A SIMPLE UNIFYING FRAMEWORK FOR CATEGORIZING DISPARATE RISK TRANSACTIONS: SECURITIES INVESTMENTS, INSURANCE, GAMBLING, AND DERIVATIVE CONTRACTS

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The Article proceeds as follows: Part II examines how the law defines the following three risk transactions: (1) securities investments, (2)

insurance, and (3) gambling. Part III introduces a theoretical model of bilateral risk transactions and applies this model to the three different types of risk transactions surveyed in Part II. Part III introduces three baseline models of bilateral risk transaction: (1) bilateral risk transfer, (2) bilateral risk creation, and (3) bilateral risk destruction, and extends these models to include two additional variables: (1) endogenous risk and (2) risk mitigation. The addition of these two variables narrows the broad definition of a bilateral risk transaction to include the risk transactions examined in Part II. Other types of bilateral risk transactions are also considered, including derivative contracts. Highlighting two main regulatory concerns in connection with bilateral risk transactions, (1) fraud or moral hazard and (2) risk mitigation, Part IV summarizes how the current regulatory environment addresses these concerns and explores possible regulatory gaps suggested by the baseline models.

I.   INTRODUCTION

In an important article, Professor Hazen argues that securities investments, insurance, gambling, and derivative investments bear striking similarities to each other in many respects.[1] These risk transactions, however, are subject not only to different regulatory regimes but also to vastly different levels of government interference.[2] Professor Hazen argues that no rational basis exists for these widely differing regulatory schemes in pushing for a more consistent or uniform approach in regulating these risk transactions.[3] Contending that these disparate regulatory schemes ought to be brought more in line with one another, Professor Hazen views an increased regulation of securities markets, for example, as inconsistent with a deregulation of markets for non-securities derivative instruments and gambling.[4] This Article disagrees with this central claim, providing a rational basis for the divergent regulatory approaches to these different types of risk transactions. As the theoretical framework set forth below illustrates, if attention is narrowly restricted to the structure of the risk transaction itself, then these transactions do appear strikingly similar, as Professor Hazen suggests, supporting his claim for a more consistent regulatory approach. But, if attention is widened to include the existing risk exposure of the

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1. Thomas Lee Hazen, *Disparate Regulatory Schemes for Parallel Activities: Securities Regulation*, *Derivatives Regulation, Gambling, and Insurance*, 24 ANN. REV. BANKING & FIN. L. 375, 375 (2005).

2. *Id*.

3. *Id*.

4. *Id*.

contracting parties, then important differences materialize that this Article contends justifies the distinct regulatory treatment of these different risk transactions.

The Article proceeds as follows: Part II examines how the law defines the following three bilateral risk transactions: (1) securities investments, (2) insurance, and (3) gambling. Part II begins with the legal definition of a security, and more specifically, an investment contract. Next, this Part introduces the concept of an indemnity agreement and examines the two additional necessary elements of an insurance contract: (1) risk distribution and (2) the business of insurance. Finally, Part II considers how the law has sought to define gambling.

Part III introduces three baseline models of bilateral risk transaction: (1) bilateral risk transfer, (2) bilateral risk creation, and (3) bilateral risk destruction, and extends these baseline models to include two additional variables: (1) endogenous risk and (2) risk mitigation. The addition of these two variables narrows the broad definition of a bilateral risk transaction to include the risk transactions surveyed in Part II. Other types of bilateral risk transactions are also considered, including asset exchanges and derivative contracts. Finally, this Part examines two types of trading positions that can be created using derivatives: (1) synthetic positions and (2) fully hedged positions. The key conclusion derived from this analytic framework is that these transactions differ not with respect to the structure of the transaction itself, but according to the initial risk endowments of the contract parties.

