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USING A DECISION TREE TO VALUE CAUSES OF ACTION

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Introduction

One of the most difficult types of assets or liabilities to value in a contested situation may be litigation-related claims. The key underlying valuation drivers (e.g., probability of a liability determination and amount of damages) are often subject to a wide range of views. Compounding the problem, there often are few, if any, "comps" that can be reliably used to benchmark the valuation. Not surprisingly, one side will frequently argue the litigation-related claim is worth a lot, whereas the other side will counter that it is worth a little or nothing.

Use of a decision tree can add transparency to the process. A decision tree forces a practitioner to identify key decision points in the underlying analysis and assign probabilities to potential outcomes. While one may disagree with the assigned probabilities (e.g., argue they are "garbage in/garbage out"), the underlying analysis is more transparent than a high-level assessment that does not show the underlying assumptions.

This article demonstrates the use of a decision tree for a stylized example related to a potential fraudulent conveyance claim. It also addresses prejudgment interest and the discount rate that is required to convert the nominal value of a litigation claim to present value.[1]

1 Material in this article is adapted from the panel presentation *"Valuing Causes of Action for Purposes of Third Party Releases,"* VALCON 2019, February 28, 2019, Las Vegas NV.

Hypothetical Fraudulent Transfer Claim Example

We will assume the following:

- Company A sells assets to its sister, Company B (they are both owned by the same entity), on December 31, 2015, for $1 billion. Neither company had publicly-traded equity or debt, which means we can't rely on market prices for the relevant securities. This assumption adds volatility to the valuation and solvency-related determinations.
- Company A files for bankruptcy on December 31, 2018 in a state with a 4-year lookback period. A fraudulent transfer claim is not time-barred in this situation.
- Company A's creditors contend the related party transaction resulted in asset stripping when Company A was insolvent. They want to claw back the proceeds via a fraudulent transfer lawsuit.
- The sponsor of the disputed transaction counters that Company A received reasonably equivalent value and was solvent when the transaction closed. The sponsor asserts that a fraudulent transfer lawsuit would be unsuccessful.
- Notwithstanding the sponsor's assertion, it agrees to contribute a large sum of money as part of the restructuring in exchange for receiving a release from the fraudulent transfer claim.

- The key question that needs to be answered: Is the sponsor's contribution reasonable consideration for release of the fraudulent transfer claim?

What Does the Decision Tree Look Like?

A decision tree identifies various possibilities for each key decision and assigns a probability to each possibility. For this example, there are five key decisions that must be assessed:

1. **Was there actual intent?**

   There are two types of fraudulent transfers, which are often referred to as (a) actual intent and (b) constructive. Actual intent generally refers to situations where *it was known* at the time that the debtor's creditors were hindered or defrauded. Constructive generally refers to situations where *it should have been known* at the time that the debtor's creditors were hindered or defrauded. The distinction primarily matters because there are various safe harbors that can protect defendants under the constructive prong that are not available under the actual intent prong.

   The next three key decisions are only applicable when the transaction is not a fraudulent transfer under the actual intent prong.

2. **Was it a settlement payment?**

   An otherwise constructive fraudulent transfer is immune from prosecution if the structure of the transaction fits within the settlement payment safe harbor. The primary use of this safe harbor is in situations where a transfer was made by or to (or for the benefit of) a financial institution. Not surprisingly, defendants typically argue the settlement payment safe harbor applies whereas plaintiffs typically take the opposite view.

   The Supreme Court recently addressed this issue in *Merit* (2018).[2] The Supreme Court, in a unanimous decision, focused on the overarching transaction (i.e., buyer to seller) and not the component parts (i.e., buyer to buyer's bank to seller's bank to seller). On the surface, this decision indicates the settlement payment safe harbor cannot be used by defendants just because a financial institution served as an intermediary in the transaction.

   However, a broad settlement payment defense may live to fight another day. The Supreme Court in footnotes 2 and 5 to its opinion in *Merit* suggests that future defendants may explore arguments that were not made by the defendants in *Merit*. More specifically, future defendants may be able to successfully argue they are a "financial institution" because they were a "customer" of a qualified "financial institution."

3. **Was there reasonably equivalent value?**

   The reasonably equivalent value safe harbor allows the recipient to keep the benefits of the transfer if the debtor got something in value that was close enough to the value that it gave up. A simple cash dividend is an example where the debtor did not get reasonably equivalent value because it gave up something (cash used to pay the dividend) for nothing. Other transactions, such as the sale in this example, are more subjective as it depends on an assessment of the transaction. The line in the sand that must be crossed to determine the consideration was not reasonably equivalent can be subjective.

