offers another set of PTRS numbers: those Alexion adjusted after receiving the HV-108 data, just before terminating the ALXN1830 program. Alexion reduced TED's chances of a successful Phase 2 trial from 43% to 20%, and it reduced TED's overall PTRS from 30% to 10%.[113] Alexion also reduced cAMR's overall PTRS from 34% to 10%.[114] Before the reduction, cAMR's probability of a successful Phase 2 trial was 50%.[115] But the record does not indicate how much that probability was reduced in response to the HV-108 data.

The post-HV-108 PTRS data paints the following incomplete picture:

Post-HV-108 Raw Data		
	TED	**cAMR**
Probability of a successful Phase 2 Trial	0.2	?
Overall PTRS	0.1	0.1

Applying the same inferences and observations as in the previous section yields the following:

[112] $0.102 \times 0.501 = 0.0511$.

[113] JX 2608 at 4.

[114] JX 2225 at 13–14.

[115] JX 1863 at 53.

Post-HV-108 Deduced Probabilities		
	TED	**cAMR**
Probability of a first dosing in a PCT	0.2	?
Probability of FDA approval	0.1	0.1
Probability of EMA and country-specific approvals	0.0501[116]	0.0501[117]

Without the missing cAMR information, $P(M_2)$ and $P(M_3)$ cannot be precisely calculated. But because cAMR has a nonzero probability of FDA approval, it must also have a nonzero probability of clinical success, including achieving dosing in a PCT. $P(M_2)$ and $P(M_3)$ would still be greater than zero even under the decreased post-HV-108 PTRS estimates.

$P(M_4)$ through $P(M_7)$ can be found using the same calculations performed on the pre-HV-108 data.

Post-HV-108 PTRS Milestone Probability Calculations for M_4 Through M_7		
Probability	**Inquiry**	**Calculation**
$P(M_4)$	$P(FDA_{TED} \cup FDA_{\text{cAMR}})$	$0.1 + 0.1 - (0.1 \times 0.1) = \mathbf{0.19}$.
$P(M_5)$	$P(FDA_{\text{TED}} \cap FDA_{\text{cAMR}})$	$0.1 \times 0.1 = \mathbf{0.01}$.
$P(M_6)$	$P(EA_{TED} \cup EA_{cAMR})$	$0.0501 + 0.0501 - 0.0501 \times 0.0501 = \mathbf{0.098}$.
$P(M_7)$	$P(EA_{TED} \cap EA_{cAMR})$	$0.0501 \times 0.501 = \mathbf{0.00251}$.

Finally, as in the pre-HV-108 PTRS, $P(M_8)$ is calculated by multiplying $P(M_5)$ by 0.501. So the post-HV-108 PTRS probability for M_8 is about 0.00501.[118]

[116] $0.1 \times 0.501 = 0.0501$.

[117] $0.1 \times 0.501 = 0.0501$.

[118] $0.01 \times 0.501 = 0.00501$.

d. Milestone Probabilities Using CDEK Data

Kinch's opinions based on his CDEK database provide an alternative starting point for estimating the Milestone Probabilities. Kinch's Milestone Probability calculations do not properly account for the fact that some milestones are contingent upon others.[119] They must be adjusted to comport with Kinch's starting assumptions, reproduced in the following table.

Kinch's Opinions Based on CDEK	
Opinion	**Notation**
The probability of M_2 is between 0.582 and 1.	$0.582 \leq P(M_2) \leq 1.$
The probability of M_4 given that M_2 occurred is 0.684.	$P(M_4 \mid M_2) = 0.684.$
The probability of M_3 given that M_2 occurred is equal to the probability of M_2.	$P(M_3 \mid M_2) = P(M_2).$
The probability of M_5 given that M_4 occurred is equal to the probability of M_4.	$P(M_5 \mid M_4) = P(M_4).$

[119] For example, Kinch's expert report conflates M_3's *conditional* probability given M_2 with M_3's probability at the outset (*i.e.*, without knowing whether M_2 occurred). Translated to notation, the report conflates $P(M_3 \mid M_2)$ with $P(M_3)$. As a result, Kinch's expert report mistakenly suggests $P(M_3) = P(M_2)$. *See* JX 2498 at 68–72, 76. As this section shows, $P(M_3) = P(M_2) \cdot P(M_3 \mid M_2)$. If $P(M_3)$ were equal to $P(M_2)$, that would imply $P(M_3 \mid M_2) = 1$. In other words, it would imply M_3 was guaranteed upon the occurrence of M_2. That is inconsistent with reality and Kinch's own testimony. *See* Kinch Tr. 349 (responding when asked about his calculations for $P(M_3)$, "You can argue . . . that if you've established proof of concept and proof of mechanism, other mechanisms should be more likely . . . *but I took the more conservative approach*." (emphasis added)).

Kinch's report also conflates $P(M_5 \mid M_4)$ with $P(M_4)$. *See* JX 2498 at 68–72, 76. As a result, the report suggests $P(M_5) = P(M_4)$. But as this section shows, $P(M_5) = P(M_5) \cdot P(M_5 \mid M_4)$. So if $P(M_5)$ were equal to $P(M_4)$, that would imply $P(M_5 \mid M_4) = 1$. Again, this is false. My CDEK calculations disregard the errors in Kinch's expert report.

i. $P(M_2)$

Kinch estimated a probability range for M_2 based on his analysis of CDEK. This figure needs no adjustment. The CDEK probability range for M_2 is

$$0.582 \leq P(M_2) \leq 1.$$

ii. $P(M_3)$

ALXN1830 cannot reach a PCT for a second indication unless it has done so for some first indication. So $M_3 \subseteq M_2$. It follows that $P(M_2 \cap M_3) = P(M_3)$.[120] From our mathematical primer, we know $P(M_2 \cap M_3) = P(M_2) \cdot P(M_3|M_2)$.[121] Therefore,

$$P(M_3) = P(M_2) \cdot P(M_3|M_2).$$

Recall Kinch opined that $P(M_3|M_2) = P(M_2)$. That substitution yields

$$P(M_3) = P(M_2)^2.$$

Plugging in the lower and upper bounds for $P(M_2)$ yields

$$0.339 \leq P(M_3) \leq 1.$$[122]

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[120] If $B \subseteq A$, then $P(A \cap B) = P(B)$.