Highlighting two main regulatory concerns in connection with bilateral risk transactions, namely, (1) fraud and moral hazard and (2) risk mitigation, Part IV summarizes how the present regulatory environment addresses these two concerns and explores possible regulatory gaps suggested by the baseline models introduced in Part III. Although securities investments and insurance are similar bilateral risk transactions in that both involve risk transfer, the regulation of insurance, unlike securities law, primarily seeks to protect the party transferring risk, and not the party to whom the risk has been transferred. This difference in regulatory focus follows directly from the analytic framework set forth in Part III, and, specifically, the discussion on risk distribution and the fact that the collective action problem created by multiple contract parties characterizes the transferor of risk in the case of insurance (i.e., the insureds), and not the parties to whom the risk is transferred as in the case of securities investments (i.e., the investors).

Finally, this Article contends that the increased use of derivative contracts has allowed investors to enter synthetic transactions that constitute gambling, no different than placing a wager on the outcome of a sporting contest. Although financial regulators have recognized the counterparty risk

implied by such synthetic positions, these regulatory authorities have been reluctant to condemn synthetic positions more generally. This is a mistake. Not only is risk creation antithetical to the broader social mission of the financial sector but these types of bilateral risk transactions also make the financial system less sound, amplify volatility, and, ultimately, render the economy susceptible to financial crisis. The difficulty, however, confronted by a financial regulator seeking to monitor or limit such activity is that the initial risk endowment of a contract party in a bilateral risk transaction, which the analytical framework emphasizes is necessary to differentiate between risk transfer and risk creation, is likely difficult to correctly identify or measure. Part V briefly concludes.

II.   BILATERAL RISK TRANSACTIONS

Part II examines how the law currently defines the following three bilateral risk transactions: (1) securities investments, (2) insurance, and (3) gambling.

A. Securities Investments

This Section begins with the legal definition of a security, and more specifically, an investment contract.

1.   Investment Contracts Defined

Section 2(a)(1) of the Securities Act defines the term "security."[5] For the most part, section 2(a)(1) is clear, and the question of whether a security exists for the purposes of the Securities Act is answered by reference to that section.[6] The question of what constitutes a security is complicated by the inclusion of the term "investment contract" in the section 2(a)(1) list of securities.[7] This term has no commonly understood meaning in a commercial context and is purely a construct of legislators and judges; specifically, in *SEC v. W.J. Howey Co.*,[8] the U.S. Supreme Court relied upon prior state

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5. 15 U.S.C. § 77b(a)(1). The Securities Act definition is essentially identical to the definition found in Exchange Act section 3(a)(10). 15 U.S.C. § 77c(a)(10). The U.S. Supreme Court has made clear that the two statutory definitions are to be treated the same. *See* United Hous. Found. v. Forman, 421 U.S. 837, 847 n.12 (1975) ("The definition of a security in § 3(a)(10) of the 1934 Act, 15 U.S.C. § 78c(a)(10) is virtually identical. . . .").

6. 15 U.S.C. § 77b(a)(1).

7. *Id*.

8. SEC v. W.J. Howey Co., 328 U.S. 293 (1946).

court decisions to define an investment contract, for the purposes of the federal securities law, as a:

> [C]ontract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party, it being immaterial whether the shares in the enterprise are evidenced by formal certificates or by nominal interests in the physical assets employed in the enterprise.[9]

The Supreme Court stated that its definition of a security "embodies a flexible rather than a static principle, one that is capable of adaptation to meet the countless and variable schemes devised by those who seek the use of the money of others on the promise of profits."[10] The Court has consistently rejected attempts to narrow the definition of a security, stating that "in searching for the meaning and scope of the word 'security' . . . form should be disregarded for substance and the emphasis should be on *economic reality*."[11]

The *Howey* test is traditionally broken down into four elements: (1) investment of money, (2) common enterprise, (3) expectation of profits, and (4) solely from the efforts of others.[12]

a.   Investment of Money

The first prong of the *Howey* test represents a relatively straightforward inquiry. Federal securities law encompasses all offers and sales of securities,

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9. *Howey*, 328 U.S. at 299.