4. **Was the debtor solvent?**

   There are three tests to assess whether a debtor was solvent at the time of the disputed transfer. The so-called Balance Sheet Test typically compares the debtor's enterprise value with the face value of its funded net debt and fair value of its unliquidated/contingent liabilities. The Adequate Capital Test typically assesses a debtor's liquidity and ability to service its debt obligations. The Ability to Pay Debts, by name, sounds like the Adequate Capital Test but in practice is typically a harder-to-fail test. Because a plaintiff only must establish that the debtor failed one of these three tests, most of the focus is on the Balance Sheet and Adequate Capital Tests.[3]

5. **How much is recovered?**

   In some fraudulent transfer cases, the amount that is recovered is straightforward. For example, a fraudulent transfer lawsuit that tries to claw back a $10 million cash dividend will recover $10 million if the lawsuit is successful. In other fraudulent transfer cases, the amount that is recovered is more subjective. This stylized example can have a wide range of possible recovery amounts because it depends on the value of assets that were sold.

Exhibit 1 on p.8 depicts these five key decision points within a decision tree framework. There are effectively two paths (in black) that lead to the fraudulent transfer claim having value. There are also three paths (in red) that lead to the fraudulent transfer claim having no value. For the fraudulent transfer claim to have value, either (a) it must meet the actual intent threshold or (b) it must get past the settlement payment, reasonably equivalent value, and solvency safe harbors

To demonstrate how the decision tree can be filled in,

2 *Merit Management Group v FTI Consulting*, 138 S. Ct. 883, 200 L. Ed. 2d 183, 583 U.S. (2018).

3 A broad discussion related to the solvency tests is beyond the scope of this article. For this author's view on the topic, see Michael Vitti, "Grounding Retrospective Solvency Analyses in Contemporaneous Information (3 of 3)," *Business Valuation Review* 33, no 3 (2014): 50-80.

we will make some assumptions. For purposes of this discussion, we will assume the following for the "Low Case," which is shown in Exhibit 2:

- There is a 40% probability that the actual intent hurdle will be met;
- For the scenarios where the actual intent hurdle is not met there is a:
  - 90% probability the settlement payment safe harbor will not apply,
  - 40% probability the reasonably equivalent value safe harbor will not apply,
  - 65% probability the debtor will be deemed insolvent; and
- Damages range from $1.4 to $1.6 billion. Damages will likely be (substantially) higher than the $1.0 billion transaction price because Company A was (a) stripped of assets for unfair consideration under the actual intent prong, and/or (b) did not receive reasonably equivalent value under the constructive prong in scenarios where damages are applicable.[4,5]

Exhibit 3 provides some context for framing the reasonably equivalent vale safe harbor. Valuing the transferred assets at $1.1 billion results in Company A receiving 91 cents on the dollar, which may be close enough to be reasonably equivalent. Valuing the transferred assets at $1.4 billion (71 cents on the dollar) to $1.6 billion (63 cents on the dollar) may not be close enough to be reasonably equivalent.

The following changes are made for a "High Case" example, shown in Exhibit 4 on p.10:

- The probability that the actual intent hurdle will be met increases from 40% to 50%;
- For the scenarios where the actual intent hurdle is not met:
  - the probability that the settlement payment safe harbor will not apply increases from 90% to 100%,
  - the probability that the reasonably equivalent value safe harbor will not apply increases from 40% to 50%,
  - the probability that the debtor will be deemed insolvent increases from 65% to 75%; and
- Each damage estimate increases by $100 million.

As shown in Exhibits 2 and 4, a series of small changes (10% points change in each liability-related assumption, $100 million change in damages) in the same direction combines to result in a large (>35%) change in output.[6]

4 There may be a possibility that the transferred assets are worth around $1 billion (or even less than $1 billion). However, those possibilities are likely not relevant for damages purposes because liability will not likely be established if the value of transferred assets is that low.

5 The same range for damages is used for the actual intent and constructive prong analyses. However, it is possible for recovery under the actual intent prong to be lower (e.g., $1.1 billion) than under the constructive prong because the transfer may have been for reasonably equivalent value yet still be a recoverable fraudulent transfer.

6 The $1.1 billion High Case is $289 million higher than the $811 million Low Case ($289 million / $811 million = 35.6%).