[121] For any events A and B with $P(A) > 0$, $P(A \cap B) = P(A) \cdot P(B|A)$.

[122] $0.582^2 = 0.339$; $1^2 = 1$.

iii. $P(M_4)$

First, because it is impossible for any indication to receive FDA approval unless some indication advances to a PCT, $M_4 \subseteq M_2$. So $P(M_2 \cap M_4) = P(M_4)$.[123] And we know $P(M_2 \cap M_4) = P(M_2) \cdot P(M_4|M_2)$.[124] Therefore,

$$P(M_4) = P(M_2) \cdot P(M_4|M_2).$$

Applying Kinch's opinion that $P(M_4|M_2) = 0.684$ yields

$$P(M_4) = P(M_2) \cdot 0.684.$$

Plugging in the lower and upper bounds for $P(M_2)$ yields

$$0.398 \leq P(M_4) \leq 0.684.$$[125]

iv. $P(M_5)$

Similarly, because ALXN1830 cannot receive FDA approval for a second indication unless it has done so in some first indication, $M_5 \subseteq M_4$. So $P(M_4 \cap M_5) = P(M_5)$.[126] Like before, we know $P(M_4 \cap M_5) = P(M_4) \cdot P(M_5|M_4)$.[127] Therefore,

$$P(M_5) = P(M_4) \cdot P(M_5|M_4).$$

Applying Kinch's opinion that $P(M_5|M_4) = P(M_4)$ yields

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[123] If $B \subseteq A$, then $P(A \cap B) = P(B)$.

[124] For any events A and B with $P(A) > 0$, $P(A \cap B) = P(A) \cdot P(B|A)$.

[125] $0.582 \times 0.684 = 0.398$; $1 \times 0.684 = 0.398$.

[126] If $B \subseteq A$, then $P(A \cap B) = P(B)$.

[127] For any events A and B with $P(A) > 0$, $P(A \cap B) = P(A) \cdot P(B|A)$.

$$P(M_5) = P(M_4)^2.$$

Plugging in the above lower and upper bounds of $P(M_4)$ to calculate the lower and upper bounds of $P(M_5)$ yields

$$0.158 \leq P(M_5) \leq 0.468.$$[128]

v. $P(M_6)$

Kinch's analysis of milestone probabilities was agnostic as to the number of indications Alexion was pursuing. The CDEK data did not provide information on the number of indications being pursued for a given molecule.[129] For purposes of calculating $P(M_6)$ based on CDEK, I assume Alexion was pursuing exactly two indications. It is not possible to calculate $P(M_6)$ with the available information.[130] And Alexion was in fact pursuing two indications at the time of breach. And finally, assuming Alexion was pursuing more than two indications would increase each remaining Milestone Probability, so my calculations serve as a conservative floor for $P(M_6)$.

Given the assumption that Alexion was pursuing two indications, $P(M_6)$ depends on whether ALXN1830 received FDA approval in zero, one, or two indications. Let us define three events:

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[128] $0.398^2 = 0.158$; $0.684^2 = 0.468$.

[129] JX 2498 at 70; *cf.* Kinch Tr. 230–31.

[130] This is because the likelihood of M_6 depends on the number of indications that receive FDA approval.

FDA_0: zero indications receive FDA approval;

FDA_1: one indication receives FDA approval;

FDA_2: two indications receive FDA approval.

Because these events partition the sample space S, the law of total probability provides that

$$P(M_6) = P(FDA_0) \cdot P(M_6|FDA_0) + P(FDA_1) \cdot P(M_6|FDA_1) + P(FDA_2) \cdot P(M_6|FDA_2).$$

We may use this expression, Kinch's initial opinions, and previous calculations to calculate lower and upper bounds for $P(M_6)$.

As to the lower bound, the following table solves for each term on the right-hand side of the expression for $P(M_6)$ assuming $P(M_2) = 0.582$. The terms are listed in an order that facilitates calculation.

Lower Bound of Each Term in the Expression for $P(M_6)$	
Probability	**Explanation**
$P(FDA_0) = 0.602.$	$P(FDA_0) = 1 - P(M_4)$, because M_4 occurs when at least one indication receives FDA approval. $$P(FDA_0) = 1 - P(M_4) = 1 - 0.398 = 0.602.$$
$P(FDA_2) = 0.158.$	$P(FDA_2) = P(M_5)$ because M_5 occurs when two indications receive FDA approval. $$P(FDA_2) = P(M_5) = 0.158.$$
$P(FDA_1) = 0.240.$	FDA_1 occurs if neither FDA_0 nor FDA_2 occur. So $P(FDA_1) = 1 - [P(FDA_0) + P(FDA_2)]$. $$P(FDA_1) = 1 - 0.602 - 0.158 = 0.240.$$

