

CANCELING THE DEAL:
TWO MODELS OF MATERIAL ADVERSE CHANGE
CLAUSES IN BUSINESS COMBINATION
AGREEMENTS

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ABSTRACT

In any large corporate acquisition, there is a delay between the time the parties enter into a merger agreement and the time the transaction is effected and the purchase price is paid. One effect of this delay is that the business or financial condition of one of the parties may deteriorate before the deal closes. When this happens to the target in a cash deal or to either party in a stock deal, the counterparty may conclude that the transaction is no longer attractive. Merger agreements typically protect counterparties against such contingencies through material adverse change (MAC) clauses. Under the typical MAC clause, if a party has suffered a MAC before the deal closes, the counterparty may costlessly cancel the deal and walk away.

MAC clauses are very complex and are highly negotiated. They typically distinguish various kinds of risks to the party's business and assign some risks to the party, others to the counterparty, often with exceptions and exceptions to exceptions. When a counterparty declares a MAC and attempts to cancel a pending transaction, the fate of the deal hangs in the balance, and so when parties to a merger agreement litigate whether one of them has been MAC'd, the stakes are usually enormous, often tens of billions of dollars.

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In such litigations, the key issue has usually been whether an admittedly adverse change in a party's business is of sufficient magnitude to be a MAC—i.e., whether the adverse change is material. Despite their complexity and prolixity, typical MAC clauses do not define materiality. To decide such cases, therefore, courts have had to turn to their own devices.

Led by the Delaware Court of Chancery, courts have decided MAC cases by estimating the present and future earnings of the affected company in order to determine whether such earnings have declined relative to historical standards. This method of interpreting MAC clauses is here called the Earnings Potential Model. As the case law developed, courts have improved the Earnings Potential Model by invoking financial theory, generally accepted accounting principles (GAAP), and the disclosure standards of the federal securities laws in order to make the inquiry mandated by the model increasingly precise. For example, courts have taken to measuring a company's earnings by its earnings before interest, taxes, depreciation, and amortization (EBITDA) and have identified relevant fiscal periods to compare using the disclosure requirements of Regulations S-X and S-K.

Nevertheless, the Earnings Potential Model fails at two critical points. First, the model does not specify which fiscal periods of the party should be compared with which. In practice, courts have made any number of comparisons that have seemed relevant, but they have never articulated a rational explanation of which comparisons are important and why. Second, although the model allows the court to calculate with great precision the percent diminution in a party's earnings across any two fiscal periods, the model is completely silent as to what level of diminution is necessary to cause a MAC. Having calculated the percent diminutions as between various pairs of fiscal periods, courts have then simply announced—without the slightest explanation and apparently on the basis of nothing more than judicial intuition—that the party was or was not MAC'd. In the end, therefore, the Earnings Potential Model yields no principled answers in MAC litigations.

To develop a more satisfactory method of resolving MAC disputes, this Article first identifies the efficiency rationales for assigning the risk of material adverse changes in a party's business to the party itself and the risk of immaterial adverse changes to the counterparty. With respect to risks arising in its own business, the party is, for readily apparent reasons, almost always the cheaper cost avoider or superior risk bearer, and so such risks are efficiently allocated to the party itself. For exactly the same reasons, however, the party would also be the cheaper cost avoider or superior risk bearer of immaterial risks to its

business, and so the assignment of such risks to the counterparty requires a special, overriding explanation.

In fact, risks of immaterial adverse changes to the party's business are assigned to the counterparty because, if they were assigned to the party, the counterparty could declare a MAC and credibly threaten to cancel the deal whenever the party's business was adversely affected, no matter how slightly. In such circumstances, the counterparty would have tremendous leverage over the party and could generally renegotiate the purchase price downwards. Since the adverse change was immaterial, however, the transaction would very likely still have been profitable for the counterparty at the original price. When, in such circumstances, the counterparty threatens to cancel the deal and seeks to renegotiate the price, it is simply attempting to transfer value from the party to itself; its behavior, in other words, is pure rent-seeking. Such inefficient behavior can be completely forestalled, however, if the risk of immaterial adverse changes is allocated to the counterparty in the MAC clause. When such risks are thus allocated, the counterparty cannot credibly threaten to cancel the deal because of trivial changes in the party's business.

Understanding the rationales for allocating material risks to parties and immaterial risks to counterparties allows us to locate the efficient border between material and immaterial adverse changes. That border lies at the point at which the efficiency rationale for allocating immaterial risks to the counterparty is outweighed by the efficiency rationale for allocating material risks to the party. That is, in the argument that allocating immaterial risks to the counterparty was efficient, it was essential that, when such risks materialize, the transaction would still be profitable for the counterparty; hence, the efficient border between materiality and immateriality lies at the point at which the transaction ceases to be profitable for the counterparty. Therefore, a risk is material if, but only if, its materialization makes the transaction unprofitable for the counterparty. This insight allows us to create a new model to resolve MAC disputes—the Continuing Profitability Model.

In applying the Continuing Profitability Model, we employ a discounted cash-flow model to value the party's equity. Applying the model requires that we obtain estimates of the party's future EBITDA, an appropriate enterprise value to future EBITDA ratio, and an estimate of the party's weighted average cost of capital (WACC), as well as information about the party's net debt. If, on the date that the counterparty declares a MAC, the value of the party's equity as determined by the model is greater than the purchase price, then the deal is still profitable for the counterparty, and the party has not been MAC'd. If the value of the party's equity is less than the purchase

price, then the deal is no longer profitable for the counterparty, and the party has been MAC'd. In the latter case but not the former, the counterparty should be permitted to cancel the deal.

Although implementing the Continuing Profitability Model in practice may at first appear daunting, it turns out to be no more difficult or uncertain in real cases than applying the Earnings Potential Model. In that model, courts are already relying on data, usually derived from published estimates by industry analysts, of the party's expected future EBITDA. Such estimates are uncertain, to be sure, but since the Earnings Potential Model cannot be implemented without some data about the future EBITDA of the company, courts have had little choice but to rely on such data. Implementing the Continuing Profitability Model, however, requires only that courts accept some more data also readily ascertainable from publicly available sources—most importantly, estimates of enterprise value/forward-EBITDA multiples and WACCs for companies operating in the same industry as the party. If the estimates of analysts are good enough to measure future EBITDA in the Earnings Potential Model, then they are good enough to measure enterprise value/forward-EBITDA multiples and WACCs in the Continuing Profitability Model as well. By accepting such data, courts can have in the Continuing Profitability Model an economically rational, fully principled, and reasonably practical tool of judicial decision-making sufficient to settle MAC disputes.

*To demonstrate how the Continuing Profitability Model would work in practice, I conclude by applying it to the facts in *Hexion v. Huntsman*, the most recent MAC case in the Delaware Court of Chancery, and I argue that the court, relying on the Earnings Potential Model, was clearly wrong in holding that *Huntsman* had not been MAC'd.*

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INTRODUCTION

In any merger between public companies, there is a delay between the time the parties enter into a merger agreement and the time the agreement is consummated, i.e., the time that the purchase price is paid and the merger is effected. The reasons for the delay are various but usually include obtaining needed shareholder approvals and required regulatory consents from government agencies. This delay between signing and closing creates the possibility that, during the interim period, the business or financial condition of one of the parties may deteriorate. When this happens to the target company in a cash deal, or to either company in a stock-for-stock or cash-and-stock deal, the counterparty may conclude that the deal is no longer advantageous for it. It may, therefore, want to cancel the deal.

The primary contractual protection counterparties typically have in such cases is the *material adverse effect* (MAE) or *material adverse change* (MAC) clause in the business combination agreement.¹ The

¹ Although the phrase “material adverse effect” is more commonly used in merger agreements nowadays, “material adverse effect” (MAE) and “material adverse change” (MAC) are generally understood to be synonymous. As I have done in the past, see Robert T. Miller, *The Economics of Deal Risk: Allocating Risk Through MAC Clauses in Business Combination Agreements*, 50 WM. & MARY L. REV. 2007, 2012 n.2 (2009), I shall use “MAC” throughout. Cf. Ronald J. Gilson & Alan Schwartz, *Understanding MACs: Moral Hazard in Acquisitions*, 21 J.L. ECON. & ORG. 330 (2005) (treating MAC and MAE as equivalent and using MAC throughout); Rod J. Howard, *Deal Risk, Announcement Risk and Interim Changes—Allocating Risks in Recent Technology M&A Agreements*, in DRAFTING CORPORATE AGREEMENTS 2000-2001, at 217, 244

basic idea is that, if a party has suffered a MAC between the signing and closing of the agreement, the counterparty may cancel the deal without penalty. When a party to a pending merger agreement suffers an adverse change, whether or not the transaction will close thus depends on whether the change is a MAC as defined in the agreement. These definitions tend to be extremely complex and heavily negotiated. They typically distinguish many kinds of risks to a party's business and assign some risks to the party and others to the counterparty, often with various exceptions and exceptions from exceptions.

Given the importance and complexity of MAC clauses, it is not surprising that such clauses have given rise to more disputes and more litigation than any other provision of business combination agreements. Over the years, there have been several MAC disputes litigated to completion, mostly in the Delaware Court of Chancery. Moreover, the advent of the credit crisis in the summer of 2007 caused several pending mergers to end with the parties disputing whether one of them had suffered a MAC. In such disputes, the fate of the whole transaction hangs in the balance, and so the amount in controversy is usually tremendous. In the litigation between Hexion and Huntsman, for example, the transaction was valued at over \$10.6 billion,² and in the dispute between private-equity giant J.C. Flowers and Sallie Mae, the deal was worth more than \$25 billion.³

The story of how courts have grappled with MAC disputes is an odd one. Given that the claims involved are contractual, and given that MAC clauses are intensely negotiated by highly sophisticated commercial parties advised by expert counsel, we should expect that courts would employ the standard techniques of contract interpretation to discern and enforce the intentions of the parties. In fact, however, the key issue in MAC disputes has usually been whether an admittedly adverse change in the party's business or financial condition is sufficiently serious to be *material* within the meaning of the MAC clause. For all their complex assignments of various kinds of risks, however, MAC clauses almost never define a materiality standard. The text of the clause has thus proved to be of limited value in helping courts attempting to determine whether a party has been MAC'd.

Forced to rely on their own devices, courts have treated the problem of materiality by developing an essentially quantitative model, which I shall call the Earnings Potential Model, in which they compare

(PLI Corp. Law & Practice, Course Handbook Series No. B0-00OB, 2000) (stating that “[o]ften the difference [between MAC and MAE] is merely a choice of shorthand terminology, and the definitions are identical or indistinguishable,” but noting that clever litigators may attempt to find, *ex post*, a difference in meaning).

² Hexion Specialty Chems., Inc. v. Huntsman Corp., 965 A.2d 715 (Del. Ch. 2008).

³ Andrew Ross Sorkin & Michael J. de la Merced, *Sallie Mae Settles Suit over Buyout That Fizzled*, N.Y. TIMES, Jan. 28, 2008, at C1.

the earnings of the company across various fiscal periods, including estimates of earnings for future periods. If the earnings have declined, they calculate the percent diminution, and if this diminution is large enough, courts will hold that the company has been MAC'd. Since rational, value-maximizing counterparties care primarily about the value of the company, and since financial theory holds that that value equals the present value of the company's future earnings, the Earnings Potential Model for interpreting MAC clauses is generally plausible.

As I shall show, however, the model consistently fails at two critical points. First, the model does not specify which fiscal periods of the party should be compared with which. In practice, courts have made various comparisons that have seemed relevant, but they have never articulated a rational explanation of which comparisons are important and why. Second, although the model evinces great sophistication in computing the percent diminution in the subject company's earnings as between any two given fiscal periods, it is completely silent on the crucial issue of how large a percent diminution is required for a MAC. In case after case, courts consider various pairs of fiscal periods and compute the percent diminution in the party's earnings as between those periods. After collecting such statistics, however, courts will simply hold—without the slightest explanation—that a party was or was not MAC'd. Although in many of the cases the results seem intuitively plausible, the decisions remain unprincipled. In the end, the Earnings Potential Model provides no basis for deciding which fiscal periods ought to be compared, how large a percent diminution in earnings is legally significant, or how different percent diminutions as between different periods compared should be weighted in reaching a final decision. The Earnings Potential Model thus provides no judicable standard by which to decide cases.

The purpose of this Article is to explain and defend an alternative model for interpreting MAC clauses, a model that allows courts to resolve the key issues in MAC litigations in a principled and economically rational manner. I begin in Part I by outlining the typical MAC clause and describing its place in the typical business combination agreement, relying in part on the results of a large empirical study of MAC clauses in public-company merger agreements I have previously published.⁴ In Part II, I review all the important reported MAC cases and describe the evolution of the Earnings Potential Model. I also describe how the model has failed to provide principled answers to the key questions regarding (a) which fiscal periods of the party ought to be compared, and (b) how large a percent diminution in a company's earnings as between fiscal periods is

⁴ Miller, *supra* note 1, at 2091-2101.

sufficient to MAC the company. In Part III, I explain and defend an alternative model of MAC clauses that builds on what was valuable in the Earnings Potential Model and solves the problem of determining which adverse changes are material and which are not. I also demonstrate how the model would work in practice by applying it to the most recent litigated MAC case, concluding that the court clearly decided that case wrongly. In Part IV, I make some concluding observations.

I. TYPICAL MAC CLAUSES AND THEIR PLACE IN BUSINESS COMBINATION AGREEMENTS

In this Part, I shall (a) explain the problem of deal risk in business combinations and its usual solution in MAC clauses, (b) describe the complex structure of typical MAC clauses, and (c) comment briefly on potential issues that litigations arising under MAC clauses would naturally be thought to raise.

A. *The Problem of Deal Risk and Its Solution in MAC Clauses*

In any large corporate acquisition, and certainly in any business combination transaction in which the target is a public company,⁵ there will be a significant delay between the time the parties enter into a merger agreement and the time the merger is effected, the ownership of the subject business changes hands, and the purchase price is paid.⁶ The reasons for this delay include obtaining needed shareholder approvals⁷ (from the target's shareholders in all deals and from the acquirer's shareholders in some stock-for-stock or cash-and-stock deals)⁸ and complying with waiting periods under the federal antitrust laws.⁹ In

⁵ JAMES C. FREUND, ANATOMY OF A MERGER: STRATEGIES AND TECHNIQUES FOR NEGOTIATING CORPORATE ACQUISITIONS 149 (1975) (noting that merger of a publicly-held seller will always involve non-simultaneous signing and closing as a result of federal securities law and corporate law); 1 LOU R. KLING & EILEEN T. NUGENT, NEGOTIATED ACQUISITIONS OF COMPANIES, SUBSIDIARIES AND DIVISIONS § 1.04[2] (2009) (same).

⁶ FREUND, *supra* note 5, at 148-52 (discussing simultaneous versus non-simultaneous signing and closing of transactions); KLING & NUGENT, *supra* note 5 (discussing deferred versus simultaneous closing).

⁷ FREUND, *supra* note 5 (discussing process of obtaining board and shareholder approval of merger); KLING & NUGENT, *supra* note 5; MARTIN LIPTON & ERICA H. STEINBERGER, TAKEOVERS AND FREEZEOUTS § 1.02[3] (2006).

⁸ Miller, *supra* note 1, at 2024-28 (explaining which parties to a shareholder agreement must hold shareholder votes).

⁹ KLING & NUGENT, *supra* note 5, § 1.04[1][c][i] (discussing federal securities laws and the Hart-Scott-Rodino (HSR) Act); LIPTON & STEINBERGER, *supra* note 7, §§ 7.01-7.11 (detailing

regulated industries, the parties will generally also need to obtain approvals from the government agencies superintending the industry.¹⁰ In a typical merger involving companies not in regulated industries and presenting no significant antitrust issues, the delay between signing and closing will depend primarily on obtaining shareholder approval and may last for about ninety days.¹¹ In a regulated industry like banking¹² or communications,¹³ or even in unregulated industries when the transaction creates significant antitrust issues, the delay needed to obtain governmental approvals could last more than a year.¹⁴ Whatever the reason, therefore, business combination agreements involving the sale of a public company always involve delayed performance.¹⁵

Such delays create the problem of *deal risk*, the risk that changes during the period from signing to closing will adversely affect the value of a party's business and consequently reduce the counterparty's desire to perform on the agreement.¹⁶ In deals in which the target company's

antitrust concerns in context of corporate acquisitions); *id.* § 3.06[2] (discussing how the requirement of federal and state regulatory approvals delays closing).

¹⁰ See generally FREUND, *supra* note 5, at 300 (noting that approval of regulatory authorities is a common condition of closing business combination transactions); KLING & NUGENT, *supra* note 5, § 1.04[1][c][ii] (discussing approvals of regulatory agencies needed to close business combinations in certain regulated industries); LIPTON & STEINBERGER, *supra* note 7, §3.06[2]; Arthur Fleischer, Jr., *Contract Interpretation in Acquisition Agreements: The Content of Material Adverse Change*, INSIGHTS; CORP. & SEC. L. ADVISOR, Sept. 2001, at 2, 2 (discussing regulatory approvals needed to complete mergers).

¹¹ STEPHEN M. BAINBRIDGE, *MERGERS AND ACQUISITIONS* 176 (1st ed. 2003) ("two to four months").

¹² Countrywide Fin. Corp., Agreement and Plan of Merger, By and Among Countrywide Financial Corporation, Bank of America Corporation and Red Oak Merger Corporation (Form 8-K), at 13 ex. 2.1 (Jan. 17, 2008) (Countrywide Financial needs approval of Federal Reserve Board to complete merger); *id.* at 49-50 (same for Bank of America). On the regulation of business combinations among financial institutions, see generally LIPTON & STEINBERGER, *supra* note 7, §11.08; EDWARD D. HERLIHY ET AL., WACHTELL, LIPTON, ROSEN & KATZ, *FINANCIAL INSTITUTIONS M&A 2009: CONVERGENCE, CONSOLIDATION, CONSTERNATION AND COMPLEXITY IN AN INDUSTRY IN TRANSITION* 96-98 (Annual Review 2009).

¹³ For example, the Sirius-XM transaction required approval of the Federal Communications Commission. Sirius Satellite Radio, Inc., Agreement and Plan of Merger by and among Sirius Satellite Radio, Inc., Vernon Merger Corporation and XM Satellite Radio Holdings, Inc. (Form 8-K), at 9 ex. 2.1 (Feb. 21, 2007) (consent of FCC needed for XM to complete merger); *id.* at 16 (FCC consent also needed for Sirius). For approvals needed to complete transactions involving entities regulated under the Communications Act, see generally KLING & NUGENT, *supra* note 5, § 5.05[2].

¹⁴ For example, the Sirius-XM transaction took more than a year to clear antitrust review with the Department of Justice. See Press Release, Sirius Satellite Radio, Inc., Merger of Sirius and XM Clears DOJ (Mar. 24, 2008), available at http://xmradio.mediaroom.com/index.php?s=press_releases&item=1588.

¹⁵ The problem of delayed performance affects all but the simplest contracts. See, e.g., RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 93 (7th ed. 2007) (stating that when parties to a contract do not perform their obligations simultaneously, "two dangers to the process of exchange arise—opportunism and unforeseen contingencies").

¹⁶ Virtually everyone who has considered the problem agrees that the non-simultaneity of signing and closing generates the problem of deal risk. See, e.g., Fleischer, Jr., *supra* note 10, at 2; Gilson & Schwartz, *supra* note 1; Kari K. Hall, *How Big is the MAC?: Material Adverse*

shareholders will receive cash for their shares (cash deals), deal risk is a problem only for acquirers. For, if the target company's business deteriorates between signing and closing, the acquirer will not want to pay at closing the price agreed upon at signing. The target, by contrast, need not worry about the acquirer's business; provided only that the acquirer has the cash to pay the agreed upon purchase price, the target will want to close.¹⁷ In deals in which the target company's shareholders will receive in return for their shares either stock of the acquirer (stock-for-stock deals) or a mix of cash and such stock (cash-and-stock deals), deal risk is a problem for both parties. In such deals, the target's shareholders have an interest in the combined business just as much as the acquirer's shareholders do, and so the target will care about the condition of the acquirer's business just as much as the acquirer will care about that of the target. In such deals, each party will be concerned about negative changes in the other's business between signing and closing.¹⁸ Because MAC clauses thus protect acquirers in cash deals and both parties in deals involving stock consideration, I shall describe the situation generically by saying that MAC clauses protect the contractual counterparty against material adverse changes in the condition of the party.

Now, in any merger agreement involving a delay between signing and closing, the obligations of the parties to close the deal will expressly depend on the joint satisfaction or waiver of certain conditions precedent or *closing conditions*. The contractual solution to the problem of deal risk is to include among these conditions for the counterparty (that is, for acquirers in cash deals and for both parties in stock-for-stock and cash-and-stock deals), a condition that the party has not suffered a MAC (a MAC Condition).¹⁹ Hence, if the party has *not*

Change Clauses in Today's Acquisition Environment, 71 U. CIN. L. REV. 1061, 1062 n.10 (2003); Jeffrey Thomas Cicarella, Note, *Wake of Death: How the Current MAC Standard Circumvents the Purpose of the MAC Clause*, 57 CASE W. RES. L. REV. 423, 425 (2007). Deal risk, of course, is but a special case of the general problem of negative contingencies arising between the time of agreement and performance in any contract providing for delayed performance. See POSNER, *supra* note 15, at 95-97; Richard A. Posner & Andrew M. Rosenfield, *Impossibility and Related Doctrines in Contract Law: An Economic Analysis*, 6 J. LEGAL STUD. 83, 87-88 (1977).

¹⁷ However, if, in the interim, the target receives a superior offer, it may want to abandon the transaction with the original acquirer to accept the alternative offer. Under applicable principles of corporate law (at least in Delaware), it is generally legally permissible to do so, regardless of what the merger agreement may provide. See Miller, *supra* note 1, at 2030-34.

¹⁸ The symmetry of economic interests between targets and acquirers and thus the reciprocal nature of the closing conditions in stock-for-stock and cash-and-stock mergers has sometimes been overlooked by scholars. Compare Gilson & Schwartz, *supra* note 1, at 346 (arguing that payment of the purchase price leaves the seller indifferent to the value of the business) with Miller, *supra* note 1, at 2052, 2065-70 (noting that in stock-for-stock and cash-and-stock deals, both parties have a continuing interest in the value of the business).

¹⁹ The text simplifies the issue somewhat. In a small percentage of deals, the closing condition is as simple as the text says, i.e., the condition is that the party has not suffered a MAC between signing and closing. See, e.g., Anheuser-Busch Co., Agreement and Plan of Merger by

suffered a MAC, then the counterparty must close the deal and pay the purchase price. If, on the other hand, the party *has* suffered a MAC, then the counterparty may cancel the deal; that is, it may costlessly terminate the agreement and walk away. In accordance with the general understanding of contractual risk-shifting, the economic purpose of MAC Conditions is to allocate efficiently between the parties the risks of the various negative contingencies affecting the value of the party that may occur between signing and closing.²⁰

As noted above, such MAC Conditions appear in virtually all public company agreements. What varies from agreement to agreement is the definition of “material adverse change” or “material adverse effect” (the MAC Definition) and thus which particular risks are allocated to which parties.

B. *Typical MAC Definitions*

Although MAC Definitions are heavily negotiated,²¹ virtually all such definitions in agreements involving public companies follow the

and among Anheuser-Busch Companies, Inc., InBev N.V./A.G., and Pestalozzi Acquisition Corp. (Form 8-K), at 52 exh. 2.1 (July 16, 2008). More commonly, however, a party’s closing condition is keyed to the representations and warranties made in the agreement by the counterparty, the condition typically being that the parties’ representations and warranties (read without regard to any materiality qualifications) are true, except for such failures to be true as would not have a MAC on the party. In the jargon of mergers-and-acquisitions lawyers, the party’s representations and warranties have to be true “to a MAC.” This introduces several complexities, but none of them are relevant here. *See generally* Miller, *supra* note 1, at 2041 n.133.

²⁰ There is virtually universal agreement, among both practitioners and academics, that MAC clauses allocate risk between the parties. Yair Y. Galil, *MAC Clauses in a Materially Adversely Changed Economy*, 2002 COLUM. BUS. L. REV. 846, 848 (“[MAC] clauses are generally thought of as methods to allocate interim risk.”); Gilson & Schwartz, *supra* note 1 (noting that MAC clauses allocate risks between buyer and sellers); Hall, *supra* note 16, at 1062 (noting that purpose of MAC clause is to allocate risk between buyer and seller during time between signing and closing); Howard, *supra* note 1, at 222 (“MAC and MAE clauses are used to allocate interim risks in a variety of ways.”); Alana A. Zerbe, Note & Comment, *The Material Adverse Effect Provision: Multiple Interpretations & Surprising Remedies*, 22 J.L. & COM. 17, 17 (2002) (“[MAC clauses] may be as broad or as general as is necessary to effectively allocate the risk of a change in the financial or legal status of a firm, or within the industry itself.”).

²¹ Hall, *supra* note 16, at 1063 (noting that while MAC clauses “normally consist of boilerplate language,” and “often remain[] the same deal after deal,” they are “negotiated in almost every transaction”); Arthur H. Rosenbloom & Jeffrey E. Mann, *Liability Issues in the Interpretation of Material Adverse Change/Material Adverse Effect Clauses*, ANDREWS DEL. CORP. LITIG. REP., July 9, 2001, at 11 (“[C]ourts perceive MAC/MAE provisions as likely to have been heavily negotiated by sophisticated parties”); *see also* Howard, *supra* note 1, at 221 (noting intense negotiations of MAC clauses in high technology deals); Sherri L. Toub, Note, *“Buyer’s Regret” No Longer: Drafting Effective MAC Clauses in a Post-IBP Environment*, 24 CARDOZO L. REV. 849, 892 (2003) (“[In MAC clauses], each and every word, no matter how insignificant it may seem at the time of drafting, is potentially the most important word in the clause.”).

same general pattern.²² In the typical MAC definition, “material adverse change” or “material adverse effect” is defined as being any event, fact, circumstance, change, or development²³ that, either singly or in the aggregate,²⁴ would reasonably be expected (or “is reasonably likely” or “could reasonably be expected”) to have a material adverse effect (a phrase not further defined) on any of various aspects of the subject company and its subsidiaries taken as a whole,²⁵ such as its business, financial condition, or results of operations. The language controlling the definiteness of the adverse facts or circumstances resulting in a MAC—whether a MAC would reasonably be expected, could reasonably be expected, is reasonably likely to result, etc.—I shall call the MAC Expectation Metric. The aspects of the party affected by the adverse change—its business, financial condition, results of operations, etc.—I shall call MAC Objects.²⁶

From this definition of MAC, there are then usually made one or more exceptions (“MAC Exceptions”), which remove particular kinds of risk from the definition of MAC and thus shift these risks to the counterparty.²⁷ Some MAC Exceptions relate to what I have previously classified as *systematic risks*, such as general changes in the economy as a whole, in financial markets, or in the industries in which the party operates, as well as changes in law or generally accepted accounting principles (GAAP), or force majeure events like war, terrorism, or natural disasters.²⁸ Other MAC Exceptions relate to various indicators of the party’s financial performance, such as a failure to meet the party’s own financial projections or the estimates of industry analysts

²² See generally Miller, *supra* note 1, at 2044-49.

²³ Howard, *supra* note 1, at 222 (discussing language used in this section of the definition); Kenneth A. Adams, *A Legal-Usage Analysis of “Material Adverse Change” Provisions*, 10 FORDHAM J. CORP. & FIN. L. 9, 22 (2004) (arguing that, besides “change,” the nouns “development,” “circumstance,” and “effect,” are “superfluous and [are] evidence of lawyers’ penchant—generally misguided—for synonyms and near-synonyms”).

²⁴ Adams, *supra* note 23, at 42-43 (discussing aggregation language and how various items can be aggregated under MAC clauses).

²⁵ For a discussion of the seemingly innocuous phrase “taken as a whole,” see Howard, *supra* note 1, at 245-46; see also Adams, *supra* note 23, at 34-35.

²⁶ On MAC Objects, see Miller, *supra* note 1 at 2046, 2093-97; see also 2 LOU R. KLING & EILEEN T. NUGENT, *NEGOTIATED ACQUISITIONS OF COMPANIES, SUBSIDIARIES AND DIVISIONS* § 11.4[9] (2009); Howard, *supra* note 1, at 223 (discussing various objects of potential MAC); Adams, *supra* note 23, at 29-35 (discussing objects to be listed in definition of MAC). Adams argues that the usual list of MAC Objects contains surplussage, contending that “[I]ittle is to be gained by including both assets and properties, and operations (as opposed to results of operations) should fall within the scope of business,” for “otherwise one would be entitled to wonder what, if anything, business means.” *Id.* at 31.

²⁷ On MAC Exceptions, see Miller, *supra* note 1 at 2047, 2073-89, 2094-97.

²⁸ Miller, *supra* note 1 at 2047, 2073-82; cf. Gilson & Schwartz, *supra* note 1, at 330, 345, 356 (distinguishing endogenous risks, which they say efficiently remain with the target company, from exogenous risks, which they say are efficiently shifted to acquirers); see also Cicarella, *supra* note 16, at 429 (endorsing endogenous-exogenous distinction made by Gilson and Schwartz).

(but not usually the underlying causes of such failures). These I have previously denominated *indicator risks*.²⁹ Yet others, which I have called *agreement risks*, relate to risks arising from the public announcement of the agreement, including attrition among the party's employees, defections by its customers or suppliers, and actions by competitors seeking to exploit the company's vulnerability during the pendency of the agreement.³⁰

I discuss each of the three main parts of MAC Definitions—MAC Expectation Metrics, MAC Objects, and MAC Exceptions—in greater detail below.

1. MAC Expectation Metrics

Given a set of facts or circumstances adversely affecting a party, the MAC Expectation Metric determines how close must be the connection between those facts and circumstances and a MAC on the party. The most commonly used metrics are that the facts or circumstances: (a) have had a MAC on the party; (b) would reasonably be expected to have a MAC on the party; (c) are reasonably likely to have a MAC on the party; or (d) could reasonably be expected to have a MAC on the party.³¹

The differences among these may seem trivial, but they are actually quite important, and transactional lawyers negotiating merger agreements often battle over which MAC Expectation Metric ought be used.³² To take the clearest case, whether a proposition *could*

²⁹ Miller, *supra* note 1, at 2082-87; *see also* Howard, *supra* note 1, at 229-30 (discussing MAC provisions related to party's failure to meet financial projections).

³⁰ Miller, *supra* note 1, at 2087-89; Howard, *supra* note 1, at 221 (discussing allocation of announcement risk).

³¹ The assertion in the text is based on my review of the sample of 353 merger agreements forming the basis of the empirical study described in Miller, *supra* note 1, at 2091-92 (providing details of the sample and methodology of the study). Although I had originally intended to report statistics on the frequency of the various MAC Expectation Metrics, I ultimately abandoned that intention because a large percentage of the agreements in the sample contained multiple, inconsistent MAC Expectation Metrics the legal effect of which is unclear. For example, in some agreements, the MAC Definition refers to events that "are or could reasonably be expected" to be materially adverse to the party, but then the MAC Condition makes the counterparty's obligation to close dependent upon the absence of events that "are or would reasonably be expected to be" MACs as defined in the agreement. The joint effect of such provisions is that the counterparty's obligation to close would depend on the absence of events that "are or would reasonably be expected" to be such that they "are or could reasonably be expected" to be materially adverse to the party. Without the apparatus of formal logic, it is difficult to say what such nested levels of modal operators mean. In any event, such agreements cannot be neatly categorized as employing any one MAC Expectation Metric, and creating categories for every possible combination of metrics seems unhelpful.

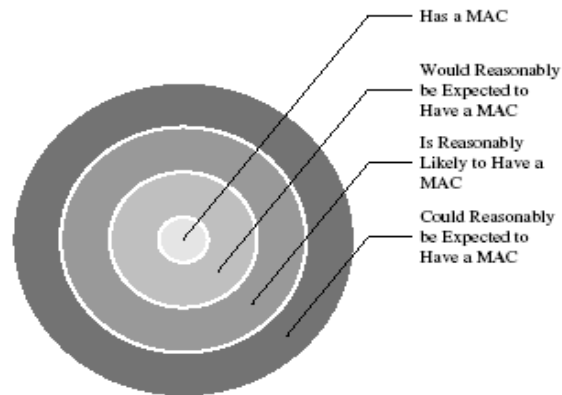
³² Adams, *supra* note 23, at 15-16 (discussing different verbs such as *will*, *would*, and *could*, and stating that "[i]n all but the most exceptional contexts," *would reasonably be expected* is the

reasonably be believed is clearly very different from whether that same proposition *would* reasonably be believed. The former is a question of whether *any reasonable person* could believe the proposition, i.e., whether, within the constraints of reason, it is possible to believe the proposition. The latter is a question of whether *every reasonable person* has to believe the proposition, i.e., whether, within the constraints of reason, it is necessary to believe the proposition. Put another way, under the *could* MAC Expectation Metric, a MAC occurs if it is reasonable to believe that a MAC has occurred—a standard very friendly to the counterparty seeking to declare a MAC. Under the *would* MAC Expectation Metric, a MAC occurs if the only reasonable view (or at least the most reasonable view, if we admit degrees of reasonability) is that a MAC has occurred. The difference is very significant. From the point of view of the counterparty seeking to cancel a deal, it is the difference between having to prove³³ that there is reasonable disagreement about whether a MAC has occurred and having to prove that there can be no reasonable view except that a MAC has occurred.

The relation among the various MAC Expectation Metrics can usefully be conceptualized as one of inclusion among sets of facts and circumstances. That is, each metric identifies a set of possible facts and circumstances that will count as a MAC, and the sets thus identified can be arranged in order such that each is a subset of the next, ranging from the most inclusive set down to the least inclusive. The Venn diagram below depicts this inclusion relation among commonly used MAC Expectation Metrics:

“appropriate formulation to use”).

³³ The litigated MAC cases have been unanimous in assigning the burden of proof as to the existence of a MAC to the party seeking to cancel the deal. *See, e.g.*, *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715 (Del. Ch. 2008) (“[T]he burden is on Hexion [buyer] to demonstrate the existence of an MAE in order to negate its obligation to close.”); *In re IBP, Inc. S’holders Litig.*, 789 A.2d 14, 52-54, 68 (Del. Ch. 2001) (stating that under the laws of New York and Delaware, the party seeking to assert a breach of warranty excusing performance as an affirmative defense bears the burden of proof, and “a buyer ought to have to make a strong showing to invoke a Material Adverse Effect exception to its obligation to close”); *Adams, supra* note 23, at 46-48 (stating that standard solution at law is for party asserting a MAC provision to have the burden of proof).