Exhibit 1: Decision Tree Framework for Example

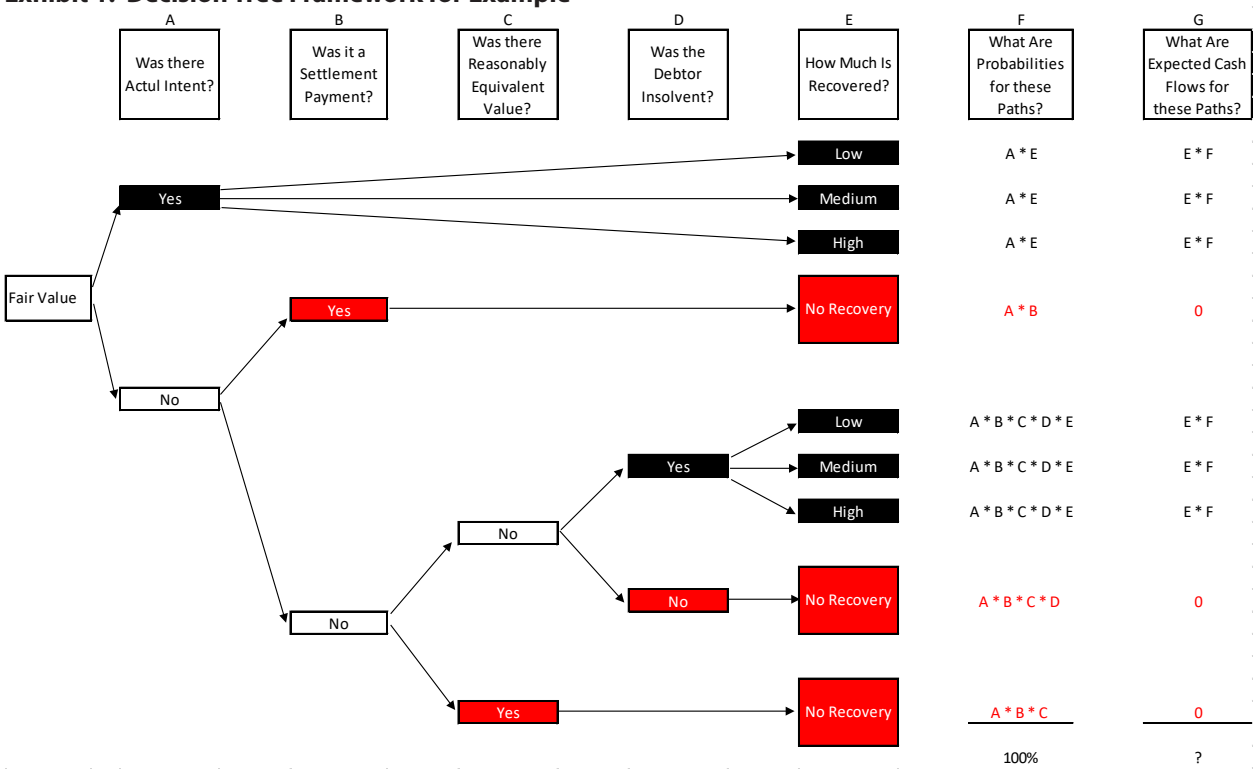
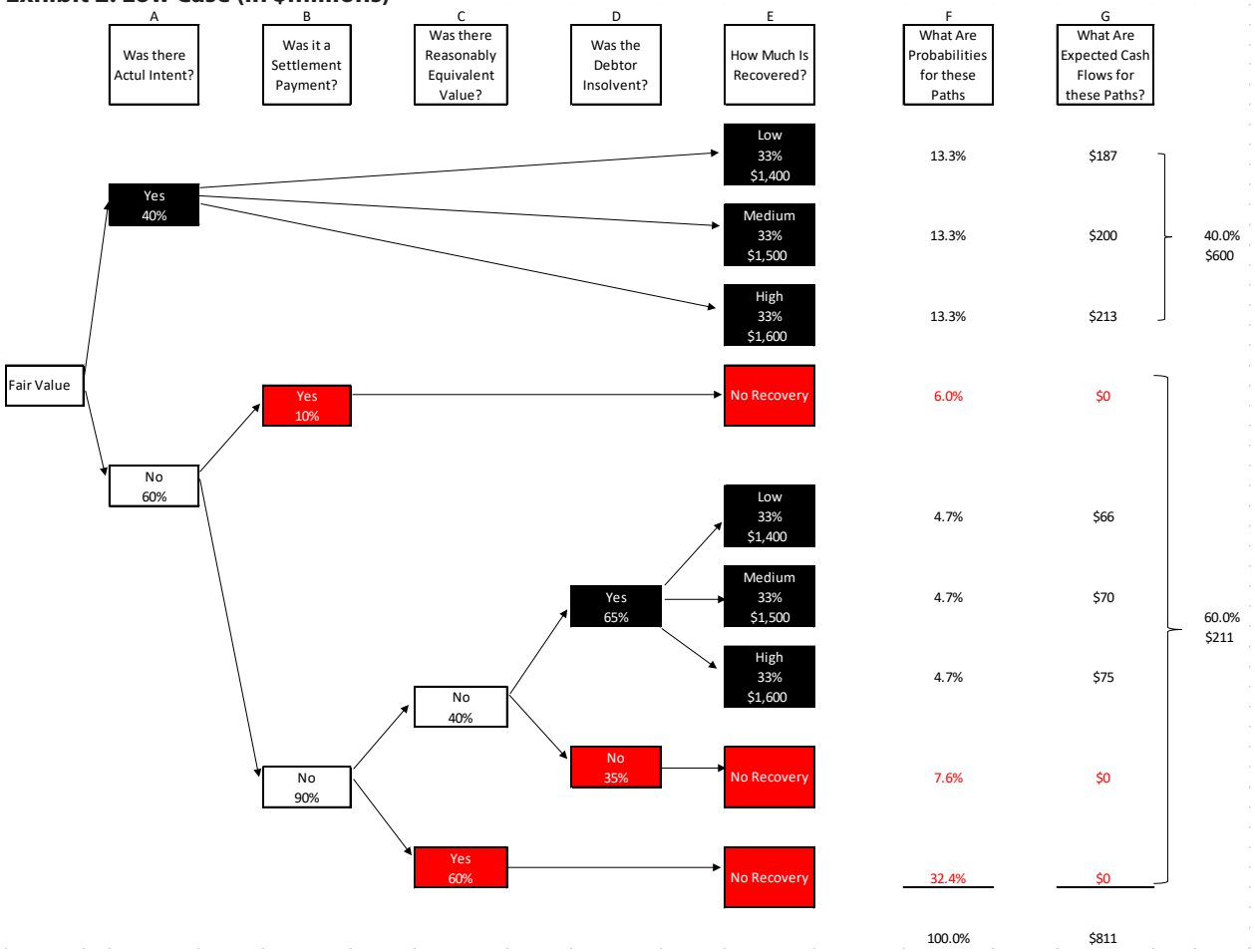