10. *Id*.

11. Tcherepnin v. Knight, 389 U.S. 332, 336 (1967) (emphasis added).

12. As an alternative to the *Howey* test for a security, the "risk-capital test" has been adopted in some form in sixteen jurisdictions. *See* State v. Brewer, 932 S.W.2d 1, 28 (Tenn. Crim. App. 1996) (noting the influence of the risk-capital test). The risk capital test considers (1) whether funds are being raised for a business venture or enterprise; (2) whether the transaction is offered indiscriminately to the public at large; (3) whether the investors are substantially powerless to impact the success of the enterprise; and (4) whether the investor's money is substantially at risk because it is inadequately secured. *See* Silver Hills Country Club v. Sobieski, 55 Cal. 2d 811, 814–15 (1961) (applying these factors). Stated broadly, the risk capital test condemns a transaction that involves raising "funds for a business venture or enterprise; an indiscriminate offering to the public at large where the persons solicited are selected at random; a passive position on the part of the investor; and the conduct of the enterprise by the issuer with other people's money." Fox v. Ehrmantraut, 28 Cal. 3d 127, 138 (1980); *see also* People v. Coster, 151 Cal. App. 3d 1188, 1195 (1984). The risk-capital test "focuses retrospectively on what the investor stands to lose rather than prospectively on what he expects to gain." Wolf v. Banco Nacional de Mexico, 549 F. Supp. 841, 848 n.7 (N.D. Cal. 1982).

regardless of the form of consideration exchanged in the bargain. Importantly, the consideration does not have to be "money" and can be cash, checks, or anything else that would constitute consideration under ordinary contract law principles.[13]

b. Common Enterprise

With respect to the second prong of the *Howey* test, two distinct and competing formulations of a "common enterprise" have emerged in the courts of appeals: (1) horizontal commonality, and (2) vertical commonality.[14] The horizontal approach to common enterprise "focuses on the relationship among investors in an economic venture."[15] Horizontal commonality requires multiple investors who have interrelated interests in a common scheme and whose fortunes are shared or interwoven.[16] Central to this approach is the *pooling* of investors' money in a common venture.[17]

The vertical approach, by contrast, requires a common enterprise "in which the fortunes of the investor are interwoven with and dependent upon the efforts and success of those seeking the investment or of third parties."[18] Under this approach, investor funds do not need to be pooled; rather, the fortunes of the investors must be linked to the promoter in some way. Two different versions of vertical commonality exist. Strict vertical commonality requires a positive correlation between the fortunes of the investor and the *fortunes* of the investment promoter.[19] Under this view, the common enterprise element of the *Howey* test is satisfied if the investor and the investment promoter are both exposed to the same risk, and the profits and

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13. *See* Larry Soderquist, *Reach of the Securities Act Regulation*, *in* 1490 PLI/Corp. 113, 119 (2005).

14. *See Howey*, 328 U.S. at 298.

15. Marc G. Alcser, *Comment*, *The* Howey *Test: A Common Ground for the Common Enterprise Theory*, 29 U.C. Davis L. Rev. 1217, 1226 (1996).

16. *See id*. ("The horizontal approach to common enterprise focuses on the relationship among investors in an economic venture.").

17. *See*, *e.g.*, Hirk v. Agri-Research Council, Inc. 561 F.2d 96, 100 (7th Cir. 1977) (noting that the court in Milnarik v. M-S Commodities, Inc., 457 F.2d 274 (7th Cir. 1972) found commonality lacking when investors did not expect to obtain profits from a jointly managed operation).