Table 1. Venn Diagram of Various MAC Expectation Metrics

That is, in the diagram, the innermost set (facts or circumstances that actually cause a MAC) is a subset of the second-innermost set (facts or circumstances that would reasonably be expected to cause a MAC), which is a subset of the third-innermost set (facts or circumstances that are reasonably likely to have a MAC), which in turn is a subset of the outmost set (facts or circumstances that could reasonably be expected to cause a MAC).³⁴

It is to the advantage of counterparties, of course, to have the MAC Definition be as expansive as possible, thus increasing the probability that the counterparty will be able to cancel a deal if it should wish to do so at the time of closing. Hence, from the point of view of the counterparty, the wider and more inclusive the set of facts and circumstances that result in a MAC, the better. Conversely, it is to the advantage of the party to have the MAC Definition be as restrictive as possible, thus increasing the probability that the counterparty will have

³⁴ Let A be the set of all circumstances in which a MAC has occurred, B the set of all circumstances in which it would reasonably be expected that a MAC will result, C the set of all circumstances in which it is reasonably likely that a MAC will result, and D the set of all circumstances in which it could reasonably be expected that a MAC will result. To show that the diagram above is correct, we need to show that $A \subset B \subset C \subset D$. First, if a MAC has resulted, then all reasonable people should believe that a MAC has resulted ($A \subset B$), but even if all reasonable people believe a MAC will result, nevertheless a MAC might not result ($B \not\subset A$). Also, if a set of facts would reasonably be expected to cause a MAC (i.e., all reasonable people will expect a MAC), then surely it is reasonably likely that the set of facts will cause a MAC (i.e., that it is more likely than not that a MAC will result) (hence, $B \subset C$). The opposite inclusion, of course, does not hold ($C \not\subset B$). Furthermore, if it is reasonably likely that a MAC will result, then surely it could reasonably be expected that a MAC will result ($C \subset D$), and once again the opposite conclusion, of course, does not hold ($D \not\subset C$). Therefore, we have a sequence of proper inclusions $A \subset B \subset C \subset D$ as depicted in the diagram.

to close the deal. Thus, from the point of view of the party, the narrower and less inclusive the set of facts and circumstances that result in a MAC, the better. Counterparties will accordingly prefer the *could* metric to the *likely* metric, the *likely* metric to the *would* metric, and the *would* metric to the *has* metric, whereas parties will have the exact opposite preferences.

When parties to a merger agreement litigate whether one of them has been MAC'd, we should thus expect that courts would look to the MAC Expectation Metric as quite important in determining whether the party had been MAC'd within the meaning of the agreement. Surprisingly, as we shall see, courts have either wholly ignored the metric or else absorbed it into the Earnings Potential Model.

2. MAC Objects

After indicating via a MAC Expectation Metric the definiteness with which the material adverse change must result, the typical MAC Definition specifies the object that must be materially adversely changed in order to result in a MAC under the agreement. The table below shows the frequency of various MAC Objects in MAC Definitions applicable to targets in cash deals (MAC on TAR) and in MAC Definitions applicable to both targets (MAC on TAR) and acquirers (MAC on ACQ) in deals involving stock consideration (i.e., both stock-for-stock and cash-and-stock deals):

**Table 2. Frequency of MAC Objects by Deal Type
(Percentages Expressed in Two-Digit Decimal Notation)³⁵**

<u>MAC Objects</u>	MAC on TAR in Cash Deals	MAC on TAR in Stock Deals	MAC on TAR in All Deals	MAC on ACQ in Stock Deals	All MAC Defs
Business	.86	.95	.90	.94	.91
Financial Condition	.97	.98	.98	.98	.98
Results of Operations	.86	.85	.86	.83	.85
Assets	.77	.64	.71	.64	.69
Liabilities	.46	.36	.42	.38	.41
Properties	.27	.30	.28	.32	.29
Condition (Other than Financial)	.39	.29	.35	.27	.33
Operations	.28	.28	.28	.26	.27
Prospects	.17	.19	.18	.20	.19

As indicated above, the company's business (91% of all MAC Definitions), financial condition (98%), and results of operations (85%) are the most common MAC Objects, followed somewhat distantly by assets (69%). None of the other common MAC Objects appear in even half of all MAC Definitions.

The logical form of the typical MAC Definition thus seems to be disjunctive. That is, a MAC includes a material adverse change on the party's business *or* its financial condition *or* its results of operations *or* its assets, etc. The maxim of contract interpretation that all parts of an agreement ought to be given a meaning and none ought to be left as mere surplusage³⁶ would seem to require a reading of the MAC Definition under which there are facts and circumstances that could cause a MAC on one MAC Object but not on another—e.g., facts and circumstances that could materially adversely affect a party's business but not its assets, or its results of operations but not its business, etc. For some pairs of MAC Objects, however, this is quite implausible. For

³⁵ The data in this table are derived from Miller, *supra* note 1, at 2097 tbl.1. In the table above, "stock deals" refers to all transactions involving stock consideration, that is, both stock-for-stock and cash-and-stock deals.

³⁶ *E.g.*, J.E. Faltin Motor Transp. Inc. v. Eazor Express, Inc., 273 F.2d 444, 445 (3d Cir. 1960) ("It would not be good interpretation to disregard language of the parties as meaningless or absurd if that can be avoided."); E. ALLAN FARNSWORTH, CONTRACTS § 7.11 (2d ed. 1990) (discussing the assumption in contract interpretation that "the parties intend every part of the agreement to mean something" and so "an interpretation that gives meaning to the entire agreement is favored over one that makes some part of it mere surplusage").

example, any adverse change in a party's results of operations, assets, or liabilities would seem necessarily to imply an adverse change in its financial condition, and an adverse change in its properties would seem necessarily to imply an adverse change in its assets, etc. Nevertheless, even if not all of the common MAC Objects are neatly separable, since parties clearly negotiate over which MAC Objects to include in the agreement, it would seem that, at least sometimes, which objects are included in the MAC Definition should make a difference in practice. As we shall see, however, the adoption of the Earnings Potential Model makes nearly irrelevant the specific MAC Objects included in a MAC Definition.

Among scholars and practitioners alike, there has been little discussion of the MAC Objects and the distinctions among them.³⁷ The one exception is “prospects,” and the consensus among scholars and practitioners alike is that the inclusion of prospects is rare (only 19% of all MAC Definitions)³⁸ as well as highly advantageous to counterparties.³⁹ The intuition is that a company may be at closing just as it was at signing (and thus not otherwise be MAC'd), but that its prospects—e.g., its range of future business opportunities—may have been diminished. This would, of course, reduce the expected future earnings of the company relative to what they were at signing. As we shall see, adopting the Earnings Potential Model requires courts to consider changes in the expected future earnings of the company, regardless of whether prospects is included as a MAC Object in the MAC Definition. The inclusion of prospects in a MAC Definition, therefore, may make little difference in practice, no matter how important transactional lawyers negotiating agreements think it may be.

3. MAC Exceptions and Disproportionality Exclusions

As indicated above, most MAC Definitions except from the definition certain specified kinds of risks. Most important among these are systematic risks beyond the control of either party, such as general changes in the economy, financial markets, or the industries in which the party operates, as well as changes in law or GAAP, or force majeure

³⁷ See Adams, *supra* note 23, at 29-35 (stating that many MAC objects seem to be surplussage).

³⁸ See Miller, *supra* note 1, at 2097 tbl.1; *supra* Table 2.

³⁹ FREUND, *supra* note 5, at 260 (stating that buyer's counsel should include “prospects,” “if [they] can get away with it”); Galil, *supra* note, at 20, 854-56 (discussing uncertainty resulting from the use of “prospects”); Howard, *supra* note 1, at 222 (noting that inclusion of “prospects” is rare in technology deals); *id.* at 235 (noting that inclusion of “prospects” is often a contentious issue, offering “a significant protection for the buyer and a significant source of uncertainty and risk for the seller”); Toub, *supra* note 21, at 867 (noting that inclusion of “prospects” is “rare”).

events like war, terrorism, or natural disasters.⁴⁰ In some cases, MAC Exceptions for systematic risks are further qualified so that events otherwise falling within the exception (and so not counting as MACs) are excluded (and so once again *do* count as MACs) if they affect the company disproportionately relative to some control group, such as other companies operating in the same industry (Disproportionality Exclusions).⁴¹ For instance, if a MAC Definition contains a MAC Exception for changes in law, then any such changes, no matter how adverse to the company, will not count as a MAC; but if the MAC Exception is further qualified by a Disproportionality Exclusion, then a change in law materially adverse to the company *will* count as a MAC if and to the extent that the change affects the company disproportionately relative to its peer companies in the industry.

The frequencies of the most common MAC Exceptions for systematic risks, along with the frequency of Disproportionality Exclusions related thereto, are shown in the table below by deal type. For instance, the numbers .61/.25 in the row for changes in law and the column for all MAC Definitions indicate that 61% of all MAC Definitions contain a MAC Exception for changes in law and 25% of all such definitions contained a MAC Exception for such changes qualified by a Disproportionality Exclusion.

⁴⁰ Miller, *supra* note 1, at 2047, 2073-82, 2095-97; *see also* Gilson & Schwartz, *supra* note 1, at 345-47 (discussing exogenous (systematic) risks generally).

⁴¹ Miller, *supra* note 1, at 2047-48, 2097 tbl.1 (discussing Disproportionality Exclusions and giving statistics for frequency thereof in various kinds of deals).

Table 3. MAC Exceptions for Systematic Risks (With Disproportionality Exclusions) by Deal Type⁴² (Percentages Expressed in Two-Digit Decimal Notation)

MAC Exceptions for Systematic Risks (With Disproportionality Exclusions):	MAC on TAR in Cash Deals	MAC on TAR in Stock Deals	MAC on TAR In All Deals	MAC on ACQ In Stock Deals	All MAC Defs
ECONOMY/-D	.81/.62	.66/.38	.74/.51	.64/.37	.71/.47
FINANCIAL MARKETS/-D	.61/.44	.45/.25	.54/.36	.43/.26	.51/.33
INDUSTRY-WIDE CHANGES/-D	.77/.63	.63/.47	.71/.56	.61/.45	.68/.53
LAW/-D	.62/.28	.61/.23	.61/.26	.62/.22	.61/.25
GAAP/-D	.60/.21	.57/.20	.59/.20	.60/.20	.59/.20
POLITICAL CONDITIONS/-D	.39/.27	.37/.23	.38/.25	.37/.23	.38/.25
WAR/-D	.63/.39	.50/.24	.57/.32	.49/.24	.55/.30
TERRORISM/-D	.62/.38	.48/.23	.56/.32	.49/.24	.54/.29
NATURAL DISASTERS/-D	.30/.20	.20/.10	.26/.16	.18/.10	.24/.14

Other MAC Exceptions pertain to *indicator risks*, i.e., the risks that a party will not meet pre-determined measures of its success such as financial projections prepared by the party itself or the earnings estimates of industry analysts or that the trading prices of the party's stock will decline. Nearly universally excluded from such MAC Exceptions are the underlying causes of such events.⁴³ The key feature of these risks is that their materialization is not in itself an adverse change in the business of the company but is rather *evidence of* such a change. Thus, if a party fails to meet its own internal earnings projections or similar estimates made by industry analysts, or if its stock price drops, this does not necessarily mean that the party's business has been materially adversely affected, only that, *for other reasons*, it may have been.⁴⁴ The table below shows the frequencies of the most common MAC Exceptions for indicator risks:

⁴² The data in this table are derived from Miller, *supra* note 1, at 2097 tbl.1. In the table above, "stock deals" refers to all transactions involving stock consideration, that is, both stock-for-stock and cash-and-stock deals.

⁴³ Howard, *supra* note 1, at 229 ("[Although] agreements will often specify that the listed items [such as failure to meet estimates or stock price changes] will not *in and of themselves* be deemed to constitute a MAC . . . [t]his [nevertheless] leaves open the possibility of finding a MAC . . . in the underlying developments which caused the drop in stock price or the failure to meet earnings forecasts.").

⁴⁴ Howard, *supra* note 1, at 229-30 ("[A] company may miss earnings expectations for a quarter because a customer order is delayed by a day, or its stock price may fall because of a stock market crash, and not because of any change in the company's fundamentals.").

**Table 4. MAC Exceptions for Indicator Risks by Deal Type⁴⁵
(Percentages Expressed in Two-Digit Decimal Notation)**

<u>MAC Exceptions for Indicator Risks:</u>	MAC on TAR in Cash Deals	MAC on TAR in Stock Deals	MAC on TAR In All Deals	MAC on ACQ In Stock Deals	All MAC Defs
Internal Projections	.33	.19	.27	.17	.24
Industry Analyst Estimates	.34	.18	.27	.19	.25
Trading Prices of Shares	.30	.23	.27	.30	.28

Finally, many MAC Definitions contain MAC Exceptions for adverse changes arising from the public announcement of the merger agreement and for actions taken thereunder.⁴⁶ This exception is aimed at the inevitable disruption of the party's business resulting from the merger—for example, the attrition of employees worried about their future in the merged company, defections by customers who prefer not to deal with acquirer, and actions by competitors seeking to take advantage of the vulnerability of the party during the pendency of the merger. As shown in the table below, MAC Exceptions for such *agreement risks* appear in a large majority of public-company merger agreements:

⁴⁵ The data in this table are derived from Miller, *supra* note 1, at 2097 tbl.1. In the table above, “stock deals” refers to all transactions involving stock consideration, that is, both stock-for-stock and cash-and-stock deals.

⁴⁶ Miller, *supra* note 1, at 2047, 2087-89.

**Table 5. MAC Exceptions for Agreement Risks by Deal Type⁴⁷
(Percentages Expressed in Two-Digit Decimal Notation)**

	MAC on TAR in Cash Deals	MAC on TAR in Stock Deals	MAC on TAR In All Deals	MAC on ACQ In Stock Deals	All MAC Defs
<u>MAC Exceptions for Agreement Risks:</u>	.79	.73	.76	.71	.75

For our purposes, the key thing about MAC Exceptions is that they classify MACs by *cause*. That is, MAC Exceptions presuppose that it is possible to determine with reasonable accuracy the cause of a MAC—e.g., whether the MAC has resulted from factors peculiar to the party’s business, from factors affecting firms in the party’s industry generally, from factors related to the economy as a whole, and so on. In some cases, making this determination will be easy, as when the MAC results from the party having to recall defective products when none of its competitors needs to do so.⁴⁸ In other cases, however, because of the complexity of modern business relationships and the confluence of factors in a developed economy, identifying the cause or causes of a downturn in the party’s financial performance will be extremely difficult. We should expect, therefore, that this issue may arise in MAC litigations. As we shall see, it occasionally does. We should bear in mind too that, if possible, a model of MAC clauses should be able to sort out the causes of a MAC, distinguishing between systematic factors that may impact a party’s business and factors peculiar to the party itself.

⁴⁷ The data in this table are derived from Miller, *supra* note 1, at 2097 tbl.1. In the table above, “stock deals” refers to all transactions involving stock consideration, that is, both stock-for-stock and cash-and-stock deals.

⁴⁸ This was the case in the Johnson & Johnson-Guidant transaction. See Barry Meier & Andrew Ross Sorkin, *Price Tag of Guidant is Lowered*, N.Y. TIMES, Nov. 16, 2005, at C1.

C. *MAC Definitions and Potential Issues in MAC Litigations*

We have seen that typical MAC Definitions define MACs to be facts and circumstances bearing some relation expressed in any of various MAC Expectation Metrics to a material adverse change on any of several MAC Objects, subject to certain stated MAC Exceptions, which are sometimes qualified by Disproportionality Exclusions. Because parties and their lawyers expend much time and attention on negotiating such definitions, it would seem that these different aspects of MAC Definitions should make a difference in practice when parties to a merger agreement are litigating whether one of them has suffered a MAC. It would seem, for example, that there would be disputes as to which of the MAC Objects in the particular definition had been materially adversely affected, as to whether it is *reasonable to expect* that a MAC has occurred (as opposed to whether in fact a MAC has occurred), or whether an undoubted MAC was caused by risks shifted to the counterparty via a MAC Exception or by risks that remained with the party itself. As the review of reported MAC litigations below will show, however, such issues have been important only occasionally. Rather, the primary issue in most MAC cases has been whether an admittedly adverse change in the party's business is sufficiently serious to be *material* within the meaning of the MAC Definition. In other words, the cases have generally turned on the *undefined* phrase "material adverse change" or "material adverse effect" used in the definition.

II. MAC LITIGATIONS AND THE DEVELOPMENT OF THE EARNINGS POTENTIAL MODEL

Because the stakes in MAC litigations are so high, and because litigation outcomes are so unpredictable, most MAC disputes are settled by negotiation and not litigated to conclusion.⁴⁹ When this happens, the relevant facts, disputed as they inevitably are by the parties, are difficult or even impossible to ascertain with reasonable certainty. Moreover, even in those MAC disputes litigated to conclusion, the factual records

⁴⁹ *E.g.*, Colloquy, *Negotiating Acquisitions of Public Companies*, 10 U. MIAMI BUS. L. REV. 219, 242 (2002) ("[I]t's got to be something pretty close to catastrophic before you can comfortably advise a client to walk away [due to a MAC] and face the potentially horrendous liability associated with making the wrong call on the issue."); Arthur Fleischer, Jr., Client Memorandum from Fried, Frank, Harris, Shriver & Jacobson (July 5, 2001) (stating MAC litigation is rare); Toub, *supra* note 21, at 854 (noting that, in disputes about MACs between parties to a merger agreement, "litigation is rarely the path of choice").

tend to be very complex.⁵⁰ Generalizing about MAC disputes is thus difficult. Nevertheless, examining the important reported MAC litigations reveals some striking similarities. Most important among these is an increasingly sophisticated inquiry into the earnings potential of the affected company, an inquiry that has little to do with the text of the MAC Definition and that has become increasingly quantitative as the case law has evolved. It is this systematic inquiry that I am calling the Earnings Potential Model.

A. *MAC Litigations*

The most important MAC disputes that have resulted in reported decisions include (1) a few early cases in which “material adverse change” was not further defined, (2) the leading case of *In re IBP Shareholders Litigation*,⁵¹ which arose from the acquisition of IBP by Tyson Foods, (3) *Frontier Oil v. Holly*,⁵² a failed cash-and-stock merger of two mid-sized petroleum companies, (4) *Genesco v. The Finish Line*,⁵³ a dispute between two apparel companies, and (5) *Hexion v. Huntsman*, in which Hexion, a portfolio company of private-equity giant Apollo Capital Management, sought to terminate a cash merger agreement with Huntsman, a fellow chemicals maker.⁵⁴

⁵⁰ MAC disputes are notoriously fact intensive. *See, e.g.*, Galil, *supra* note 20, at 847 (“Most [MAC] cases turn on the particular fact patterns involved”); Hall, *supra* note 16, at 1080-82 (describing fact intensive nature of MAC litigation); Toub, *supra* note 21, at 862 (“[T]he interpretation of MACs is guided by the facts of each case”); Zerbe, *supra* note 20, at 24 (discussing “fact-specific nature” of analysis by the court).

⁵¹ *In re IBP, Inc. S’holders Litig.*, 789 A.2d 14 (Del. Ch. 2001).

⁵² *Frontier Oil Corp. v. Holly Corp.*, Civ. A. No. 20502, 2005 WL 1039027 (Del. Ch. Apr. 29, 2005).

⁵³ *Genesco, Inc. v. Finish Line, Inc.*, Memorandum and Order, No. 07-2137-II(III) (Tenn. Chan. Ct. Dec. 27, 2007) [hereinafter *Genesco Memorandum and Order*], available at http://www.genesco.com/?g=litigation_library.litigation_library (Item 57).

⁵⁴ *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715 (Del. Ch. 2008). There are other, less important, cases as well. *E.g.*, *Northern Heel Corp., v. Compo Indus., Inc.*, 851 F.2d 456 (1st Cir. 1988) (no MAC for downturn in average daily production of women’s shoe heels where contract did not contain warranty for daily production amount); *Pacheco v. Cambridge Tech. Partners, Inc.*, 85 F. Supp. 2d 69 (D. Mass. 2000) (no MAC when target missed quarterly financial projections); *Allegheny Energy, Inc. v. DQE, Inc.*, 74 F. Supp 2d 482 (W.D. Pa. 1999) (in merger of public utility companies, party had been materially adversely affected by adverse changes in state regulations related to electric utilities); *Polycast Tech. Corp. v. Uniroyal, Inc.*, 792 F. Supp. 244 (S.D.N.Y. 1992) (whether cancelation of contract from major customer was MAC would be a jury question); *Pan Am Corp. v. Delta Air Lines, Inc.*, 175 B.R. 438, 492-93 (Bankr. S.D.N.Y. 1994) (airline suffered MAC because of steep decline in bookings over three month period); *Gordon v. Dolin*, 434 N.E.2d 341 (Ill. App. Ct. 1982) (reduction in sales by major customer was not MAC); *Borders v. KRLB, Inc.*, 727 S.W.2d 357 (Tex. Ct. App. 1987) (radio station’s loss of over half its listeners was not MAC because “MAC” refers to actions caused by target itself); *see also* Colloquy, *supra* note 49, at 241 (“[C]ase law in this area is scary. The decisions interpreting MAC clauses are all over the lot, and some of the cases were quite clearly

1. Some Early MAC Cases

In *Pittsburgh Coke & Chemical Co. v. Bollo*,⁵⁵ Pittsburgh Coke & Chemical (PCC), which was a diversified investment management company with controlling interests in many different businesses, had purchased from Louis J. Bollo almost all of the common shares of Standard Aircraft Equipment Company, a corporation Bollo had founded. Standard was in the business of distributing parts for commercial aircraft, purchasing such parts from manufacturers and reselling them to aircraft owners, mostly national airlines, that had large fleets of aircraft to maintain.⁵⁶

PCC had purchased the shares of Standard from Bollo under a stock purchase agreement in which Bollo had represented and warranted that, since the date of certain financial statements related to the company, “there has been no material adverse change in the financial condition of the company.”⁵⁷ In the terminology of this Article, therefore, the MAC Definition in the agreement had a very seller-friendly MAC Expectation Measure (there “has been” no MAC), had only the financial condition of the company as a MAC Object,⁵⁸ and contained no MAC Exceptions.

At the time the transaction was being negotiated, various airlines were about to add to their fleets so-called “second-generation” wide-bodied jets such as the Boeing 747,⁵⁹ and both parties hoped and expected that Standard would distribute parts for these new jets, including by sharing in very large initial orders for parts that airlines

decided by judges that are not familiar or comfortable with the finer points of M&A deals and acquisition agreements.”); Galil, *supra* note 20, at 847 (“[In MAC cases,] courts have produced case law that is complex and perplexing.”); *id.* at 850 (“[T]he jurisprudence of MAC clauses has been less than coherent.”); Zerbe, *supra* note 20, at 26 (“Even prior to the ruling in *Tyson Foods*, case law in this area was widely viewed as unsettling due to the uncertainty over the scope of the [MAC] clause.”).

⁵⁵ *Pittsburgh Coke & Chem. Co. v. Bollo*, 421 F. Supp. 908 (E.D.N.Y. 1976).

⁵⁶ *Id.* at 911.

⁵⁷ *Id.* at 914. It is fascinating, as a matter of the history of corporate transactions, that the PCC-Bollo agreement, which was related to a relatively small (about \$3.1 million in 1968) private-company transaction over forty years ago, displays the same essential structure in the MAC Definition as the most sophisticated contemporary merger agreements between public companies. This appears to be a particular case of a more general phenomenon, *viz.*, that although corporate agreements have clearly become much longer and more detailed over recent decades, the basic patterns in such agreements have not changed very much. See FREUND, *supra* note 5, at 254-61 (discussing MAC clause).

⁵⁸ Note that the financial condition of the company is the most common MAC Object (98% of all MAC Definitions), and so, given the continuity of business combination agreements over time described *supra* in note 57, it is not surprising that, if this relatively simple agreement from four decades ago contained one MAC Object, that object would be the financial condition of the company.

⁵⁹ *Pittsburgh Coke*, 421 F. Supp. at 915.

had to stockpile when bringing new models of aircraft into service.⁶⁰ After the signing but before the closing of the transaction, two of Standard's largest suppliers announced that they would sell repair parts for second-generation jets directly to the airlines and not through Standard or other distributors.⁶¹ PCC sued Bollo on a variety of theories, including that the loss of the expected business amounted to a MAC on Standard.⁶²

The court had little difficulty in concluding that Standard had not suffered a MAC.⁶³ It seems to have had two main reasons for reaching this conclusion. First, Standard's failure to capture part of the second-generation jet business did not cause its revenues⁶⁴ to decrease below historical levels; in fact, by the time that the suit was filed, Standard was enjoying the highest revenues in its history.⁶⁵ In the court's view, therefore, there simply was no adverse change relative to Standard's condition in the past, let alone a material adverse change. Put another way, the failure to capture new sales related to the new generation of jets did not mark a *deterioration* in the business—a change that made the business worse than it was in the past⁶⁶—but was merely a failure to obtain a benefit not enjoyed by the historical business, albeit one that the parties expected and hoped the company would obtain in the future. The parties “hoped that the advent of the big jets would mean greater business for Standard, but it was business not yet existing or within reach,” and so the “decision of the manufacturers to deal directly with the airlines took nothing from Standard except great expectations.”⁶⁷

The decision in this early case seems closely tied to the text of the agreement. The agreement defined a MAC as a material adverse change in the financial condition of the company, and the court, looking at the company's revenues, found no adverse change at all relative to the past, and so *a fortiori* no material adverse change. We can see, however, an early foreshadowing of the Earnings Potential Model, for to determine whether the company's financial condition was MAC'd, the court looked to the company's revenues. Looking to its earnings would likely have made more sense, but that is a relatively minor matter. The larger point is that the qualitative, contractual standard was being interpreted

⁶⁰ *Id.* at 915-16.

⁶¹ *Id.* at 916-17.

⁶² *Id.* at 925. For a discussion of the burden of proof in MAC litigation, see *supra* note 33.

⁶³ *Pittsburgh Coke*, 421 F. Supp. at 930.

⁶⁴ The parties appear not to have supplied the court with information related to the company's earnings, much less more modern metrics like EBIT and EBITDA.

⁶⁵ *Pittsburgh Coke*, 421 F. Supp. at 930; *id.* at 914 (“In 1972, however, sales rose to 10.8 million [dollars], the highest in Standard's 39 year history.”).

⁶⁶ *Cf. Adams*, *supra* note 23, at 13 (“MAC provisions are geared to the significance of change in something over time rather than the significance of that thing at any given point in time.”).

⁶⁷ *Pittsburgh Coke*, 421 F. Supp. at 930.

in a quantitative way by looking to numbers on the company's financial statements.

In holding that Standard had not been MAC'd, the court also relied on the fact that the reason that Standard had failed to obtain the hoped-for business was not peculiar to Standard.⁶⁸ In the court's words, "There were to be sure technological and economic changes in the aviation industry that affected the business of all who had dealings with that industry," and so "to say that these extrinsic developments constituted material adverse changes in Standard's existing business or financial condition is patently unreasonable."⁶⁹ In other words, although the MAC Definition in the PCC-Bollo stock purchase agreement contained no MAC Exceptions, the court read it as if it contained a MAC Exception related to general changes in the industries in which the company operated.

Now, on one interpretation, the court here has simply rewritten the parties' agreement, giving Bollo the benefit of a MAC Exception for which he did not bargain. From our perspective, knowing that MAC Exceptions for general changes in the industry in which the party operates currently appear in 68% of all MAC Definitions, this would be an easy conclusion to reach. It is, however, probably wrong. MAC Exceptions are relatively recent innovations in deal technology⁷⁰ and were probably rare in the late 1960s when the PCC-Bollo deal was negotiated. If so, it may well have been the intention of the parties to exclude from the meaning of "material adverse change" the effects of systematic risks such as factors affecting the aircraft parts distribution industry generally. On this account, the growing prevalence of MAC Exceptions over the years represents not a change in the meaning of merger agreements but reflects rather the increased detail with which agreements are spelled out. Perhaps because of technological changes affecting the practice of law (e.g., computerized word processing), the transaction costs involved in reaching more elaborate and detailed agreements have fallen, and this makes more prolix MAC Definitions efficient.

Two other early MAC cases reinforce the idea that MAC clauses should be interpreted quantitatively in terms of the earnings potential of the company. In *Katz v. NVF*,⁷¹ the parties had entered into an agreement that required the potential acquirer, prior to a specified future date, to make a binding offer to acquire the target conditional on the

⁶⁸ *Id.*

⁶⁹ *Id.* (emphases omitted).

⁷⁰ See Gilson & Schwartz, *supra* note 1, at 339 (arguing that MAC Exceptions started appearing in MAC Definitions with increasing frequency during the 1990s because of increased volatility in capital and product markets during that period).

⁷¹ *Katz v. NVF Co.*, 473 N.Y.S.2d 786 (N.Y. App. Div. 1984).

target's not having suffered a MAC in the interim. Prior to entering into the agreement, the target's annual earnings had been about \$2.1 million per year, but by the date the acquirer was required to make the offer, the company had swung to a loss—losing over \$6.3 million during the most recent twelve month period.⁷² The acquirer and the target then *agreed* that the target had suffered a MAC and that the acquirer's obligation to offer to buy the target was discharged.⁷³ Similarly, in *Raskin v. Birmingham Steel Corporation*,⁷⁴ after the acquirer and the target entered into a merger agreement but before the transaction closed, the business of the target deteriorated substantially, with earnings falling off about 50% for two consecutive quarters.⁷⁵ The acquirer declared a MAC, and the target acquiesced, agreeing to terminate the merger agreement.⁷⁶ In both cases, the parties themselves and not the courts looked to the earnings capacity of the company, comparisons of earnings across different fiscal periods, and calculations of the percent decline in earnings across such periods. At least implicitly, the parties were measuring the materiality or magnitude of the adverse change by the percent decline in the party's earnings.

This point about the magnitude of the adverse change also appears in *Pine State Creamery Company v. Land-O-Sun Dairies*.⁷⁷ In that case, Land-O-Sun had entered into an asset purchase agreement with Pine State pursuant to which Land-O-Sun would acquire from Pine State, for a little over \$3 million, certain assets Pine State used in connection with a dairy plant.⁷⁸ At the time of signing, both parties believed that the business to be acquired had in recent quarters either broken even or turned a modest profit (about \$44,000 for the then current fiscal year to date).⁷⁹ By the time of closing, however, it had become clear that the business had in fact been losing money. “Rather than operating at a small profit, it was revealed that Pine State had lost more than \$212,000 for the year.”⁸⁰ When Pine State's business deteriorated even further and it lost an additional \$156,000 in the next month, Land-O-Sun

⁷² *Id.* at 471.

⁷³ The case arose when a shareholder of the target sued the target and various of its officers and directors for securities fraud in connection with the failed transaction. The issue of whether the target was materially adversely affected was not before the court.

⁷⁴ *Raskin v. Birmingham Steel Corp.*, Civ. A. No. 11365, 1990 WL 193326 (Del. Ch. Dec. 4, 1990).

⁷⁵ *Id.* at *2 (“Earnings for the second quarter of FY 1990 declined almost 66%, and earnings for the first half of FY 1990 declined almost 50%.”).

⁷⁶ *Id.* at *2-3. As in *Katz*, the case arose when shareholders of the target sued the target and several of its officers and directors, as well as the acquirer and several of its officers and directors.

⁷⁷ *Pine State Creamery Co. v. Land-O-Sun Dairies, Inc.*, 201 F.3d 437, 1999 WL 1082539 (4th Cir. 1999) (unpublished table decision); see Hall, *supra* note 16, at 1065-68 (discussing *Pine State Creamery*).

⁷⁸ *Pine State Creamery*, 1999 WL 1082539, at *1.

⁷⁹ *Id.* at *2.

⁸⁰ *Id.*

declared a MAC and terminated the agreement.⁸¹ When Pine State sued to enforce the agreement, the Fourth Circuit vacated the district court's order granting Land-O-Sun summary judgment and held that there was a genuine issue of fact as to whether Pine State had suffered a MAC. Finding that "the financial viability of Pine State was at the essence of the contract," the court stated that "it is simply a question of degree regarding the point that Pine State's operating losses would become 'material.'"⁸² If "Pine State operated at a small loss during the [relevant period], that eventuality would surely have been within the contemplation of Land-O-Sun," but if "Pine State lost millions during the same period, Land-O-Sun could have readily concluded that the business was a lost cause."⁸³ On the actual facts, however, it was "a considerably closer question" whether "an operating loss of more than \$400,000 during a two-month period amounts to a 'material adverse change.'"⁸⁴ The court remanded the case to the district court for trial on the question of whether the change in Pine State's business amounted to a MAC.⁸⁵ Without much discussion, the court had thus assumed that MACs are to be measured by earnings, and the materiality of an adverse change was to be measured by how much earnings had fallen off.

In an echo of *Pittsburgh Coke & Chemical Co.*, the court also stated that, if the downturn in Pine State's business resulted from systematic factors rather than factors peculiar to the company's own business, the adverse change would not constitute a MAC. "Although such a downturn [as Pine State suffered] appears substantial at first blush," a Pine State executive had testified that "his company's business was seasonal" and "explained that sales were generally at their highest point [during the time of the year when the agreement was signed] but would plunge severely [in the subsequent months]."⁸⁶ That is, if the adverse change resulted from factors affecting the industry generally, then it would not be a MAC. Thus we again find courts understanding the undefined term "material adverse change" as if it were already qualified by some of the MAC Exceptions of the kind we commonly find in contemporary merger agreements.

⁸¹ *Id.*

⁸² *Id.* at *5.

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ See generally Howard, *supra* note 1 at 237 ("[T]here is no generally agreed quantitative or qualitative definition of materiality.").

⁸⁶ *Pine State Creamery*, 1999 WL 1082539, at *5.