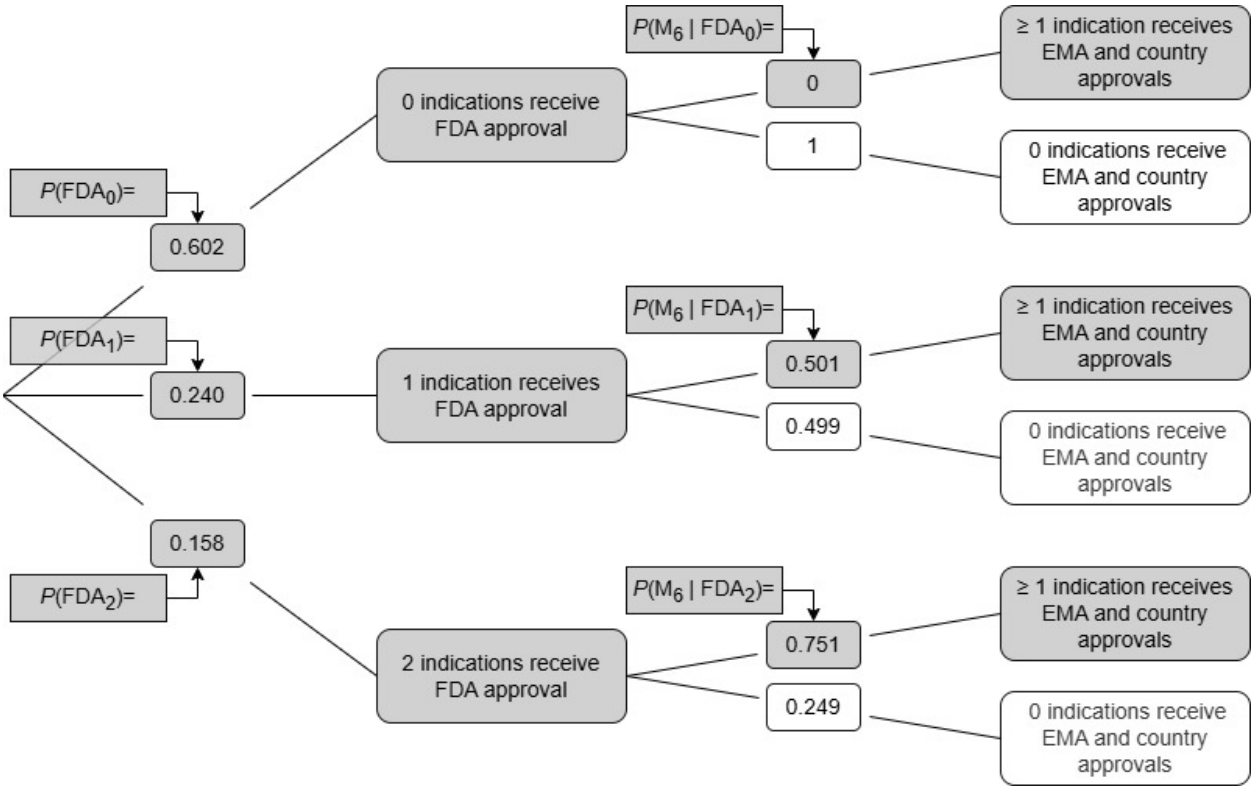
$P(M_6 \mid FDA_0) = 0.$	M_6 is not possible if zero indications receive FDA approval.
$P(M_6 \mid FDA_1) = 0.501.$	Because it is assumed that FDA approval guarantees EMA approval, Russell's testimony indicates that any indication that receives FDA approval has a 50.1% chance of receiving the requisite European approvals.[131] So, if exactly one indication receives FDA approval, M_6 occurs with probability 0.501. So, $P(M_6 \mid FDA_1) = 0.501.$
$P(M_6 \mid FDA_2) = 0.751.$	If an indication receives FDA approval, its probability of *not* receiving the requisite country-specific approvals to satisfy M_6 is $(1 - 0.501)$. So, if two indications receive FDA approval, the probability that *neither* receives the requisite country-specific approvals is $(1 - 0.501)^2$. Thus, the probability that *at least one* of the indications receives the requisite country-specific approvals is $(1 - (1 - 0.501)^2)$. $$P(M_6 \mid FDA_2) = 1 - (1 - 0.501)^2 = 0.751.$$

Substituting these values into the expression,

$$P(M_6) = (0.602) \cdot (0) + (0.240) \cdot (0.501) + (0.158) \cdot (0.751) = \mathbf{0.239}.$$

This calculation may also be visualized with a flow chart.

[131] As in the PTRS calculations, I assume each indication is entirely independent of the other.



As to the upper bound of $P(M_6)$, the following (abbreviated) table solves for each term on the right-hand side of the expression for $P(M_6)$ assuming $P(M_2) = 1$. The terms are again listed in an order that facilitates calculation.

Upper Bound of Each Term in the Expression for $P(M_6)$	
Probability	**Explanation**
$P(FDA_0) = 0.316.$	$P(FDA_0) = 1 - P(M_4) = 1 - 0.684 = 0.316.$
$P(FDA_2) = 0.468.$	$P(FDA_2) = P(M_5) = 0.468.$
$P(FDA_1) = 0.216.$	$P(FDA_1) = 1 - 0.316 - 0.468 = 0.216.$
$P(M_6 \mid FDA_0) = 0.$	The explanation is the same as above.
$P(M_6 \mid FDA_1) = 0.501.$	The explanation is the same as above.
$P(M_6 \mid FDA_2) = 0.751.$	The explanation is the same as above.

Substituting these values into the expression for $P(M_6)$,

$$P(M_6) = (0.316) \cdot (0) + (0.216) \cdot (0.501) + (0.468) \cdot (0.751) = \mathbf{0.460}.$$

Therefore,

$$0.239 \leq P(M_6) \leq 0.460.$$

vi. $P(M_7)$

The record shows that the requisite European approvals follow only after FDA approval. So $M_7 \subseteq M_5$. Thus, $P(M_5 \cap M_7) = P(M_7)$. Additionally, we know $P(M_5 \cap M_7) = P(M_5) \cdot P(M_7|M_5)$. Therefore,

$$P(M_7) = P(M_5) \cdot P(M_7|M_5).$$

Based on Russell's testimony, $(M_7|M_5) = (0.501)^2$.[132] So

$$P(M_7) = P(M_5) \cdot (0.501)^2.$$

Plugging in the lower and upper bounds for $P(M_5)$ yields:

$$0.0398 \leq P(M_7) \leq 0.117.$$[133]

[132] Based on Russell's testimony, an indication that receives FDA approval has a 0.501 probability of receiving the European approvals. If M_5 is given, then both indications have received FDA approval. M_7 occurs only if both of those indications receive the European approvals. Because each indication is assumed to be independent, we can calculate the probability that both obtain EMA approval given that both obtained FDA approval by multiplying each indication's probability of making that leap on its own.

[133] $0.158 \times (0.501)^2 = 0.0398$; $0.468 \times (0.501)^2 = 0.117$.

vii. $P(M_8)$

Milestone 8's CDEK probability can be calculated in the same manner used for the PTRS calculations.[134]

$$P(M_8) = P(M_5) \cdot (0.501).$$

Using the lower and upper bounds calculated for $P(M_5)$,

$$0.0794 \leq P(M_8) \leq 0.234.$$[135]

In sum, the CDEK probabilities are as follows:

CDEK Probabilities	
Milestone Event	**Probability**
M_2	0.582–1
M_3	0.339–1
M_4	0.398–0.684
M_5	0.158–0.468
M_6	0.239–0.460
M_7	0.0398–0.117
M_8	0.0794–0.234

[134] For the PTRS calculations, I reasoned—based on Alexion's internal projections for TED and cAMR and Russell's testimony about those projections—that M_8 was likely to occur if ALXN1830 obtained FDA approval in both TED and cAMR, but that M_8 otherwise would not occur.