18. SEC v. Glenn W. Turner Enters., Inc., 474 F.2d 476, 482 n.7 (9th Cir. 1973).

19. *See* SEC v. Eurobond Exch., Ltd., 13 F.3d 1334, 1339 (9th Cir. 1994) ("It is not necessary that the funds of investors are pooled; what must be shown is that the fortunes of the investors are linked with those of the promoters. . . ." (quoting SEC v. Goldfield Deep Mines Co., 758 F.2d 459 (9th Cir. 1985))). Only the Ninth Circuit currently follows this approach. *See, e.g.*, Brodt v. Bache & Co., 595 F.2d 459, 461 (9th Cir. 1978) (rejecting a horizontal commonality requirement in favor of a vertical commonality requirement).

losses of the investor and the investment promoter are positively correlated. Broad vertical commonality, by contrast, requires a positive correlation between the fortunes of the investor and the *expertise* or *efforts* of the investment promoter; the promoter need not benefit from the investment under this form of vertical commonality.[20] Under this approach, the common enterprise element of the *Howey* test is satisfied if the investor relies upon the industry expertise or entrepreneurial efforts of the investment promoter.

c. *Expectation of Profit*

The third prong of the *Howey* test requires the expectation of profit to be the principal motivation for the investment.[21] The U.S. Supreme Court has defined "profits" as simply "financial returns on . . . investments," including dividends, periodic payments or increased value of investment, and "either capital appreciation resulting from the development of the initial investment . . . or a participation in earnings resulting from the use of investors' funds," and not merely from additional contributions.[22] The expected financial return may be fixed or variable and may be marketed as low-risk or "guaranteed."[23] In other words, that a money-making scheme offers a contractual entitlement to a fixed, rather than a variable, return does not prevent classification of the scheme as a security.[24]

d. *Solely from the Effort of Others*

Even if there exists an expectation of profit, the fourth prong of the original *Howey* test requires that these expected profits must derive "solely

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20. *See*, *e.g*., SEC v. ETS Payphones, Inc., 300 F.3d 1281, 1284 (11th Cir. 2002) ("Broad vertical commonality . . . only requires a movant to show that the investors are dependent upon the expertise or efforts of the investment promoter for their returns."). Both the Eleventh Circuit and the Fifth Circuit currently follow this approach. *See*, *e.g*., Eberhardt v. Waters, 901 F.2d 1578, 1580 (11th Cir. 1990) (noting that the common enterprise test examines whether the "fortunes of the investor are interwoven with and dependent upon the efforts and success of those seeking the investment or of third parties" (quoting Villeneuve v. Advanced Bus. Concepts Corp., 698 F.2d 1121, 1124 (11th Cir. 1983))); SEC v. Koscot Interplanetary, Inc., 497 F.2d 473, 479 (5th Cir. 1974) (stating that the commonality threshold requires a finding of group reliance on the defendant's actions).

21. *Howey*, 328 U.S. at 298–99. For an "investment" to exist, the consideration must be given in exchange for an expected financial return, and not a product or service.

22. *Forman*, 421 U.S. at 852–53; SEC v. Edwards, 540 U.S. 389, 396 (2004).

23. *See Forman*, 421 U.S. at 852–53 (describing investment contract examples).

24. *See Edwards*, 540 U.S. at 390 ("There is no reason to distinguish between promises of fixed returns and promises of variable returns. . . .").

from the efforts of others."[25] Lower courts have cautioned that the word "solely" is not to be interpreted as a literal limitation on the definition because "it would be easy to evade [the *Howey* test] by adding a requirement that the buyer contribute a modicum of effort."[26] Rather, courts have adopted "a more realistic test" that asks "whether the efforts made by those other than the investor are the undeniably significant ones, those essential managerial efforts which affect the failure or success of the enterprise."[27] Interestingly, the U.S. Supreme Court itself has seemingly softened its stance in endorsing a more relaxed standard for the derivation of the expectation of profits by omitting the word "solely" from its explication of the *Howey* test, stating in *United Housing Foundation, Inc. v. Forman* that the "touchstone is the presence of an investment in a common venture premised on a reasonable expectation of profits to be derived from the entrepreneurial or managerial efforts of others."[28]