2. *In re IBP Shareholders Litigation*

The leading case about MACs,⁸⁷ *In re IBP Shareholders Litigation* concerned the \$4.7 billion acquisition of IBP, the nation's largest processor of beef and second largest processor of pork, by Tyson Foods, the nation's largest producer of poultry. Tyson had won a hotly contested auction, eventually agreeing⁸⁸ to acquire IBP for a mix of cash and stock.⁸⁹ As both parties knew at signing, the beef business is cyclical, suffering during severe winters, and was about to enter one of its periodic troughs.⁹⁰ After the agreement was signed but before it closed, IBP's earnings fell off sharply. Tyson's founder and controlling shareholder, Don Tyson, developed a bad case of buyer's remorse,⁹¹ and when he decided he wanted out of the merger agreement, "Tyson's legal team swung into action,"⁹² sending a notice to IBP purporting to terminate the merger agreement and then suing IBP on a variety of theories, including that IBP had suffered a MAC.⁹³

The Tyson-IBP merger agreement defined "Material Adverse Effect" as "a material adverse effect on the condition (financial or otherwise), business, assets, liabilities or results of operations" of IBP

⁸⁷ William R. Kucera, *MAE Clauses Might Not Avert a Bad Deal*, NAT'L L.J., Nov. 7, 2005, at S1 (stating that *IBP* provided significant guidance on how Delaware courts will interpret MAC Conditions); Bradley C. Sagraves & Bobak Talebian, *Material Adverse Change Clauses in Tennessee: Genesco v. Finish Line*, 9 TRANSACTIONS: TENN. J. BUS. L. 343, 348-49 (2008) (referring to *IBP* as "the seminal case upon which most jurisdictions rely when interpreting MAC clauses"); Toub, *supra* note 21, at 871 ("[Before *IBP*] there existed no historically significant decision focused almost entirely on the interpretation of MAC clauses in agreements."); *id.* at 871-82 (analyzing various aspects of *IBP*); Zerbe, *supra* note 20, at 18 (referring to *IBP* as "a landmark interpretation regarding the MAE clause").

⁸⁸ More specifically, the Tyson-IBP merger agreement provided for a two-step transaction. *See* Miller, *supra* note 1, at 2019 (discussing two-step transactions and their relation to deal risk). Like most agreements related to such transactions, the Tyson-IBP merger agreement provided that Tyson would launch a tender offer for the shares of the target, with Tyson's obligation to close the offer being conditioned on, among other things, a MAC Condition. Also, as is typical in such agreements, if the offer did not close by a specified date and for specified reasons, the transaction would in effect convert to a one-step merger transaction, again with Tyson's obligation to close the transaction being subject to a MAC Condition.

⁸⁹ The whole case has been helpfully reviewed by knowledgeable practitioners. *See* Joseph S. Allerhand & Seth Goodchild, *Court of Chancery Orders Tyson-IBP Merger*, BUS. & SEC. LITIG., Aug. 2001, available at <http://www.weil.com/news/pubdetail.aspx?pub=8624>; Herbert Henryson, 'IBP v. Tyson' Teaches Valuable Lessons, 7/26/2001 N.Y. L.J. 1, (col. 1). For academic commentary, see Gilson & Schwartz, *supra* note 1, at 355-57; Cicarella, *supra* note 16, at 432-36.

⁹⁰ *In re IBP, Inc. S'holders Litig.*, 789 A.2d 14, 22 (Del. Ch. 2001); *see also id.* at 26 (explaining that cattle supplies go through cycles that can be tracked with some general precision using information from the United States Department of Agriculture).

⁹¹ *Id.* at 22-23.

⁹² *Id.* at 50.

⁹³ The characterization of the behavior of Tyson and its managers in the text is harsh, but not more so than Vice Chancellor Strine's findings of fact in the case. *See id.* at 47-51 (detailing delicts by Tyson managers).

and its subsidiaries taken as a whole.⁹⁴ The definition thus presented a relatively long list of MAC Objects, including some fairly unusual ones: assets (in only 71% of MAC Definitions for targets), liabilities (42% of such definitions), and condition (other than financial condition) (35%).⁹⁵ It included no MAC Exceptions. Furthermore, IBP had represented and warranted that, except as affected by actions specifically permitted by the merger agreement,⁹⁶ “there has not been . . . any event, occurrence or development of a state of circumstances or facts which has had or *reasonably could be expected to have* a Material Adverse Effect” on IBP.⁹⁷ The agreement thus in effect contained a very buyer-friendly MAC Expectation Metric.

a. The Genesis of the Earnings Potential Model

None of this, however, figures significantly in Vice Chancellor Strine’s opinion. Rather than analyzing “Material Adverse Effect,” the term formally defined in the MAC Definition, he analyzes the undefined term “material adverse effect” used in that definition. This leads him away from any serious consideration of MAC Objects or MAC Expectation Metrics. Indeed, the opinion proceeds very much as if the agreement had merely made it a condition of Tyson’s obligation to close that IBP had not suffered a “material adverse effect” and had not further defined that phrase.

The critical move in Vice Chancellor Strine’s analysis comes early on when he glosses the phrase “material adverse effect” as referring to “events that substantially threaten the overall earnings potential of the target in a durationally-significant manner,”⁹⁸ meaning that a diminution in earnings should count as a MAC if, but only if, it is “material when viewed from the longer-term perspective of a reasonable acquirer.”⁹⁹ In

⁹⁴ IBP, Inc., Agreement and Plan of Merger Among IBP, Inc., Tyson Foods, Inc., and Lasso Acquisition Corp., (Sch. 14D-9), at 16 exh. 99E(3) (Jan. 2, 2001) [hereinafter Tyson-IBP Merger Agreement].

⁹⁵ See *supra* Table 2.

⁹⁶ It did not figure in the case, but this language in the MAC representation would have had the same effect as a MAC Exception in the MAC Definition for actions taken under the agreement.

⁹⁷ Tyson-IBP Merger Agreement, *supra* note 94, at 20 (emphasis added).

⁹⁸ *In re* IBP, Inc. S’holders Litig., 789 A.2d 14, 68 (Del. Ch. 2001); see Hall, *supra* note 16, at 1087 (discussing V.C. Strine’s treatment of IBP’s decline in earnings).

⁹⁹ *In re* IBP, 789 A.2d at 68. There is a discussion, mostly carried on among practitioners, about “objective” versus “subjective” MAC standards. The objective standard is the one adopted by V.C. Strine as described in the text. The subjective standard would result in a MAC if the change in fact caused the actual acquirer to value the transaction (substantially) less than it did at signing. Such a result would be obtained by contractual language providing that a MAC is a change that would, or would reasonably be expected to, result in a substantial diminution in the value to the acquirer of the transactions contemplated by the agreement. See Adams, *supra* note

providing this gloss, Vice Chancellor Strine not only made explicit some of the assumptions lurking in earlier MAC cases but also set the direction for future MAC cases. At least when the issue is whether the magnitude of the adverse change is sufficient to MAC the party, henceforth the case will turn on whether the long-term earnings potential of the company has been substantially impaired, and the case law will elaborate the inquiry that courts must perform in making this determination. The Earnings Potential Model had been born.

As the case law develops, the inquiry required by the model tends to appropriate conclusions from modern finance theory and so becomes increasingly quantitative.¹⁰⁰ Even in *IBP*, Vice Chancellor Strine goes far in developing an essentially quantitative interpretation of his doctrinal language. This development centers on three key issues that must be resolved to apply the model, and although he does not explicitly identify these issues, the Vice Chancellor stakes out important positions on all three. In particular, the Earnings Potential Model requires: (a) an appropriate measure of the earnings capacity of the company, whether earnings, earnings per share, operating income, etc.; (b) a principle by which to select fiscal periods of the company to compare using this measure of earnings capacity; and (c) a determination as to what level of diminution in earnings thus measured across such periods is needed to effect a MAC. The model requires, in other words, that we know first, *how to measure earnings capacity quantitatively*; second, *which fiscal periods to compare*; and third *what percentage diminution in earnings capacity* amounts to a MAC.¹⁰¹ I shall call these three issues the Earnings Measurement Problem, the Fiscal Periods Problem, and the Percent Diminution Problem. As we shall see, courts have made great progress on the first and some modest progress on second but have persistently failed to deal convincingly with the third.

b. The Earnings Measurement Problem

Vice Chancellor Strine discusses *IBP*'s financial performance sometimes in terms of the company's earnings before interest and taxes

23, at 24-25 (discussing relative merits of objective versus subjective MAC definitions); Howard, *supra* note 1, at 240-41 (discussing objective versus subjective standards and stating that "[s]ince subjective materiality may give too much unchecked leverage to the parties to seek to re-trade the deal before closing, subjective materiality provisions are rare"); Charles N. Nathan et al., *Providing Certainty in the Uncertain World of Telecom Deal Making*, in TELECOM DEALS NOW: UNDERSTANDING THE INTERPLAY OF REGULATORY, CORPORATE, SECURITIES & BANKRUPTCY ISSUES 176 (PLI Corp. Law Practice, Course Handbook Series No. B0-014Z, 2001).

¹⁰⁰ I have previously discussed some similar ideas in my *Hexion v. Huntsman: Elaborating the Delaware MAC Standard*, 10 ENGAGE 20 (2009).

¹⁰¹ *See id.* at 21.

(EBIT)¹⁰² and sometimes in terms of its earnings per share (EPS) without attempting to justify the use of one measure rather than another. There are, of course, important differences.¹⁰³ For one thing, EPS varies not only with earnings but also with the number of shares outstanding, and this number can change from one fiscal period to another.¹⁰⁴ More important, what Vice Chancellor Strine refers to as EBIT is the “Earnings from Operations” numbers in IBP’s financial statements, and these numbers exclude not only interest and taxes but also at least some extraordinary charges.¹⁰⁵ The “earnings” Vice Chancellor Strine refers to in his EPS data, however, reflect all three of these.¹⁰⁶ Hence, ratios between EBIT for given fiscal periods and EPS for the same periods are not identical, even accounting for changes in the number of shares outstanding as between the periods. There is thus a certain slippage in Vice Chancellor Strine’s discussion as he shifts back and forth from EBIT numbers to EPS numbers.¹⁰⁷ Subsequent cases will address this issue.

c. The Fiscal Periods Problem

As to the Fiscal Periods Problem, Vice Chancellor Strine again does not address the issue directly, but we can draw certain inferences

¹⁰² It is a good question why Vice Chancellor Strine used EBIT rather than EBITDA (earnings before interest, taxes, depreciation, and amortization). As we will see, Vice Chancellor Lamb in *Hexion* will use EBITDA, never even mentioning EBIT. As to why Vice Chancellor Strine used EBIT rather than EBITDA, the reason, I suspect, is simply that IBP’s financial statements did not break out depreciation and amortization in a way that made it feasible to compute EBITDA. See, e.g., IBP, Inc., Annual Report (Form 10-K) (Mar. 30, 2001) [hereinafter IBP 2000 Annual Report].

¹⁰³ See Miller, *supra* note 100, at 24.

¹⁰⁴ In all likelihood, however, such changes will be slight, if only because we are talking about fiscal periods during and immediately before the pendency of the merger, and merger agreements typically include interim covenants that prohibit parties from undertaking the kinds of extraordinary transactions (e.g., share repurchases) that would significantly affect the number of shares outstanding. FREUND, *supra* note 5, at 285-97; KLING & NUGENT, *supra* note 5, § 1.05[3]; LIPTON & STEINBERGER, *supra* note 7, § 1.11[3]; see also Bill D. Jarnagin & Jon A. Booker, *Earnings per Share*, in THE FINANCIAL ANALYST’S HANDBOOK 456 (Sumner N. Levine ed., 2d ed. 1988) (discussing how to calculate earnings per share).

¹⁰⁵ See IBP 2000 Annual Report, *supra* note 102, at 15; IBP, Inc., Annual Report (Form 10-K), at Item 6 (Mar. 23, 2000). It seems, however, that “Earnings from Operations” includes depreciation and amortization; that is, it is truly EBIT and not EBITDA. Since depreciation and amortization figures are not separately reported and are not discussed in the notes to IBP’s financial statements, it seems safe to assume that they were *de minimis* and that, for practical purposes, IBP’s EBIT and EBITDA were the same.

¹⁰⁶ Vice Chancellor Strine, of course, is perfectly aware of this. See *In re IBP, Inc. S’holders Litig.*, 789 A.2d 14, 68-69 (Del. Ch. 2001) (noting that EPS data for FY2001Q1 “exaggerate IBP’s success, because part of those earnings were generated from a windfall generated by accounting for its stock option plan, a type of gain that is not likely to recur”).

¹⁰⁷ See Miller, *supra* note 100, at 24.

from the EBIT and EPS figures he compares. In particular, in the course of the opinion, the Vice Chancellor considers data for the five most recently completed fiscal years of the company for which data was available (IBP's FY1995-FY1999) and takes averages both for this five-year period and the most recent three-year period (FY1997-FY1999).¹⁰⁸ He also considers the then most recent trough in the beef industry, a period that extended for three years (FY1997-FY1999). Against these periods, Vice Chancellor Strine compared available data from the time the agreement was signed to the date of the decision, i.e., data for FY2001Q1 and preliminary data from the then still-pending FY2001Q2. He also considered expected earnings for future periods, including both FY2001 and FY2002. For FY2001, he obtained data by projecting FY2001Q1 results on a straight-line basis, and for both FY2001 and FY2002, he took judicial notice of the earnings estimates of industry analysts.¹⁰⁹ The periods compared, therefore, were: (a) the five most recently completed fiscal years of the company for which data was available, including averages of certain periods within this period; and (b) the periods during the pendency of the merger, as well as the current and next succeeding fiscal years. As to why these were the correct periods to compare or which among the various comparisons were the most important, the Vice Chancellor never explained.

d. The Percent Diminution Problem

Assuming we know how to measure earnings and which fiscal periods to compare, the issue becomes what level of diminution should count as a MAC—that is, in the language of the definition, how adverse an adverse change must be to count as *material*.

Vice Chancellor Strine does not approach the earnings comparisons he makes in a systematic way, but in one of the most important conclusions reached in the case, he writes, “If IBP had continued to perform on a straight-line basis using its first quarter 2001

¹⁰⁸ Tyson and IBP entered into the merger agreement on January 1, 2001, which was two days after IBP's FY2000 ended on December 30, 2000. Naturally, audited financial statements for this fiscal year would not have been available yet on January 1, 2001, but IBP had prepared and filed its Forms 10-Q for 2000, and so the unaudited financial information included in them for FY2000Q1 through FY2000Q3 should perhaps have been included in the baseline Vice Chancellor Strine established. Despite this omission, however, Vice Chancellor Strine does refer at times to EBIT numbers for Q1 to Q3 for FY2000.

¹⁰⁹ *In re IBP*, 789 A.2d at 69-70. Such estimates, of course, are far from entirely reliable, but there is probably no better source of information about the future earnings of the company. *E.g.*, Samuel S. Stewart, Jr., *Forecasting Corporate Earnings*, in *THE FINANCIAL ANALYST'S HANDBOOK*, 532, 535-42 (Sumner N. Levine ed., 2d ed. 1988). Vice Chancellor Strine, of course, is perfectly aware of this. *In re IBP*, 789 A.2d at 71 (expressing skepticism about the reliability of analyst earnings estimates).

performance . . . [t]his sort of annual performance would be consequential to a reasonable acquirer and would deviate materially from the range in which IBP had performed during the recent past.”¹¹⁰ That is, based on this comparison, IBP would have suffered a MAC. Now, the Vice Chancellor does not make explicit exactly which past periods he has in mind, and he does not calculate precise figures indicating the diminution in earnings between the straight-lined FY2001Q1 numbers and the numbers for these periods. Assuming, however, that he had in mind the past periods to which he had already referred, then the comparison Vice Chancellor Strine intended was probably the following:

Table 6. IBP Projected FY2001 EBIT Versus Various Historical Periods¹¹¹

<u>Historical Period</u>	<u>Projected FY2001 Percent Change</u>
FY2000	-45.7%
FY1999	-61.1%
FY1998	-45.0%
FY1997	-9.4%
FY1996	-36.4%
FY1995	-57.2%
Average FY1995-FY1999	-46.8%
Average FY1997-FY1999	-45.4%

That is, if we were to assume that IBP would perform as poorly from FY2001Q2 through FY2001Q4 as it had in FY2001Q1, then its EBIT would have declined approximately 45% against historical standards (e.g., the FY1997-FY1999 average), and, according to Vice Chancellor Strine, *this would have been a MAC*. This is an important assertion about the Percent Diminution Problem: it says, in other words,

¹¹⁰ *In re IBP*, 789 A.2d at 69.

¹¹¹ The percentages presented in the table are based on the following EBIT numbers (with all numbers in thousands). For FY2001Q1, \$205,504, projected on a straightline basis from EBIT of \$51,376, as reported in IBP's Form 10-Q for FY2001Q1 (i.e., Earnings from Operations of \$58,273, adjusted to disregard an extraordinary gain of \$6,897). For FY2000, EBIT of \$378,181 (that is, \$346,882 adjusted to disregard a non-recurring merger-related expense of \$31,299) as reported in IBP's Form 10-K for FY2000 (a figure that was not available to Vice Chancellor Strine at the time the case was decided but which is included here for the sake of completeness). For FY1999 through FY1995, EBIT of \$528,473 (FY1999), \$373,735 (FY1998), \$226,716 (FY1997), \$322,908 (FY1996), and \$480,096 (FY1995), as set forth in *In re IBP*, 789 A.2d at 66.

that a decrease of 45% or more in earnings capacity is sufficient for a MAC.¹¹² As to *why* 45% is sufficient, however, Vice Chancellor Strine is silent.

Because of the demonstrably cyclical nature of IBP's business, however, and because of other evidence that IBP's EBIT was increasing in FY2001Q2, Vice Chancellor Strine concluded that IBP's FY2001 EBIT would exceed what projecting FY2001Q1 numbers on a straight-line basis would imply.¹¹³ He thus turns to the analyst estimates for IBP's FY2001 and FY2002, though without being quite clear about which fiscal periods he was comparing to which. Based on data in the opinion and in IBP's financial statements, however, we can compute the following:

Table 7. Mean Analyst Estimates for IBP FY2001 and FY2002 EPS Versus Various Historical Periods¹¹⁴

<u>Historical Fiscal Period</u>	<u>Estimated FY2001 Percent Change</u>	<u>Estimated FY2002 Percent Change</u>	<u>Average Estimated FY2001-FY2002 Percent Change</u>
FY2000	+21.0%	+87.9%	+54.4%
FY1999	-55.8%	-31.3%	-43.5%
FY1998	-32.1%	+5.4%	-13.3%
FY1997	+19.0%	+84.9%	+52.0%
FY1996	-28.6%	-11.0%	-8.8%
FY1995	-49.3%	-21.3%	-35.3%
Average FY1995-FY1999	-37.1%	-2.3%	-19.7%
Average FY1997-FY1999	-34.4%	+1.9%	-16.3%
Average FY1996-FY1998	-19.2%	+25.5%	+3.1%

¹¹² Chancellor Allen, on a motion to approve a shareholder class action settlement, in considering the probable merits of a claim that a party to a merger agreement had suffered a MAC, stated, "While it is possible that on a full record and placed in a larger context one might conclude that a reported 50% decline in earnings over two consecutive quarters might not be held to constitute a material adverse development, it is, I believe unlikely . . . that that might happen." *Raskin v. Birmingham Steel Corp.*, Civ. A. No. 11365, 1990 WL 193326, at *5 (Del. Ch. Dec. 4, 1990).

¹¹³ *In re IBP*, 789 A.2d at 69-70; *see also* Miller, *supra* note 100, at 21-22.

¹¹⁴ The percentages presented in the table are based on the following EPS numbers: (a) for FY2001, \$1.50, and for FY2002 \$2.33, as set forth in 789 A.2d at 71 (taking, as Vice Chancellor Strine says, the lower end of the consensus ranges (i.e., \$1.50 from the \$1.50 to \$1.74 range for FY2001, and \$2.33 from the \$2.33 to \$2.42 range for FY 2002)); (b) for FY2000, EPS of \$1.24 as reported in IBP's Form 10-K for FY2000 (*see supra* note 102); (c) for FY1999 through FY1995, EPS of \$3.39 (FY1999), \$2.21 (FY1998), \$1.26 (FY1997), \$2.10 (FY1996), and \$2.96 (FY1995), as set forth in *In re IBP*, 789 A.2d at 66.

Again, Vice Chancellor Strine does not explicitly compute all of these percentages, and exactly which numbers he is comparing to which is not always clear, but he seems to draw two important conclusions.¹¹⁵ First, the Vice Chancellor states that, if the analysts' earnings estimates are attained, then "IBP would return to historically healthy earnings" in FY2002.¹¹⁶ That is, the relation between the earnings estimates and the historical earnings do *not* show a MAC. Assuming that the comparison is, at least primarily, to the five-year (FY1995-FY1999) and three-year (FY1997-FY1999) averages, the Vice Chancellor thus implies that a 2.3% diminution in earnings capacity (estimated FY2002 versus the average over FY1995-FY1999) is not a MAC. This result seems intuitively right, but once again the Vice Chancellor does not explain why.

Second, the Vice Chancellor stated that, based on analysts' earnings estimates, "IBP's earnings for the next two years would not be out of line with its historical performance during troughs in the beef cycle."¹¹⁷ Since the Vice Chancellor had mentioned the FY1996-FY1998 period as a trough period, we can assume this is the period he has in mind and can compare the company's average EPS over this period with the average estimated EPS for the expected trough in FY2001-FY2002. If we do so, we find that average estimated EPS for FY2001-FY2002 was actually 3.1% *above* the average EPS in the FY1996-FY1998 trough.¹¹⁸ Largely on the basis of these conclusions, Vice Chancellor Strine ultimately held that IBP had not suffered a MAC. Of course, when earnings *increase* from period to period, this tells us nothing about the percent diminution sufficient for a MAC.

e. MAC Definitions Under the Earnings Potential Model

As the court's analysis in *IBP* makes clear, adopting the Earnings Potential Model implies a holistic understanding of MAC Objects. That is, in applying the model, Vice Chancellor Strine never once indicates which of the various MAC Objects in the MAC Definition might have been materially adversely changed.¹¹⁹ Indeed, he does not speak as if

¹¹⁵ *In re IBP*, 789 A.2d at 68-70; *see also* Miller, *supra* note 100, at 21-22.

¹¹⁶ *In re IBP*, 789 A.2d at 70.

¹¹⁷ *Id.* at 71.

¹¹⁸ Again, I use the figures referred to above to compute these percentages. Vice Chancellor Strine does not explain why he implicitly compares a three-year average (FY1996-FY1998) to a two-year average (FY2001-FY2002), but if troughs in the beef cycle vary in length so that some extend for two seasons but others for three, such a comparison would seem unobjectionable.

¹¹⁹ *See* Adams, *supra* note 23, at 29-35 (noting that many MAC objects seem to be surplussage). Adams argues that "courts have given no indication that in determining materiality [of a purported MAC] they rigidly compartmentalize the components of the field of change [i.e., what this article calls the MAC Objects]." *Id.* at 35. This is right, but it would probably be more

IBP's "condition (financial or otherwise), business, assets, liabilities or results of operations"¹²⁰ were separate things. On the contrary, since the inquiry mandated by the Earnings Potential Model considers only diminution in earnings, adopting the model is in effect to treat the long list of MAC Objects in the MAC Definition not as a list of several different things but as a single long verbal formula referring to just one thing—the earnings capacity of the company as measured in its financial statements.

Furthermore, in applying the Earnings Potential Model, Vice Chancellor Strine repeatedly compared IBP's past earnings to estimates of its future earnings. Sound as this is from the point of view financial theory, transactional lawyers have long excluded *prospects* as a MAC Object precisely to forestall such forward-looking inquiries. As favorable to Tyson as the MAC Definition in the Tyson-IBP agreement was, it definitely did not include prospects among the MAC Objects. In applying the Earnings Potential Model, comparing past earnings to future earnings seems inevitable,¹²¹ however, and this has the effect of reading *prospects*—or something very much like it—back into the MAC Definition as a MAC Object.¹²²

Further, even though the MAC Definition in the Tyson-IBP agreement included no MAC Exception for general changes in the industry in which IBP operated or for changes arising from weather or climactic conditions, IBP argued that adverse changes arising from such factors (i.e., the trough in the beef cycle)¹²³ ought to be excluded in determining whether IBP had been MAC'd.¹²⁴ As we saw above, there

accurate to say that courts have, like Vice Chancellor Strine, generally ignored the whole issue.

¹²⁰ *In re IBP*, 789 A.2d at 65 (citing Section 5.01 of the Tyson-IBP merger agreement).

¹²¹ We could apply the model by comparing only fiscal periods completed prior to signing to fiscal periods (or parts thereof) completed after signing and before closing. If so, there would be no need to estimate future earnings, and so presumably no argument that prospects had been read back into the MAC Definition. This approach, however, denies the relevance of future earnings to the question of whether the company's earning potential has been impaired, and that is obvious nonsense from the point of view of financial theory. The great argument in favor of the Earnings Potential Model is its support in such theory, and so it seems by far the better view that applying the model will require the court to look to the company's future earnings.

¹²² There is a controversy, mostly among practitioners, as to whether "business" as a MAC Object implicates the prospects of the company. *E.g.*, Howard, *supra* note 1, at 236 ("[S]ome practitioners will take the position that a reference to the company's 'business' in the MAC/MAE definition incorporates some notion of the company's future prospects Under this interpretation, a material adverse change in the company's future prospects is a material adverse change in the company's 'business.'"); *see also* Adams, *supra* note 23, at 37 (noting that "one could argue that a material adverse change in a company's prospects constitutes a material adverse change in the company's current business condition," thus making "prospects" unnecessary in the definition of MAC, but opining that such argument is unlikely to succeed in litigation); Toub, *supra* note 21, at 893 (discussing "business" as object of MAC).

¹²³ *In re IBP*, 789 A.2d at 22 ("[IBP's] problems were due in large measure to a severe winter, which adversely affected livestock supplies and vitality.").

¹²⁴ *Id.* at 66.

is support in some of the early cases for the idea that systematic risks should be excluded from MACs.¹²⁵ In a return to the language of the contract, however, Vice Chancellor Strine rejected this argument, saying that if IBP had wanted exceptions from the MAC Definition related to “industry-wide or general factors,” it should have bargained for them.¹²⁶ In applying the Earnings Potential Model, however, the Vice Chancellor may have returned with the left hand what he had just taken away with the right. For, one of the most relevant earnings comparisons he made was that between the coming two trough years and the most recent three trough years, and if, in determining whether the company’s earnings potential has been impaired, we must consider the natural cyclicity of the business, then we have in effect read back into the MAC Definition a MAC Exception for cyclicity. Such an exception is not quite as sweeping as one for industry-wide conditions (many things affect an industry besides cyclicity), but cyclicity is surely one important industry-wide factor affecting a company’s earnings.¹²⁷ Therefore, despite what he expressly said, the Vice Chancellor did to a certain extent read a MAC Exception into the

¹²⁵ See *supra* Part II.A.1; see also Dennis J. Block & Jonathan M. Hoff, *Material Adverse Change Provisions in Merger Agreements*, 8/23/2001 N.Y. L.J. 5, (col. 1) (noting that in cases from 1970s and 1980s courts were “reluctant to apply a MAC to negative events affecting the market or industry that are extrinsic to the specific parties to the agreement” and noting that some later cases did not follow this pattern); Hall, *supra* note 16, at 1079-80 (discussing V.C. Strine’s treatment of whether “external factors” were excluded from definition of “Material Adverse Effect”); *id.* at 1084 (“While past cases may have suggested that only factors that were under the target’s control [could form the basis of a MAC] recent cases suggest courts will take events that are outside the target’s control into consideration when determining if the target [has] suffered a MAC.”). Furthermore, if the argument in Miller, *supra* note 1, at 2073-82 is correct, counterparties are almost always the superior risk bearers of such risks and so it would make sense to interpret the undefined phrase “material adverse change” or “material adverse effect” as excluding adverse changes arising from systematic risks.

¹²⁶ This presents something of a paradox. If, as the early cases suggest, in the past parties had understood the phrase “material adverse effect” as excluding systematic risks, then, as the express inclusion of MAC Exceptions became more prevalent in the 1990s, parties may have thought they were merely making more explicit a meaning already understood by the parties. See Gilson & Schwartz, *supra* note 1, at 335-40 (discussing the increased prevalence of MAC Exceptions in merger agreements in the 1990s). The resulting prevalence of MAC Exceptions, however, makes plausible (if not necessarily correct) the inference Vice Chancellor Strine drew: if transacting parties intend to exclude systematic risks from the MAC Definition, they will say so explicitly in MAC Exceptions; if they do not do so, the unqualified phrase “material adverse change” will include the systematic risks it used to be thought to exclude. In other words, by attempting to be more explicit about the meaning of the phrase “material adverse change” parties may unwittingly have in practice changed that meaning. See Cicarella, *supra* note 16, at 448-50 (arguing that courts should find events to be MACs or not depending on whether underlying factor is endogenous or exogenous, respectively).

¹²⁷ In seven of the 492 MAC Definitions studied in Miller, *supra* note 1, at 2095, there were MAC Exceptions for seasonality or seasonal conditions. Seasonality, of course, is a kind of cyclicity, albeit on a single year scale rather than the multi-year scale of the beef cycle at issue in *IBP*.

agreement,¹²⁸ and, moreover, he had to do so because anything else would have made nonsense of the Earnings Potential Model.

Finally, Vice Chancellor Strine entirely ignores the MAC Expectation Metric in the Tyson-IBP agreement. As noted above, IBP had represented and warranted that “there has not been . . . any event, occurrence or development of a state of circumstances or facts which has had or *reasonably could be expected to have* a Material Adverse Effect” on IBP.¹²⁹ To prevail, therefore, Tyson needed to show not that IBP had been MAC’d but only that it was reasonable to believe that IBP had been MAC’d. Despite the importance of this issue in negotiating merger agreements,¹³⁰ there is no hint of it in the court’s opinion. Throughout, Vice Chancellor Strine speaks as if the issue is whether a MAC has occurred, not whether there have occurred events that could reasonably be expected to result in a MAC.¹³¹ Since he admits that he is “torn about the correct outcome,”¹³² that the issue is “a close one,”¹³³ and that he reaches his conclusion “with less than the optimal amount of confidence,”¹³⁴ ignoring the MAC Expectation Metric seems to have affected the outcome of the case. If the question was this close, then it would seem that the events to which Tyson pointed *could reasonably have been expected* to MAC IBP. If so, perhaps Tyson should have won this case.

Unlike the implicit interpretations of MAC Objects and MAC Exceptions required by the Earnings Potential Model, the court’s disregard of the MAC Expectation Metric is not a necessary consequence of adopting that model. Given that the court will inquire into the diminution in the company’s earnings potential, there is no reason why the question must be whether that potential has substantially diminished and not, for example, whether it is reasonable to believe that that potential has substantially diminished. The Earnings Potential Model may require heavily interpreting certain aspects of the typical MAC Definition, but there is no reason that the MAC Expectation

¹²⁸ To be more precise, Vice Chancellor Strine’s holding in the Tyson-IBP agreement would exclude all adverse changes arising from the cyclical nature of business consistent with past cycles. That is, an unprecedentedly bad trough in the beef business could cause a MAC if earnings fell off steeply relative to the past trough.

¹²⁹ Tyson-IBP Merger Agreement, *supra* note 94, at 20 (emphasis added)

¹³⁰ KLING & NUGENT, *supra* note 26, § 11.04[9] (discussing negotiation of language in this part of MAC clauses); *see also* Cicarella, *supra* note 16, at 429 (discussing significance of *would* versus *could* in MAC Definition).

¹³¹ *E.g.*, *In re* IBP, Inc. S’holders Litig., 789 A.2d 14, 68 (Del. Ch. 2001) (“[T]he question of whether IBP has suffered a Material Adverse Effect remains a close one.”); *id.* at 71 (“Tyson has not persuaded me that IBP has suffered a Material Adverse Effect.”).

¹³² *Id.* at 71.

¹³³ *Id.* at 68.

¹³⁴ *Id.* at 71.

Metric must be among them. Courts can apply the model and still respect this part of the intentions of the parties.

3. *Frontier Oil v. Holly*

In *Frontier Oil v. Holly*,¹³⁵ Frontier and Holly, both mid-sized petroleum refiners, entered into a merger agreement pursuant to which Frontier would acquire Holly for a mix of cash and stock.¹³⁶ Even prior to entering into the merger agreement, however, both parties knew that Frontier was likely to be sued in connection with a potentially massive toxic tort. In particular, Frontier had in the past operated an oil rig on land adjacent to Beverly Hills High School, and it had been publicly reported that the famous plaintiffs firm associated with Erin Brockovich was planning to sue Frontier, alleging that emissions from the site were responsible for an alleged cancer cluster at the high school.¹³⁷ To deal with this risk, Frontier represented to Holly that the potential litigation would not have, and would not reasonably be expected to have, a material adverse effect on Frontier.¹³⁸ Furthermore, the parties added “prospects” to “financial condition,” “results of operations,” and “condition (other than financial condition)” in the list of MAC Objects in the MAC Definition applicable to Frontier.¹³⁹

After the signing of the agreement, the Beverly Hills situation worsened. Individuals represented by the Brockovich firm sued Frontier, and eventually there were three separate litigations involving more than 400 individual plaintiffs.¹⁴⁰ Although Frontier and Holly disagreed about the potential costs of the litigation (including both actual liabilities and defense costs), it was clear that these costs would be significant. After the parties tried unsuccessfully to renegotiate the deal, Frontier sued Holly, alleging that Holly had repudiated the merger agreement.¹⁴¹ Holly denied this and counterclaimed, alleging, among

¹³⁵ *Frontier Oil Corp. v. Holly Corp.*, Civ. A. No. 20502, 2005 WL 1039027 (Del. Ch. Apr. 29, 2005). At least prior to *Hexion v. Huntsman* discussed *supra*, *Frontier Oil* was generally recognized as the most important of the reported MAC cases after *IBP*. See, e.g., Kucera, *supra* note 87 (noting that states other than Delaware look to *IBP* and *Frontier Oil* as persuasive authority in MAC cases); see also *Genesco* Memorandum and Order, *supra* note 53 (citing *IBP* in MAC case decided under Tennessee law); Cicarella, *supra* note 16, at 433-35 (discussing *Frontier Oil*).

¹³⁶ *Frontier Oil*, 2005 WL 1039027, at *1-2. Each Holly share would also receive a contingent value right representing the potential value of a litigation claim Holly was then pursuing. *Id.*

¹³⁷ *Id.*; see also Miller, *supra* note 100, at 22-23.