To calculate M_6's CDEK probability, I assumed Kinch's opinions contemplated two indications. It was not necessary to assume which specific indications were at play. Given that Alexion was in fact pursuing TED and cAMR, I believe it is fair to calculate M_8's CDEK probability in a manner that mirrors that reality.

My M_8 CDEK calculations thus assume M_8 was likely to occur if ALXN1830 received FDA approval in the two indications assumed to be at play, but that M_8 otherwise would not occur.

[135] $0.158 \times 0.501 = 0.079$; $0.468 \times 0.501 = 0.234$.

e. Comparison Of Milestone Probability Estimates

I have summarized the probability estimates under the three complete views from the record evidence, plus the incomplete view based on the post-HV-108 PTRS data.

Comparison of Milestone Probability Estimates				
Event	**ATP**	**Pre-HV-108 PTRS**	**Post-HV-108 PTRS**	**CDEK**
M_2	0.80	0.715	> 0	0.582–1
M_3	0.75	0.215	> 0	0.339–1
M_4	0.53	0.538	0.190	0.398–0.684
M_5	0.45	0.102	0.0100	0.158–0.468
M_6	0.53	0.295	0.0977	0.239–0.460
M_7	0.45	0.0256	0.00251	0.0398–0.117
M_8	0.10	0.0511	0.00501	0.0794–0.234

No dataset indicates the probability of achieving any given milestone was zero. SRS has proven by a preponderance of the evidence that the probability of achieving each milestone—and therefore the expected value of each milestone—was greater than zero at the time of breach. SRS has proven an injury from Alexion's breach, in general and as tethered to each milestone.

2. Causation

Expectation damages are certainly available when the plaintiff proves the defendant's breach was the but-for cause of its injury.[136] Here, Alexion's breach was the termination of the ALXN1830 program, which eliminated all expected value in the milestones at the time of breach. That termination was the but-for cause of SRS's loss of expected value: there was no time or opportunity for any intervening cause to contribute to that loss.

Alexion argues SRS must prove ALXN1830 was more likely than not to achieve a given milestone to establish proximate cause.[137] But Alexion misunderstands SRS's injuries as lost milestone payments *in toto*. As explained, the injury is the loss of expected value associated with milestone payments triggered by progress Alexion makes using CREs. SRS must still show causation: it must prove

[136] *See SIGA Techs., Inc. v. PharmAthene, Inc.*, 67 A.3d 330, 350–51 (Del. 2013) ("We now hold that where the parties have a Type II preliminary agreement to negotiate in good faith, and the trial judge makes a factual finding, supported by the record, that the parties would have reached an agreement but for the defendant's bad faith negotiations, the plaintiff is entitled to recover contract expectation damages."). Expectation damages may also be available when the breach proximately caused the damage. *See Great Hill Equity P'rs IV, LLP v. SIG Growth Equity Fund I, LLP*, 2020 WL 948513, at *19 (Del. Ch. Feb. 27, 2020).

[137] D.I. 313 at 58; D.I. 371 at 53.

Alexion's failure to use CREs caused a loss in expected value with reasonable certainty.[138] It has done so.

3. Estimate Of Damages

"The *amount* of damages can be an estimate,"[139] provided "the court has a basis to make a responsible estimate of damages."[140] Delaware law grants the Court flexibility to use its "conscience and reason" to determine such an estimate and to determine whether setting an estimate is appropriate under the circumstances.[141] In establishing that estimate, Delaware courts recognize the wrongdoer rule, which states,

> Doubts [about the extent of damages] are generally resolved against the party in breach. A party who has, by his breach, forced the injured party to seek compensation in damages should not be allowed to profit from his breach where it is established that a significant loss has occurred. *A court may take into account all the circumstances of the breach, including willfulness, in deciding whether to require a lesser degree of certainty, giving greater discretion to the trier of the facts*. Damages

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[138] *Siga II*, 132 A.3d at 1130; *cf. Del. Express Shuttle, Inc. v. Older*, 2002 WL 31458243, at *15 (Del. Ch. Oct. 23, 2002).

[139] *Siga II*, 132 A.3d at 1111.

[140] *Del. Express*, 2002 WL 31458243, at *15.

[141] *See Siga II*, 132 A.3d at 1130 (quoting *Gatz Props., LLC v. Auriga Cap. Corp.*, 59 A.3d 1206, 1212 (Del. 2012)); *Weinberger v. UOP, Inc.*, 457 A.2d 701, 715 (Del. 1983) (noting the Court of Chancery's "broad discretion . . . to fashion such relief as the facts of a given case may dictate").

> need not be calculable with mathematical accuracy and are often at best approximate.[142]

In *Fortis*, "the parties' contemporaneous risk-adjusted probabilities of success" were the best evidence of the milestones' expected payouts "absent [the promisor's] breaches."[143] *Fortis* was able to rely on the parties' own projections for several reasons. First, little time had passed between the date of those projections and the time of the promisor's breaches.[144] Second, because the promisor "had deep knowledge of its own ability to reach the milestones," and the promisee's "independent estimate came after (or during) multiple rounds of due diligence and was remarkably close to [the promisee's] predictions," the probabilities provided "a credible, responsible basis to calculate" damages.[145] And third, the plaintiff's more optimistic view of the probabilities was balanced out by the defendant's more conservative view.[146]

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[142] *Cura*, 2001 WL 1334188, at *20 (quoting Restatement (Second) of Contracts § 352 cmt. a (1981)); *accord Siga I*, 2014 WL 3974167, at *8; *Beard Rsch., Inc. v. Kates*, 8 A.3d 573, 613 (Del. Ch. 2010) ("Public policy has led Delaware courts to show a general willingness to make a wrongdoer 'bear the risk of uncertainty of a damages calculation where the calculation cannot be mathematically proven.'" (quoting *Great Am. Opportunities, Inc. v. Cherrydale Fundraising, LLC*, 2010 WL 338219, at *23 (Del. Ch. Jan. 29, 2010)), *aff'd sub. nom.*, *ASDI, Inc. v. Beard Rsch., Inc.*, 11 A.3d 749 (Del. 2010).