2.   Promissory Notes Defined

To determine if a promissory note constitutes a security for purposes of the securities laws, courts have relied upon an analysis of "economic reality."[29] To analyze the economic reality underlying promissory notes, the U.S. Supreme Court has endorsed the "family resemblance" test.[30] The family resemblance test starts with the presumption that any note with a term of more than nine months is a security.[31] Because not all notes are securities, however, the Court also announced a judicially crafted list of exceptions.[32]

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25. *See Howey*, 328 U.S. at 301. Many courts combine the third and fourth components, referring to the test as a three-part test. *See*, *e.g.*, Warfield v. Alaniz, 569 F.3d 1015, 1020 (9th Cir. 2009) ("We distilled *Howey*'s definition into a three-part test . . . .").

26. *Koscot*, 497 F.2d at 480 (alteration in original) (quoting *Turner*, 474 F.2d at 482) (demonstrating that a buyer could evade the fourth prong of the *Howey* test).

27. *Id*. at 483

28. *Forman*, 421 U.S. at 852; *see also* Teamsters v. Daniel, 439 U.S. 551, 561 (1979) (repeating "touchstone" formulation from *Forman*). Even under this relaxed standard, however, the effort of the investment promoter must still be predominant; investors must be primarily passive. *See*, *e.g.*, *Koscot*, 497 U.S. at 480–81 (supporting the notion that investors should be passive).

29. *See Howey*, 328 U.S. at 298 (emphasizing the newfound importance of an economic reality analysis).

30. Reves v. Ernst & Young, 494 U.S. 56, 66–67 (1990).

31. *See id*. at 63 ("[A]ny note with a term of more than nine months is a 'security.'").

32. The judicial list of exceptions is as follows: note delivered in consumer financing, note secured by a mortgage on a home, short-term note secured by a lien on a small business or some of its assets, note evidencing a "character" loan to a bank customer, short-term notes secured by an assignment of accounts receivable, or note which simply formalizes an open-account debt incurred in the ordinary course of business (particularly if, as in the case of the

The presumption that a note with a term of more than nine months is a security can be rebutted in two ways: (1) demonstrate that the note in question bears a strong family resemblance to one of the enumerated exceptions, or (2) demonstrate that the note in question should itself be considered an exception.

The Supreme Court announced four factors that a court should consider in determining whether a note resembles an item on the list or should itself constitute an exception.[33] *First*, courts should examine the motivations of the buyer and seller. If the seller's purpose is to raise money for general business operations and the buyer is primarily interested in profit, then the note is more likely a security.[34] If the seller is merely seeking to purchase a minor asset or correct a cash flow issue and the buyer is not interested primarily in profit, then the note is less likely a security. *Second*, courts should examine whether the instrument involves common trading for speculation or investment.[35] *Third*, courts should assess the public's expectation by, for example, seeking to determine whether the notes in question are publicly characterized as investments.[36] *Finally*, courts should evaluate the existence of risk-mitigating factors, such as alternative regulatory schemes or insurance on the notes, that significantly reduce the need for the note in question to be covered by the securities laws.[37]

B. Insurance

This Section introduces the concept of an indemnity agreement and examines the additional elements that an indemnity agreement must possess to satisfy the legal definition of insurance.

1. Indemnity Agreements

An indemnity agreement can be defined as a contract in which one party agrees to pay compensation necessary to reimburse an economic loss of a type defined in the contract in exchange for consideration, often a predetermined monetary amount referred to as a "premium."[38] Subject to the

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customer of a broker, it is collateralized). *See id*. at 65 (listing the various non-securities).

33. *Id*. at 66–67.

34. *Id*.

35. *Id*.

36. *Id*.

37. *Id*.

38. *See* Walter Williams, *The Principle of Indemnity: A Critical Analysis*, 1960 Ins. L.J. 471, at 475 (1960) (describing the evolution of indemnity in American legislation and court system).