¹³⁸ *Frontier Oil*, 2005 WL 1039027, at *33.

¹³⁹ *Id.* at *4.

¹⁴⁰ *Id.* at *21.

¹⁴¹ *Id.* at *24.

other things, that because of the Beverly Hills litigation, Frontier had suffered a MAC¹⁴² within the meaning of the agreement.¹⁴³

Vice Chancellor Noble began by quoting *IBP*'s doctrinal language that a MAC requires an event that substantially threatens the overall earnings potential of the target in a durationally-significant manner¹⁴⁴ and thus implicitly adopted the Earnings Potential Model. An inquiry into Frontier's earnings potential in the style of the *IBP* opinion, however, was not immediately adaptable to the facts in *Frontier Oil*. It was not that Frontier's earnings had or would decline because its business was declining; rather, its operations would remain whatever they were, but there would be some additional costs not directly related thereto, certainly in the form of legal costs and possibly in the form of payments to plaintiffs. Although these costs would affect the company's earnings and EPS, they may or may not have affected its EBIT or EBITDA depending on the vagaries of GAAP.¹⁴⁵ The case thus raises the Earnings Measurement Problem in a particularly acute form.

Without addressing that issue, Vice Chancellor Noble next estimated the expected cost to Frontier of the Beverly Hills lawsuits, considering evidence regarding the likelihood of their success and the likely dollar value of any judgments or settlements if the suits succeeded, plus estimated defense costs.¹⁴⁶ Because he concluded that Holly had failed to adduce sufficient evidence to show that the plaintiffs were likely to prevail,¹⁴⁷ the Vice Chancellor assumed that Frontier's liability to the plaintiffs would be zero. He then estimated the likely

¹⁴² As discussed more fully in Miller, *supra* note 1, at 2052, 2065-70, the literature on MAC clauses generally assumes that MAC Conditions protect buyers, who have an interest in the combined business after closing, against sellers, who do not. As I point out, in stock-for-stock and cash-and-stock deals, this assumption is false, for in such transactions, both parties have an economic interest in the combined company. *Id.* *Frontier Oil* illustrates this point nicely, for we here have a nominal *target* attempting to cancel a deal because of a purported MAC on the nominal *acquirer*.

¹⁴³ *Frontier Oil*, 2005 WL 1039027, at *25. More precisely, Holly claimed that Frontier's representation that there was no litigation pending or threatened against it except for such litigations as would not have (or would not reasonably be expected to have) a material adverse effect on Frontier, was false. That is, Holly claimed that Frontier's litigation representation, which was qualified to a MAC, not its MAC representation, had been breached. *Id.* at *35. Since the closing condition in favor of Holly conditioned Holly's obligation to close on all of Frontier's representations qualified to MACs (or to materiality) being true, *id.* at *8, the net effect was that Holly's obligation to close would be discharged if the Beverly Hills litigation caused (or would reasonably be expected to cause) a MAC on Frontier.

¹⁴⁴ *Id.* at *34.

¹⁴⁵ See generally ACCOUNTING FOR CONTINGENCIES, Statement of Fin. Accounting Standards No. 5 (Fin. Accounting Standards Bd. 1975).

¹⁴⁶ *Frontier Oil*, 2005 WL 1039027, at *36-37; see also Miller, *supra* note 100, at 22-23.

¹⁴⁷ Vice Chancellor Noble wryly notes that a fellow petroleum company like Holly had little incentive to argue that a toxic tort suit brought by Erin Brockovich's firm was meritorious. Indeed, most of the evidence Holly presented concerned the alleged plaintiff-friendliness of the court in which the suit was brought. *Frontier Oil*, 2005 WL 1039027, at *35 n.221.

defense costs Frontier would incur and on the basis of expert testimony determined that these would aggregate between \$15 million and \$20 million.¹⁴⁸

At this point, the Vice Chancellor thus knew that Frontier's earning potential had declined by the indicated amount, but he had still not addressed the Earnings Measurement Problem and the Fiscal Periods Problem. The Vice Chancellor's next move, however, implicitly adopted solutions to both problems. For, recognizing that the defense costs of the suits would not be borne by Frontier in a single fiscal period but would likely be incurred over several years in the future (it being difficult to say exactly which), Vice Chancellor Noble compared the expected defense costs to the enterprise value of the firm, which according to Holly's own experts was about \$338 million.¹⁴⁹ Comparing \$15 million to \$20 million in costs to \$338 million in enterprise value, the Vice Chancellor concluded that the costs were too small in relation to that value to MAC the company.¹⁵⁰

Now, this holding implicitly solves the Earnings Measurement Problem, for the court accepted the estimate of the enterprise value of the firm provided by Holly's expert, and this estimate was in turn based on the EBITDA of the firm. That is, Holly's financial advisors had valued Frontier by discounting its expected future EBITDA.¹⁵¹ Hence, in comparing the expected costs of the Beverly Hills litigation to the enterprise value thus calculated, the Vice Chancellor was implicitly saying that the costs should be viewed as reductions in EBITDA.¹⁵² Further, the holding also implicitly solves the Fiscal Periods Problem, because the calculation of enterprise value is also based on a certain number of future fiscal periods of the company—namely, all of them.¹⁵³ In other words, in comparing the expected costs of the lawsuits to the enterprise value of Frontier, the Vice Chancellor implicitly accepted whatever assumptions about the proper way to measure earnings and the

¹⁴⁸ *Id.* at *36.

¹⁴⁹ *Id.* at *37.

¹⁵⁰ *Id.*

¹⁵¹ *Id.* at *37 n.230.

¹⁵² To be wholly consistent, Vice Chancellor Noble should have discounted the defense costs back to present value at a discount rate reflecting the risk that such costs might not actually be incurred. Given the relatively short period at issue (e.g., probably two to three years), and given the imprecision in the estimate of the defense costs (i.e., \$15 million to \$20 million), the difference between the absolute value and the present value was probably negligible. In any event, *not* discounting the costs exaggerated their value in relation to the enterprise value of the firm, and so if these costs not discounted to present value were insufficient to MAC Frontier, then *a fortiori* they would be insufficient to MAC Frontier if they were discounted to present value.

¹⁵³ That is, the model discounts projections of EBITDA for certain future periods (usually five years) and then estimates EBITDA for even more distant future periods as, for example, a growing annuity based on the EBITDA in the final year of the projections. See ASWATH DAMODARAN, DAMODARAN ON VALUATION 193-200 (2d ed. 2006); PIERRE VERNIMMEN ET AL., CORPORATE FINANCE: THEORY AND PRACTICE 818-22 (2005).

proper periods over which they should be measured that had been incorporated into Holly's financial model used to compute Frontier's enterprise value.

Finally, in holding that the defense costs were too small in relation to the enterprise value of the company to cause a MAC, Vice Chancellor Noble also implicitly addressed the Percent Diminution Problem. That is, although he does not perform the calculation expressly, the ratio of his estimate of the expected costs of the litigation to the enterprise value of Frontier is between 4% and 6% (i.e., \$15 million to \$20 million in relation to \$338 million). Splitting the difference, we may call it 5%. If the enterprise value of the company is a multiple of its EBITDA, saying that a 5% decline in enterprise value is not a MAC is equivalent to saying that a 5% decline in EBITDA is not a MAC. Like Vice Chancellor Strine in *IBP*, however, Vice Chancellor Noble does not tell us *why* a given percent diminution in earnings is, or is not, a MAC. The assertion seems plausible enough, but there is not a hint of a justification for it.

4. *Genesco v. The Finish Line*

In *Genesco v. The Finish Line*,¹⁵⁴ the parties, both of whom were apparel and footwear companies, agreed that Finish Line would acquire Genesco in a cash merger.¹⁵⁵ The MAC Definition in the agreement was elaborate and reflected some of the most advanced deal technology. In particular, the definition included as MAC Objects the business, financial condition, assets, liabilities, condition (other than financial condition), and results of operations of the company, and included MAC Exceptions for, among other things, (a) systematic risks related to general changes in the economy, financial markets, and the industries in which the company operated, in each case subject to Disproportionality Exclusions, and (b) indicator risks related to failures to meet the company's own financial projections or estimates of third parties (though not for the underlying causes of such failures).¹⁵⁶

After signing and before closing, Finish Line learned that Genesco had failed to meet its own financial projections for the month leading up

¹⁵⁴ *Genesco* Memorandum and Order, *supra* note 53; *see also id.*, Order, No. 07-2137-II(III) (Tenn. Chan. Ct. Jan. 2, 2008) available at http://www.genesco.com/?g=litigation_library.litigation_library (Item 58) (clarifying that the *Genesco* Memorandum and Order of December 27, 2007 was non-final pending outcome of related litigation in New York on issues not relevant to whether Genesco had suffered a MAC).

¹⁵⁵ *See* Sagraves & Talebian, *supra* note 87, at 343-46 (reviewing whole course of events between Finish Line and Genesco).

¹⁵⁶ *Genesco* Memorandum and Order, *supra* note 53, at 29-30.

to the signing of the merger agreement.¹⁵⁷ In the months that followed, Genesco's earnings continued to disappoint, falling below not only its projections but also below historical levels. Finish Line eventually declared a MAC, and Genesco sued to specifically enforce the merger agreement.¹⁵⁸

The case was brought not in the Delaware Court of Chancery, which had decided *IBP* and *Frontier Oil*, but in the Tennessee Court of Chancery, and the opinion is considerably less clear than the Delaware opinions. Most importantly, although the parties disagreed about whether Genesco had been MAC'd, Genesco also argued in the alternative that, if it had been MAC'd, the MAC arose from general economic or industry conditions and so fell within a MAC Exception.¹⁵⁹ The evidence on this causation issue seemed to consist exclusively in competing expert testimony,¹⁶⁰ and the court ultimately held that the MAC, if such there was, was due to general economic conditions.¹⁶¹

If the court had stopped there, the opinion would not implicate the Earnings Potential Model in any way, but, for reasons not entirely clear, the court went on to consider¹⁶² whether the admittedly adverse change in Genesco's business amounted to a MAC and ultimately held that it

¹⁵⁷ *Id.* at 10-11.

¹⁵⁸ The litigation described in the text was only one of two relevant to the fate of the transaction. In a separate action in New York, UBS, which had agreed to provide Finish Line with the financing it needed to close the transaction, had sought to avoid its obligations to Finish Line on the basis that the combined company, when giving effect to the loan UBS was to make, would be insolvent, which, under the terms of UBS's commitment letter to Finish Line, would allow UBS to terminate its agreement to lend the purchase price to Finish Line. The court's decision in the Tennessee litigation provided that, if the New York action was decided in favor of UBS, Finish Line would be entitled to argue that the commercial purpose of the transaction with Genesco had been frustrated. The court stated that the implications of the insolvency of a combined Finish Line-Genesco and its implications for the Tennessee lawsuit were not ripe and would depend on developments in the New York suit. *Id.* at 2. The parties, including UBS, settled the case before the New York court ruled. Under the terms of the settlement, the parties abandoned the merger, Finish Line and UBS agreed to pay Genesco \$175 million (about 12% of the original \$1.5 billion purchase price) and Finish Line agreed to issue to Genesco shares of Finish Line common stock aggregating about 12% of the post-issuance total for later distribution to Genesco shareholders. Finish Line, Inc., Settlement Agreement, Made and Entered Into as of March 3, 2008, By and Among UBS Securities LLC and UBS Loan Finance LLC, The Finish Line, Inc. and Headwind, Inc. and Genesco Inc. (Form 8-K), exh. 10.1 (Mar. 4, 2008); *see also* Sagraves & Talebian, *supra* note 87, at 362-63 (discussing terms of settlement by Finish Line, UBS and Genesco).

¹⁵⁹ *See Genesco Memorandum and Order, supra* note 53, at 30-31 (stating that the court gave greater weight to testimony of expert witness "who had, in addition to academic or professional certification and expertise, actual retail experience").

¹⁶⁰ The details of the expert testimony that the court found persuasive on the causation issue, as well as any statistical evidence tending to demonstrate the causes of Genesco's disappointing financial performance, are not included in the court's opinion.

¹⁶¹ *Genesco Memorandum and Order, supra* note 53, at 31.

¹⁶² Although the court expressly stated that it was not necessary to decide whether the adverse change in Genesco's business amounted to a MAC, it "include[d] its MAE analysis for completeness." *Id.* at 33.

did.¹⁶³ As in *IBP* and *Frontier Oil*, the court did not discuss either the MAC Objects or the MAC Expectation Metric used in the MAC Definition. Rather, at least implicitly, the court adopted the Earnings Potential Model. Its inquiry into the diminution in Genesco's earnings, however, is at best obscure, and its handling of the Earnings Measurement Problem, the Fiscal Periods Problem, and the Percent Diminution Problem are all sometimes confused.

The least troubling is the court's treatment of the Earnings Measurement Problem, for the court refers mostly to changes in Genesco's EBITDA, though it occasionally mentions other measures of earnings as well. As to the Fiscal Periods Problem, for the most part the court compares fiscal quarters or even calendar months, including the periods leading up to the signing of the agreement and the pendency of the merger, to various fiscal periods in the past. Unfortunately, the court rarely provides enough information to make it clear which periods are being compared to which, let alone which comparisons are relevant and why.¹⁶⁴ For example, the court notes repeatedly that the "loss in earnings" in the month leading up to the signing of the agreement was "one of the lowest" in ten years, and that in the fiscal year in which the agreement was signed, Genesco's earnings were likewise "one of the lowest" in ten years.¹⁶⁵ Moreover, in comparing EBITDA from one fiscal period to another, the court almost never quantifies *how much* EBITDA has declined from period to period.¹⁶⁶ The court thus takes no

¹⁶³ Commentators have criticized this aspect of the opinion. See, e.g., Sagraves & Talebian, *supra* note 87, at 356 ("Commentators have noted that this order of reasoning seems backwards."). Purely from an analytical point of view, such criticism is probably justified, but from the point of view of a trial judge settling a dispute between parties in the real world, what Chancellor Lyle did makes perfect sense. If a court can dispose of a case without reaching a particularly difficult issue, it is rational for it to do so. Hence, if it was easier on the particular facts to determine why Genesco's earnings had declined rather than whether the magnitude of the decline amounted to a MAC, Chancellor Lyle's choice to treat this issue first makes perfect sense. Nevertheless, it might still make sense, as a matter of conserving judicial resources, for the court to make findings of fact on the more difficult issue too if the court is concerned it might be reversed on appeal on the first issue and that the second issue would be dispositive on remand. Delaware courts often do similar things. See *In re IBP, Inc. S'holders Litig.*, 798 A.2d 14, 72 n.172 (Del. Ch. 2001) (making findings of fact under various burdens of proof).

¹⁶⁴ See Sagraves & Talebian, *supra* note 87, at 356-59 (discussing court's determination that Genesco had been MAC'd).

¹⁶⁵ *Genesco Memorandum and Order*, *supra* note 53, at 34-35. Indeed, it is not clear what the court means when it says that the "loss" in a certain month's earnings was the "lowest" in ten years. Even assuming lowest here means "steepest," it is not clear if the court means that the amount of decrease on a month-to-month basis was the largest decrease in the period, or if the earnings in the month in question were the lowest monthly earnings in the relevant period. The former seems closer to the sense of the text, but the latter would be more indicative of a MAC.

¹⁶⁶ At one point the court does note that an exhibit "depicts a 61% decline in earnings for Q2 and Q3 [presumably for the current fiscal year] compared to the previous year. 54% for combined Q1, Q2 and Q3," *id.* at 10, but this tells us nothing about how much the current earnings numbers were below other historical levels (e.g., the ten year period that seems to figure so heavily in the opinion).

clear position on the Fiscal Periods Problem or the Percent Diminution Problem.

Such obscurity vitiates the court's reasoning on a deep level. For example, as noted above, the court repeatedly says that the company's current fiscal year may have been the worst in the last ten years¹⁶⁷ and partly on this basis concludes that the company had been MAC'd. This, however, does not follow. For example, if the company's EBITDA was flat for ten years, with each year's results within one or two percent of the average, then in the tenth year the company's EBITDA may have been, say, three percent below average, thus making that year the worst of the ten. Under the standard in *IBP* and *Frontier Oil*, however, such a diminution in earnings potential would not be a MAC.

Finally, in discussing whether the diminution in Genesco's earnings potential amounted to a MAC, the court repeatedly noted that, during fiscal periods after signing, Genesco missed financial projections it had previously prepared for such periods.¹⁶⁸ Since the MAC Definition in the agreement contained an exception for failures to meet such projections, this was simply a mistake by the court; it should have given no weight to such misses. Unlike Vice Chancellor Strine's reading an exception for cyclicity into the Tyson-IBP agreement, this was not an artifact of the Earnings Potential Model. That model requires that the court determine if the earnings potential of the company has decreased and so virtually inevitably requires the court to consider projections or estimates of future earnings—but to do so in order to compare still future periods to historical periods. In *Genesco*, the court compared historical periods to projections that had been prepared for such periods when it really should have compared such periods to even earlier historical periods. Given the notorious inaccuracy of financial projections,¹⁶⁹ missing projections is, at best, very weak evidence of being MAC'd,¹⁷⁰ and since Finish Line had bargained away any right to rely on failures by Genesco to meet projections in arguing that Genesco had been MAC'd, the court should have enforced the bargain the parties had made and refused to consider failures to meet such projections as evidence of a MAC.

¹⁶⁷ *Id.* at 10-11 (noting expert testimony that “operating income losses in Q2 2007 are the lowest in 10 years” and “EBITDA in 2007 is in the low range for Genesco’s 10-year history” but not stating how much below historical levels current figures are).

¹⁶⁸ *Id.* at 10 (noting that Genesco “missed its projections for the first quarter” in February, March and April; and “continued to miss its projections” in May and June).

¹⁶⁹ *See, e.g.*, Stewart, *supra* note 109, at 535-42.

¹⁷⁰ Miller, *supra* note 1, at 2082-87.

5. *Hexion v. Huntsman*

Just before the credit markets began to unravel in June of 2007, Hexion, a portfolio company of private-equity giant Apollo Global Management, agreed to acquire its fellow chemical manufacturer Huntsman.¹⁷¹ Although Hexion intended to finance the whole \$10.6 billion cash purchase price, its obligation to close the transaction was not conditioned on the availability of financing,¹⁷² and although Hexion had received commitment letters from its bankers for the needed financing, the banks' obligation to fund was contingent in various ways that Hexion's obligation to close was not.¹⁷³ Thus, if, at closing, Hexion had not arranged the needed financing, it would still be obligated to close the deal and would be in breach if it failed to do so.

Under the terms of the merger agreement, however, the effect of such a breach would depend on whether or not Hexion had committed a knowing and intentional breach of the agreement.¹⁷⁴ In particular, if Hexion had used its reasonable best efforts to obtain financing but had nevertheless failed to do so, then its liability to Huntsman would be capped at \$325 million.¹⁷⁵ If, on the other hand, Hexion had committed a knowing and intentional breach of the agreement (by, for example, intentionally sabotaging its own financing—which is what the court concluded in fact happened), then Huntsman would be entitled to full expectation damages—i.e., the purchase price in the agreement minus the fair market value of the company at the time of closing.¹⁷⁶

After signing but before closing, not only did the credit markets start to deteriorate but Huntsman's financial performance declined very sharply. The transaction thus became less and less profitable for Hexion, and Hexion began to look for a way out of the agreement. One attractive strategy was to declare that Huntsman had suffered a MAC. For, if Huntsman *had* suffered a MAC, Hexion could have canceled the deal without having to pay the \$325 million in liquidated damages.¹⁷⁷ As part of a larger strategy to exit the transaction, Hexion sued

¹⁷¹ *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715, 722 (Del. Ch. 2008). I consider the place of *Hexion* in the development of the Delaware MAC standard in Miller, *supra* note 100, at 22-24.

¹⁷² *Hexion*, 965 A.2d at 723-24. The court is not clear about this, but the \$10.6 billion represents the price for Huntsman's common stock (about \$6.5 billion including preferred stock converted into common stock and options), plus debt (about \$4.1 billion). *See infra* notes 287, 298, 305.

¹⁷³ *Id.* at 724.

¹⁷⁴ *Id.*; *see* Miller, *supra* note 100, at 23.

¹⁷⁵ *Hexion*, 965 A.2d at 724.

¹⁷⁶ Miller, *supra* note 100, at 23.

¹⁷⁷ *Id.*

Huntsman, alleging, among other things, that Huntsman had suffered a MAC¹⁷⁸ because of an admitted downturn in its business.

The MAC Definition in the Hexion-Huntsman merger agreement included as MAC Objects the business, financial condition, and results of operations of Huntsman and had MAC Exceptions for, among other things, general changes in the economy, financial markets, or chemicals industry, subject to Disproportionality Exclusions.¹⁷⁹ The MAC Expectation Metric referred to changes that had, or were reasonably expected to have, a MAC on Huntsman.¹⁸⁰ Since Vice Chancellor Lamb ultimately held that the downturn in Huntsman's business was not severe enough to be a MAC, he never reached the issue of whether the downturn arose from risks allocated to Hexion in the MAC Exceptions. Moreover, much like Vice Chancellor Strine in *IBP*, Vice Chancellor Lamb ignored the MAC Expectation Metric entirely. Finally, because he adopted the Earnings Potential Model, repeating the doctrinal language from *IBP* that MACs are "events that substantially threaten the overall earnings potential of the target in a durationally-significant manner,"¹⁸¹ Vice Chancellor Lamb also implicitly adopted the holistic interpretation of the MAC Definition's list of MAC Objects, thus making the list into a single complex description of the company's earnings capacity. The opinion goes far beyond *IBP*, however, because whereas Vice Chancellor Strine only broached the Earnings Measurement Problem, the Fiscal Periods Problem, and the Percent Diminution Problem, Vice Chancellor Lamb deals with these much more systematically.

a. The Earnings Measurement Problem Solved

Vice Chancellor Lamb explicitly recognized the Earnings Measurement Problem as an issue to be resolved in applying the Earnings Potential Model. "The issue then becomes," he says, "what benchmark to use in examining changes in the business operations post-signing of the merger agreement—EBITDA or earnings per share."¹⁸²

¹⁷⁸ *Hexion*, 965 A.2d at 721-22.

¹⁷⁹ Huntsman Corp., Agreement and Plan of Merger among Hexion Specialty Chemicals, Inc., Nimbus Merger Sub Inc., and Huntsman Corporation (Form 8-K), at 9-10 exh. 2.1 (July 13, 2007) [hereinafter *Hexion Merger Agreement*].

¹⁸⁰ *Id.* at 54-55. The language used (Hexion's obligation to close was dependent on the condition that "[t]here shall not have occurred . . . any event, change, effect or development that has had or is reasonably expected to have . . . a Company Material Adverse Effect") does not track exactly any of the MAC Expectation Metrics described *supra* in Part I, but it seems to be synonymous with the "is reasonably likely" metric.

¹⁸¹ *Hexion*, 965 A.2d at 738 (quoting *In re IBP, Inc. S'holders Litig.*, 789 A.2d 14, 67 (Del. Ch. 2001)).

¹⁸² *Id.* at 740. Recall that in *IBP* Vice Chancellor Stine used EBIT rather than EBITDA.

He comes down strongly in favor of EBITDA because EPS “is very much a function of the capital structure of a company, reflecting the effects of leverage.”¹⁸³ The Vice Chancellor’s point is that if a company changes its mix of debt and equity financing, its interest expense will change, thus affecting its earnings and so its EPS. By contrast, since calculating EBITDA from earnings involves adding back in interest expense, EBITDA does not vary with the capital structure of the company.¹⁸⁴ Vice Chancellor Lamb does not say it, but an analogous point can be made for taxes. For example, if the company has net operating losses or investment tax credits, then its earnings will increase even though its EBITDA will remain unchanged. The same is true for depreciation and amortization expenses, which, moreover, may not be calculated the same way by all companies.¹⁸⁵ EPS will also reflect extraordinary charges against earnings, including non-cash ones, although EBITDA generally will not.¹⁸⁶ Hence, Vice Chancellor Lamb

There may be cases where using EBIT makes sense. For example, if the company uses high-value capital assets in its business, and these assets wear out quickly and must be replaced frequently, depreciation and amortization will figure more prominently in valuing the business and so EBIT might be a more useful measure of earnings than EBITDA. See *Complaint of Hexion Specialty Chemicals, Inc. at 25, Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715 (Del. Ch. 2008) (Civ. A. No. 3841-VCL) (public version) [hereinafter *Hexion Complaint*] (stating that, “The decline in [Huntsman’s] EBIT is particularly significa[n]t because, since Huntsman uses capital assets in its business, depreciation and amortization expense is a necessary element of its costs and ability to generate revenue.”).

¹⁸³ *Hexion*, 965 A.2d at 740.

¹⁸⁴ Grosser changes to capital structure can do this too, such as share repurchases, stock splits, etc. During the pendency of a merger agreement, effecting such changes would be difficult, however, because such extraordinary transactions would likely be prohibited by the interim covenants in the merger agreement. Nevertheless, as we saw in *IBP*, the fiscal periods compared in determining whether the earnings potential of the company has been substantially impaired can extend back many years prior to the signing of the merger agreement, and such extraordinary transactions could have occurred during such periods. Of course, careful financial analysis will be able to control for such changes. See Jarnagin & Booker, *supra* note 104 (discussing how to calculate earnings per share).

¹⁸⁵ Damodaran notes that “differences in depreciation methods across different companies—some might use straight line while others use accelerated depreciation—can cause differences in operating income or net income but will not affect EBITDA.” ASWATH DAMODARAN, *INVESTMENT VALUATION: TOOLS AND TECHNIQUES FOR DETERMINING THE VALUE OF ANY ASSET* 501 (2d ed. 2002).

¹⁸⁶ In *IBP* discussed *supra* Part II.A.2, *IBP* determined after signing that a business it had bought a few years earlier probably had no value, and so it took an impairment charge against its earnings when it wrote down on its balance sheet the goodwill generated by the acquisition. See *generally* BUSINESS COMBINATIONS, Statement of Fin. Accounting Standards No. 141 (Fin. Accounting Standards Bd. 2001); GOODWILL AND OTHER INTANGIBLE ASSETS, Statement of Fin. Accounting Standards No. 142 (Fin. Accounting Standards Bd. 2001). That charge against earnings, which would clearly be extraordinary, would also have been a non-cash item and so would have no real effect on *IBP*’s earnings potential at all. Vice Chancellor Strine, however, assumes that the charge should be considered in measuring the earnings potential of the company. See *In re IBP, Inc. S’holders Litig.*, 789 A.2d 14, 69 (Del. Ch. 2001). On excluding extraordinary items from EBITDA generally, see PETER A. HUNT, *STRUCTURING MERGERS AND ACQUISITIONS: A GUIDE TO CREATING SHAREHOLDER VALUE* § 6.02[A] n.1 (2d. ed. 2004).

concludes that EBITDA “is a better measure of the operational results of the business,”¹⁸⁷ noting that in the Hexion-Huntsman transaction (as indeed in most business combination transactions), EBITDA was the measure most heavily relied upon by the parties and their financial advisors in valuing the deal.¹⁸⁸

b. The Fiscal Periods Problem Partly Solved

Having resolved the Earnings Measurement Problem, Vice Chancellor Lamb next needed to deal with the Fiscal Periods Problem. He did this, surprisingly, by paying serious attention to the MAC Objects in the MAC Definition—the first time in any reported MAC case that a court has done so. In particular, Vice Chancellor Lamb asserted that the MAC Objects in question—the terms “business,” “financial condition,” and “results of operations”—are technical terms under the federal securities laws. They “are terms of art, to be understood with reference to their meaning in Reg. S-X and Item 7 [of Form 10-K], the ‘Management’s Discussion and Analysis of Financial Condition and Results of Operations’ section of the financial statements public companies are required to file with the SEC.”¹⁸⁹ These provisions, the Vice Chancellor notes, require companies to disclose not only financial information for current fiscal periods but also for comparable periods of the past two years, and that such “results are analyzed by comparing the results in each period with the results in the same period for the prior year (i.e., year-end 2007 results to year-end 2006 results, first-quarter 2005 results to first-quarter 2004 results, and so forth).”¹⁹⁰ Hence, in determining whether a company has been MAC’d, the proper procedure is “to examine each year and quarter and compare it to the prior year’s equivalent period.”¹⁹¹

Now, the Vice Chancellor is certainly right that these terms have a technical meaning under the securities laws; indeed, he has even understated the point. In particular, Regulation S-X, together with the SEC’s Financial Reporting Releases, “sets forth the form and content of and requirements for financial statements required to be filed” under various provisions of the Securities Act of 1933 (the Securities Act), such as registration statements for the sale of securities, and the

¹⁸⁷ *Hexion*, 965 A.2d at 740.

¹⁸⁸ *Id.* Of course, depending on the nature of the business and the accounting principles it employs, other measures such as EBITDAR (earnings before interest, taxes, depreciation, amortization, and rent) or EBITDARM (earnings before interest, taxes, depreciation, amortization, rent, and management fees) may be more appropriate.

¹⁸⁹ *Id.* at 742.

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

Securities Exchange Act of 1934 (the Exchange Act), such as an issuer's annual report on Form 10-K and its quarterly reports on Form 10-Q.¹⁹² Particular rules in Article 3 of Regulation S-X concern the balance sheets (Rule 3-01) and statements of income and cash flows (Rules 3-02 and 3-03) to be included in disclosure documents.

Regulation S-K, on the other hand, "states the requirements applicable to the content of the non-financial portions" of the same kinds of filings under the Securities Act and the Exchange Act.¹⁹³ Various provisions of Regulation S-K relate to the issuer's "business," "financial condition," and "results of operations." For instance, Item 101 (Description of Business) requires a registrant to "[d]escribe the general development of the business of the registrant . . . during the past five years" and for any longer period "if material to an understanding of the general development of the business."¹⁹⁴ Item 301 (Selected Financial Data) requires disclosure "in comparative columnar form of selected financial data of the registrant" for "each of the last five fiscal years" and "[a]ny additional fiscal years necessary to keep the information from being misleading."¹⁹⁵ The instructions to Item 301 state that the purpose of the item is "to supply . . . selected financial data which highlight certain significant trends in a registrant's financial condition and results of operations."¹⁹⁶ Item 303 of Regulation S-K (Management's Discussion and Analysis of Financial Conditions and Results of Operations) requires that the registrant discuss its "financial condition, changes in financial condition and results of operations," including with regard to liquidity, capital resources, results of operations, and off-balance arrangements.¹⁹⁷ The discussion of the registrant's results of operations should "[d]escribe . . . any significant economic changes that materially affected the amount of reported income from continuing operations"¹⁹⁸ and "any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations."¹⁹⁹

Now, by expressly treating the terms "business," "financial condition," "results of operations," etc. used as MAC Objects as technical ones under Regulations S-X and S-K, we make explicit something that had already been implicit in the Earnings Potential Model—that is, a decision to treat the MAC Objects not as individual

¹⁹² Regulation S-X, 17 C.F.R. § 210.1-01(a) (2009).

¹⁹³ Regulation S-K, 17 C.F.R. § 229.10(a) (2009).

¹⁹⁴ *Id.* § 229.101(a).

¹⁹⁵ *Id.* § 229.301(a), (b).

¹⁹⁶ *Id.*, Instruction to Item 301, § 1.

¹⁹⁷ *Id.* § 229.303(a).

¹⁹⁸ *Id.* § 229.303(a)(3)(i).

¹⁹⁹ *Id.* § 229.303(a)(3)(ii).

things each of which could individually be MAC'd but rather collectively as a description of one thing—the earnings potential of the company as understood in accordance with modern finance theory and GAAP, in particular in accordance with the understanding thereof mandated by the federal securities laws. As noted above, such an interpretation was implicit all along because evaluating a company's earnings potential requires considering the company's earnings, either as EBITDA or EPS or in some other way, but all the plausible measures are ones the computation of which presupposes GAAP and the relevant provisions of the federal securities laws, such as Regulations S-X and S-K. In other words, once we commit to using the Earnings Potential Model, we have imported such accounting and disclosure standards into the inquiry, regardless of what items may be expressly listed as MAC Objects. Given the strong reasons for thinking that a commercial counterparty involved in a transaction as complex and sophisticated as a business combination will care primarily about the value of the party, and given the strong reasons in financial theory for understanding the value of a firm as the present value of its future earnings, this holistic interpretation of the MAC Objects as referring collectively to the conventional way of understanding the earnings potential of the party seems irresistible. One of the virtues of the *Hexion* decision is that Vice Chancellor Lamb finally made the interpretation explicit.

It is important to see, however, that although the appeal to Regulations S-X and S-K is a significant advance in interpreting MAC Definitions, it does not settle the Fiscal Periods Problem as simply as Vice Chancellor Lamb supposes. For one thing, the information prepared in accordance with those regulations is generally historical information, i.e., information for the most recently completed fiscal period and certain earlier periods. Although inquiries into the diminution of a party's earnings potential in MAC cases have often involved such comparisons,²⁰⁰ as when fiscal periods completed after the signing but before the closing of an agreement are compared to periods in the more distant past, the more important inquiries have involved comparing completed fiscal periods (whether these be completed before or after signing) to *future periods*, i.e., comparing earnings for present or completed fiscal periods to expected earnings for future periods. Moreover, such comparisons cannot be made mindlessly by, for example, simply comparing earnings estimates for the coming year to earnings figures for the most recently completed year or years. Recall, for example, how Vice Chancellor Strine in *IBP* noted the cyclicity of IBP's business and compared trough years to trough

²⁰⁰ *E.g.*, *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715, 732 (Del. Ch. 2008); *In re IBP, Inc. S'holders Litig.*, 789 A.2d 14, 67 (Del.Ch. 2001).

years.²⁰¹ Had he compared peak-year numbers to trough-year numbers, even if the former immediately succeeded the latter, the result would have been misleading. Similarly, in television and radio broadcasting, election years (especially the years of presidential elections) almost always produce financial results greatly superior to those of non-election years because of added revenues from political advertising.²⁰² For just such reasons, Regulation S-K requires registrants to include in their disclosure “any additional fiscal years necessary to keep the information [disclosed in Item 301 on Selected Financial Data] from being misleading.”²⁰³ Thus, there will always be an element of judgment in determining which fiscal periods to be compare with which, but the judgments will be of the kind routinely made by financial analysts and will often not be controversial.