Exhibit 2: Low Case (in $millions)



Litigation Cost Considerations

Litigation costs must be added to the equation. The preceding discussion focused on the expected revenue that will be achieved if the litigation claim is pursued to a final judgment. This revenue must be reduced by expected expenses that are incurred while pursuing the litigation claim.

Litigation counsel may be paid via a percentage of the proceeds that are ultimately collected on the claim. These costs only require an assumption regarding the percentage that they are paid. Other costs (and litigation counsel's costs if they are not on a contingency basis) will be incurred regardless of the ultimate verdict. These costs will require additional assumptions.

It is noteworthy that there is a meaningful probability that the litigation claim will have a negative value (i.e., costs will be incurred but no revenue is obtained). As shown in the decision trees for this stylized example, there is a 46% probability of a negative value under the "Low case" value and a 31% probability of a negative value under the "High case" value if the claim is pursued through final judgment. The meaningful probability that a litigation claim will have negative value, combined with the potential that the defendant can incur a very large expense, helps explain why most lawsuits settle.

Exhibit 3: Get vs. Give

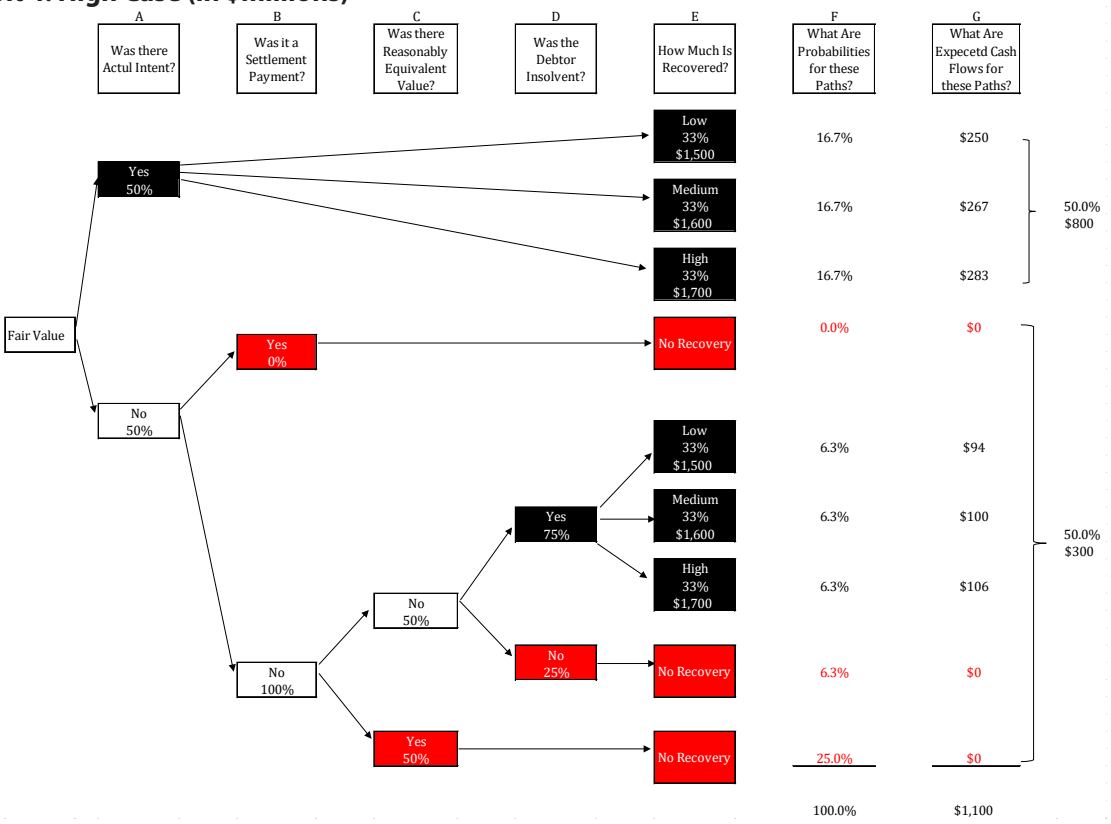
Get	Give	Cents on $
$1.0	$1.0	100
$1.0	$1.1	91
$1.0	$1.2	83
$1.0	$1.3	77
$1.0	$1.4	71
$1.0	$1.5	67
$1.0	$1.6	63

Discount Rate and Prejudgment Interest Rate Considerations

Debates over how to value a litigation claim are not limited to differences over the previously discussed assumptions for (a) the probability that the litigation claim will be successful, (b) the amount of damages, and (c) the costs to pursue a litigation claim. Acknowledgement that a discount rate must be applied to account for the time value of money and risk (which decreases value) and availability of prejudgment interest (which increases value) are additional areas of contention.

Continued from p.9

Exhibit 4: High Case (in $millions)



What Is the Appropriate Discount Rate?

There is not a lot of established guidance regarding how to determine the appropriate discount rate when valuing litigation claims. For example, the International Valuation Standards Council's recently published exposure draft observed "a lack of guidance in the broader marketplace related to the valuation of non-financial liabilities."[7] The lack of guidance may lead to a large difference in views among practitioners when determining the appropriate discount rate.