"fortuity principle," the economic loss must be random or uncertain; uncertainty must exist with respect to if, or when, the loss event will occur.[39] In an indemnity agreement, the indemnitor must estimate two variables with reasonable accuracy: (1) the probability of the loss, and (2) the magnitude of the loss.[40] An indemnity agreement seeks only to reimburse the indemnitee for the loss incurred. Under this principle of indemnity, the indemnitee can receive a benefit less than or equal to the economic loss incurred but cannot receive a benefit greater than the loss.[41] Accordingly, if the indemnitee does not incur an economic loss, then the indemnitee is not entitled to reimbursement. And an indemnitee does not incur an economic loss from damage or destruction to property if the indemnitee has no interest in that property. To recover, the indemnitee must have an "insurable interest" in the subject matter of the indemnity contract.[42]

a. Insurable Interest

Courts have articulated two tests to determine what type of interest satisfies the insurable interest requirement: (1) the legal interest test, and (2) the factual expectancy test.[43] Under the legal interest test, a legal interest must exist between the indemnitee and the subject of the indemnity to provide an insurable interest. In applying the legal interest test, courts have

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39. *See* M. Elizabeth Medaglia, Gregory H. Horowitz & Gina S. Love, *The Status of Certain Nonfortuity Defenses in Casualty Insurance Coverage*, 30 TORT & INS. L.J. 943, 945 n.10 (1995) (first quoting BARRY R. OSTRAGER & THOMAS R. NEWMAN, HANDBOOK ON INSURANCE COVERAGE DISPUTES § 8.01 (7th ed. 1994) ("Pursuant to the fortuity requirement, liability insurance will not cover property damage that the insured knows about when the policy is issued."); and then quoting MITCHELL L. LATHROP, INSURANCE COVERAGE FOR ENVIRONMENTAL CLAIMS § 1.04 (1994) ("Put another way, an individual or business entity cannot purchase insurance to cover a loss which has already occurred, nor will insurance cover a loss intentionally caused by the insurer.")).

40. *See*, *e.g.*, Alberto Feduzi, Jochen Runde & Carlo Zappia, *De Finetti on the Insurance of Risks and Uncertainties*, 63 BRIT. J. PHIL. SCI. 329, 339 (2012) ("If she is able to estimate the magnitude of the loss L and the probability p of the loss occurring, then she will be able to determine what premium to charge.").

41. Emeric Fischer, *The Rule of Insurable Interest and the Principle of Indemnity: Are They Measures of Damages in Property Insurance?*, 56 IND. L.J. 445, 448 n.18 (1980) (citing ROBERT E. KEETON, BASIC TEXT OF INSURANCE LAW 88 (1971)).

42. *See* Franklin L. Best, Jr., *Defining Insurable Interests in Lives*, 22 TORT & INS. L.J. 104, 105 (1986) ("Without an insurable interest, any policy which may be issued would be void."). For an excellent discussion of this topic, see Bertram Harnett & John V. Thornton, *Insurable Interest in Property: A Socio-Economic Reevaluation of a Legal Concept*, 48 COLUM. L. REV. 1162 (1948).

43. These competing theories trace their genesis to *Lucena v. Craufurd*, a seminal English case that has shaped the development of insurance law in every American jurisdiction. (1806) 127 Eng. Rep. 630.

recognized three types of legal interests: (1) property rights, (2) contract rights, and (3) legal liability.[44] Under this approach, an indemnity contract will ordinarily be declared void in the absence of one these three interests.[45] Notably, an insurable interest can exist under this test "even if the factual expectation was that the right would be economically worthless."[46] As discussed below, the legal interest test conflicts with the baseline model of insurance developed in Part III insofar as an insured's existing risk endowment is defined according to prospective economic gain, and not by some technical legal right that may have little, or no, real economic value.