Finally, although adopting the holistic interpretation of MAC Objects and relying on the standards of Regulations S-X and S-K help significantly in determining whether any two fiscal periods can be meaningfully compared, these moves do little to settle the issue of which of various comparable periods the court should consider in determining whether the party has suffered a MAC. That is, although for any two periods, the standards of Regulations S-X and S-K can help in determining whether comparisons between such periods are meaningful, there will be many pairs of periods that can meaningfully be compared, and the issue of which such pairs should be considered in settling the MAC dispute remains. For example, if the party’s EBITDA for the fiscal year completed during the interim period is only 10% below the EBITDA for the immediately prior year, but analyst estimates for the party’s EBITDA for the coming fiscal year and the next succeeding year are respectively 25% and 50% below the EBITDA for the just completed year, how are the various comparisons to be weighted in determining whether the company has suffered a MAC? These important questions, unfortunately, are not answered by appeal to the standards of Regulations S-X and S-K.

c. The Percent Diminution Problem Still Unsolved

Having adopted a compelling answer to the Earnings Measurement Problem and having made significant progress on the Fiscal Periods Problem, Vice Chancellor Lamb starts comparing EBITDA figures from

²⁰¹ *In re IBP*, 789 A.2d at 67.

²⁰² Douglas A. Ferguson, *The Broadcast Television Networks*, in *MEDIA ECONOMICS: THEORY AND PRACTICE* 155 (Alison Alexander et al. eds., 3d ed. 2004) (advertising revenue cyclical, increasing in years of president elections).

²⁰³ Regulation S-K, 17 C.F.R. § 229.301(b) (2009).

different periods.²⁰⁴ In rapid succession, he compares at least a dozen pairs of periods.²⁰⁵ As indicated in the table below, these comparisons can usefully be divided into comparisons of past periods to past periods (whether twelve months periods to twelve month periods or quarters to quarters) and comparisons of past periods to future periods, using various estimates of EBITDA for such future periods:

Table 8. Changes in EBITDA for Various Fiscal Periods Compared in *Hexion v. Huntsman*²⁰⁶

<u>Earlier Period</u>	<u>Later Period</u>	<u>Percent Change</u>
<i>Comparisons of Past Periods to Past Periods (12 Months):</i>		
FY2006	FY2007	-3%
TTM FY2007Q2	TTM FY2008Q2	-6%
<i>Comparisons of Past Periods to Past Periods (Quarters):</i>		
Q2 to Q3		
FY2007Q2	FY2007Q3	-3%
FY2006Q2	FY2006Q3	-26%
FY2005Q2	FY2005Q3	-12%
Q3 to Q4		
FY2007Q3	FY2007Q4	-19%
FY2006Q3	FY2006Q4	-21%
FY2005Q3	FY2005Q4	-43%
<i>Comparisons of Past Periods to Future Periods (12 Months):</i>		
FY2007	FY2008 (Huntsman Projections)	-7%
FY2007	FY2008 (Hexion Projections)	-11%
FY2006	FY2008 (Hexion Projections)	-15%
FY2006	FY2009 (Analyst Estimates)	-4%

As to the comparisons of past periods to past periods, Vice Chancellor Lamb compared FY2006 (the year immediately prior to the year in which the deal was struck) to FY2007 (the year, completed by the time of the litigation, in the middle of which the deal was struck),

²⁰⁴ See the discussion in Miller, *supra* note 100, at 23-24.

²⁰⁵ *Hexion*, 965 A.2d at 742-43.

²⁰⁶ The percentages presented in the table are those computed by the court in *Hexion*, 965 A.2d at 742-43, including nn.74 & 76. The Vice Chancellor says in the text that the diminution between Huntsman's actual FY2007 and Hexion's projections for Huntsman's FY2008 is 11%, but he then computes the same number as 12% in footnote 76. I have incorporated in the table the number the Vice Chancellor gives in the text.

and he notes that Huntsman's EBITDA for FY2007 was only 3% below that for FY2006. Turning to the last two quarters of FY2007 (i.e., the six month period immediately following the signing of the merger agreement), the Vice Chancellor notes that, although Huntsman's EBITDA declined from FY2007Q2 to FY2007Q3 and from FY2007Q3 to FY2007Q4, the declines (3% and 19%) were not as sharp as declines in the analogous periods in FY2006 (26% and 21%) and FY2005 (12% and 43%). Hence, although the company's EBITDA was declining quarter-to-quarter in late FY2007 after the deal was signed, such declines were consistent with past years and so did not represent a change—much less a material adverse change—in the company's earnings potential. That is, in an echo of Vice Chancellor Strine's treatment of troughs in the beef cycle in *IBP*, Vice Chancellor Lamb held that, since the natural cyclicity of Huntsman's business resulted in EBITDA dropping off in the third and fourth quarters, such a drop off in FY2007 did not count as a MAC. Finally, the Vice Chancellor compared the trailing 12-month period leading up to the signing of the merger agreement (TTM FY2007Q2) to the trailing 12-month period leading up to time Hexion declared a MAC and filed the lawsuit (TTM FY2008Q2) and observed only a 6% decline in EBITDA.²⁰⁷ Neither this decline, nor the 3% decline from FY2006 to FY2007, the Vice Chancellor held, amounted to a MAC.²⁰⁸

As to the comparisons of past periods to future periods, Vice Chancellor Lamb compared various EBITDA projections for the company for FY2008 and FY2009 to its historical EBITDA in FY2006 and FY2007.²⁰⁹ As is apparent from the table, the comparisons Vice Chancellor Lamb made are not entirely systematic (e.g., analyst estimates for FY2008 are omitted). Of the comparisons made, however, none showed a decline in EBITDA of more than 15%, and that comparison was based on the Hexion's projections, which were likely biased in its favor. Averaging the percent declines in EBITDA over the various projections (by Hexion, Huntsman, and industry analysts) and

²⁰⁷ Why the Vice Chancellor did not separately compare FY2007Q1 to FY2008Q1 and FY2007Q2 to FY2008Q2 is unclear.

²⁰⁸ *Hexion*, 965 A.2d at 742.

²⁰⁹ Although the MAC Definition in the Hexion-Huntsman merger agreement did not contain a MAC Exception related to failures to meet financial projections or earnings estimates by industry analysts, Hexion Merger Agreement, *supra* note 179, even if it had, Vice Chancellor Lamb's reliance on such projections and estimates would *not* have replicated the court's mistake in *Genesco*. In that case, the court improperly regarded as evidence of a MAC the failure of the company to meet, during the interim period, projections made pre-signing related to fiscal periods completed during the interim period. In *Hexion* as in *IBP*, the court inquired not whether the company in fact met pre-signing projections covering the interim period but whether projections or estimates of earnings *for future, post-closing* periods were consistent with earnings in various recently completed periods. The question was not whether the company had performed during the interim period as had been expected but whether it was currently expected that the company would perform as well in the future as it had in the past.

interpreting the numbers in Table 8 about as much as they will bear, it would seem that Vice Chancellor Lamb implicitly held that a 10% decline in EBITDA was insufficient to MAC the company.²¹⁰ Nevertheless, just as in *IBP* and *Frontier Oil*, the court in *Hexion* does not even begin to explain which comparisons are important, how various comparisons ought to be weighted, or why a certain percentage decline in earnings potential is or is not a MAC. Various comparisons are made, percentages are computed, and the conclusion is announced, but no clear connections among the comparisons relied on or between certain percent diminutions and the existence of MAC are ever explained.

B. *Unresolved Problems in the Earnings Potential Model*

This review of the reported MAC litigations supports certain important conclusions. First, the primary issue in MAC disputes has been whether an admittedly adverse change in the party's business is of sufficient magnitude to be material within the meaning of the MAC Definition. Second, since MAC Definitions generally do not define materiality, courts have had to supply their own theory of materiality—which I have called the Earnings Potential Model—and this theory makes the outcome of cases dependent on the percent diminution in the company's EBITDA across various fiscal periods.

Third, under the Earnings Potential Model, the major parts of the typical MAC Definition have had quite different fates. The list of MAC Objects, which on its face seems to be an enumeration of different items each of which could be MAC'd independently of the others, has been interpreted holistically to be a more-or-less elaborate description of one single thing—the earnings potential of the company as understood in contemporary financial theory and as disclosed in its financial statements prepared in accordance with GAAP and the disclosure standards of the federal securities laws. Given the difficulties associated with interpreting the list of MAC Objects as distinct, independently MAC-able items, as well as the strong justifications for

²¹⁰ In arguing that Huntsman had suffered a MAC, Hexion also referred to factors other than a decline in Huntsman's actual or expected EBITDA, including increased debt levels relative to the time the merger agreement was signed, 965 A.2d at 743-44, and alleged poor performance at certain of Huntsman's business segments, *id.* at 744-46. Vice Chancellor Lamb dismissed the first argument because in valuing the deal, Hexion had assumed Huntsman would have debt levels consistent with those Huntsman actually eventually had. *Id.* at 744. As to the second argument, Vice Chancellor Lamb concluded that, if the earnings capacity of Huntsman as a whole had not been impaired (which he held it had not, based on the EBITDA analysis described in the text), then any adverse changes limited to particular business segments *a fortiori* could not amount to a MAC on the whole company. *Id.* at 745.

relying on contemporary financial theory, this interpretation seems entirely right. As to MAC Expectation Metrics, however, courts have almost completely ignored them, and for this there is no justification at all. However MACs may be understood, whether in the Earnings Potential Model or otherwise, it is possible to give effect to MAC Expectation Metrics by framing the issue as whether the company in fact has been MAC'd, whether it is reasonable to think the company has been MAC'd, whether it is the most reasonable view that the company has been MAC'd, etc. Courts ought to have done this and have simply failed to do so. Finally, as to the MAC Exceptions, since in the most important cases courts have found that the company had not been MAC'd, courts have generally not faced the question of whether a MAC resulted from risks shifted to the counterparty via MAC Exceptions. In other words, they have not generally had to determine the causes of a MAC. If they had, however, they would have found that there is little in the Earnings Potential Model that could have helped them in determining the cause of a diminution in the earnings potential of a company and thus the cause of the MAC. The model could likely be elaborated to deal with the causation issue, but thus far this has not occurred.

Furthermore, the Earnings Potential Model has generated certain significant, recurring issues that run through the case law. First, the Earnings Measurement Problem seems after *Hexion* to have been definitively resolved in favor of measuring earnings potential by EBITDA. No doubt there are some unusual businesses for which other measures of earnings potential are better, and if a case arises in which such a company has allegedly suffered a MAC, the Earnings Potential Model could easily be adapted to use some measure other than EBITDA. Generally speaking, however, EBITDA will be the appropriate measure to use in applying the model. Second, significant progress was made on the Fiscal Periods Problem in *Hexion*. By appealing explicitly to Regulations S-X and S-K, the Earnings Potential Model makes clear that any comparisons between fiscal periods made in applying the Earnings Potential Model should be periods regarded as comparable under such regulations. Nevertheless, although the standards of Regulations S-X and S-K can help determine whether any two periods are meaningfully comparable, such regulations tell us nothing about which pairs of meaningfully comparable periods ought to be compared to determine whether the company has been MAC'd. In practice, courts have made many different comparisons but have not seriously attempted to explain which comparisons are important and why. Nor have courts explained how MAC disputes should be resolved if some comparisons show a substantial change in EBITDA and others do not. That is, courts have had virtually nothing to say about how the

results of various different comparisons should be weighted in reaching a final decision as to whether the company has been MAC'd. The Fiscal Periods Problem, therefore, has not been resolved satisfactorily.

Finally, courts employing the Earnings Potential Model have consistently failed to resolve the Percent Diminution Problem. Although courts have said or, more often, implied that particular percent diminutions in EBITDA will or will not count as MACs, nevertheless no court has ever attempted to explain, even in a qualitative way, what level of diminution is needed to make a MAC.²¹¹ Courts have settled such issues by judicial intuition, not by financial theory or in any other principled way.

The move to a quantitative interpretation of MACs in the Earnings Potential Model, along with the invocation of GAAP and Regulations S-X and S-K, gives an air of financial sophistication and objectivity to MAC cases. At the most critical steps in the analysis, however—that is, in determining which meaningfully comparable fiscal periods to compare and what percent diminutions in EBITDA will make a MAC—the Earnings Potential Model has virtually nothing to say. The Earnings Potential Model, therefore, ultimately fails as a tool of principled judicial decision-making. Courts should thus discard it if there is another principled, practical interpretative theory that they can use to resolve MAC disputes. In the next Part, I shall show that there is indeed such a theory.

III. THE EFFICIENT INTERPRETATION OF MATERIALITY AND THE CONTINUING PROFITABILITY MODEL

The most attractive aspect of the Earnings Potential Model was that, by concentrating on the earnings of the affected party, it concentrated on what, according to modern financial theory, a rational, value-maximizing counterparty would care about. This aspect of the model should be retained. Furthermore, any inquiry about earnings must measure earnings somehow or other, and, for the reasons given above, the Earnings Potential Model's reliance on EBITDA (and so on GAAP and the standards embodied in Regulations S-X and S-K) should be retained as well, at least unless special factors in a particular case suggest that some other measure of earnings would be more accurate. To succeed where the Earnings Potential Model has failed, however, a

²¹¹ See, e.g., *In re IBP, Inc. S'holders Litig.*, 789 A.2d 14, 65 (Del. Ch. 2001) (stating that determining whether a party has suffered a MAC "requires the court to engage in an exercise that is quite imprecise"). Indeed, the attitude among some commentators seems to be that no principled resolution is even possible. See, e.g., Howard, *supra* note 1, at 237 ("[T]here is no generally agreed quantitative or qualitative definition of materiality.").

competing model must also be able to (a) limit in a principled way the number of comparisons to be made, preferably to just one in order to avoid the problem of how to deal with weighting the results of multiple comparisons, and (b) determine in a principled and economically rational way whether a given diminution in earnings is or is not—in the language of the MAC definition—*material*.

We can make progress here by temporarily putting aside these questions and asking instead why, *as a matter of positive economics*, MAC Definitions allocate risk between the parties on the basis of the materiality (i.e., the magnitude) of the adverse change. That is, since they are intensely negotiated by sophisticated commercial parties, we may safely assume that business combination agreements *in fact* allocate risk efficiently, and since such agreements allocate to parties the risk of *material* adverse changes (other than those falling into MAC Exceptions, if any) and to counterparties the risk of *immaterial* adverse changes, *such allocations must be efficient*. If we can identify the efficiency rationales for allocating risks in this way, we may be able to determine the point at which, from an efficiency perspective, the material should be divided from the immaterial. In particular, we should say that an adverse change is material if the efficiency rationale for assigning it to the party outweighs the efficiency rationale for assigning it to the counterparty, and an adverse change is immaterial if the efficiency rationale for assigning it to the counterparty outweighs the efficiency rationale for assigning it to the party. In this way, we can draw the line between the material and the immaterial and so perhaps find a way to incorporate the distinction between these into a model that courts can use to settle MAC disputes. To pursue this strategy, however, we must begin by identifying the relevant efficiency rationales for allocating material risks to parties and immaterial risks to counterparties.

A. *Efficiency Rationales for Allocating Risks by Materiality*

As explained in Part I.B, MAC Definitions typically shift to counterparties via MAC Exceptions certain systematic risks, indicator risks, and agreement risks. I have explained elsewhere why such risks are often more efficiently borne by counterparties,²¹² and I have even suggested above that there is a sound basis for thinking that, even when a particular MAC Definition does not expressly allocate such a risk to the counterparty, the MAC Definition should be interpreted as if it

²¹² Miller, *supra* note 1, at 2070-89.

did.²¹³ The remaining risks, the risks generally borne by parties themselves, I have called *business risks*.²¹⁴ These are the risks associated with the ordinary business operations of the party—the kinds of negative events that, in the ordinary course of operating the business, can be expected to occur from time to time, including events that are very improbable.²¹⁵ Examples include many of the adverse changes that figured in MAC litigations, such as the loss of important customers or sales due to competitive pressures,²¹⁶ large tort liabilities arising from the company's operations,²¹⁷ problems rolling out new information and accounting systems,²¹⁸ product defects along with resulting recalls and products liability claims,²¹⁹ or unexpected increases in the costs of inputs not affecting the company's competitors.²²⁰ Likewise, price cutting by competitors that reduces margins in relevant markets, infringements on key pieces of intellectual property, technological changes that make the party's products obsolete or less valuable to consumers, and shifts in consumer tastes and fashions²²¹ are all business risks as I am using the term. Thus, since MAC Definitions often shift all systematic, indicator, and agreement risks to counterparties via MAC Exceptions, it is primarily with respect to business risks that the distinction between the material and the immaterial is important.²²²

1. The Efficient Allocation of Material Business Risks

Leaving aside for a moment the distinction between material and immaterial business risks, we should have little trouble understanding why MAC Definitions typically allocate business risks to the party itself rather than to the counterparty. Many business risks are preventable at a cost less than the expected cost of the loss if the risk materializes.

²¹³ See *supra* Part II.A.1.

²¹⁴ Miller, *supra* note 1, at 2089-91.

²¹⁵ *Id.*

²¹⁶ Pittsburgh Coke & Chem. Co. v. Bollo, 421 F. Supp. 908 (E.D.N.Y. 1976).

²¹⁷ Frontier Oil Corp. v. Holly Corp., Civ. A. No. 20502, 2005 WL 1039027 (Del. Ch. Apr. 29, 2005).

²¹⁸ Complaint of Valassis Communications, Inc., Valassis Commc'ns, Inc. v. ADVO, Inc., Civ. A. No. 2383-N (Del. Ch. Ct. Sept. 15, 2006) (second redacted-public version).

²¹⁹ Meier & Sorkin, *supra* note 48.

²²⁰ See *Hexion* Complaint, *supra* 182, at 29-33. Hexion argued that Huntsman, unlike most of its competitors in producing titanium dioxide, used a process involving sulfuric acid; when the price of sulfur increased dramatically, Hexion said, Huntsman was placed at a substantial competitive disadvantage in relation to companies that manufactured the compound without using sulfuric acid. *Id.*

²²¹ Miller, *supra* note 1, at 2090.

²²² Nevertheless, the argument given below to explain why it is efficient to shift immaterial risks to the counterparty applies as well to all immaterial risks, including systematic, indicator, and agreement risks, and not just to immaterial business risks.

When this is the case, the efficient solution is to take precautions to forestall the risk. For most preventable business risks, the party will have a clear cost advantage over the counterparty in taking precautions. The party, in other words, will be the cheaper cost avoider of the risk.²²³ This is obvious, for example, when the risk involved is, say, the risk that the party's products will be defective and injure consumers.

Other business risks, while not preventable, will be such that the party has superior information about them, either as to the probability of their materialization, the magnitude of the loss if they materialize, or both. If so, the party will likely be the superior risk bearer for such risks.²²⁴ For instance, knowing better than the counterparty the probability and magnitude of the risk, the party can better estimate the expected loss from the risk. If, using its superior information, the party estimates the expected cost of the risk to be less than the counterparty estimates it to be, the party can bear the risk at a lower expected cost than can the counterparty.²²⁵

For these and related reasons, parties can almost always bear their own business risks more efficiently than can counterparties, and so the typical allocation of such risks to parties rather than counterparties is efficient. The difficult question, therefore, is why there should be any exceptions to this rule. In other words, the same reasons that make it efficient for parties to bear their *material* business risks should, one might think, make it efficient for parties to bear their *immaterial* business risks as well. The losses resulting from immaterial risks may be small in the context of the deal, but the party rather than the counterparty is still very likely to be the cheaper cost avoider or superior risk bearer of the relevant risk. Nevertheless, MAC Definitions universally shift *immaterial* risks, including the party's *immaterial* business risks, to the counterparty. But since we have independent reasons for believing that business combination agreements are efficient, shifting a party's immaterial business risks to the counterparty must be efficient, even if the efficiency rationale is unusual. The next step in the argument is to identify this rationale.

²²³ Miller, *supra* note 1, at 2051 n.165, 2090-91.

²²⁴ Miller, *supra* note 1, at 2051 n.166, 2090-91; *see also* Posner & Rosenfield, *supra* note 16; POSNER, *supra* note 15, at 105-08.

²²⁵ Miller, *supra* note 1, at 2051 n.166. *See generally* RONALD J. GILSON & BERNARD S. BLACK, *THE LAW AND FINANCE OF CORPORATE ACQUISITIONS* 1565-67 (2d. ed. 1995); POSNER, *supra* note 15, at 111-13 (discussing the economic function of representations generally); Galil, *supra* note 20, at 848-49.

2. The Efficient Allocation of Immaterial Business Risks

Recall that the transaction memorialized in the business combination agreement was efficient when the agreement was signed. That is, two rational, value-maximizing parties voluntarily entered into the agreement, and so, at least at the time of signing, both parties must have believed themselves to have been made better off by the deal—the counterparty by owning the party's business and the party by receiving the purchase price.²²⁶ If, between signing and closing, the party's business is *immaterially* adversely changed, then the counterparty may not realize exactly the whole benefit for which it hoped, but the counterparty is still very likely to be made better off by the transaction. That is, provided that the difference between the counterparty's reserve price for the deal and the agreed upon purchase price is greater than the cost arising from the materialization of the risk, then that materialization will reduce the benefit the counterparty receives from the deal but will not wholly eliminate it. Only if the deal price is already almost equal to the counterparty's reserve price will the materialization of relatively small magnitude risks make the transaction unprofitable for the counterparty. As to the party itself, if, after the materialization of the risk, it still receives the full purchase price,²²⁷ it too is still being made better off by the transaction. Indeed, since the party's market value declines when the risk materializes, the transaction is likely *even more* attractive to the party than it was at signing. The transaction, therefore, is still efficient. Both parties, therefore, and even society as a whole, should want the transaction to be consummated on the original terms.

If the risk of immaterial adverse changes in the party's business were allocated to the party rather than the counterparty, however, the counterparty could credibly threaten to cancel the deal if the party's business was impaired between signing and closing, no matter how slightly. The counterparty might do this not because the transaction had become unattractive for it, much less because the transaction had become inefficient as a whole (neither would usually be the case), but opportunistically—i.e., in the hopes of renegotiating the purchase price downwards and obtaining for itself a larger share of the joint surplus created by the transaction.

²²⁶ See Miller, *supra* note 1, at 2052-53, 2065-69 (recognizing always that this price may come in the form of stock in the combined business).

²²⁷ In a stock-for-stock deal, although the purchase price received by the party's shareholders represents an interest in the combined company (and so in part in the party's own declining business), the purchase price will still be attractive to the target provided that the counterparty's value has not declined even more than the party's own value has declined.

Now, if MAC clauses assigned immaterial business risks to parties rather than counterparties, such a strategy would likely succeed. For, when a counterparty declares a MAC and cancels a deal, the jilted party is likely to be publicly perceived as damaged goods. It is thus immediately placed at a competitive disadvantage in all the markets in which it competes.²²⁸ For example, worried that the company may not survive, employees may look for alternative employment, with the most valuable employees being the most mobile. Especially if long-term relationships are important in the industry, customers may transfer business to other suppliers whose future is more secure. Creditors will demand better terms. Rating agencies may downgrade the company and its debt securities, thus increasing its cost of debt capital. Investors will sell the company's shares, depressing its stock price, and thus increasing its costs of equity capital. In short, being declared MAC'd can trigger a negative cascade of effects that can damage a party far beyond whatever caused the underlying adverse change.²²⁹ Therefore, a credible threat to declare a MAC is extremely potent. If a merger agreement allowed a counterparty to declare a MAC for even the smallest adverse changes in the party's business, the counterparty would have tremendous leverage over the party in renegotiating the terms of the agreement. In many cases, since the alternative would sometimes be bankruptcy,²³⁰ the party may even be forced to accept a price that it would never have accepted at the time the original agreement was

²²⁸ Miller, *supra* note 1, at 2075-82; Toub, *supra* note 21, at 858 (stating that a target company "cannot afford the risk of termination based on the occurrence of a MAC event"); Danny Forston, *Hard Times Call for MAC Attack*, DAILY DEAL, Apr. 17, 2001, available at <http://www.thedeal.com/> (stating that declaring a MAC on a merger partner "can stigmatize the spurned company"); Joshua Jaffe, *Jilted Deal Partners Can Face Ruin*, DAILY DEAL, Apr. 5, 2000, available at <http://www.thedeal.com/> (collapse of merger because of MAC can decimate high technology companies).

²²⁹ In *Hexion v. Huntsman*, discussed *supra* in Part II.A.5, Hexion declared a MAC on Huntsman, and Huntsman, in denying it was MAC'd, also asserted, "By creating the false impression that Huntsman was in financial difficulty and did not have a sustainable business, [Hexion has] severely injured Huntsman, wrongfully impaired the value of the company, and unnecessarily disrupted Huntsman's relationships with its employees, customers, and suppliers." Answer of Huntsman Corp. at 35, *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715 (Del. Ch. 2008) (Civ. A. No. 3841-VCL) (redacted-public version); see also Memorandum of Law in Support of Defendant's Motion to Expedite Proceedings at 14, *Hexion*, 965 A.2d 715 (Civ. A. No. 3841-VCL) ("[Because of Hexion's declaring a MAC on Huntsman, pending the resolution of the dispute,] the business and affairs of Huntsman are being subject to intolerable uncertainty [that] affects not only Huntsman and its stockholders, but also its employees, customers, suppliers, and other persons or entities having or doing business with Huntsman. The longer that this uncertainty about the Merger continues, the more likely it is that Huntsman's business will suffer—for example, by losing some of those employees, customers, and suppliers."); Reply Brief in Support of Defendant's Motion to Expedite Proceedings at 12, *Hexion*, 965 A.2d 715 (Civ. A. No. 3841-VCL) ("Huntsman has already lost key employees on account of the pendency of the Merger.").

²³⁰ Nathan et al., *supra* note 99, at 181 (noting when merger agreement is terminated because a party has suffered a MAC, the party may have to file for bankruptcy).

struck, even allowing for the subsequent adverse change. If so, the result would be that the transaction as a whole has become inefficient—that is, the business would be transferred from persons who value it more to persons who value it less.

Moreover, this scenario would play out regularly. Since the delay between signing and closing in public-company transactions is usually considerable,²³¹ the probability of some small adverse change occurring in the party's business is very high. Hence, an opportunistic counterparty would very often be able to gin up an argument that the party had been adversely changed and thus that the counterparty was entitled to cancel the deal. Parties would thus routinely find themselves renegotiating their merger agreements from a position of extreme weakness.

But, assuming that the original agreement was efficient, and assuming too that the adverse change in the party's business was small (i.e., "immaterial" in the language of the agreement and, more precisely according to the analysis above, of magnitude less than the difference between the counterparty's reserve price and the deal price), then despite the adverse change, the counterparty would still be made better off by completing the transaction on the original terms. Any attempt by the counterparty to renegotiate the deal, therefore, would be purely opportunistic; it is, in fact, a form of rent-seeking.²³² That is, the counterparty would be investing resources in doing nothing more than transferring to itself some of the joint surplus of the transaction that had previously gone to the party. Rent-seeking, of course, is pure inefficiency; it consumes real resources without producing any net benefit to society. It is perhaps not surprising, therefore, that when counterparties have declared MACs on parties whom courts have subsequently found not to have been MAC'd, the courts have often also found that the counterparties were behaving opportunistically. At least the courts seemed to think that such was case, for example, in both *IBP* and *Hexion*.²³³

The inefficiency that would result from counterparties renegotiating deals that are still profitable for them on the original terms can be wholly prevented, however, by assigning the risk of small

²³¹ See *supra* Part I.A.

²³² The term derives from Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291 (1974). See generally THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 315-22 (Peter Newman ed., 1998).

²³³ The exception is *Frontier Oil*, but although Holly declared a MAC on Frontier and although the court ultimately found that Frontier had not been MAC'd, it is clear on the facts of that case that the bad behavior began with Frontier. Frontier, apparently on the basis of shockingly bad legal advice, breached the agreement first by wrongfully claiming that Holly had repudiated it. Only in defending itself against this meritless breach-of-contract claim did Holly assert that Frontier had been MAC'd. See generally *Frontier Oil Corp. v. Holly Corp.*, Civ. A. No. 20502, 2005 WL 1039027 (Del. Ch. Apr. 29, 2005).

adverse changes in the party's business to the counterparty. With such risks assigned to the counterparty, the counterparty cannot cancel the deal if the party's business is adversely affected but only slightly so. If the contract allocates the risk of *immaterial* adverse changes to the counterparty, then the counterparty's threat to declare a MAC on the basis of trivial adverse changes in the party's business would not be credible and so would not exact any concessions from the party. Since such incredible threats are costly to make (especially in terms of reputation costs) and unlikely to produce any benefits, the counterparty will likely never make any such threats and will not seek to renegotiate the deal. Hence, the transaction will close on the original (and still efficient) terms—which is the efficient result from a societal point of view. For these reasons, the counterparty is the more efficient bearer of the party's immaterial business risks.²³⁴

B. *The Efficient Border Between Materiality and Immateriality*

We have thus seen that (a) business risks are efficiently allocated to parties rather than counterparties because parties are almost always the cheaper cost avoiders or superior risk bearers of such risks, but (b) for immaterial risks (whether business risks or any other kind), the danger that counterparties would use the materialization of such a risk to engage in opportunism and rent-seeking is so great that it becomes efficient to shift these risks to the counterparty and so forestall such inefficient behavior.

This allows us to identify the efficient dividing line between immaterial and material business risks. In essence, that line lies at the point that the loss from a materializing business risk is so great that the efficiency rationale for assigning the risk to the counterparty is outweighed by the rationale for assigning it to the party: that is, the efficiency captured by assigning the risk to the cheaper cost avoider or superior risk bearer is greater than the efficiency captured by forestalling inefficient, rent-seeking renegotiation. Now, in particular, in arguing for the efficiency of allocating immaterial business risks to

²³⁴ By assigning immaterial business risks to the counterparty, the party's incentive to prevent immaterial but preventable business risks is eliminated, and if the party did not for other reasons take steps to prevent such risks, the resulting losses would be genuine inefficiencies that would have to be balanced against the efficiency gained in forestalling opportunistic renegotiation by the counterparty. The inefficiency thus introduced, however, is likely to be small: we are considering, after all, only *immaterial* business risks, i.e., risks the materialization of which result in only small losses of value. Moreover, as explained at length in Miller, *supra* note 1, at 2038-39, 2062-64, the interim covenants typically included in merger agreements give parties strong incentives to take steps to preserve the value of the business even apart from the incentive effect of MAC clauses.

counterparties, it was essential to the argument that, even after the materialization of such risks, the transaction still had value for the counterparty—that is, the counterparty still valued the deal more than the purchase price. That was how we knew that renegotiating the deal was inefficient and that the transaction ought still to close on its original terms. If the materialization of the risk had made the transaction less valuable to the counterparty than the purchase price, then this argument would fail, and the efficiency rationales that normally justify allocating business risks to parties rather than counterparties would support allocating the risk in question to the party itself. Hence, as alluded to above, a risk should be regarded as material if, but only if, the materialization of the risk imposes a cost greater than the difference between the counterparty's reserve price and the purchase price in the deal. Put another way, the efficient dividing line between material risks and immaterial risks lies at the point *where the materialization of the risk reduces the value of the transaction to the counterparty below the purchase price the counterparty has agreed to pay.*

This should seem intuitively right. For, *ex ante*, a rational, value-maximizing counterparty willing to purchase the company for the agreed upon purchase price would likely agree to bear the risk that the company may be damaged or impaired at closing, provided that the transaction was still valuable for it. By assuming this risk, it creates an efficiency for the party, who is relieved of the risk that the counterparty might behave strategically by declaring a MAC for a materializing risk that does not reduce the value of the party below the point at which the deal is profitable for the counterparty. A rational, value-maximizing party will recognize that it is being relieved of this risk and be willing to adjust the purchase price downward accordingly in exchange. On the other hand, it seems very unlikely that a rational, value-maximizing counterparty would be willing to assume some of the business risk²³⁵ that the party would be reduced in value to the point that the deal had negative value for the counterparty at the agreed upon purchase price. Given the nature of that risk (that is, that it is a *business risk* peculiar to the party, as opposed to, for instance, a systematic risk), the party is very likely the efficient bearer of the risk. Hence, a rational, value-maximizing counterparty would agree to bear this risk only in exchange for a reduction in the purchase price that would exceed the cost to the party of bearing the risk itself. A rational, value-maximizing party

²³⁵ Recall that systematic, indicator, and agreement risks are generally allocated to counterparties under MAC Exceptions, but that there are special efficiency rationales for this unrelated to our present discussion. See Miller, *supra* note 1, at 2073-89. Note too that, as argued in *id.* at 2082-89, the materialization of indicator and agreement risks are very unlikely to MAC the party, i.e., are unlikely to be material. In the terms of the present discussion, they are very unlikely to reduce the value of the party to the point that the transaction becomes inefficient for the counterparty.

would thus agree to bear the risk itself and obtain a higher purchase price from the counterparty. The result is just as the argument above suggests: if the materialization of a risk reduces the value of the deal for the counterparty so much that, at the agreed upon purchase price, the deal comes to have negative value for the counterparty, then the risk will be allocated to the party; but if the materialization of the risk reduces the value of the deal to the counterparty by a lesser amount so that deal is still profitable for the counterparty at the agreed upon purchase price, then the risk will be allocated to the counterparty. This gives us a consistent, principled, economically rational interpretation of the distinction between *material* and *immaterial* in the definition of *material adverse change* as used in business combination agreements.

C. *The Continuing Profitability Model*

So the problem becomes to construct a model of MAC clauses that distinguishes between those adverse changes in the condition of the party that leave the underlying transaction profitable for the counterparty and those adverse changes that do not. This involves comparing the value of the equity of the adversely affected party—i.e., its value after the alleged MAC—and the purchase price in the transaction. The latter of these is easily ascertained. The problem is finding an objective, feasible way for a court to value what the counterparty gets for the purchase price—i.e., the equity of the allegedly MAC'd company.

Now, the Earnings Potential Model was clearly right in assuming that the value of a company depends on the value of its future earnings.²³⁶ Indeed, one of the most commonly used methods of computing the value of a business, both among academic financial economists²³⁷ and among practicing investment bankers,²³⁸ involves

²³⁶ For example, in *Hexion*, Vice Chancellor Lamb says that “the expected future performance of the target company is . . . relevant to a material adverse effect analysis” because, according to “the basic proposition of corporate finance,” “the value of a company is determined by the present value of its future cash flows.” *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715, 742 n.75 (Del. Ch. 2008).