[143] *Fortis*, 2024 WL 4048060, at *51.

[144] *See id.* at *26–34, *50–51.

[145] *Id.* at *51.

[146] *Id.* at *52.

Similarly, here, the strongest evidence of the Milestone Probabilities is derived from Alexion's own pre-HV-108 PTRS estimates made shortly before the breach. ATP's November 2018 estimates are not a good indication of SRS's expectation damages at the time of breach because those estimates were not contemporaneous with the breach, and reflect very different circumstances. Most notably, in 2018, Alexion was pursuing treatments for PV, gMG, and WAIHA; by the fall of 2021, Alexion's was solely focused on TED and cAMR.[147]

The CDEK estimates (based on Kinch's and Russell's testimony) are anchored to the time of breach. But I am skeptical of the reliability of Kinch's CDEK database on which those estimates are based. First, because the database only includes publicly available data, it systematically overestimates probabilities of success; Kinch acknowledged that failures are underreported.[148] Unlike the private databases CDEK intends to mimic, CDEK is not a tested tool.[149] Pharmaceutical companies do not use it, and Kinch implied that the only peer-reviewed papers relying on the database were his own.[150]

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[147] *See* JX 1477; JX 1928; JX 1933 at 1; JX 2021 at 1; JX 2042 at 1; JX 2065 at 1; Lee Tr. 445, 457; *see also* JX 1948; Russell Tr. 732.

[148] Kinch Tr. 377–79.

[149] *See id.* at 208.

[150] *See id.*

Further, this opinion has explained the deficiencies in Kinch's probability calculations. While I recalculated the CDEK probabilities based on Kinch's initial opinions from his database, Kinch's mathematical errors undermine his overall credibility.

As for the pre-HV-108 PTRS estimates, those are Alexion's own internal predictors of clinical and regulatory success, set by those with detailed knowledge of the ALXN1830 program just before the breach, and untainted by a desire to terminate the program. Alexion's management team was capable of estimating its own molecule's probability of success accurately enough to serve as a starting point for a responsible estimate of damages.

To be sure, the pre-HV-108 PTRS figures do not appear as reliable as those in *Fortis*. The September Opinion expressed skepticism of PTRS as subjective and easy to manipulate.[151] It remains unclear how PTRS is calculated and what objective data it uses.[152] The September Opinion afforded Alexion's reduced post-HV-108 PTRS little weight as an explanation for Alexion's decision to terminate ALXN1830, instead concluding Alexion shut down the program to deliver on

[151] *See* Sept. Op. at *25–26, *43.

[152] *See* Lee Tr. 475, 482, 652–53; Pradhan Tr. 898–99; Washburn Tr. 646; Borboroglu Tr. 1403; Sept. Op. at *25 n.449.

AstraZeneca's promise of merger synergies.[153] But the record offers no reason to doubt Alexion's pre-HV-108 PTRS numbers, despite its subjective inputs. The pre-HV-108 numbers are a conservative starting point and a responsible one.

a. Calculation Of Expected Milestone Payments

With the pre-HV-108 PTRS probabilities as the starting point for the estimate of damages, I have calculated each milestone's expected payment by weighting the milestone amount by its probability of achievement.[154]

Expected Milestone Payments			
Milestone	**Milestone Amount**	**Probability**	**Expected Payment**
2	$ 120,000,000.00	0.715	$ 85,800,000.00
3	$ 120,000,000.00	0.215	$ 25,800,000.00
4	$ 150,000,000.00	0.538	$ 80,700,000.00
5	$ 150,000,000.00	0.102	$ 15,300,000.00
6	$ 25,000,000.00	0.295	$ 7,375,947.45
7	$ 25,000,000.00	0.0256	$ 640,052.55
8	$ 80,000,000.00	0.0511	$ 4,088,160.00
		Total	**$ 219,704,160.00**

b. Present Value of Expected Milestone Payments

From there, the expected milestone payments must be discounted to present value at the time of breach to put SRS in the economic position it would have been

[153] *See* Sept. Op. at *43–44, *47. The post-HV-108 data, even if it provided complete probability estimates, would be an unreliable starting point for a damages estimate.

[154] Blitzstein & Hwang, *supra* note 12, at 149–52.

in absent a breach.[155] The present value of a future lump sum ("PV") is a function of the estimated future value of the lump sum ("FV"), a discount rate reflecting risk ("r"), and the number of periods between the date the lump sum is received and the present date ("n").[156] The formula for present value can be expressed as $PV = FV/(1+r)^n$.

For each milestone, FV is the milestone's expected payment shown in the last section. I address the variables n and r in turn.

i. Estimating *n*

The variable *n* in the present value formula varies based on each milestone's expected payment date at the time of breach. For Milestones 2 through 5, the best evidence of the expected payment dates is a slide deck prepared for the December 14, 2021, meeting in which Alexion decided to terminate ALXN1830.[157] The deck contains draft developmental timelines for TED and cAMR, which evince the following expected milestone schedule[158]:

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[155] *See Duncan*, 775 A.2d at 1022; *Fortis*, 2024 WL 4048060, at *53.

[156] *See* Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* 11–12 (3d ed. 2012).

[157] JX 2220 at 14–15.

[158] *Id.*

Expected Achievement Schedule for Milestones 2 Through 5	
Milestone	**Month/Quarter of Achievement**
2	June 2025
3	August 2025
4	Q2 2028
5	Q2 2029

The draft timelines do not indicate how long after FDA approval EMA approval would be obtained. In 2018, Alexion predicted EMA approval would occur two years after FDA approval for a given indication.[159] ATP's 2018 valuation assumes FDA approval and EMA approval would occur at approximately the same time.[160] Applying Alexion's more conservative timing estimate for EMA approval, I conclude Milestone 6 was expected to be achieved in Q2 2030, and Milestone 7 was expected to be achieved in Q2 2031.