The first step in determining the appropriate discount rate should be identifying the defendant's (in this case the sponsor's) cost of unsecured debt. The discount rate used to determine present value for this litigation claim should reflect the defendant's credit risk after taking the judgment into account. As a practical matter, the litigation claimholders effectively give the defendant an unsecured loan from Company A's bankruptcy filing date through the date they receive payment on their claim.

The second step is determining what compensation, if any, the litigation claimholders should receive for holding a litigation claim that may be riskier than an unsecured debt instrument. This step can lead to an interesting debate with a wide range of views.

On the one hand, a practitioner could highlight that this litigation claim has no incremental beta beyond what is implied in the defendant's cost of unsecured debt. That means a verdict from trial (or settlement of the litigation claim) has no correlation with changes in market conditions after the valuation date. A faithful application of the Capital Asset Pricing Model results in *no incremental compensation* for litigation claimholders.

This practitioner might also highlight Delaware appraisal cases as market support for the view that incremental compensation for litigation risk should be low. Petitioners in Delaware appraisal cases seek to get their shares bought out at an appraised amount that is greater than the change-in-control deal price. Petitioners also receive prejudgment interest at the Delaware statutory rate, which is the federal discount rate plus 5.0%. As shown in Exhibit 5, the Delaware statutory interest rate was 6.0% or lower for several years. This fact is noteworthy because many have observed that appraisal arbitragers have viewed the Delaware statutory interest rate as higher than the litigation claim's cost of capital (which implicitly was less than 6.0% for many years), which further incentivizes appraisal-related claims. The state of Delaware tried to stem this outcome by allowing companies to prepay appraisal claims to avoid paying prejudgment interest at the Delaware statutory rate.[8] Implicit in these observations is the view that a

7 IVS 220 Non-Financial Liabilities Exposure Draft was issued on January 4, 2019. Available at https://www.ivsc.org/files/file/view/id/1345.