²³⁷ *E.g.*, DAMODARAN, *supra* note 153, at 193 (“In the cost of capital approach, the value of the firm is obtained by discounting the free cash flow to the firm (FCFF) at the weighted average cost of capital.”); DAMODARAN, *supra* note 185, at 382-422; VERNIMMEN ET AL., *supra* note 153, at 813-43.

²³⁸ In real-world transactions, bankers invariably use several different kinds of models, but a discounted cash-flow model of the kind described in the text almost always figures prominently among them. The section of virtually any merger proxy describing the valuation studies employed by the company’s investment bankers demonstrates this point. *E.g.*, Anheuser-Busch Cos., Proxy Statement (Amendment No. 2 to Schedule 14A), at 34-35 (Oct. 2, 2008) (discounted cash-flow analysis of Anheuser-Busch by Goldman Sachs & Co.); *id.* at 41 (same by Citigroup Global Markets, Inc.). For academic commentary thereon, see Charles W. Calomiris & Donna

discounting the future EBITDA²³⁹ of the firm at the weighted average cost of capital (WACC)²⁴⁰ for the business.²⁴¹ The use of such valuation models is so common that it is well-nigh inconceivable²⁴² that public companies could have entered a merger agreement without performing and relying on such a valuation study or some similar one,²⁴³ and in the most important modern MAC cases the counterparties did indeed use such models to value the parties.²⁴⁴ Thus, in a great majority of cases, at the time the deal was signed, the counterparty must have believed that the value of the party's equity—that is, the party's expected future EBITDA, discounted to present value at the party's WACC (minus the present value of its net debt, i.e., the present value of its total debt less its cash and marketable securities)²⁴⁵—exceeded the purchase price;

M. Hitscherich, *Banker Fees and Acquisition Premia for Targets in Cash Tender Offers: Challenges to Popular Wisdom on Banker Conflicts*, 4 J. EMPIRICAL LEGAL STUD. 909 (2007); Steven M. Davidoff, *Fairness Opinions*, 55 AM. U. L. REV. 1557 (2006).

²³⁹ Sometimes academics and bankers speak of discounting the “free cash flows” of the firm but the meaning is often the same, or close to the same, as EBITDA. Thus, Damodaran says, “The cash flows discounted are the cash flows to the firm, computed as if the firm had no debt and no tax benefits from interest expense.” DAMODARAN, *supra* note 153, at 193. See *infra* note 243 on other measures of free cash flow.

²⁴⁰ The appropriate WACC is the WACC of the *party*, not the counterparty. The opposite view is a mistake because:

[It] fails to take into account the fundamental investment principle that it is not who raises the money that determines the cost of equity as much as what the money is raised for. The same firm will face a higher cost of equity for funds raised to finance riskier projects and a lower cost of equity to finance safer projects.

DAMODARAN, *supra* note 185, at 712-13.

²⁴¹ *E.g.*, *id.* at 382-422; DAMODARAN, *supra* note 153, at 193-211; VERNIMMEN ET AL., *supra* note 153, at 813-43.

²⁴² In one account of corporate history, boards always pay for such studies because, in *Smith v. Van Gorkom*, 488 A.2d 858 (Del. 1985), the Delaware Supreme Court held, or almost held, failing to get one was a breach of the board's duty of care. See, e.g., Daniel R. Fischel, *The Business Judgment Rule and the Trans Union Case*, 40 BUS. L. 1437 (1985).

²⁴³ The caveat about similar studies is necessary because, although valuation studies based on the present value of future EBITDA are very common, there are technically distinct valuations that bankers sometimes use, such as studies based on the present value of future EBIT, NOPAT (net operating profit after taxes), or some other measure of cash flow, as well as valuation studies based on the discounted value of expected future dividends. See generally DAMODARAN, *supra* note 153, at 157-92; VERNIMMEN ET AL., *supra* note 153, at 813-43. Despite their technical differences, these are all variations on a theme, and in theory at least they should all yield the same value for the equity of the firm. Which method to use in which case depends on the relative certainty of various sources of information. For example, the exact model suggested in the text has been crafted to be as easy to apply as possible for a *court* in the context of a MAC dispute.

²⁴⁴ *In re IBP, Inc. S'holders Litig.*, 789 A.2d 14, 70 (Del. Ch. 2001) (referring to Merrill Lynch's valuation studies of IBP); *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715, 725, 727 (Del. Ch. 2008) (referring to deal models for Hexion-Huntsman transaction prepared by Apollo, the corporate parent of Hexion).

²⁴⁵ There are important technical reasons for subtracting the present value of the party's debt and adding the value of its cash and marketable securities. To wit, the model described in the text is based on the firm's EBITDA, i.e., its operating income *before* interest, income, and expense. Thus, the model includes the value of the firm's cash flows going to debt holders. Similarly, interest income from cash and marketable securities is *not* included in the value the model returns. Since the counterparty is purchasing the *equity* of the firm, it does not receive the cash

otherwise, it would not have agreed to buy that equity for that price. If the transaction has subsequently become unprofitable for the counterparty, the reason will be that, for some reason, the present value of the party's future EBITDA, discounted at the party's WACC, minus the party's net debt, has been reduced below the purchase price.²⁴⁶

Now, as we have just seen, an adverse change in the party's business is material if, but only if, the change makes the transaction unprofitable for the counterparty at the agreed upon purchase price. Combining this insight with the counterparty's valuation of the deal based on a discounted cash-flow valuation model, we get the following interpretation of MAC clauses: *an adverse change in the party's business is material if, but only if, as of the date of the alleged MAC, the party's expected future EBITDA, discounted to present value at the party's WACC, minus the value of its net debt, is less than the agreed upon purchase price.*²⁴⁷ I shall call this interpretation the Continuing Profitability Model. Some more detailed explanation is necessary.

First, to value a company using the discounted cash-flow model, we should ideally like to know (or have reasonably reliable estimates of) the EBITDA of the company for all future years. Obviously, human ability to predict the future is limited, and in practice when parties and their bankers use discounted cash-flow models, the management of the company usually prepares financial projections for the company for the next five fiscal years or so.²⁴⁸ By contrast, industry analysts generally do not publish estimates for quite so many years, with more estimates generally available for two years than for three or more years.

Regardless of how many years the available EBITDA estimates cover, however, there is always a problem in discounted cash-flow models of estimating the earnings of the company for the years following the period covered by the available projections. The value of

flows going to debtholders but it does benefit from the cash and marketable securities owned by the firm at closing. Hence, to compute the value of the *equity* of the firm, we must subtract the present value of the firm's debt and add the value of the firm's cash and marketable securities. See DAMODARAN, *supra* note 153, at 197-98 (explaining how to "get from the value of the operating assets to the value of the equity" by, among other things, subtracting "the value of interest bearing debt" and adding "cash and marketable securities"); VERNIMMEN ET AL., *supra* note 153, at 813 ("[In] the indirect method, we first value the firm as a whole (what we call 'enterprise' or 'firm' value), then subtract the value of net debt."); see also *infra* note 298 (discussing other items to be added or subtracted from the value of the firm to compute the value of the firm's equity).

²⁴⁶ See *infra* note 261 (discussing the possibility that synergies or other benefits to be captured in the merger can importantly affect the calculation).

²⁴⁷ As to the dates as of which these variables should be estimated (e.g., the date of the agreement, the date of the MAC declaration, etc.), see *infra*.

²⁴⁸ DAMODARAN, *supra* note 153, at 117-56 (discussing techniques for estimating future cash flows); VERNIMMEN ET AL., *supra* note 153, at 818-22 (discussing estimates of future cash flows); see also *In re IBP*, 789 A.2d at 25 (IBP's bankers requested that management prepare five-year earnings projections for the company for bankers to use in valuation model).

such EBITDA is generally called the terminal value²⁴⁹ of the company, and, assuming the company is going to continue as a going concern during this indefinite future period,²⁵⁰ there are two methods commonly-used to estimate its terminal value.²⁵¹ One involves estimating a stable growth rate for the firm in perpetuity; that is, we assume that, after the years covered by the available projections, the company's EBITDA will grow at some (usually relatively low) fixed rate forever. On this approach, the terminal value is then a perpetuity based on the EBITDA of the company for the last year covered by the projections, the estimated perpetual growth rate, and the party's WACC.²⁵² The other method for calculating a terminal value for the firm involves setting that value equal to the present value of the product of the firm's EBITDA in the last year for which forecasts are available, times a multiple based on how comparable, publicly-traded firms are presently priced in the market.²⁵³ For example, if comparable, publicly-traded companies currently have an enterprise value²⁵⁴ to EBITDA (EV/EBITDA) multiple of ten, then the terminal value of the party may be estimated as the present value of ten times its EBITDA in the last year for which projections are available. Although the former method of estimating the terminal value is superior for theoretical reasons,²⁵⁵ both are in common use,²⁵⁶ and the latter is especially common in valuations performed to

²⁴⁹ DAMODARAN, *supra* note 185, at 303-05; VERNIMMEN ET AL., *supra* note 153, at 818-19; DAMODARAN, *supra* note 153, at 143 ("Since we cannot estimate cash flows forever, we generally impose closure in discounted cash flow valuation by stopping our estimation of cash flows sometime in the future and then computing a terminal value that reflects the value of the firm at that point.").

²⁵⁰ The alternative is to assume that the company will cease operations and liquidate, in which case the terminal value is the expected liquidation value of the company's assets, net of its debts. *See, e.g.*, DAMODARAN, *supra* note 153, at 143.

²⁵¹ DAMODARAN, *supra* note 153, at 143-45; DAMODARAN, *supra* note 185, at 303-05; VERNIMMEN ET AL., *supra* note 153, at 813-14.

²⁵² DAMODARAN, *supra* note 153, at 144-46; DAMODARAN, *supra* note 185, at 305-17; VERNIMMEN ET AL., *supra* note 153, at 820-22.

²⁵³ DAMODARAN, *supra* note 153, at 144; VERNIMMEN ET AL., *supra* note 153, at 820-21 (stating that terminal value can be estimated "based on a multiple of . . . operating performance" such as EBITDA or EBIT).

²⁵⁴ Enterprise value is customarily defined as the market value of the firm's equity plus the market value of the firm's debt minus its cash holdings. *See, e.g.*, DAMODARAN, *supra* note 153, at 295 ("Enterprise Value = Market value of equity + Market Value of debt - Cash holdings"). For various problems in determining enterprise value precisely, see *id.* at 296-98 (discussing treatment of equity options, cross-holdings, and measurement of debt); DAMODARAN, *supra* note 185, at 501-04 (explaining the treatment of cross-holdings).

²⁵⁵ DAMODARAN, *supra* note 153, at 144 ("[Although there are advantages to this approach,] using multiples to estimate terminal value, when those multiples are estimated from comparable firms, results in a dangerous mix of relative and discounted cash flow valuation."); VERNIMMEN ET AL., *supra* note 153, at 821 ("[S]ince using this method [i.e., a multiple] to assess the terminal value implies mixing intrinsic value with comparative values, we do not advise [using] it.").

²⁵⁶ DAMODARAN, *supra* note 153, at 234 ("Most equity research reports are based on multiples: price-earnings ratios, enterprise value-to-EBITDA ratios, and price-to-sales ratios are but a few examples. In an informal study of 550 equity research reports in early 2001, relative

justify prices paid or accepted in corporate acquisitions. As will be explained more fully below, this latter approach would be much easier for courts to implement.²⁵⁷

Therefore, to apply the Continuing Profitability Model, a court would need to know five things: (a) the purchase price in the transaction; (b) the projected EBITDA for the party for as many years into the future as possible; (c) the EV/estimated-EBITDA multiple for a group of companies comparable to the party;²⁵⁸ (d) the WACC for the party; and (e) the present value of the party's outstanding debt net of its cash and marketable securities. Once we have all these, computing a value for the party's equity is straightforward. For example, if we have just the publically-available analyst estimates of the company's EBITDA for the current and next succeeding fiscal years, then the implied value of the company would be:

$$V = \frac{E_1}{(1+WACC)} + \frac{E_2}{(1+WACC)^2} + \frac{E_2M}{(1+WACC)^2} - D$$

valuations [i.e., values based on multiples] outnumbered discounted valuations almost 10 to 1. While many equity research reports included the obligatory cash flow tables, values were estimated and recommendations were made by looking at comparable firms and using multiples.”). Indeed, according to Damodaran:

While casual empiricism suggests that almost every acquisition is backed up by a discounted cash flow valuation, the value paid in the acquisition is often determined using a multiple. In acquisition valuation, many discounted cash flow valuations are themselves relative valuations in disguise because the terminal values are computed using multiples.

Id. at 234-35.

²⁵⁷ See, e.g., DAMODARAN, *supra* note 153, at 235 (“Use of multiples and comparables is less time and resource intensive than discounted cash flow valuation [e.g., using the perpetuity method to compute a terminal value]. Discounted cash flow valuations require substantially more information than relative valuations.” (emphasis omitted)). Hence, “[f]or analysts who are faced with time constraints and limited access to information, relative valuation offers a less time-intensive alternative.” *Id.*; cf. VERNIMMEN ET AL., *supra* note 153, at 814 (referring to the multiple method as the “pragmatic” approach).

²⁵⁸ DAMODARAN, *supra* note 153, at 237 (“When buying a business, as opposed to just the equity in the business, it is common to examine the value of the firm as a multiple of the operating income (EBIT) or the earnings before interest, taxes, depreciation, and amortization (EBITDA).”). Furthermore:

One of the key tests to run on a multiple is to examine whether the numerator and denominator are defined consistently. If the numerator for a multiple is an equity value, then the denominator should be an equity value as well. If the numerator is a firm value, then the denominator should be a firm value as well. To illustrate . . . the enterprise value-to-EBITDA multiple [is consistently defined], since the numerator and denominator are both firm value measures; the enterprise value measures the market value of the operating assets of a company and the EBITDA is the cash flow generated by the operating assets, prior to taxes and reinvestment needs.

Id. at 239.

where E_1 is the estimated EBITDA for the current fiscal year, E_2 the estimated EBITDA for the succeeding fiscal year, M the median²⁵⁹ EV/estimated-EBITDA multiple for a group of companies comparable to the firm being valued (using the estimated-EBITDA for the next succeeding fiscal year of such companies),²⁶⁰ $WACC$ the party's weighted-average cost of capital, and D the present value of its outstanding debt net of its cash and marketable securities.²⁶¹

Now, as events unfold between signing and closing, each of these variables will change. We could ascertain the value of each of them, for example, as of the date of the agreement or as of the date of the alleged MAC. If we use the values as of the date of the agreement for all the variables, we would reproduce (no doubt in a crude way) the analysis the counterparty itself would have made in deciding to enter the transaction. Since we are using the model to inquire whether there has been a material adverse *change* since the date of the agreement, however, the correct date as of which to ascertain the values of the variables used in the model is *the date the counterparty declared a MAC* on the party.²⁶²

²⁵⁹ Because of a positive skew in distributions (e.g., for companies with negative EBITDA, the EV/EBITDA multiple is undefined), “the average values for multiples will be higher than median values,” and so “[t]he median value is much more representative of the typical firm in the group, and any comparisons should be made to the medians.” *Id.* at 241. Nevertheless, since “[f]ar fewer firms have negative EBITDA than have negative earnings per share or negative net income,” “there is less potential for bias [using] EBITDA multiples than with P/E ratios.” *Id.* at 302. Also, because far fewer firms have negative EBITDA, “fewer firms are lost from the analysis.” DAMODARAN, *supra* note 185.

²⁶⁰ That is, in the EV/estimated-EBITDA multiple for comparable companies, the estimated-EBITDA is the estimated-EBITDA for the next succeeding fiscal year of such companies. The reason for this is that this is the last year for which we have EBITDA estimates for the firm being valued.

²⁶¹ Obviously, the Continuing Profitability Model disregards many factors that could affect the value of the party to the counterparty, such as synergies to be captured in the transaction, tax benefits, etc. The model could be made more complex to take account of some or all such factors. The cost of doing so, of course, is additional work for the court and additional uncertainty in the application of the model as more numerical inputs—each of which the parties will dispute—are required. The theory underlying the model as presented in the text is that such inputs should be limited to those for which there are publicly-available estimates generated by knowledgeable third-parties such as industry analysts. By relying on such estimates, the court can avoid a largely futile battle-of-the-experts concerning the correct values to use. For items such as synergies arising from the transaction or tax benefits, there will usually be no such third-party estimates, and for that reason I think that complicating the model to take account of such things is not worth the costs of doing so. If, in a particular case, it seemed important to do so, however, it would be possible to take account of synergies at the last step, provided that the court makes some finding of the likely net value of the synergies. The company would then not be MAC'd if the model showed that the value of its equity on the date of the MAC declaration, plus the value of any synergies, was at least equal to the purchase price.

²⁶² As we shall see below, if a particular MAC Definition shifts systematic risks to the counterparty, the Continuing Profitability Model can be easily adapted to account for this fact by adjusting the dates as of which the values of certain of its variables are ascertained. See *infra* Part III.C.2.b for an example.

There is, however, an obvious and serious objection to all this. For, the Delaware Supreme Court has in the past criticized academically-created mathematical models of legal standards that it regards as inherently qualitative,²⁶³ and it may seem that, even if correct in some theoretical sense, the Continuing Profitability Model could not realistically be applied by courts to decide real-world cases. Most obviously, the model requires numerical inputs for its variables, and determining the values of at least some of these will be fraught with uncertainty and subject to endless controversy between the litigating parties. For example, the parties will disagree about EBITDA projections for the party, about which companies are comparable to the party (and thus what the correct EV/estimated-EBITDA multiple should be), and about the party's WACC, and courts seem entirely unsuited to settle such disputes in a principled way—if, indeed, such questions can be settled in a principled way at all. Therefore, the model may seem hopelessly impracticable. This, I shall argue, is wrong. In fact, I shall show below that the Continuing Profitability Model is no more difficult to apply than the Earnings Potential Model that courts already use.

1. The Practicality of the Continuing Profitability Model

As noted above, the Continuing Profitability Model requires a court to obtain reliable estimates of several quantities: (a) the purchase price in the transaction; (b) EBITDA estimates for the party for as many years into the future as possible; (c) the EV/estimated-EBITDA multiple for a group of companies comparable to the party; (d) the WACC for the party; and (e) the present value of the party's net debt. Some of these quantities are readily ascertainable with reasonable certainty. As to the purchase price, this is easily determined: in a cash deal, the price will be apparent from the face of the agreement,²⁶⁴ and in a stock deal it can be readily calculated from the face of the agreement and trading prices as of the time immediately prior to the public announcement of the agreement.²⁶⁵ Furthermore, the value of the party's outstanding debt

²⁶³ *E.g.*, *Unitrin, Inc., v. Am. Gen. Corp.*, 651 A.2d 1361, 1373 n.13 (Del. 1995) (criticizing mathematical model of *Unocal* proportionality review).

²⁶⁴ The price is computed by multiplying the per-share merger consideration times the number of shares outstanding, plus the value of options cashed out in connection with the merger.

²⁶⁵ The value of the merger consideration in a stock-for-stock or cash-and-stock deal should generally be measured using the unaffected trading price of the stock of the counterparty prior to the announcement of the agreement because trading prices from after that time will reflect, among other post-signing factors, market perceptions about whether the deal will close and on what terms. Depending on developments in the counterparty's own business, however, there could be various complicating factors in computing the purchase price.

and its cash and marketable securities can be relatively easily ascertained from the party's most recent financial statements.²⁶⁶

As to estimates of the party's future EBITDA, as we have seen in reviewing the important MAC cases,²⁶⁷ courts already routinely obtain such estimates in implementing the Earnings Potential Model.²⁶⁸ Courts have done this by relying not only on projections by the parties²⁶⁹ but, more significantly, on publicly available estimates by industry analysts,²⁷⁰ such as consensus estimates published by Morningstar or Bloomberg. To be sure, such estimates are very far from certain,²⁷¹ and courts have quite rightly expressed some skepticism about them,²⁷² but they have used them nonetheless. The reason for this, presumably, is that applying the Earnings Potential Model requires comparing the historical EBITDA of the company to its future EBITDA, and this is obviously impossible without some data about future EBITDA. Moreover, in the context of a dispute between the parties about the level of such future EBITDA, each side is likely to produce estimates biased in its favor,²⁷³ and so the estimates of disinterested third-parties knowledgeable about the company are probably the best available data there is. In any event, if the Earnings Potential Model may rely on analyst estimates of a company's future EBITDA, so too may the Continuing Profitability Model.

Now, as noted above, to get a reasonably large group of estimates from different analysts, a court may not be able to get estimates for more than a few years, perhaps only the current and next succeeding fiscal year of the company. If there are enough estimates to extend the set of projections to three or more years, that would, of course, be practicable and desirable.²⁷⁴ I shall assume, however, that the available

²⁶⁶ A court could and should take testimony about whether these values have changed between the date of the most recent financials prior to the MAC declaration and the date of the MAC declaration, but any such changes should be well within the competence of a court to determine.

²⁶⁷ See *supra* Part II.A.

²⁶⁸ See, e.g., *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715, 733-34 (Del. Ch. 2008); *In re IBP, Inc., S'holders Litig.*, 789 A.2d 14, 70, 70 n.162 (Del. Ch. 2001).

²⁶⁹ *Hexion*, 965 A.2d at 733-34.

²⁷⁰ *In re IBP*, 789 A.2d at 70; *Hexion*, 965 A.2d at 733-34.

²⁷¹ See, e.g., *Stewart*, *supra* note 109, at 535-42.

²⁷² E.g., *In re IBP*, 789 A.2d at 71 (expressing skepticism about the reliability of analyst earnings estimates).

²⁷³ See, e.g., *Hexion*, 965 A.2d at 743 (“[T]he court recognizes that [Huntsman’s] management’s expectations for a company’s business often skew towards the overly optimistic . . . [while] Hexion’s projections reflect an overly pessimistic view of Huntsman’s future earnings.”).

²⁷⁴ Relying on a very small number of analyst estimates of the EBITDA of a company for some future years creates not only the obvious problem of unreliability but also the possibility of manipulation by analysts. That is, if it was generally known that courts would rely on analyst estimates for a given future year even if there were only one or two such estimates, unscrupulous analysts could skew their estimates in hopes of affecting the court’s decision and so perhaps profiting by trading in the party’s or counterparty’s securities. The more estimates there are for a

estimates cover only the current and next succeeding fiscal years. Even when this is the case, certainly no defender of the Earnings Potential Model can fault the Continuing Profitability Model for relying on projections for only two years when the Earnings Potential Model does just the same thing.²⁷⁵ Indeed, the advantage here is entirely on the side of the Continuing Profitability Model, for it at least attempts to take account of EBITDA beyond two years by estimating a terminal value for the company—something the Earnings Potential Model entirely overlooks.

This reliance on the published estimates of industry analysts to determine the future EBITDA of the party suggests a strategy for determining the other numerical inputs the court would need in applying the Continuing Profitability Model. For, if there are analogous estimates produced by disinterested, knowledgeable third parties for these inputs to the model, courts could rely on those estimates just as they rely on such estimates for future EBITDA numbers. In fact, such estimates exist, and they would be readily available to courts hearing MAC cases.

First, as to the multiple to use in computing the terminal value of the party, the difficult part is determining which companies to include in the set of comparables. Once that issue is settled, the enterprise value for each of the selected companies as of any fiscal quarter and EBITDA estimates for the companies as of any given date (and thus the quotient of these in each particular company's EV/estimated-EBITDA ratio) are readily available from a data service like Bloomberg. From the set of ratios for the selected companies, it is trivial to compute the median value²⁷⁶ to use as the multiple in the Continuing Profitability Model. Hence, the issue the parties will dispute here is which companies to include in the set of comparables.²⁷⁷

What we want, of course, are public companies with cash flows, growth potential, and risk similar to the firm being valued,²⁷⁸ and the conventional practice is to look at firms within the same industry²⁷⁹ on

given year, the less likely it is that there will be such manipulation. Even more important, by relying on estimates published *before* the date of the MAC declaration, the possibility of manipulation can be very substantially reduced. I am indebted to Thomas C. Crimmins for pointing this out to me.

²⁷⁵ In both *In re IBP*, 789 A.2d at 70-71 and *Hexion*, 965 A.2d at 743, the court considered analyst earnings estimates for just the current and next succeeding fiscal years of the allegedly MAC'd company.

²⁷⁶ See *supra* note 259 (discussing using the median value).

²⁷⁷ The issue of which firms to treat as comparable is always controversial, and it is easy to manipulate results by biasing the selection of firms to include. As Damodaran says, "Since no two firms are identical, the choice of comparable firms is a subjective one and can be tailored to justify the conclusion we want to reach. . . . In short, there is plenty of room for a biased firm to justify any price, using reasonable valuation models." DAMODARAN, *supra* note 185, at 712.

²⁷⁸ DAMODARAN, *supra* note 153, at 247.

²⁷⁹ *Id.*

the (reasonable, but not absolutely certain) assumption that such firms will be like the company being valued in the relevant respects.²⁸⁰ There is, however, no mechanical way to identify such firms.²⁸¹ Moreover, since the firms selected determine the multiple used in the model, and since that multiple has a very large effect on the value attributed to the company,²⁸² the parties to the litigation will likely disagree sharply about which firms ought to be included among the comparables. Once again, however, a solution lies in using published judgments of disinterested third parties. For example, the court could look to the companies composing one or more of the established stock indices related to the party's industrial sector.²⁸³ Perhaps even better, the same analysts and data services that supply enterprise value and estimated-EBITDA estimates for publicly-traded companies often identify a company's peer firms as well. For any firm with publicly traded equity securities, for example, Bloomberg will, at the touch of a key, supply a list of comparable companies, on either a global or a regional basis, through its Bloomberg Peers function.²⁸⁴ Once again, if analyst judgments are good enough to use in the Earnings Potential Model, why not in the Continuing Profitability Model as well? The data used will, of course, be quite uncertain, but in the absence of something better, it makes sense to use it.

Finally, implementing the Continuing Profitability Model also requires that the court obtain reasonably reliable information about the party's WACC. Once again, there are publicly available estimates. Ibbotson and others publish estimates of WACCs, computed in various ways, for parties operating in various industries and update these estimates regularly.²⁸⁵ Although the court could also take expert

²⁸⁰ See, e.g., *id.*

²⁸¹ There are many sophisticated ways to judge the comparability of firms and to control sets of companies to make them more comparable. See *id.* at 248-53 (discussing subjective adjustments, modified multiples, and statistical techniques, including sector regressions and market regressions).

²⁸² This is virtually always the case when the terminal value of a firm is computed as a multiple of some other value, and in the Continuing Profitability Model, the problem is exacerbated because we will generally be using EBITDA projections for only a few years—maybe as few as two—instead of the more usual five. That is, in applying the Continuing Profitability Model, the question of which multiple to use is even more critical than usual.

²⁸³ Courts could also look to which companies the parties and their bankers thought were comparable to the firm to be valued *before the MAC dispute arose*, that is, to the companies the parties and their bankers treated as comparables when valuing the deal prior to the signing of the agreement.

²⁸⁴ Bloomberg explains that Bloomberg Peers “is a targeted per-company peer set” of comparable companies, generally between five and fifty in number, determined using a proprietary algorithm that “analyzes numerous relationships between companies such as analyst coverage, correlated news stories and industry classifications to compute those companies that are most closely aligned.” Bloomberg L.P., Bloomberg Peers for Securities, Bloomberg Doc 2051304 (2009).

²⁸⁵ IBBOTSON SBBI COST OF CAPITAL YEARBOOK (2009) (updated quarterly) (giving

testimony from the parties on this issue or else look to the discount rates that the parties' own bankers used in originally valuing the deal, nevertheless the more important point is that, if published estimates by industry analysts are good enough to determine a party's future EBITDA, then surely similar published estimates for WACCs should be good enough as well. Both kinds of estimates are, to be sure, highly uncertain, but neither is obviously more uncertain than the other, and in each case such estimates are likely to be the best information available.

In essence, therefore, while the Earnings Potential Model requires that courts accept the judgments of industry analysts about the company's future EBITDA, the Continuing Profitability Model requires that they also accept such judgments about which firms are comparable to the company, what the future EBITDA of such firms is likely to be, and what the WACC of the party probably is.²⁸⁶ The only plausible objection to accepting such data is that it is not reasonably reliable. No defender of the Earnings Potential Model, however, can make this objection because that model itself already essentially relies on such data. By accepting just a little more such data, courts can apply the Continuing Profitability Model and resolve MAC disputes in a principled and economically rational manner. In my view, that benefit is well worth the cost.

2. An Example of the Continuing Profitability Model in Practice:
Hexion v. Huntsman

The best proof of the practicability of the Continuing Profitability Model, however, is a demonstration, and for such purposes, I shall use the facts in *Hexion v. Huntsman*. In particular, I shall show below that, under the Continuing Profitability Model, (a) Huntsman was clearly MAC'd on the date Hexion declared it MAC'd, and (b) even controlling for materializing systematic risks that had been shifted to Hexion via MAC Exceptions, Huntsman was still clearly MAC'd on that date. Under the Continuing Profitability Model, Hexion deserved to win this case.

weighted-average cost of capital for companies by SIC codes).

²⁸⁶ The enterprise value of the comparable firms is a function of publicly available data and so presumably is not controversial.

a. Huntsman Was MAC'd

On July 12, 2007, Hexion agreed to acquire the equity in Huntsman for about \$6.5 billion.²⁸⁷ To apply the Continuing Profitability Model, we need to compare the value of the equity of Huntsman to this amount, and thus we need: (a) EBITDA estimates for Huntsman; (b) a set of companies comparable to Huntsman; (c) the median EV/estimated-EBITDA multiple for these companies; (d) the estimated WACC for Huntsman; and (e) the present value of Huntsman's outstanding debt net of its cash and marketable securities. Since we are inquiring whether Huntsman was MAC'd as of the date Hexion declared it MAC'd, we need values for these variables as of June 18, 2008, the date Hexion issued its MAC declaration.

First, as to Huntsman's future EBITDA, using the latest data prior to June 18, 2008, the Bloomberg BEst EBITDA²⁸⁸ estimates for

²⁸⁷ Pursuant to Section 2.1(b)(i) of the Hexion Merger Agreement, *supra* note 179, the merger consideration was \$28 per common share of Huntsman (subject to certain small increases if the closing was delayed beyond April 5, 2008). In Section 3.1(b)(i)(A) of the agreement, Huntsman represented that there were 221,923,556 common shares outstanding at the time of the agreement. This aggregates to \$6,213,859,568 in consideration for the common shares. In addition, under Section 2.3, all outstanding stock options of Huntsman would, prior to the closing, fully vest, and at the effective time of the merger would be converted into the right to receive the difference between the \$28 per share merger consideration and the exercise price of the option. According to Huntsman Corp., Quarterly Report (Form 10-Q), at 30 (May 7, 2007), as of March 31, 2007, the company had outstanding options on 6,338,000 shares with a weighted-average exercise price of \$21.35 per share. Hence, these options would add about \$42,147,700 to the value of Huntsman's equity. In addition, as of the date of the agreement, Huntsman had about 5,750,000 shares of 5% Mandatory Convertible Preferred Stock outstanding, Hexion Merger Agreement, *supra* note 179, at 10-11, which were convertible into common shares, at a rate of between 1.7 and 2.1 common shares per preferred share depending on the trading prices of Huntsman's common stock and subject to antidilution provisions. See Huntsman Corp., Certificate of Designations, Preferences and Rights of 5% Mandatory Convertible Preferred Stock (Form 8-K), exh. 3.01 (Feb. 16, 2005). Pursuant to Section 5.14 of the merger agreement, these shares were all to be converted into common shares before the closing. Assuming an exchange rate of 1.9 common shares per preferred share, this would add another \$305,900,000 to the price of Huntsman's equity, for a grand total of \$6,561,907,268 or about \$6.5 billion. This is consistent with the calculation made by Merrill Lynch, Huntsman's primary financial advisor in connection with the transaction. Huntsman Corp., Proxy Statement (Schedule 14A), at 40 (Sept. 12, 2007) [hereinafter Huntsman Proxy Statement] (stating that Merrill Lynch calculated an equity value of the company of \$6,543 million). In the text, I round the cost to Hexion of Huntsman's equity to \$6.5 billion.

²⁸⁸ Bloomberg BEst EBITDA data are the mean of all analyst estimates reported for the company in Bloomberg, and EBITDA is defined in the conventional way as EBIT plus depreciation plus amortization, Bloomberg <equity> FA "EBITDA," with EBIT being defined as net sales plus other operating income, minus cost of goods sold (COGS), minus selling, general and administrative expense (SG&A), adjusted to correct for non-operating gains and expenses

Huntsman's FY2008 and FY2009 EBITDA were \$895.60 million and \$946.25 million, respectively.²⁸⁹ Vice Chancellor Lamb, in applying the Earnings Potential Model, relied on the parties' own EBITDA projections for Huntsman's FY2008 and FY2009, as well as analyst estimates for Huntsman's FY2009, and although he is not entirely clear about this, he seems to think these values are likely to be about \$848 million for FY2008 and \$965 million for FY2009,²⁹⁰ which are quite close to the BEst EBITDA numbers.²⁹¹ Second, as to companies comparable to Huntsman, perhaps the easiest thing for the court to do would be to rely on a published set of comparables such as the ones identified by Bloomberg in its Bloomberg Peers service.²⁹² From Bloomberg, therefore, the court could have obtained the following data:

otherwise included. Non-operating gains include dividend and interest receivable/income, profits on sales of fixed assets/investments, foreign currency gains, and share of associates' net profits. Non-operating expenses include interest expenses, finance charges, borrowing costs, loss on sales of fixed assets/investments, foreign currency losses, and share of associates' net losses. Bloomberg <equity> FA "EBIT."

²⁸⁹ Here, I am using the estimates dated June 16, 2008, the last estimates before the filing of Hexion's complaint.

²⁹⁰ After noting the projections for FY2008 and FY2009 by both Hexion (\$817 million and \$809 million) and Huntsman (\$878 million and \$1.12 billion), Vice Chancellor Lamb says "the likely outcome for Huntsman's 2009 EBITDA is somewhere in the middle," and he notes that the consensus of industry analysts was \$924 million for FY2009. *Hexion Specialty Chems., Inc. v. Huntsman Corp.*, 965 A.2d 715, 743 (Del. Ch. 2008). The numbers in the text are derived from averaging the Hexion and Huntsman projections.