As for Milestone 8, ATP's valuation conservatively assumes that if the milestone were achieved, it would be achieved during the year with the highest projected sales.[161] ATP's conservative approach is appropriate for a responsible estimate of damages. At the time of breach, Alexion projected 2036 as its peak sales

[159] *See* JX 643 at 23.

[160] JX 2962 at 30.

[161] *Id.* at 24.

year.[162] Because Alexion's fiscal year coincides with the calendar year, I conclude Milestone 8's expected achievement date was December 31, 2036.[163]

The Merger Agreement provides that a given milestone payment is due 45 days after the milestone is achieved.[164] Because Milestones 2 through 7 do not have an exact expected achievement date, I assume the milestones would be achieved at the midpoint of the relevant month or quarter.[165]

Milestone Expected Achievement Dates and Payment Due Dates		
Milestone	**Expected Achievement Date**	**Expected Payment Due Date**
2	June 15, 2025	July 30, 2025
3	August 15, 2025	September 29, 2025
4	May 17, 2028	July 1, 2028
5	May 17, 2029	July 1, 2029
6	May 17, 2030	July 1, 2030
7	May 17, 2031	July 1, 2031
8	December 31, 2036	February 14, 2037

[162] JX 1953.

[163] JX 1708 at 1.

[164] Merger Agr. § 3.8(e).

[165] Alexion argues SRS cannot be compensated for Milestones 4 through 8 because these timelines extend beyond Alexion's seven-year CRE Obligation. ALXN Ans. Suppl. Br. 28–29. I disagree. Alexion's timelines (and its PTRS projections, for that matter) implicitly incorporate information available to Alexion, including Alexion's seven-year CRE Obligation and its continuing obligation not to take action with the primary purpose of avoiding any milestone. *See* Merger Agr. § 3.8(f). In theory, the PTRS estimates might have been higher if Alexion's CRE Obligation extended longer or indefinitely. The corresponding differential in expected value has already been accounted for. The remaining expected value reduction was caused by Alexion's breach.

ii. Estimating *r*

"A discount rate reflects both the time value of money and risk."[166] It represents the total expected rate of return an investor demands.[167] SRS proposes using Alexion's 9% weighted average cost of capital ("WACC") from 2018 as the discount rate.[168] But SRS's valuation expert was excluded,[169] SRS does not explain why it believes Alexion's WACC is the appropriate discount rate, and I do not think it is appropriate except as applied to Milestone 8.

A company's cost of capital is the expected rate of return the company needs to attract investors.[170] It can be thought of as an opportunity cost.[171] Riskier investments have a higher cost of capital because capital is a limited resource: when investors commit funds to riskier projects, they are foregoing safer alternatives. So investors demand a risk premium over the risk-free rate: higher expected returns to compensate for taking on additional risk.[172]

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[166] Shannon P. Pratt & Roger J. Grabowski, *Cost of Capital in Litigation: Applications and Examples* 4 (2011).

[167] *Id.* at 5.

[168] SRS Op. Suppl. Br. 22; Sarin Tr. 1020.

[169] D.I. 312.

[170] *See* Pratt & Grabowski, *supra* note 166, at 1.

[171] *Id.*

[172] *See id.* at 110.

In lost profits cases, the cost of capital may be the proper discount rate.[173] "[B]ecause the plaintiff no longer has to bear the investment's risk, the plaintiff is not entitled to be compensated for the risk factors."[174] So the damages award in a lost profits case must discount not only for the time value of money (using the risk-free rate), but also for the risk premium.[175] Because the cost of capital incorporates both, it is often used as the discount rate in such cases.[176]

Here, for Milestones 2 through 7, there is no risk premium on the right to receive milestone payments. To be sure, the probability-weighted expected payments are not "already risk adjusted" just because they "factor[] in the possibility of good and bad outcomes."[177] Expected value is a risk-neutral metric.[178] But the risks underlying the metrics in Milestones 2 through 7 are "diversifiable."[179] A

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[173] *Id.* at 109–10; *Siga II*, 132 A.3d at 1123.

[174] Pratt & Grabowski, *supra* note 166, at 110 (quoting R.F. Lanzillotti & A.K. Esquibel, *Measuring Damages in Commercial Litigation: Present Value of Lost Opportunities*, J. Acct., Auditing & Fin., Winter, 1990, at 125–42).

[175] *Id.*

[176] *See id.*; *Cede & Co. v. Technicolor, Inc.*, 884 A.2d 26, 39 (Del. 2005).

[177] *See* Damodaran, *supra* note 156, at 906.

[178] *See id.*; *cf.* Pratt & Grabowski, *supra* note 166, at 21. An investment with a 100% chance of returning $90 has the same expected value as one with a 90% chance of returning $100 and a 10% chance of returning $0. But the second investment involves greater risk and so commands a risk premium.

[179] *See* Appraisal Foundation, *Valuations in Financial Reporting Valuation Advisory 4: Valuation of Contingent Consideration* 23 (2019) (noting examples of diversifiable risks in the context of contingent consideration, including "a payment contingent upon receiving regulatory approval," a payment upon the "achievement of technical milestones," and the

diversifiable risk is one "that is peculiar to an individual company."[180] Such risks can be "diversified away" through a broad investment portfolio "due to the law of large numbers."[181] In the context of contingent consideration, diversifiable risks include product development milestones (like Milestones 2 and 3) and regulatory approval milestones (like Milestones 4 through 7).[182] Because the risk associated with Milestones 2 through 7 can be diversified away, that risk commands no risk premium, and there is no need to discount for a risk premium in awarding damages. Alexion's cost of capital is not an appropriate discount rate.

For Milestones 2 through 7, the discount rate is the risk-free rate plus a credit risk premium.[183] For a given milestone, that sum is Alexion's cost of debt "specific to the term and seniority of the earnout obligation."[184] ATP estimated this amount based on the yield for investment-grade corporate bonds with maturities equal to the

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"development of a new product"); *id.* at 23 n.21 ("While there may be a small degree of systematic risk associated with the achievement of technical or regulatory milestones, in most cases, the non-diversifiable risk is *de minimis* as compared to the diversifiable risk. Assuming the risk associated with such events to be diversifiable is therefore generally considered reasonable.").

[180] *Id.* at 23, 23 n.20.