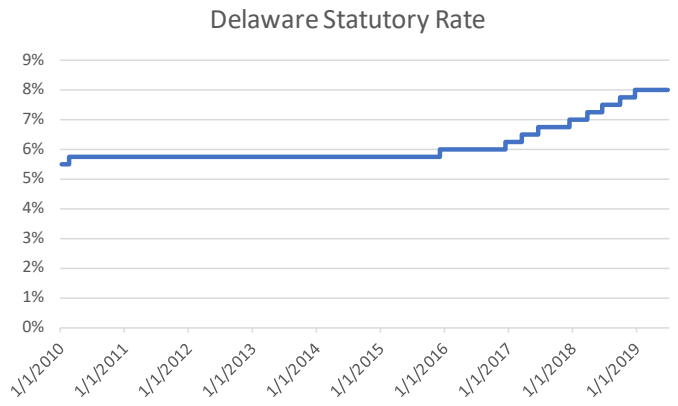
8 Observing the number of companies that prepay appraisal claims may not be relevant for this discussion because of unintended consequences. For example, prepaying appraisal-related claims, while it may be beneficial for present value-related purposes, results in funding litigation against the company. Companies that would prepay for present value purposes may choose to not prepay for this reason.

Delaware appraisal claim's cost of capital should not be massively higher than the company's unsecured cost of debt, which means limited incremental compensation for litigation risk.[9]

On the other hand, another practitioner might argue there is *a lot of incremental risk that is relevant for discount rate purposes*. Creditors know with certainty how much a debtor owes on a "vanilla" (basic or standard) debt obligation that is used to observe the cost of unsecured debt. The only risk associated with a vanilla debt obligation is the possibility that the debtor won't pay what is owed. A litigation claim, on the other hand, can have substantial volatility around what is ultimately owed, which is demonstrated in the decision trees depicted in Exhibits 2 and 4. If given a choice, a risk-adverse investor may logically choose to be the counterparty on a vanilla $100 debt obligation over owning a litigation claim that might ultimately be worth much more or less than $100 when they both have the same expected (i.e., probability of outcomes weighted) $100 value.

This practitioner might also highlight that Delaware appraisal claims are (much) less risky than most other litigation claims.[10] The petitioner will always receive payment in a Delaware appraisal case because he is entitled to the fair value of his shares. The only issue is whether the fair value will be high enough to justify the costs of pursuing litigation. By contrast, most other litigation claims have a substantial risk of receiving no payment because they only receive payment (damages) when liability is established.[11] As previously discussed, the assumptions used in this stylized example showed a significant (31% to 46%) probability of no revenue associated with the claim.

Exhibit 5: Delaware Statutory Prejudgment Interest Rate



The tiebreaker would appear to be a focus on litigation claimholders' ability to diversify the litigation claim-specific risk. While the litigation claim may have a zero beta, it does not necessarily follow that the litigation claim-specific risk can be diversified away. As a practical matter, the litigation claim-specific risk will likely never be diversified away if it is owned by the creditors who receive this claim because most (if not all) of them do not have a large portfolio of litigation claims. The ability to reduce litigation claim-specific risk through diversification is therefore dependent on an active market in trading litigation claims.

The litigation finance market is not as active as traditional debt or publicly traded equity markets. Therefore, it stands to reason that the market is not efficient enough to fully diversify litigation claim-specific risks. The largest publicly traded litigation finance company, Burford Capital, effectively makes this point when it states, "Our capital is expensive, with Burford's overall financial return expectations consistent with private equity and venture capital funds, not commercial banks.")[12,13] The International Valuation Standards' exposure draft generally echoes this point when it states that a market participant who takes over an obligation may require compensation to "reflect the risk that the actual cash []flows might differ from the expected cash []flows at the time of the transaction."[14] It seems reasonable to conclude that some incremental compensation should be included in the discount rate with the amount likely to be fervently contested among the parties.

9 Many lawyers have published views on appraisal arbitrage. For example, see Edward McNally and Patricia Winston of MorrisJames, "Is Appraisal Arbitrage Past Its Prime" (https://www.morrisjames.com/blogs-Delaware-Business-Litigation-Report,is-appraisal-arbitrage-past-its-prime); Jack Jacobs of Sidley Austin, "Pushbacks and Delaware Appraisal Arbitrage" (https://corpgov.law.harvard.edu/2016/06/28/pushbacks-and-delaware-appraisal-arbitrage/) and Daniel Atlas, Arthur Bookout and Andrew Kinsey of Skadden, "Delaware Appraisal Actions: When Does it Make Sense to Prepay?" (https://www.skadden.com/insights/publications/2018/05/insights-the-delaware-edition/delaware-appraisal-actions).