²⁹¹ I note, however, that Vice Chancellor Lamb took his estimates as of the date of his opinion (September 29, 2008) or at least as of the time of trial (in late September of 2008). By then, the BEst EBITDA numbers for Huntsman were slightly lower—about \$834 million for FY2008 and \$904.4 million as of September 11, 2008. Since the relevant issue in the suit was whether Hexion was entitled to terminate the merger agreement when it purported to do so when it declared a MAC and sued Huntsman for a declaratory judgment on June 18, 2008, the question should be whether Huntsman was indeed MAC'd on June 18, 2008, not whether it was MAC'd on some later date. As I explain in Miller, *supra* note 1, at 2074-80, even an unjustified MAC declaration by the counterparty can seriously harm a party; hence, if the party is MAC'd subsequent to the date of the MAC declaration, this could be a result of the MAC declaration itself and so ought not be regarded as justifying the MAC declaration.

²⁹² See *Bloomberg L.P.*, *supra* note 284.

Table 9. Bloomberg BEst EBITDA Estimates and Enterprise Values for Huntsman's Bloomberg Peers as of June 18, 2008²⁹³
(All Dollar Amounts in Millions)

<u>Company:</u>	BEst EBITDA ²⁹⁴		EV ²⁹⁵	EV/BEst EBITDA FY2009
	FY2008	FY2009		
Monsanto Company	\$3,378.50	\$4,113.40	\$70,020.14	17.02
E.I. du Pont de Nemours & Co.	\$5,914.44	\$6,232.00	\$50,641.55	8.13
Praxair, Inc.	\$2,937.27	\$3,247.73	\$36,399.10	11.21
Dow Chemical Company	\$6,754.44	\$5,995.25	\$44,375.03	7.40
Air Products & Chemicals, Inc.	\$2,464.82	\$2,689.09	\$23,746.41	8.83
Ecolab, Inc.	\$1,077.80	\$1,193.70	\$11,820.95	9.90
PPG Industries, Inc.	\$2,158.57	\$2,340.50	\$14,254.47	6.09
Sherwin-Williams Co.	\$974.33	\$1,042.80	\$7,663.78	7.35
Celanese Corp.	\$1,360.40	\$1,399.80	\$8,717.27	6.23
Lubrizol Corp.	\$675.00	\$721.33	\$4,823.55	6.69
Eastman Chemical Co.	\$981.33	\$980.33	\$5,591.69	5.70
Albemarle Corp.	\$471.13	\$531.38	\$4,084.83	7.69
Valspar Corp.	\$379.17	\$414.67	\$3,268.64	7.88
Nalco Holding Co.	\$735.20	\$793.30	\$6,352.26	8.01
Westlake Chemical Corp.	\$232.14	\$224.67	\$1,403.49	6.25
Rockwood Holdings, Inc.	\$680.67	\$726.33	\$4,944.33	6.81
Olin Corp.	\$306.67	\$298.33	\$1,452.77	4.87
Cytec Industries, Inc.	\$494.80	\$530.80	\$3,329.60	6.27
Cabot Corp.	\$343.00	\$398.33	\$2,455.55	6.16
Koppers Holdings, Inc.	\$190.00	\$206.00	\$1,364.99	6.63
Nova Chemicals Corp.	\$799.54	\$712.46	\$3,723.80	5.23
Omnova Solutions, Inc.	\$40.50	\$50.25	\$339.67	6.76
Georgia Gulf Corp.	\$191.71	\$230.00	\$1,633.66	7.10
MEDIAN:	\$735.20	\$726.33	\$4,944.33	6.81

²⁹³ The companies listed are those identified by Bloomberg (HUN <Equity> RV <GO>) as the global companies comparable to Huntsman, with Saudi Karan Petrochemical Company and Solutia, Inc. deleted. I have deleted these two companies from the sample because some or all of the needed data for such companies is unavailable.

²⁹⁴ For the meaning of Bloomberg's BEst EBITDA, see *supra* note 288. For each company, the BEst EBITDA estimates are latest estimates prior to June 18, 2008.

²⁹⁵ For each company, the enterprise value shown is the enterprise value of the company as of the most recently completed quarter prior to June 18, 2008. For companies in which the fiscal year is the calendar year (most companies in the group), that quarter will be the quarter ending on March 31, 2008. For Monsanto Company and Omnova Solutions, Inc., it is the quarter ending on May 31, 2008. For Valspar Corp., it is the quarter ending on April 30, 2008. Bloomberg defines enterprise value as follows: "Enterprise Value = Market Capitalization + Preferred Equity + Minority Interest + Short-Term and Long-Term Debt - Cash and Equivalents." For industrial companies and utilities, "Cash and Equivalents = Cash and Marketable Securities." In addition, "Market capitalization is based on the most recent price [i.e., before the relevant date]" and on "financial statement data as of the most recent reporting period-end (quarter, semi-annual or annual)." Bloomberg <equity> FA "Enterprise Value."

And thus, in particular, the court would obtain a median EV/estimated-EBITDA multiple for companies comparable to Huntsman of 6.81.²⁹⁶

The court would next consult a source such as the Ibbotson Cost of Capital Yearbook and find that cost of capital for companies in Huntsman's industrial grouping (SIC 28 for chemicals and allied products) as of the date of the MAC declaration was about 12.24%.²⁹⁷ Finally, from Huntsman's 10-Q for the quarter ended March 31, 2008 (the most recently completed quarter prior to the date of the MAC declaration), the court would find that the present value of Huntsman's debt net of its cash and marketable securities was about \$4,350 million.²⁹⁸

²⁹⁶ Merrill Lynch, Huntsman's primary financial advisor for the transaction, identified five companies comparable to Huntsman, of which four appear in the table above (they were Celanese Corp., Dow Chemical Company, Eastman Chemical Co., and PPG Industries, Inc.; the fifth company was Rohm & Haas Co.). Huntsman Proxy Statement, *supra* note 287, at 43. On the date of the agreement, as opposed to the date of the MAC declaration, Merrill Lynch computed the median EV/2008E EBITDA multiple for its comparables to be 7.7x; as will appear from Table 10, *infra*, on the same date, the median multiple for the Bloomberg Peers was 7.83x. Cowen and Company, LLC, Huntsman's secondary financial advisor for the transaction, identified as comparable to Huntsman six companies, of which four appear among the Bloomberg Peers (Dow Chemical Company, PPG Industries, Inc., Celanese Corp., and Eastman Chemical Co.; the other two were Rohm & Haas Co. and Kronos Worldwide, Inc.). *Id.* at 50. On the date of the agreement, the median EV/2008E EBITDA multiple for these companies as computed by Cowen and Company was 7.3x. *Id.*

²⁹⁷ Ibbotson publishes its cost of capital information quarterly at the end of March, June, September, and December. Since Hexion declared a MAC on June 18, 2008, the most recent data as of that date would be the March data. In March of 2008, for companies in SIC 28, Ibbotson reports various estimates for median WACCs: CAPM 11.49, CAPM + Size Prem 13.71, 3-Factor Fama-French 12.60, DCF 1-Stage 13.09, and DCF 3-Stage 10.33. IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-27 (2008) (giving weighted-average cost of capital for companies by SIC codes). Averaging these estimates results in 12.244%, or about 12.24% as given in the text. Since the March data would reflect conditions in the months of January through March, it may seem that the June data, reflecting events from April through June, would be more appropriate to use to capture conditions on June 18, 2008, even though the June data would also reflect events *after* the date of the MAC declaration (that is, from June 19, 2008, through June 30, 2008). In the June 2008 supplement to the Cost of Capital Yearbook, Ibbotson reports for companies in SIC 28 the following median WACCs: CAPM 10.70, CAPM + Size Prem 12.84, 3-Factor Fama-French 12.19, DCF 1-Stage 12.79, and DCF 3-Stage 10.29. IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-10 (June 2008 Supp.). These values average to 11.762 or about 11.76%. The difference between 12.24% and 11.76% is too small to have a meaningful effect on the calculations in the text. For example, in the equation above, using a WACC of 11.76% raises the value of Huntsman by just \$53.92 million to \$2,368.12 million. In keeping with my policy of using the most recent data *prior* to the relevant date, I shall use the March 2008 WACC, not the June 2008 WACC, for Huntsman.

²⁹⁸ See Huntsman Corp., Quarterly Report (Form 10-Q) (May 12, 2008). According to the balance sheet contained therein, Huntsman had \$166.4 million in cash and cash equivalents and \$3,816.6 million in interest bearing debt (\$234.0 million in current portion of long-term debt and \$3,582.6 million in long term debt). Included in net debt should be the estimated value of minority interests in subsidiaries whose assets and earnings are consolidated with the firm's, unfunded pension plans and health care obligations, and the expected liabilities from lawsuits against the firm. DAMODARAN, *supra* note 153, at 197. According to Vice Chancellor Lamb's calculations, the net debt of Huntsman in June of 2008 was about \$4.35 billion, Hexion Specialty

The court would then plug into the formula given above the values $E_1 = \$895.60$, $E_2 = \$946.25$, $M = 6.81$, $WACC = .1224$, and $D = \$4,350$, thus obtaining the following value for Huntsman:

$$V = \frac{\$895.60}{(1 + .1224)} + \frac{\$946.25}{(1 + .1224)^2} + \frac{\$946.25 \times 6.81}{(1 + .1224)^2} - \$4,350.00 = \$2,314.20$$

or about \$2.3 billion, which is a staggering \$4.2 billion or about 64% below the \$6.5 billion purchase price. Under the Continuing Profitability Model, therefore, Huntsman was clearly MAC'd on the date of the MAC declaration.

Now, as we saw above, courts applying the Earnings Potential Model have habitually failed to give effect to MAC Expectation Metrics—a mistake we can and should avoid in applying the Continuing Profitability Model. The metric in the Hexion-Huntsman agreement provided that Hexion's obligation to close was dependent upon there having occurred no event "that has had or is reasonably expected to have" a MAC on Huntsman.²⁹⁹ In other words, to avoid having to close, Hexion would have to show either that Huntsman had in fact been MAC'd or, at least, that the view that Huntsman had been MAC'd was more reasonable than the view that it had not. Given that standard, and given how far below the purchase price the value of Huntsman had slipped (again, about 64% below the deal price), it seems clear that it was more reasonable than otherwise to think that Huntsman had been MAC'd. Giving effect to the MAC Expectation Metric in the agreement thus only further strengthens the view that Huntsman was indeed MAC'd on June 18, 2008.³⁰⁰

To make sure that all this makes sense, it is useful to see how the same calculation would have worked out at the time the agreement was struck on July 12, 2007. Back then, the most recent³⁰¹ Bloomberg BEst estimates of Huntsman's FY2007 and FY2008 EBITDA were \$1,154.33 million and \$1,134.33 million, respectively, and the median EV/BEst-EBITDA 2008 for the same group of companies used above was 7.83x.³⁰² According to Ibbotson,³⁰³ the WACC for companies in

Chems., Inc. v. Huntsman Corp., 965 A.2d 715, 744 (Del. Ch. 2008), which is the figure I shall use in the text.

²⁹⁹ Hexion Merger Agreement, *supra* note 179, at 55.

³⁰⁰ Obviously, if we use Vice Chancellor Lamb's slightly lower estimated-EBITDA numbers from September of 2008 (i.e., EBITDA of \$848 million for FY2008 and of \$911 million for FY2009), the result is even worse for Huntsman. Under these assumptions, the value of the company had fallen to \$2,053.26 million or about \$4.5 billion or 68% below the purchase price.

³⁰¹ In particular, the estimates date from July 5, 2007.

³⁰² See *infra* Table 10 and accompanying notes; see also DAMODARAN, *supra* note 153, at 321

Huntsman's SIC code was about 12.42%.³⁰⁴ Finally, according to Huntsman's 10-Q for the quarter ended June 30, 2007, Huntsman's debt net of its cash and marketable securities was about \$4,100 million.³⁰⁵ We thus have:

$$V = \frac{\$1,154.33}{(1+.1242)} + \frac{\$1,134.33}{(1+.1242)^2} + \frac{\$1,134.33 \times 7.83}{(1+.1242)^2} - \$4,100.00 = \$4,852.05$$

which, although more than *double* the value of the company on the date of the MAC declaration, is nevertheless about \$1.6 billion or 25% below the purchase price of \$6.5 billion. But, if we assume, as was in all human probability the case, that Hexion was more optimistic about Huntsman's prospects than was the market (buyers always value things more than the market price—that is why they are *buyers*),³⁰⁶ then it is not hard to see how Hexion could have reasonably thought the deal would be profitable for it. For example, if we assume that Hexion thought Huntsman's prospects were just 9.0%³⁰⁷ better than the market

(discussing use of forward operating income numbers in multiples). The comparable companies identified by Merrill Lynch, Huntsman's primary financial advisor for the transaction, yielded a median EV/estimated FY2008 EBITDA multiple of 7.7x, Huntsman Proxy Statement, *supra* note 287, at 43, although Merrill Lynch in performing its discounted cash-flow analysis of Huntsman chose to use multiples ranging between 6.5x and 7.5x. *Id.* at 42. The companies identified as comparable by Cowen and Company, Huntsman's other financial advisors, yielded a median multiple of 7.3x, *id.* at 50, and Cowen chose to use in its discounted cash-flow analysis multiples ranging from 7.5x to 8.5x. *Id.* at 52.

³⁰³ In its discounted cash-flow analysis, Merrill Lynch used discount rates ranging from 9.5% to 10.5%, which are considerably lower than the median estimates of Ibbotson. *Id.* at 42. Such lower rates would, of course, increase the value attributed to the company.

³⁰⁴ For companies in SIC 28 (chemicals and allied products), Ibbotson reports various estimates for median WACCs: CAPM 11.53, CAPM + Size Prem 14.08, 3-Factor Fama-French 13.95, DCF 1-Stage 13.37, and DCH 3-Stage 9.18. Averaging these gives 12.422%, which I round to 12.42% in the text. IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-10 (June 2007 Supp.).

³⁰⁵ See Huntsman Corp., Quarterly Report (Form 10-Q) (Aug. 9, 2007). According to the balance sheet in the 10-Q, Huntsman had cash and cash equivalents of \$167.5 million, and debt of \$3,783.4 million (comprising \$258.8 million in current portion of long term debt, plus \$3,524.6 million in long term debt). See *infra* note 298 regarding other items to be included in net debt. According to Vice Chancellor Lamb, on the date of the agreement Huntsman's net debt was about \$4.1 billion. Hexion Specialty Chems., Inc. v. Huntsman Corp., 965 A.2d 715, 744 (Del. Ch. 2008).

³⁰⁶ Recall that Huntsman had previously agreed to be acquired by Basell AF, and the Hexion-Huntsman agreement was reached only after Hexion made a topping offer for Huntsman and Huntsman exercised its fiduciary out to terminate its agreement with Basell. See Huntsman Corp., Current Report (Form 8-K), at 1 (July 13, 2007). It is thus reasonable to assume that Hexion had paid top dollar for Huntsman and that the deal price was close to Hexion's reserve price.

³⁰⁷ I have chosen 9.0% here because it is the minimum increase that makes the deal profitable for Hexion.

did, and if we thus increase the estimates of Huntsman's future EBITDA by 9.0% (to \$1,258.22 million for FY2007 and \$1,236.42 million for FY2008),³⁰⁸ increase the EV/estimated-EBITDA multiple by 9.0% (to 8.53x),³⁰⁹ and decrease the estimated WACC by 9.0% (to 11.30%),³¹⁰ then we get a value for Huntsman's equity of \$6,542.41 million, which is just slightly above the \$6.5 billion purchase price. Similarly, projections that Huntsman provided to potential buyers in June of 2007 estimated its FY2007 EBITDA at \$1,027 million and FY2008 EBITDA at \$1,289 million, with yearly increase up to \$1,661 million in 2011.³¹¹ Using these EBITDA values, the increased multiple (8.53x) and the decreased WACC (11.30%) used immediately above, we get a value for Huntsman's equity of \$6,739.16 million—which is \$239 million or about 4% above the purchase price. Obviously, even more aggressive assumptions would drive the value of Huntsman even higher.

No such tinkering can make the value of Huntsman's equity as of the date of the MAC declaration even close to the \$6.5 billion purchase price. Consider again the equation below, which uses the numbers as of the date of the MAC declaration:

$$V = \frac{\$895.60}{(1 + .1224)} + \frac{\$946.25}{(1 + .1224)^2} + \frac{\$946.25 \times 6.81}{(1 + .1224)^2} - \$4,350.00 = \$2,314.20$$

If, as we did above, we increase the EBITDA estimates and the multiple each by 9.0% (that is, to \$976.20 million for FY2008, \$1,031.41 million for FY2009, and 7.42x, respectively) and reduce the WACC by 9.0% (that is, to 11.14%), then we get a value for Huntsman's equity of only \$3,559.12 million, which is still about \$2.9 billion or 45% below the purchase price. Or again, if we use the EBITDA projections that Huntsman itself produced at the time of the

³⁰⁸ In June of 2007, prior to signing its agreement with Hexion, Huntsman had distributed to potential buyers projections for the company predicting EBITDA of \$1,027 million for FY2007, \$1,289 million for FY2008, \$1,414 million for FY2009, \$1,609 million for FY 2010, and \$1,661 million for FY2011. Huntsman Proxy Statement, *supra* note 287, at 37. The increased EBITDA estimates used in the text are thus consistent with Huntsman's projections.

³⁰⁹ This multiple is greater than those of fifteen but less than those of eight of Huntsman's Bloomberg Peers as of the date of signing. *See infra* Table 10.

³¹⁰ This WACC of 11.30% is higher than the DCH 3-Stage estimate (9.18) and almost equal to the CAPM estimate (11.53) reported by Ibbotson for SIC 28 in its June 2007 supplement. *See supra* note 304. It is also considerably higher than those used by Merrill Lynch, Huntsman's primary financial advisor, which used discount rates ranging from 9.5% to 10.5%. Huntsman Proxy Statement, *supra* note 287, at 42.

³¹¹ *Id.* at 37. The figures for the other years were \$1,414 million for FY2009, and \$1,609 million for FY2010. *Id.*

trial, that is, \$878 million for FY2008 and \$1,120 million for FY2009,³¹² and continue to use the increased multiple (7.42x) and the reduced WACC (11.14%), we get a value for Huntsman's equity of just \$4,074.65 million, which is still \$2.4 billion or 37% below the purchase price of \$6.5 billion. Or again, using Huntsman's EBITDA projections produced at the time of trial (\$878 million for FY2008 and \$1,120 million in FY2009), the highest multiple (8.5x) and lowest WACC (9.5%) used by Huntsman's own financial advisors at the time the agreement was signed,³¹³ the value of the company's equity does not exceed \$5,325.70 million, which is still \$1.2 billion or 18% below the purchase price. In fact, to make the deal hit the breakeven point for Hexion on the date of the MAC declaration, in the equation immediately above we would have to simultaneously increase the EBITDA projections and the EV/estimated-EBITDA multiple and decrease the WACC all by more than 27%—which is more than *three times* the 9.0% change in the inputs we needed to make the deal profitable as of the date of signing.

Even more dramatically, using Huntsman's own EBITDA projections produced at the time of trial (that is, \$878 million for FY2008 and \$1,120 million for FY2009) and a WACC of 12.24%, the deal does not reach the breakeven point for Hexion until the EV/estimated-EBITDA multiple hits 10.33x, which, as is clear from Table 9 above, is higher than the multiples for 21 of Huntsman's 23 Bloomberg Peer companies. Conversely, again using Huntsman's own EBITDA projections but now using the EV/estimated-EBITDA multiple from the date of the MAC declaration (6.81x), the deal does not reach the breakeven point for Hexion unless the WACC is *negative*, specifically about -6.10%.

Thus, assuming the Continuing Profitability Model provides a better understanding of MAC clauses than does the Earnings Potential Model, it seems clear that Huntsman was MAC'd on the date of Hexion's MAC declaration and the court's conclusion in *Hexion* was wrong by a wide margin. How could that happen? The answer lies in noticing that the Continuing Profitability Model takes account of more aspects of financial reality than does the Earnings Potential Model. That latter model considers only the EBITDA of the affected company. EBITDA, to be sure, is clearly relevant to the value of the company, but also relevant are the expected *growth* and *riskiness* of such cash flows. The first of these is captured (albeit only roughly) in the EV/estimated-EBITDA multiple used in the Continuing Profitability Model. The second is captured (again albeit only roughly) in the party's WACC.

³¹² Hexion Specialty Chems. Inc. v. Huntsman Corp., 965 A.2d 715, 743 (Del. Ch. 2008).

³¹³ Cowen and Company used multiples as high as 8.5x, Huntsman Proxy Statement, *supra* note 287, at 52, and Merrill Lynch used discount rates as low as 9.5%, *id.* at 42.

There are no analogues to these in the Earnings Potential Model. Put another way, the Earnings Potential Model looks to only one of the three variables needed to value the company. No wonder, therefore, that it will often get the wrong answer.³¹⁴

b. Even Excluding Systematic Factors, Huntsman Was MAC'd

In using the Continuing Profitability Model to show that, at the time of Hexion's MAC declaration, the value of Huntsman had declined well below the purchase price in the deal, we used EBITDA estimates, EV/estimated-EBITDA multiples, and WACCs *as of the date of the alleged MAC*, i.e., as of June 18, 2008. Hence, the values of these variables reflected conditions as of that date—including general economic and financial conditions and general conditions in the chemicals industry. Such conditions were, in some respects, different from the conditions prevailing at the time the agreement was struck on July 12, 2007. This fact was apparent when we used the Continuing Profitability Model to determine whether the deal had been profitable for Hexion when signed: using data from July of 2007, we had significantly higher EBITDA estimates, a significantly higher EV/estimated-EBITDA multiple, and a slightly lower WACC, as well as some more minor changes in the value of Huntsman's net debt.

Now, the changes in these key variables after the signing of the agreement may have resulted from changes peculiar to Huntsman, from changes in the chemicals industry generally, or from changes in the economy or financial markets generally—or, indeed, a combination of these. As we saw in Part I.B.3, however, MAC Definitions often contain MAC Exceptions that shift to counterparties one or more such systematic risks, and in fact the MAC Definition in the Hexion-Huntsman agreement included MAC Exceptions related to general changes in the economy, in the financial markets, and in the chemicals industry, subject in each case to a Disproportionality Exclusion.³¹⁵ Can the Continuing Profitability Model be adapted to control for the effects

³¹⁴ In fact, there is another important source of error in the Earnings Potential Model. That model, like the Continuing Profitability Model, is based on the firm's EBITDA, but EBITDA measures cash flows not only to the firm's equity holders but also to its debt holders. The Continuing Profitability Model corrects for this by subtracting the value of the firm's debt net of its cash and marketable securities in order to get an estimate of the value of the firm's equity. The Earnings Potential Model ignores all this. So, for example, if the firm incurred tremendous amounts of debt between signing and closing or else spent huge cash reserves on utterly useless projects, its EBITDA would be entirely unaffected; in either case, however, there can be no doubt that the company could be materially adversely changed from the point of view of a reasonable acquirer of the company's equity.

³¹⁵ Hexion Merger Agreement, *supra* note 179, at 10.

of materializing systematic risks and so determine whether Huntsman was MAC'd at the time of the MAC declaration even without regard to changes arising from such risks? The answer to this is yes.

To begin with what is easiest, changes in the estimate of Huntsman's WACC, which we based on data for the WACCs of all companies in the chemicals industry,³¹⁶ were caused almost certainly by systematic factors, whether factors peculiar to the chemicals industry, to financial markets generally, or to the economy as a whole. In order to disregard changes arising from the materialization of such risks, we should use in the Continuing Profitability Model the estimate of Huntsman's WACC *as of the date of the agreement*, provided that this WACC was lower than the WACC on the date of the MAC declaration (that is, conditions had changed between signing and closing in a way adverse to Huntsman). If it turns out that the WACC was actually lower on the date of the MAC declaration than on the date of signing, then any change between those dates was not adverse to Huntsman, and we should continue to use the WACC from the date of the MAC declaration. Consulting Ibbotson's most recent data prior to the date of the agreement (July 12, 2007) on the cost of capital for companies in the chemicals industry, we find that the appropriate WACC was 12.42%,³¹⁷ which is slightly higher than the 12.24% for the date of the MAC declaration. Hence, even controlling for systematic changes affecting Huntsman's WACC, the correct value³¹⁸ is 12.24%.³¹⁹

³¹⁶ For the estimate as of June 18, 2008, see IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-27 (2008) (estimate based on 316 companies). For the estimate as of July 12, 2007, see IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-10 (June 2007 Supp.) (estimate based on 322 companies).

³¹⁷ See *supra* note 297.

³¹⁸ In their discounted cash-flow analysis valuing the company, Merrill Lynch used WACCs ranging from 9.5% to 10.5, Huntsman Proxy Statement, *supra* note 287, at 42, and Cowen and Company used WACCs ranging from 11.0% to 12.0%. *Id.* at 52.

³¹⁹ Indeed, since the WACC for the industry group had *decreased* by 0.18% between signing and the MAC declaration, there is a reasonable argument for thinking that systematic factors actually prevented the diminution in Huntsman's value from being worse than it was. If so, then controlling for systematic factors may seem to require that we use the *higher* WACC from the date of the agreement in valuing Huntsman on the date of the MAC declaration. Now, as to which is the correct value to use, the issue is whether a MAC Exception that shifts systematic risks to counterparties shifts only downside risks or both downside and upside risks. In other words, if the MAC Exceptions in the agreement shifted only downside systematic risks to Hexion, then the correct WACC to use is the lower of the two possible rates, but if the MAC Exceptions shifted both downside and upside systematic risks to Hexion, then the correct WACC to use is the WACC as of the agreement date, whether it be lower or higher than the WACC as of the date of the MAC declaration. The language of the typical MAC Exception, even when qualified with a Disproportionality Exclusion, suggests the former. For example, in the Hexion-Huntsman agreement, the exact language provides:

[I]n no event shall any of the following constitute a . . . Material Adverse Effect . . .
(B) any occurrence, condition, change, event or effect that affects the chemical industry generally . . . except in the event, and only to the extent, that such occurrence, condition, change, event or effect has had a disproportionate effect on the Company

Similarly, since we are basing our EV/estimated-EBITDA multiple on the multiples of a set of companies comparable to Huntsman, changes in that multiple likewise result almost certainly from systematic factors. Hence, to disregard the materialization of systematic risks that affected that multiple after the signing of the Hexion-Huntsman merger agreement, we should likewise use the EV/estimated-EBITDA multiple *as of the date of the agreement*, provided that this multiple was higher than that from the date of the MAC declaration.³²⁰ From Bloomberg, we can obtain data analogous to that in Table 9 above but as of July 12, 2007:

and its Subsidiaries, taken as a whole, as compared to other Persons engaged in the chemical industry.

Hexion Merger Agreement, *supra* note 179, at 10. Furthermore, that only *downside* systematic factors are shifted is consistent with the efficiency rationale for shifting systematic risks explained in Miller, *supra* note 1, at 2073-82. That is, if systematic risks are shifted to counterparties not because counterparties are cheaper cost avoiders or superior risk bearers of such risks but in order to forestall counterparties from calling MACs on the basis of materializing systematic risks (because publicly calling a MAC exacerbates the damage done to the party, with the result that it is cheaper for the counterparty to buy the MAC'd party at the original price than for the party to suffer the additional damage, over and above the MAC, resulting from the MAC declaration), then the rationale for shifting such risks applies only in the case of downside risks and not upside risks. Hence, shifting upside risks would entail certain costs (at least transactions costs) but provide no benefits. Thus, both the text of the typical MAC Exception and economic theory suggest that upside systematic risks are *not* shifted in MAC Exceptions. Accordingly, as concluded in the text, the correct WACC to use is the lower WACC as of the MAC declaration date.

³²⁰ See the analogous argument in note 319, *supra*, regarding changes in the party's WACC.

Table 10. Bloomberg BEst EBITDA Estimates and Enterprise Values for Huntsman's Bloomberg Peers as of July 12, 2007³²¹
(All Dollar Amounts in Millions)

<u>Company:</u>	BEst EBITDA ³²²		EV ³²³	EV/BEst EBITDA FY2009
	FY2007	FY2008		
Monsanto Company	\$1,988.57	\$2,461.20	\$34,293.93	13.93
E.I. du Pont de Nemours & Co.	\$5,741.14	\$6,047.29	\$54,415.46	9.00
Praxair, Inc.	\$2,448.29	\$2,652.29	\$30,624.03	11.55
Dow Chemical Company	\$7,299.00	\$7,164.43	\$50,989.60	7.12
Air Products & Chemicals, Inc.	\$2,183.00	\$2,304.17	\$21,289.01	9.24
Ecolab, Inc.	\$967.17	\$1,064.00	\$11,261.21	10.58
PPG Industries, Inc.	\$1,850.50	\$1,899.50	\$13,840.00	7.29
Sherwin-Williams Co.	\$1,098.00	\$1,175.00	\$9,772.03	8.32
Celanese Corp.	\$1,167.80	\$1,196.80	\$8,707.71	7.28
Lubrizol Corp.	\$644.50	\$673.50	\$5,386.23	8.00
Eastman Chemical Co.	\$999.50	\$987.00	\$6,094.66	6.17
Albemarle Corp.	\$442.17	\$496.83	\$4,275.49	8.61
Valspar Corp.	\$410.75	\$447.25	\$3,807.09	8.51
Nalco Holding Co.	\$705.10	\$760.70	\$7,152.85	9.40
Westlake Chemical Corp.	\$323.20	\$301.75	\$2,058.50	6.82
Rockwood Holdings, Inc.	\$636.29	\$673.14	\$5,209.13	7.74
Olin Corp.	\$226.50	\$259.50	\$1,545.60	5.96
Cytec Industries, Inc.	\$447.50	\$497.80	\$3,895.68	7.83
Cabot Corp.	\$390.33	\$397.67	\$3,402.47	8.56
Koppers Holdings, Inc.	\$147.25	\$154.50	\$1,163.69	7.53
Nova Chemicals Corp.	\$774.64	\$739.58	\$4,742.82	6.41
Omnova Solutions, Inc.	\$43.50	\$53.00	\$396.14	7.47
Georgia Gulf Corp.	\$258.17	\$275.50	\$2,134.13	7.75
MEDIAN:	\$705.10	\$739.58	\$5,386.23	7.83

Since the median EV/estimated-EBITDA multiple for these companies was higher on the date of the agreement (7.83x) than on the

³²¹ As in Table 9, *supra*, the companies listed are those identified by Bloomberg, (HUN <Equity> RV <GO>) as the global companies comparable to Huntsman (other than Saudi Karan Petrochemical Company and Solutia, Inc., which I have deleted from the sample because some or all of the needed data for such companies is unavailable).

³²² For the meaning of Bloomberg's BEst EBITDA, see *supra* note 288. For each company, the BEst EBITDA estimates are the latest estimates prior to July 12, 2007.

³²³ For each company, the enterprise value shown is the enterprise value of the company as of the most recently completed quarter prior to July 12, 2007. For companies in which the fiscal year is the calendar year (most companies in the group), that quarter will be the quarter ending on June 30, 2007. For Monsanto Company and Omnova Solutions, Inc., it is the quarter ending on May 30, 2007. For Valspar Corp., it is the quarter ending on April 30, 2007.

date of the MAC declaration (6.81x), the correct multiple to use to control for downside systematic risks is the former (7.83x).³²⁴

If we stopped there and applied the Continuing Profitability Model using the Bloomberg BEst EBITDA estimates as of the date of the MAC declaration (\$895.60 million for FY2008 and \$946.25 million for FY2009), the EV/estimated-EBITDA multiple as of the date of the agreement (7.83x), and a WACC as of the date of MAC declaration (12.24%, since this value was lower than the WACC on the date of the MAC declaration), as well as the value of Huntsman's net debt as of the date of the MAC declaration (\$4,350 million, for this value is clearly peculiar to Huntsman), we would get a value for Huntsman's equity of about \$3,080.34 million, which is about \$3.4 billion or 53% below the \$6.5 billion purchase price.

We have not yet dealt, however, with the declines in the estimates for Huntsman's EBITDA. We must determine how much of these declines, if any, was peculiar to Huntsman, and how much, if any, was due to the materialization of systematic risks. Fortunately, there is a fairly straightforward way to do this by comparing declines in EBITDA estimates for Huntsman to declines in EBITDA estimates for the group of comparable companies as a whole. For example, if, between the time of signing and the time of the MAC declaration, the EBITDA estimate for the current year of Huntsman had declined 20%, but the median EBITDA estimate for the group of comparable companies as a whole had declined only 5%, then we can reasonably attribute 5% of the decline in Huntsman's EBITDA to systematic factors and 15% to factors peculiar to Huntsman. This will allow us to derive EBITDA estimates for Huntsman that correct for materializing systematic risks shifted to Hexion via MAC Exceptions.