[181] *Id.* at 23 ("A widely accepted valuation principle assumes that rational investors and market participants reduce risk through diversification. As a result, it is assumed that market participants will only require a return premium for those risks that cannot be diversified away.").

[182] *Id.* at 14, 23, 79.

[183] *Id.* at 39.

[184] *See id.* at 96, 109.

expected time to reach a given milestone.[185] So ATP used the bond yield as the discount rate.[186]

ATP's methodology makes sense because "[t]he interest rates on bonds are determined by the default risk that investors perceive in the issuer of the bonds," and because bond interest rates can be estimated by "the yield on the bond."[187] Without access to granular data like ATP had, my analysis conservatively uses Moody's Seasoned Baa Corporate Bond Yield as of January 2022, which is 3.58%, for Milestones 2 through 7.[188] This figure is conservative for three reasons. First, because the breach occurred on December 14, 2021, both the December 2021 yield and the January 2022 yield were candidates. I chose the higher yield, resulting in greater discounting. Second, the figure is based on bonds with maturities 20 years and above.[189] Because default risk increases with time, the figure is some degree greater than it would be if it were based on corporate bonds with maturities matching the expected time to reach each milestone. Third, "Baa" is Moody's lowest

[185] *See* JX 2962 at 22–25, 31 n.2.

[186] *See id.*

[187] Damodaran, *supra* note 156, at 177.

[188] Moody's Seasoned Baa Corporate Bond Yield, retrieved from FRED, Fed. Rsrv. Bank of St. Louis; https://fred.stlouisfed.org/series/BAA (last visited June 11, 2025).

[189] *Id.*

investment grade rating.[190] Incorporating higher grade bonds would reduce the yield and thus reduce the discount rate.

Milestone 8 is different because the risk associated with its underlying metric is "nondiversifiable." As the name suggests, nondiversifiable (or "systemic") risk, "cannot be fully removed through diversification" because it is "correlated with the market."[191] Metrics with nondiversifiable risk include financial metrics such as EBITDA or net sales.[192] If an earnout metric carries systemic risk, the discount rate must include a risk premium "commensurate with the degree" of systemic risk.[193]

Milestone 8's net sales metric carries nondiversifiable risk.[194] So the milestone's discount rate must therefore include a risk premium. SRS's suggested 9% discount rate includes a risk premium. Without expert guidance, the appropriateness of the 9% figure is uncertain. Alexion's WACC may have changed since 2018. And it is unclear whether Alexion's WACC is the best metric to measure the discount rate in this context. But "[d]oubts [about the amount of damages] are generally resolved against the party in breach."[195] As the wrongdoer, Alexion cannot

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[190] R. Glenn Hubbard & Anthony Patrick O'Brien, *Economics* 259 (7th ed. 2018).

[191] Appraisal Foundation, *supra* note 179, at 23.

[192] *See id.* at 24.

[193] *Id.* at 24, 32–33.

[194] *See id.* at 24.

[195] *Cura*, 2001 WL 1334188, at *20 (quoting Restatement (Second) of Contracts § 352 cmt. a (1981)).

be allowed to profit from its breach via an overly conservative discount rate for Milestone 8, particularly where Alexion offers no input as to the appropriate discount rate.[196] Given Delaware's recognition of the wrongdoer rule, I believe 9% is an appropriate discount rate for Milestone 8 taking into account "all the circumstances of the breach."[197]

iii. Pre-Interest Expectation Damages Calculation

I have calculated the present value of expected earnout payments based on the expected achievement dates noted above, and an annual discount rate of 3.58% for Milestones 2 through 7 and 9% for Milestone 8. The following table summarizes my full analysis.

Present Value of Expected Milestone Payments			
Milestone	**Milestone Payout**	**Expected Payment**	**Present Value**
2	$ 120,000,000.00	$ 85,800,000.00	$ 75,522,351.83
3	$ 120,000,000.00	$ 25,800,000.00	$ 22,576,414.19
4	$ 150,000,000.00	$ 80,700,000.00	$ 64,092,303.86
5	$ 150,000,000.00	$ 15,300,000.00	$ 11,731,346.77
6	$ 25,000,000.00	$ 7,375,947.45	$ 5,460,071.74
7	$ 25,000,000.00	$ 640,052.55	$ 457,425.38
8	$ 80,000,000.00	$ 4,088,160.00	$ 1,105,001.54
		Total	**$ 180,944,915.32**

[196] *See generally* Alexion Ans. Suppl. Br.

[197] *Cura*, 2001 WL 1334188, at *20 (quoting Restatement (Second) of Contracts § 352 cmt. a (1981)); *Siga I*, 2014 WL 3974167, at *8; *Beard Rsch.*, 8 A.3d at 613.

SRS's pre-interest expectation damages for Alexion's breach of its CRE Obligation are $180,944,915.32.

B. SRS's Damages Claim For Breach Of Merger Agreement Section 3.8(f)'s Requirement Not To Take Action To Avoid Milestones

Count IV of SRS's amended complaint alleges Alexion breached its Non-Avoidance Obligation by taking actions with the primary purpose of avoiding milestones.[198] The September Opinion did not address whether Alexion's termination of ALXN1830 breached the Non-Avoidance Obligation. The September Opinion asked the parties to advise if SRS's Count IV carried with it any additional potential for damages or practical ramifications.[199] Despite SRS's best efforts in supplemental briefing,[200] Count IV does not carry any additional potential for damages.[201] SRS is receiving its expectation damages based on Alexion's breach of the CRE Obligation. I do not address Count IV.

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[198] Compl. ¶¶ 272–78.

[199] Sept. Op. at *48.

[200] SRS Op. Suppl. Br. 35–39; SRS Reply Suppl. Br. 21–22.

[201] The September Opinion held SRS had not met its burden to prove Alexion's decisions to deprioritize the gMG and WAIHA programs were intended to avoid milestones in breach of its Non-Avoidance Obligation. Sept. Op. at *41 n.620 (citing SRS Op. Br. 68–70). I do not consider SRS's supplemental arguments regarding Alexion's deprioritization of these indications. SRS Op. Suppl. Br. 36.