10 The focus of this discussion is the period when there were a substantial number of Delaware appraisal-related claims. The outlook may be different (and even less volatile due to lower upside) now given the recent emphasis on the deal price less synergies in the Delaware Supreme Court's decisions regarding *Dell*, *DFC Global*, and *Aruba Networks*.

11 Further increasing risk, some litigation claims may establish liability but no (or limited) damages.

12 See https://www.burfordcapital.com/faqs/

13 Burford Capital stated earlier this year that it has generated a 30% internal rate of return ("IRR") based on recoveries to date and would generate a 15% IRR "even if one assumes all current outstanding investments before 2016 are full losses." https://www.burfordcapital.com/wp-content/uploads/2019/03/Burford-FY2018-Investor-Presentation.pdf at p. 24.

14 IVS 220 Non-Financial Liabilities Exposure Draft was issued on January 4, 2019. Available at https://www.ivsc.org/files/file/view/id/1345. Note that the discussion in this document relates to cash outflows instead of inflows and a reduction instead of an increase to the discount rate. That discussion occurs because it frames the litigation claim from the liability perspective, not the asset perspective. A cash outlflow for a liability is a cash inflow for an asset. The discount rate is decreased for the liability because it would be counterintuitive to lower the liability due to extra risk that would require compensation to be paid to a third party to take on the exposure.

Continued from p.11

What Prejudgment Interest Will Be Obtained?

The availability and parameters for determining prejudgment interest is determined by the trial judge, subject to appeal. The rate that is ultimately applied will depend on the applicable law (e.g., the applicable rate varies by state) and other factors (e.g., the rate may be reduced to reflect the fact that some of the claim holders were not investors when the transfer was executed). The plaintiff will presumably argue for a relatively high prejudgment interest rate whereas the defendant will presumably argue for a relatively low (or no) prejudgment interest rate and the final judgment may be expected to be somewhere in between.

The process for calculating interest is also relevant, primarily because interest is received at the end of the case. Simple interest applies the interest rate to the original principal amount each year. Compound interest applies the interest rate to the original principal amount plus the accrued but unpaid interest. The benefit that plaintiffs receive via compound interest depends on how frequently (e.g., annual or quarterly) the interest is compounded.

The characterization of income taxes may also matter. A debt instrument is typically valued on a pre-tax basis but that does not mean that the timing of income tax expenses is irrelevant. The owner of a typical debt instrument earns interest and must pay income tax on that interest each year. The holder of a litigation claim does not pay income tax until it receives the interest in a lump sum that can reflect many years worth of interest payments. The ability to defer income taxes on several years of interest has some value.

Interaction Between Discount Rate and Prejudgment Interest Rate

We will revisit our stylized example to observe the interaction between the discount rate and prejudgment rate. Recall that Company A filed for bankruptcy on December 31, 2018. Prejudgment interest will begin accruing on that date. We will assume that the valuation date (i.e., the date the settlement offer must be assessed) is one year later: December 31, 2019. Finally, we will assume that payment under final judgment won't be rendered until 10 years after Company A filed for bankruptcy, which is 9 years after the valuation date.

The length of period between the valuation date and payment under final judgment may be the most relevant assumption. These cases can take many years (some take well over a decade) to reach a final judgment. A sensitivity analysis that considers shorter lengths of time will be discussed later in this article.

To fill in the analysis, we also need to make a few additional assumptions. We will assume interest will accrue at 5.0% at the end of each year on a simple basis. We will also assume the discount rate is 8.0%. Setting aside the income tax deferral issue, these assumptions result in 25% present value reduction. Said differently, each $1,000 of expected judgment has a present value of $750. See Exhibit 6.

To consider other interest rate and discount rate assumptions, we will also review a sensitivity table. As shown in Exhibit 7, there can be a wide range of present value adjustments depending on which combination of interest rate and discount rate is used.