Now, at the time of signing, the Bloomberg BEst-EBITDA estimates for Huntsman's then current fiscal year (FY2007) and its then next-succeeding fiscal year (FY2008) were \$1,154.33 million and \$1,134.33 million, respectively. At the time of the MAC declaration, the BEst-EBITDA estimate for its then current fiscal (FY2008) and its then next-succeeding fiscal year (FY2009) had declined to \$895.60 million and \$946.25 million respectively—declines of about 22.4% and 16.6%, respectively. As shown in Table 10 above, at the time the Hexion-Huntsman agreement was signed, the median BEst-EBITDA estimates for the Bloomberg Peers of Huntsman for the then current fiscal year (FY2007) and the then next-succeeding fiscal year (FY2008)

³²⁴ Recall that, immediately prior to the date of the agreement, Merrill Lynch, Huntsman's primary financial advisor, was valuing the company using EV/EBITDA multiples ranging from 6.5x to 7.5x. Huntsman Proxy Statement, *supra* note 287, at 42. Cowen and Company, Huntsman's other financial advisor, used EV/EBITDA multiples ranging from 7.5x to 8.5x. *Id.* at 52.

were \$705.10 million and \$739.58 million, respectively. As shown in Table 9, at the time of the MAC declaration, the median BEst-EBITDA estimates for the then current fiscal year (FY2008) and the then next-succeeding fiscal year (FY2009) were \$735.20 and \$726.33 million, respectively. That is, the current-year EBITDA estimate had increased by 4.3%, and the next succeeding-year EBITDA had decreased by 1.8%. Thus, while the estimates for Huntsman declined 22.4% and 16.6%, respectively, the estimates for the industry group as a whole increased 4.3% and declined 1.8%, respectively. This suggests that the portions of the decline due to factors peculiar to Huntsman were, with respect to the first year, the entire 22.4% decline,³²⁵ and, with respect to the second year, $16.6\% - 1.8\% = 14.8\%$. Since the EBITDA estimates as of the time of signing were \$1,154.33 million and \$1,134.33 million respectively, the reduced estimates, controlling for systematic factors, should be \$895.60 million and \$966.45 million, respectively.³²⁶

If this is correct, then, using these EBITDA estimates and the EV/estimated-EBITDA multiple (7.83x) as of the date of the agreement, as well as the estimate of Huntsman's WACC (12.24%) as of the date of

³²⁵ Once again, there is a question of whether MAC Exceptions for systematic risks shift just downside systematic risks or both upside and downside systematic risks. For the reasons given in note 319, *supra*, I conclude that only downside systematic risks are shifted. Hence, if systematic factors prevented Huntsman's EBITDA from declining even further than it otherwise would have because of factors peculiar to Huntsman, the MAC Exceptions left this upside systematic risk with Huntsman and so we do *not* control for upside systematic risks in giving effect to the MAC Exception. If we came to the opposite conclusion and thought that upside systematic risks had been shifted to Hexion too, then since the EBITDA estimate for the industry group had *increased* by 4.3% while the estimate for Huntsman had *decreased* by 22.4%, then we would say that controlling for systematic factors requires that we lower the estimate for Huntsman's current-year EBITDA by an additional 4.3% for a total diminution of $22.4\% + 4.3\% = 26.7\%$.

³²⁶ The discussion in the text proceeds on the assumption that we need not determine *which kinds* of systematic factors—e.g., changes in the economy as a whole, changes in financial markets, changes in the chemicals industry generally, etc.—were responsible for changes in the party's WACC, the EV/estimated-EBITDA multiple, or the party's estimated EBITDA. This assumption is justified in the case at hand because the Hexion-Huntsman merger agreement contained MAC Exceptions for all of these kinds of systematic risks, Hexion Merger Agreement, *supra* note 179, at 10, and so whether a change is due to one kind of systematic risk or another is irrelevant, all such risks having been shifted to Hexion. As the statistics in Table 3 above show, this will often be the case because MAC Exceptions for all three kinds of changes appear in large majorities of public company merger agreements. If, however, an agreement contains a MAC Exception for general economic changes but not one for general changes in the party's industry, for example, then determining whether a change resulted from one kind of systematic factor or another would become important. Fortunately, there are some fairly straightforward ways to do this. For instance, we could compare changes in EV/estimated-EBITDA multiples for the particular industry to changes in such multiples for the market as a whole. Thus, if the EV/estimated-EBITDA multiple for the industry had declined from 10.0x to 7.0x (that is, a 30% decline), but the multiple for the market as a whole had declined from 20.0x to 15.0x (that is, a 25% decline), then we could attribute 25% of the decline to market-wide factors and 5% of the decline to industry-wide factors. Thus, if the agreement contained a MAC Exception for general changes in financial markets or the economy as a whole but not for changes in the particular industry, then in applying the Continuing Profitability Model we would use a multiple 5% below the multiple at the time of signing. By reducing 10.0x by 5% we would get a multiple of 9.5x.

the MAC declaration (since this estimate is lower than that as of the date of the agreement), we get the following, using the values of Huntsman's net debt as of the date of the MAC declaration:

$$V = \frac{\$895.60}{(1+.1224)} + \frac{\$966.45}{(1+.1224)^2} + \frac{\$966.45 \times 7.83}{(1+.1224)^2} - \$4,350.00 = \$3,221.93$$

which is about \$3.3 billion or 50% below the \$6.5 billion purchase price for Huntsman's equity. Nor will any tinkering bring this value close to \$6.5 billion. For example, if, as we did above, we simultaneously increase the EBITDA estimates *and* the multiple by 9.0% (that is, to \$976.20 million for FY2008 and \$1,053.43 million for FY 2009 and 8.53x, respectively) *and* decrease the WACC by 9.0% (to 11.14%), we get a value for Huntsman's equity of \$4,655.87 million, or about \$1.8 billion or 28% below the purchase price. In fact, the transaction does not hit the breakeven point for Hexion until we increase the EBITDA estimates and EV/estimated-EBITDA multiple and decrease the WACC all by about 19.4% (thus assuming FY2007 EBITDA of \$1,069.35 million, FY2008 EBITDA of \$1,153.94 million, a multiple of 9.35x, and a WACC of 9.87%). At this point, we are simultaneously assuming that Huntsman would have an EV/EBITDA multiple higher than those of 19 of its 23 Bloomberg Peers³²⁷ and a WACC lower than any provided by Ibbotson.³²⁸ Finally, if we control for systematic factors in the WACC and EV/estimated-EBITDA multiple (that is, use 12.24% and 7.83x, respectively), and then use Huntsman's own EBITDA projections produced at the time of trial (\$1,027 million for FY2007 and \$1,289 million for FY2008), we get as the value of Huntsman's equity \$5,599.80 million or about \$900 million or 14% below the purchase price.

Simply put, even controlling for systematic factors, there is no reasonable way to conclude that, on the date of the MAC Declaration, Huntsman was worth anything near the purchase price in the deal. Hence, *even excluding the effects of materializing systematic risks, Huntsman was still clearly MAC'd* on the date of the MAC declaration. Furthermore, given that the MAC Expectation Metric in the Hexion-Huntsman agreement required only that the view that Huntsman was MAC'd be more reasonable than the alternative, there can be no real doubt that Huntsman was MAC'd within the meaning of the agreement and that Hexion deserved to win this case.

³²⁷ See *supra* Table 10.

³²⁸ For March 2008, Ibbotson's lowest median WACC estimate for companies in SIC 28 (the DCF 3-Stage) is 10.33%. IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-27 (2008) (giving weighted-average cost of capital for companies by SIC codes).

This is confirmed, incidentally, by events subsequent to the court's decision. For, although Huntsman won a resounding victory in the Delaware Court of Chancery, the parties subsequently settled the litigation on terms favorable to Hexion.³²⁹ Although Huntsman's expectation damages may have aggregated several billion dollars,³³⁰ the parties agreed that Apollo, Hexion's parent, would pay the \$325 million breakup fee,³³¹ invest \$250 million in Huntsman in a ten-year, 7% convertible note, and then pay an additional \$425 million,³³² up to 20% of which it would be entitled to recover depending on the outcome of litigation between Huntsman and Hexion's lenders.³³³ This represents a payment of considerably less than \$1 billion. Presumably, this indicates that, regardless of what Vice Chancellor Lamb held, the parties themselves realized that Hexion's assertion that Huntsman had been MAC'd had considerable justification. More to the point, if Apollo and Hexion could still make money buying Huntsman for the original \$6.5 billion purchase price, why would they not do so? The only plausible answer is that the deal was no longer profitable for Apollo and Hexion at the original price, and it was cheaper to pay Huntsman several hundreds of millions of dollars to get out of the deal.³³⁴

³²⁹ Huntsman Inc., Current Report (Form 8-K), at 2-3 (Dec. 15, 2008) (describing settlement with Hexion and Apollo); *see also* Peter Lattman, *Apollo, Huntsman Reach Amicable Split*, WALL ST. J., Dec. 15, 2008, at C1; Posting of Dan Slater to WALL ST. J.L. BLOG, *A Sweet Deal for Apollo as Huntsman, Black Lay Down Swords*, <http://blogs.wsj.com/law/2008/12/15/a-sweet-deal-for-apollo-as-hunstman-black-lay-down-swords/> (Dec. 15, 2008, 8:27 EST).

³³⁰ On the twenty trading days following the public announcement of the settlement of the Hexion-Huntsman suit (that is, from December 19, 2008 through and including January 20, 2009), Huntsman's average closing price was \$3.38 per share. According to Huntman's 10-K for the year ended December 31, 2008, the company had 234,430,334 common shares outstanding as of February 13, 2009. Huntsman Corp., Annual Report (Form 10-K) (Feb. 26, 2009). This implies a market capitalization for the company of only \$792,374,529, which is vastly below the \$6.5 billion purchase of Huntsman's equity in the transaction.

³³¹ According to Hexion's complaint, Hexion obtained a separate commitment from its banks to loan Hexion \$325 million to pay the termination fee even if the banks did not fund the Hexion-Huntsman merger. Although Lattman, *supra* note 329, is not perfectly clear, it seems that Hexion drew down on this credit facility in order to pay the \$325 million to Huntsman. *Hexion Complaint*, *supra* note 182, at 13.

³³² Huntsman Corp., Current Report (Form 8-K), at 2-3 (Dec. 15, 2008).

³³³ *Id.* at 3-4; *see also* Lattman, *supra* note 329.

³³⁴ On June 22, 2009, Huntsman announced that it had settled its suit against Hexion's lenders, Deutsche Bank and Credit Suisse Group. Huntsman Corp., Current Report (Form 8-K) (June 23, 2009). The banks agreed to pay Huntsman \$632 million in cash (including \$12 million in attorneys fees) and provide Huntsman with (a) a \$500 million senior secured term loan for seven years at LIBOR + 2.25%, and (b) a \$600 million unsecured credit facility, also for seven years, at 5.5%. *Id.* at 1-2. Most commentators thought that Huntsman's case against the banks was weak. Peter Lattman, *Huntsman, Banks Settle for \$1.7 Billion*, WALL ST. J., June 24, 2009, at C1; Posting of Steven M. Davidoff to N.Y. TIMES DEALBOOK, *A Huntsman Victory in More Ways Than One*, <http://dealbook.blogs.nyti.mes.com/2009/06/23/a-huntsman-victory-in-more-ways-than-one/> (June 23, 2009, 3:48 PM); Posting of Amy Kolz to LAW.COM, *Who Won the Huntsman Case? Both Sides Claim Satisfaction*, <http://www.law.com/jsp/LawArticlePC.jsp?id=1202431710645&slreturn=1> (June 24, 2009). In

This demonstration of how the Continuing Profitability Model would be applied to the Hexion-Huntsman transaction shows that applying the model is well within the competence of a court. The court must take judicial notice of published estimates of future EBITDA not only for the company itself but also for a group of firms comparable to the company, as well as EV/estimated-EBITDA multiples for the same group of firms and WACCs for the industry group of the company. All this information, including sets of peer firms for the company being valued, is publicly available from financial data services. Applying the model does indeed require the court to accept a few more items of information from such sources than does the Earnings Potential Model, but if the court will accept one piece of such data, there can be no principled objection to accepting a few more.

More generally, all inquiries require assumptions, and the best that anyone can ever do is to use the most reliable information available. If, as here, there really is nothing better than using very uncertain data, and if a decision is actually required (as it is for a court, which must decide the cases coming before it), then it is fatuous to complain about the imperfection of one's data. In MAC litigations, estimating key values under conditions of great uncertainty is simply unavoidable. One does the best one can. What the court *can* control, however, is the use to which such data is put, and for the reasons explained above, using that data in the Continuing Profitability Model is likely to generate more reliable, more predictable, and more economically-principled answers than using such data in the Earnings Potential Model will.

D. *The Continuing Profitability Model and the Relevance of the Purchase Price*

Besides the uncertainty of data used as inputs, there are two other potential objections to the Continuing Profitability Model, both of which concern the function of the purchase price in the model.

1. The Purchase Price as a Determinant of the Materiality Standard

First, the Continuing Profitability Model makes the existence of a MAC depend in part on the purchase price in the transaction. For, by comparing the value of the company's equity on the date of the MAC declaration to the purchase price in the deal, the model implies that, for

late June of 2009, about a year after the MAC declaration, and months after the settlement of the Hexion-Huntsman suit, the market capitalization of Huntsman was hovering around a meager \$1.25 billion.

any given adverse change, the higher the purchase price, the more likely the change is to be a MAC, and the lower the purchase price, the less likely the change is to be a MAC. The purchase price may seem, however, to be entirely irrelevant to the question of whether the company has suffered a material adverse change, and surely nowhere in the litigated MAC cases has there been the slightest hint that the purchase price should count in determining the materiality of an adverse change. Making the existence of a MAC turn in part on the purchase price seems plainly wrong.

Counterintuitive as it may seem, however, it is perfectly sensible that the existence of a MAC should depend in part on the purchase price. The issue is not so much whether there has been a change of a certain magnitude in the condition of the party but rather whether there has been a change *material in the context of the transaction*. Since “whatever the concept of materiality may mean, at the very least it is always relative to the situation,”³³⁵ and since the purchase price is obviously of the first importance in the context of the transaction, it is perfectly right that the materiality of an adverse change should depend in part on the purchase price. In other words, based on the very text of the typical MAC clause, what matters is whether there has been a *material* adverse change, and what is material depends, in part, on the purchase price. If this has not been as apparent as it ought to be, one reason is that the Earnings Potential Model has systematically ignored the relevance of the purchase price. Highlighting the relevance of the purchase price, therefore, is yet another advantage that the Continuing Profitability Model has over the Earnings Potential Model.

In addition, this reading of the text of the typical MAC definition makes perfect sense economically. For, when the counterparty agrees to pay the purchase price, it gets in exchange not only ownership of the party’s business (assuming the transaction closes) but also the benefit of all the party’s representations, covenants, and other agreements in the contract. It is elementary that the more valuable these other aspects of the contract are to the counterparty, the more the counterparty will pay. In particular, everything else being equal, the stronger the party’s representations and warranties, the higher the purchase price, and, conversely, the weaker the party’s representations and warranties, the lower the purchase price.³³⁶ This is as true for the representation about the absence of a MAC as for any other. Thus, if the counterparty is paying a bargain-basement price, an adverse change is less likely to be material than if the counterparty is paying top-dollar. Hence, the higher the purchase price in the transaction, the lower the materiality threshold in the MAC representation. In other words, everything else being equal,

³³⁵ FREUND, *supra* note 5, at 246.

³³⁶ GILSON & BLACK, *supra* note 225; Galil, *supra* note 20, at 848-49.

in paying a higher purchase price, part of what the counterparty is buying is the right to cancel the deal for relatively less serious reasons.

Indeed, the underlying principle here—that bearing risk is costly and whoever bears risk will demand compensation for doing so—is well-understood by both market participants and courts for other kinds of deal risk. For example, if a transaction presents significant antitrust, regulatory, or financing risks (meaning that the transaction might never close and the party never receive the purchase price), then that transaction is obviously less valuable to the party than a deal at the same price not presenting such risks. Thus, when Huntsman was considering offers from both Hexion and Basell, its “management and the principal stockholders expressed the view that the Basell transaction, although nominally at a lower price, represented the better alternative of the two proposals” because “the Basell proposal could be consummated more quickly and with greater certainty.”³³⁷ That is, because Huntsman would bear less deal risk in a transaction with Basell, it was willing to take a lower purchase price; conversely, since it would bear more deal risk in a deal with Hexion, it would demand a higher purchase price. Likewise, after Huntsman had entered into a merger agreement with Basell and Hexion had made a topping offer, one of Huntsman’s financial advisors opined that, since the Hexion proposal “had more risk of completion,” “the Hexion price needed to be discounted to account for these factors.”³³⁸

Moreover, courts have expressly recognized that a party bearing deal risk should be compensated for doing so by an appropriate adjustment to the purchase price. For instance, the Delaware Supreme Court, in explaining a board’s *Revlon* duty to get the highest price reasonably available for its shareholders, has said that a board may consider not just the price offered but, among other things, the risk that the transaction will not be consummated.³³⁹ But to say that a board may accept a lower price in exchange for bearing less deal risk is just to say that a board may accept a *higher* price in exchange for bearing *more* deal risk. As with antitrust, regulatory, or financing risk, so too with the risk of a MAC: if a party gets a higher purchase price, it should expect to bear more risk. Hence, Huntsman’s board recognized that, in exchange for the higher purchase price offered by Hexion, it was bearing increased risk from the extended delay between signing and

³³⁷ Huntsman Proxy Statement, *supra* note 288, at 25.

³³⁸ *Id.* at 29.

³³⁹ Mills Acquisition Co. v. Macmillan, Inc., 559 A.2d 1261, 1282 n.29 (Del. 1988); *see also* Paramount Commc’ns Inc. v. QVC Network, Inc., 637 A.2d 34, 44 (Del. 1994) (“In determining which alternative provides the best value for the stockholders, a board of directors is not limited to considering only the amount of cash involved . . . [including] the risk of non-consum[m]ation . . .”).

closing, including “risks that [the company] could be subject to an event that could be deemed a material adverse effect.”³⁴⁰

In other words, when a party gets a higher price, it should expect to bear more risk. It is thus reasonable that the materiality standard in the MAC Definition should depend in part on the purchase price in the deal. So far from being wrong, it is clearly right that the purchase price should play a role in assessing the materiality of adverse changes occurring between signing and closing. That the Continuing Profitability Model does this is a virtue, not a defect, of that model.

2. The Continuing Profitability Model When the Counterparty Overpays

If courts adopted the Continuing Profitability Model, then it seems that a counterparty that overpaid in the original deal and subsequently discovered its error³⁴¹ could easily escape the unfavorable bargain it had made. For, if the counterparty declares a MAC, a court applying the model would very likely conclude that the transaction was unprofitable for the counterparty on the date of the MAC declaration, even though there had been no adverse change at all in the condition of the party. Hence, the court would allow the counterparty to cancel the deal. Indeed, it may seem that this is exactly what happened in *Hexion*. For, as shown above in Part III.C.1.a, even on the date of the agreement, the Continuing Profitability Model yields an equity value for Huntsman 25% below the purchase price, and only by increasing the EBITDA estimates and the EV/estimated-EBITDA multiple and by

³⁴⁰ Huntsman Proxy Statement, *supra* note 287, at 36. To be clear, Huntsman recognized that the increased time between signing and closing in a deal with Hexion (as compared with Basell) increased the chance that a MAC would occur. Huntsman did not say in the merger proxy that the higher purchase price Hexion was offering would affect which events would qualify as MACs under the agreement.

³⁴¹ The text contemplates that the counterparty overpays unintentionally, that is, it honestly but mistakenly (indeed, unreasonably mistakenly) believed at the time of signing that the party was worth the purchase price. It has been suggested to me that an opportunistic counterparty could *intentionally* agree to pay an unreasonably high price for the party and then threaten to declare a MAC on the party. Since the Continuing Profitability Model would supposedly imply (albeit erroneously) that the party was indeed MAC'd, the party would have to renegotiate the deal on terms favorable to the counterparty. Such a scheme is very unlikely to succeed, however, not only for the reasons given in the text (that is, the reasons that prevent an irrationally exuberant counterparty from canceling a deal will also prevent an opportunistic one from doing so). Additionally, the scheme is unlikely to succeed because (a) it is highly improbable that any rational commercial actor would intentionally obligate itself to purchase a business at an unreasonably high price in the hopes that it may be able later to extricate itself from the contract by prevailing in litigation—the result would be too uncertain, and the costs of failure too high; and (b) there would be tremendous reputational costs to attempting such a scheme, and a repeat player in the market for corporate control would very likely find these costs prohibitive even if the scheme should once (or occasionally) succeed.

simultaneously decreasing the WACC were we able to conclude that the transaction was profitable for Hexion at signing. Similarly, the financial analyses performed by Merrill Lynch, Huntsman's primary financial advisor, at the time of the transaction never yielded a value for Huntsman's equity as great as the purchase price.³⁴² No wonder, therefore, that the Continuing Profitability Model shows so easily that Huntsman had been MAC'd. Such results are entirely unacceptable, however, because the upshot would be to allow counterparties to walk away from agreements they had freely made merely because the bargain struck was objectively unfavorable for them.

This, however, does not follow. The Continuing Profitability Model is just that—a model, which, like all models, makes various assumptions and abstracts from various aspects of reality that often turn out to be important. No such model may trump reality, and the reality is that sophisticated commercial parties supported by expert legal counsel and financial advisors do not enter into transactions worth millions or even billions of dollars on utterly unreasonable terms. If the conclusions of the model conflict with the assumption that sophisticated commercial parties act in their rational self-interest, it is the conclusions of the model that must give way.

In fact, however, there will almost never be a real conflict. Rather, as we saw in Hexion-Huntsman, it will almost always turn out that the deal really was profitable for the counterparty at signing if we make some reasonable adjustments to the inputs to the model—reasonability here being measured by observable market conditions and the publicly available judgments of disinterested and informed third parties. Recall, for example, that in Hexion-Huntsman we were able to show that the deal was profitable for Hexion at signing if we adjusted the EBITDA estimates, the EV/estimated-EBITDA multiple, and the WACC each by 9.0%.³⁴³ In addition, we were able to show that each of these adjustments was reasonable as compared to market values and publicly available judgments of knowledgeable third parties: for instance, the adjusted estimated FY2008 EBITDA we used was less than Hexion's own projections at the time of signing,³⁴⁴ the adjusted EV/estimated-EBITDA multiple we used was greater than those of fifteen but less

³⁴² See Huntsman Proxy Statement, *supra* note 287, at 38-47.

³⁴³ See argument *supra* Part III.C.1.a. The values in question are \$1,258.22 for FY2007 EBITDA, \$1,236.42 million for FY2008 EBITDA, 8.53x for EV/estimated-EBITDA multiple, and 11.30% for WACC.

³⁴⁴ Huntsman was projecting \$1,289 million in FY2008 EBITDA at the time of signing. Huntsman Proxy Statement, *supra* note 287, at 37. The estimate for FY2007 EBITDA used in the text (\$1,258.22) was indeed higher than Huntsman's own estimate for FY2007 (\$1,027 million (*id.*)), but this figure has only minimal impact (the difference between using Huntsman's estimate and the one actually used is only about \$208 million) on the valuation determined by the model. The FY2008 estimate, since it is also used in computing the terminal value, is by far more important.

than those of eight of Huntsman's Bloomberg Peers,³⁴⁵ and the adjusted WACC we used was higher than some of the estimates provided by Ibbotson³⁴⁶ and all of those used by Huntsman's primary financial advisor.³⁴⁷ Given the possibility of such reasonable adjustments, the correct conclusion is that the deal *was* profitable for Hexion at the time of signing.

Now, once we start making adjustments to the inputs of the model in this way, we do indeed create a risk that, when the model shows that the deal was *not* profitable at the time of the MAC declaration, what we are seeing is not a true MAC on the party but merely the result of using more moderate assumptions to value the deal than did the counterparty at the time of signing. There is, however, a ready way to determine which scenario is actually the case: we should inquire whether adjustments similar to those needed to make the deal profitable for the counterparty at signing would also show that the deal continues to be profitable on the date of the MAC declaration. If so, then we should conclude that the company has *not* been MAC'd. This is precisely what we in fact did in the Hexion-Huntsman example, and the answer was that no adjustments analogous to those we made to show that the deal was profitable as of signing would make the deal profitable on the date of the MAC declaration. For, on the signing date, a 9.0% adjustment in various inputs, each of which was verifiably reasonable in the sense explained above, made the deal profitable for Hexion. On the date of the MAC declaration, even controlling for systematic factors, we needed more than a 19.4% adjustment in the same inputs to make the deal profitable,³⁴⁸ and each of these adjustments was verifiably *unreasonable*. That is, we needed to use EBITDA estimates higher than Huntsman's own projections at the time of trial,³⁴⁹ an EV/estimated-EBITDA multiple higher than that of all but four of Huntsman's Bloomberg Peers³⁵⁰ and higher than any used by Huntsman's financial advisors,³⁵¹ and a WACC virtually as low as any reported by Ibbotson³⁵²

³⁴⁵ See *supra* Table 10.

³⁴⁶ For June 2007, Ibbotson's median WACC for SIC 28 companies included a DCF 3-Stage rate of 9.18%, which is 212 basis points below the 11.30% used in the text, and a CAPM rate of 11.53%, which is just 23 basis points higher than the 11.30% used in the text. IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-10 (June 2008 Supp.).

³⁴⁷ Huntsman Proxy Statement, *supra* note 287, at 42 (noting that Merrill Lynch used discount rates ranging from 9.5% to 10.5%).

³⁴⁸ See argument *supra* Part III.C.1.b. The values in question are \$1,069.35 million for FY2008 EBITDA, \$1,153.94 million for FY2009 EBITDA, 9.35x for EV/estimated-EBITDA multiple, and 9.87% for WACC.

³⁴⁹ The \$1,069.35 million for FY2008 EBITDA and the \$1,153.94 million for FY2009 EBITDA were about 22% and 3% higher, respectively, than the \$878 million and \$1,120 million being projected by Huntsman for FY2008 and FY2009 at the time of trial. Hexion Specialty Chems., Inc. v. Huntsman Corp., 965 A.2d 715, 743 (Del. Ch. 2008).

³⁵⁰ See *supra* Table 10.

³⁵¹ Merrill Lynch used EV/EBITDA multiples ranging from 6.5x to 7.5x, Huntsman Proxy

and in fact lower than almost all of those used by Huntsman's financial advisors.³⁵³ In other words, based on observable market conditions and the publicly available judgments of informed and disinterested third parties, the adjustments needed to conclude that Huntsman's equity was worth about \$6.5 billion at the time of signing were reasonable, but judging by that same standard, the adjustments needed to conclude that Huntsman's equity was worth that much at the time of the MAC declaration, even controlling for systematic factors, were not reasonable.

Such, I suggest, will be the usual situation: even if the transaction looks unprofitable for the counterparty at signing, some reasonable adjustments to the inputs of the model will make the transaction profitable after all. Still, even if the adjustments needed are *unreasonable* in the sense indicated above, I still say that we cannot allow financial models to trump reality; we have to assume that the transaction was profitable for the counterparty at signing. If this requires adjustments to the model's inputs that cannot be verified as reasonable, so be it. Our procedure should be the same. We should determine what percent changes in the inputs are needed, and we should assume that the adjusted values are reasonable. The counterparty, who freely signed up the deal on these terms, certainly cannot complain about this assumption. Having determined then what percent adjustments are needed to make the deal profitable at signing, we should test any application of the Continuing Profitability Model made as of the date of the MAC declaration by rerunning the numbers applying the given percent adjustment. If, with such adjustments, the deal is profitable on the date of the MAC declaration, then there has been no MAC, and the counterparty should have to close or be in breach of the merger agreement. If, even allowing for the adjustments, the deal is no longer profitable for the counterparty, then there was indeed a MAC, and the counterparty should be permitted to cancel the deal.

Now, when the counterparty has paid a very high purchase price, it will turn out that even a relatively small adverse change³⁵⁴ after signing

Statement, *supra* note 287, at 42, and Cowen and Company used EV/EBITDA multiples ranging from 7.5x to 8.5x, *id.* at 52.

³⁵² For June 2007, the only median WACC reported by Ibbotson for SIC 28 companies less than 9.87% was again the DCF 3-Stage rate of 9.18%. Hence, the WACC needed to make the transaction profitable for Hexion was 69 basis points higher than the lowest WACC reported by Ibbotson and 166 basis points *lower* than the second lowest WACC so reported (the 11.53% CAPM figure). IBBOTSON SBBI COST OF CAPITAL YEARBOOK 2-10 (June 2008 Supp.).

³⁵³ Merrill Lynch used discount rates ranging from 9.5% to 10.5%, Huntsman Proxy Statement, *supra* note 287, at 42, and Cowen and Company used discount rates ranging from 11.0% to 12.0%, *id.* at 52.

³⁵⁴ If there has been no change at all after signing, then the inputs to the model will be the same as of the date of signing and the date of the MAC declaration, and since we will be applying the same percent adjustments to both sets of figures, just as the model will show the deal was

could result in the deal no longer being profitable for the counterparty and thus justify the counterparty in canceling the deal. This, however, as we saw above in Part III.D.1, is just as it should be. Since the counterparty was paying a very high price, the materiality standard in the MAC clause is very low. We might be tempted at this point to say that, in order to justify canceling the deal, the changes in the inputs to the model must be *material*, but that will certainly not do. Such a move would only resurrect in a new form the problem this Article has been attempting to solve—that is, to paraphrase away the unanalyzed concept of materiality in MAC clauses in terms of other concepts that are less vague and more empirically grounded. Moreover, it would violate the conclusion reached above in Part III.B that the border between immateriality and materiality lies at the point at which the transaction ceases to be profitable for the counterparty. If we hold to that conclusion, then it follows that when a counterparty has paid a very high price (that is, a price almost equal to its reserve price), even a small change can convert a profitable deal into an unprofitable one. The purpose of this Article has been to sharpen vague concepts. We should not be surprised, therefore, when the model described in the Article sometimes entails sharp distinctions.

IV. CONCLUDING OBSERVATIONS

In Part II, we saw that the key recurring issue in MAC litigations was materiality. That is, in case after case, the parties have agreed that one of them has suffered an adverse change, but they have disagreed about whether the adverse change is of sufficient magnitude to count as a *material* adverse change within the meaning of the merger agreement. Although courts have developed a sophisticated model—the Earnings Potential Model—to resolve MAC litigations, that model fails at exactly the point it is most needed—in drawing the line between the material and the immaterial. In effect, the model simply converts the pre-theoretical question of whether an adverse change is material into a pre-theoretical question of whether a certain percent diminution in EBITDA is material. Even worse than that, by introducing in no systematic way an indefinitely large number of pairs of comparable fiscal periods, it requires courts to ask, for one pair of fiscal periods after another, whether the diminution in EBITDA as between those periods is

profitable for the counterparty as of signing, so too will it show that the deal was profitable for the counterparty as of the date of the MAC declaration. Thus, if the model shows that the deal is no longer profitable on the date of the MAC declaration, this will only be because some of the inputs to the model have changed adversely to the party, though perhaps by only the smallest of amounts.

material. Even if the model provided a clear standard with regard to how much of a diminution in EBITDA is material—which it does not—it would still not explain how to decide cases if that standard were met as between some comparable periods but not as between others. At the critical point, the model leaves judges with nothing to do but rehearse the data, consult their intuitions, and announce a decision. In the end, therefore, the model does not create a judicable standard by which to decide MAC cases.

The Continuing Profitability Model, on the other hand, does exactly that. Based on an economic interpretation of the border between materiality and immateriality in the special context of MAC clauses, the Continuing Profitability Model considers not only the cash flows of the company but also their growth potential and risk, thus interpreting the phrase *material adverse change* in an economically and financially rational way. Moreover, the model is readily adaptable to segregate the effects of any systematic risks that may have been shifted to counterparties via MAC Exceptions. As shown in Part III.C, the interpretation that the Continuing Profitability Model provides is a practical tool of judicial decision making; courts could really apply it about as easily as they can apply the Earnings Potential Model. Since the Continuing Profitability Model has many theoretical advantages over the Earnings Potential Model and is not more difficult to apply in practice, the Continuing Profitability Model is clearly the superior of the two.

In addition, I want to highlight the relationship between the economic analysis involved in finding the efficient border between materiality and immateriality given above and some of my prior work on MAC clauses. In the past, I have argued that the shifting of systematic risks in MAC Definitions cannot be explained in conventional law-and-economic terms.³⁵⁵ For example, parties to stock-for-stock mergers typically use reciprocal MAC Definitions with reciprocal MAC Exceptions to shift between themselves various kinds of systematic risks, and so from signing to closing each company is bearing some of the systematic risks of the other. Since there is no plausible argument that each party is the cheaper cost avoider or superior risk bearer of the other's systematic risks, the efficiency rationale for shifting such risks must be quite unusual. I ultimately concluded that shifting such risks is efficient because it prevents the counterparty from declaring a MAC on the party under circumstances in which the harm to the party from the MAC declaration would exceed the benefit to the counterparty from making the declaration and canceling the deal. Systematic risks are shifted, in other words, in order

³⁵⁵ Miller, *supra* note 1, at 2067-69.

to eliminate a special risk arising from the acquisition process itself—the risk of the massive additional damage a party suffers, over and above the underlying material adverse change, that would result from the *public declaration* of the MAC.

When making that argument, I suggested that such unusual rationales for contractual risk-shifting may apply in other instances in sophisticated commercial agreements.³⁵⁶ This Article identifies another such instance. In locating the efficient border between material adverse changes and immaterial ones, I argued that although allocating business risks to parties rather than counterparties is easy to understand in conventional terms (i.e., the parties are typically cheaper cost avoiders or superior risk bearers of those risks), nevertheless allocating immaterial risks to counterparties cannot be so understood. For immaterial business risks as for material ones, the party itself is very likely the cheaper cost avoider or superior risk bearer, and so, assuming it is efficient to shift the party's immaterial business risks to the counterparty, the efficiency rationale for this must lie elsewhere. As with the shifting of systematic risks, the shifting of immaterial business risks is efficient because it eliminates another special kind of risk arising from the acquisition process itself. That is, by shifting immaterial business risks to counterparties, MAC clauses prevent a counterparty from declaring a MAC and exploiting the special vulnerability of the party to opportunistically renegotiate a deal that is in fact still profitable for the counterparty. Immaterial risks are shifted, in other words, to eliminate the risk of a certain kind of rent-seeking.

Finally, drawing the efficient border between materiality and immateriality in the context of MAC clauses involved not only identifying the efficiency rationales for assigning material risks to the party and immaterial ones to the counterparty. It also involved balancing the two to determine the point at which the one rationale came to outweigh the other. This technique may have wider application. In corporate and commercial contexts, Kaldor-Hicks efficiency is a very plausible norm, and it is reasonable to assume that sophisticated commercial parties are generally behaving as rational maximizers of their wealth. In such contexts, when agreements or even legal standards use terms such as *material* or *significant* or *substantial*, it may be worthwhile to analyze such terms using the method explained above. For example, if we can identify the efficiency rationale for requiring a shareholder vote when a corporation sells *substantially all* of its assets and the efficiency rationale for *not* requiring a vote when it sells some lesser amount of assets,³⁵⁷ then we can perhaps determine the

³⁵⁶ *Id.* at 2103.

³⁵⁷ *E.g.*, General Corporation Law Del. Code. Ann. Tit. 8 § 271 (2005); see Miller, *supra* note 100, at 24-25 (discussing similarities between MAC standard and § 271 “substantially all” cases).

point at which the one rationale comes to outweigh the other. If so, we can draw an efficient line between those amounts of assets that aggregate substantially all of the corporation's assets and those that do not. Terms that seem inherently qualitative can thus be given essentially quantitative paraphrases.