1. Application Of The Prevention Doctrine Would Not Result In Additional Damages.

SRS contends a breach of Alexion's Non-Avoidance Obligation would trigger Delaware's prevention doctrine. SRS asserts that under that doctrine, unless Alexion can prove its breach did not materially contribute to the nonoccurrence of a given milestone, SRS is entitled to full payment on each milestone. For purposes of this argument, I accept, with some hesitation, SRS's assertion that the Non-Avoidance Obligation is a contractual codification of Delaware's prevention doctrine.

The prevention doctrine "provides that a party may not escape contractual liability by reliance upon the failure of a condition precedent where the party wrongfully prevented performance of that condition precedent."[202] "[T]he doctrine is based on the long-established principle of law that a party should not be able to take advantage of its own wrongful act."[203] When the doctrine applies, the preventing party is "liable for damages caused by the breach."[204]

But the "plaintiff is not entitled to take advantage of this situation" to obtain a windfall.[205] "[T]he damages recoverable represent the harm resulting from th[e]

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[202] *BitGo Hldgs., Inc. v. Galaxy Digit. Hldgs., Ltd.*, 319 A.3d 310, 333 (Del. 2024) (quoting *Mobile Commc'ns Corp. of Am. v. MCI Commc'ns Corp.*, 1985 WL 11574, at *4 (Del. Ch. 1985)).

[203] 13 Richard A. Lord, *Williston on Contracts* § 39:6 (4th ed. 2024).

[204] *Id.* § 39:12.

[205] *See id.* (quoting *Siegal v. Haver*, 417 P.2d 928, 932 (Ariz. App. 1966)).

lack of cooperation."[206] For instance, "[i]f the defendant's conduct in preventing the plaintiff's performance has enabled the plaintiff to avoid expenses, the expenses saved must be deducted from the damages otherwise recoverable, for otherwise, the plaintiff would be overcompensated as a result of the defendant's breach."[207] This "principle of mitigation" reflects Delaware's broader policy against awarding windfalls.[208] Consistent with that policy, the prevention doctrine does not provide a plaintiff a back door to damages in excess of proven expectation damages.[209]

With interest, SRS pegs full milestone payment damages at $754,877,262.02.[210] But as explained, SRS's expectation damages amount to the present value of the expected value of those milestones. With interest, this opinion

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[206] *Id.*

[207] *Id.*

[208] *See Paul v. Deloitte & Touche, LLP*, 974 A.2d 140, 146 (Del. 2009) ("Contract damages are designed to place the injured party in an action for breach of contract in the same place as he would have been if the contract had been performed. Such damages should not act as a windfall." (internal quotation marks and citations omitted)); *cf. Stayton v. Del. Health Corp.*, 117 A.3d 521, 534 (Del. 2015) ("In Delaware 'a plaintiff is entitled to compensation sufficient to make him whole, but no more.' In other words, the remedy for the tort should put the plaintiff as close as possible to the same position as she was in before the injury." (quoting *Mitchell v. Haldar*, 883 A.2d 32, 38 (Del. 2005))).

[209] *See Murphy Marine Servs. of Del., Inc. v. GT USA Wilm., LLC*, 2022 WL 4296495, at *2, *9, *12–14, *16, *21 (Del. Ch. Sept. 19, 2022) (holding that even if obtaining "a final valuation decision was a condition precedent to [defendant's] performance, the failure of such a condition is excused under the prevention doctrine" because defendant's contract breach caused the failure, and therefore awarding expectation damages caused by the breach).

[210] SRS Op. Suppl. Br. at 38–39.

calculates those damages at around $220 million. SRS's application of the prevention doctrine would result in a half-a-billion-dollar windfall. Delaware law does not permit that. Given this opinion's award of expectation damages, the parties' expectations have been enforced, and Alexion has not been permitted to take advantage of its breach. The prevention doctrine cannot offer SRS more than its expectation damages.

SRS offers no other practical ramifications from Alexion's alleged breach of its Non-Avoidance Obligation.[211] Count IV is moot.

C. Pre- And Post-Judgment Interest

Alexion does not contest SRS's entitlement to pre- and post-judgment interest on its damages. The modern approach calls for compounding interest using a floating interest rate based on the legal rate.[212] The modern approach, compounding at quarterly intervals, is appropriate for pre- and post-judgment interest here.

D. Attorneys' Fees And Expenses

SRS's post-trial brief argues it is entitled to reasonable attorneys' fees and expenses under Section 8.2 of the Merger Agreement.[213] Section 8.2 provides for

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[211] *See* SRS Op. Suppl. Br. 35–39.

[212] *ITG Brands, LLC v. Reynolds Am., Inc.*, 2025 WL 670818, at *12–14 (Del. Ch. Mar. 3, 2025) (collecting cases).

[213] SRS Op. Br. 90–91. SRS raises the argument again in its supplemental briefing. SRS Op. Suppl. Br. 39. As the September Opinion requested supplemental briefing only on the

indemnification against "Losses . . . arising out of or resulting from . . . any breach of any covenant" in the Merger Agreement.[214] "Losses" are defined to include "reasonable attorneys' fees and expenses."[215]

The Merger Agreement requires written notice for any indemnification claim, which must "state in reasonable detail the nature, basis and the amount of the Direct Claim, to the extent known, along with copies of the relevant documents evidencing such Direct Claim and the basis for indemnification sought."[216] SRS makes no argument that it has satisfied the notice requirements.[217] SRS is not entitled to attorneys' fees and expenses under the Merger Agreement's indemnification provisions at this point in time.

III. CONCLUSION

SRS is awarded $180,944,915.32 in damages, plus pre- and post-judgment interest, for Alexion's breach of its obligation to use CREs. Within 30 days, the parties shall confer on an interest calculation consistent with the methodology

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proper damages model, I do not consider SRS's supplemental briefing regarding attorneys' fees and expenses.

[214] Merger Agr. § 8.2.

[215] *Id.* § 8.1.

[216] *Id.* § 8.3(d).

[217] *See* Compl. at 104–05 (SRS's complaint failing to reference Merger Agreement Section 8.2 and making only a passing mention of SRS's alleged entitlement to attorneys' fees); SRS Op. Br. 90–91; SRS Ans. Br. 69.

adopted in this opinion and submit a proposed stipulated order implementing this opinion and the damages awarded in the September Opinion.