Exhibit 6: Present Value of Expected Judgment

Expected Judgment	$1,000
Interest Rate	5.0%
Interest Method	Simple
Discount Rate	8.0%
Valuation Date	12/31/19

	Val Date	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Payment on 12/31/28
Prejudgment Interest		$50	$50	$50	$50	$50	$50	$50	$50	$50	$50	$500
Expected Proceeds												$1,000
Total Proceeds												$1,500
Period for Discounting		0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	9.0
Present Value Factor		1.00	0.93	0.86	0.79	0.74	0.68	0.63	0.58	0.54	0.50	0.50
Present Value of Total Proceeds	$750											$750
Relative to Expected Judgment	-25%											

Exhibit 7: Sensitivity Analysis

Present Value of Total Proceeds

Discount Rate	0.0%	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%
5.0%	645	709	774	838	902	967	1,031	1,096	1,160	1,225	1,289
6.0%	592	651	710	769	829	888	947	1,006	1,065	1,125	1,184
7.0%	544	598	653	707	762	816	870	925	979	1,033	1,088
8.0%	500	550	600	650	700	750	800	850	900	950	1,000
9.0%	460	506	553	599	645	691	737	783	829	875	921
10.0%	424	467	509	551	594	636	679	721	763	806	848
11.0%	391	430	469	508	547	586	625	665	704	743	782
12.0%	361	397	433	469	505	541	577	613	649	685	721
13.0%	333	366	399	433	466	499	533	566	599	632	666
14.0%	308	338	369	400	431	461	492	523	554	584	615
15.0%	284	313	341	370	398	426	455	483	512	540	569

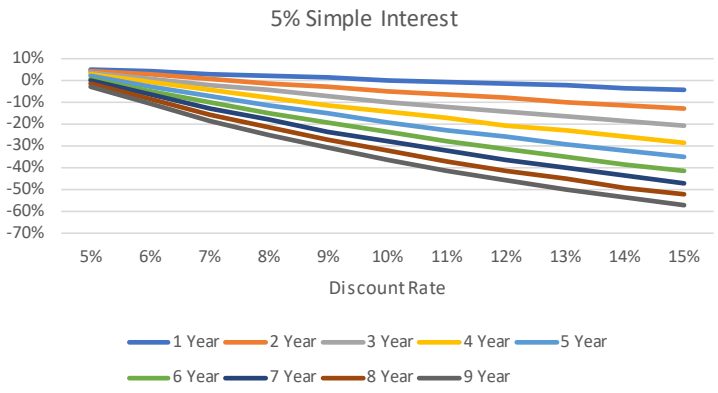
Relative to Expected Judgement

Discount Rate	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
5.0%	-36%	-29%	-23%	-16%	-10%	-3%	+3%	+10%	+16%	+22%	+29%
6.0%	-41%	-35%	-29%	-23%	-17%	-11%	-5%	+1%	+7%	+12%	+18%
7.0%	-46%	-40%	-35%	-29%	-24%	-18%	-13%	-8%	-2%	+3%	+9%
8.0%	-50%	-45%	-40%	-35%	-30%	-25%	-20%	-15%	-10%	-5%	+0%
9.0%	-54%	-49%	-45%	-40%	-36%	-31%	-26%	-22%	-17%	-13%	-8%
10.0%	-58%	-53%	-49%	-45%	-41%	-36%	-32%	-28%	-24%	-19%	-15%
11.0%	-61%	-57%	-53%	-49%	-45%	-41%	-37%	-34%	-30%	-26%	-22%
12.0%	-64%	-60%	-57%	-53%	-50%	-46%	-42%	-39%	-35%	-31%	-28%
13.0%	-67%	-63%	-60%	-57%	-53%	-50%	-47%	-43%	-40%	-37%	-33%
14.0%	-69%	-66%	-63%	-60%	-57%	-54%	-51%	-48%	-45%	-42%	-38%
15.0%	-72%	-69%	-66%	-63%	-60%	-57%	-55%	-52%	-49%	-46%	-43%

A key driver of the present value analysis shown in Exhibits 6 and 7 is duration. The analysis assumes final adjudication occurs 10 years after the bankruptcy filing date, which is 9 years after the valuation date. The size of the present value adjustment reduces (increases) as duration decreases (increases) because there is less (more) time for the difference between interest rate and discount rate to compound. This is illustrated in Exhibit 8, which shows the present value adjustment when assuming a 5% simple interest rate and durations ranging from 1 year (final adjudication on 12/31/20) to 9 years (final adjudication on 12/31/28).[15]

15 The adjustment is positive when the discount rate is greater than the interest rate in some short duration scenarios because there is one year of prejudgment interest before the valuation date.

Exhibit 8: Present Value Adjustment Curves



Closing Thoughts

Valuing litigation claims is not easy. There are many variables that are likely to be contested. That is especially the case when trying to determine the value of a litigation claim prior to the start of formal discovery when the potential outcomes are more volatile due to the lack of information.

A decision tree is a tool that can add transparency to the process. While there may be hotly contested debates over the underlying assumptions, use of a decision tree forces practitioners to focus on and disclose the key assumptions that drive the valuation.

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