Under the factual expectancy test, the focus of the inquiry is on the pecuniary or economic loss that the insured has incurred because of damage to, or destruction of, the insured's property. A typical formulation of the factual expectancy test is given as follows: "The test of insurable interest in property is whether the insured has such a right, title or interest therein, or relation thereto, that he will be benefited by its preservation and continued existence or suffer a direct pecuniary loss from its destruction or injury by peril insured against."[47] Observe that the language "or relation thereto" implies that a legal interest is not necessary if the insured has a relationship of any kind to the property such that the property's continued existence will directly impact the insured's economic well-being: factual expectancy can exist without a legal interest and is sufficient to support an insurable interest.[48] The expectancy must be substantial, however. An insurable interest cannot be created by a mere expectancy that, at some point in the future, the owner of property will bequeath or otherwise gift the property to the insured.[49]

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44.   Harnett & Thornton, *supra* note 42, at 1165.

45.   *See*, *e.g*., Farmers' Mut. Ins. Co. v. New Holland Tpk. Rd. Co., 15 A. 563, 565 (Pa. 1888) (depicting a case in which an indemnity contract was void).

46.   *See* Reuben A. Hasson, *Reform of the Law Relating to Insurable Interest in Property-Some Thoughts on Chadwick v. Gibraltar General Insurance*, 8 CAN. BUS. L.J. 114, 115 (1983) (citing KEETON, *supra* note 41, at 99–100); *see generally* Jacob Loshin, *Insurance Law's Hapless Busybody: A Case Against the Insurable Interest Requirement*, 117 YALE L.J. 475, 479 (2007) (describing the difference of the insurable interests' existence).

47.   Lancellotti v. Md. Cas. Co., 617 A.2d 296, 298 (N.J. Super. Ct. App. Div. 1992).

48.   *See*, *e.g*., Tech. Land, Inc. v. Firemen's Ins. Co., 756 A.2d 439 (D.C. 2000) (finding licensee of motion picture studio may have insurable interest in property based on economic benefit from unique property).

49.   *See*, *e.g*., Brewton v. Ala. Farm Bureau Mut. Cas. Ins. Co., 474 So. 2d 1120 (Ala. 1985) (finding that an insurable interest in property did not exist where the insureds had no title to the property). Occasional use of property will not support an insurable interest. *See*, *e.g*., Sayah v. Metro. Prop. & Cas. Ins. Co., 733 N.W.2d 192 (Neb. 2007) (finding occasional use of adult son's vehicle did not create insurable interest in vehicle).

b. Endogenous Risk

One of the key features of an indemnity contract, as defined in this Article, is endogenous risk, meaning that the probabilities of different states of nature are a function of the indemnitee's costly effort. Importantly, the indemnitor cannot observe the level of effort chosen by the indemnitee: the realized state of nature is only a noisy signal of the indemnitee's effort. If the mapping between effort and observable outcomes was completely deterministic, then the non-observability of effort would not act as a binding constraint upon the parties' ability to contract, and the conflict of interest between the two contract parties would be costless to resolve. In the case of endogenous risk, however, the observable outcome aggregates effort and the realization of pure chance. In this case, the indemnitor must design a contract, based solely upon observable outcomes, that induces the indemnitee to take optimal effort without directly conditioning the indemnitee's reward (or punishment) on the actual level of effort chosen. In this asymmetric information environment, the non-observability of effort can significantly increase the cost of resolving the conflict of interest between the indemnitor and indemnitee with respect to the indemnitee's optimal effort choice.[50]

2. Insurance Defined

This subsection examines two additional elements of an insurance contract: (1) risk distribution, and (2) the "business of insurance" requirement.

a. Risk Distribution

The element of risk distribution distinguishes indemnity from insurance.[51] Insurance *distributes* the risk of economic loss among a large number of parties subject to the same type of risk. By paying a predetermined amount into a general pool out of which payment is made for the economic loss specified in the insurance contract, each member contributes to

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50. *See* JEAN-JACQUES LAFFONT & DAVID MARTIMORT, THE THEORY OF INCENTIVES: THE PRINCIPAL-AGENT MODEL 159 (2002) (providing a mathematical formula to better calculate the tradeoff between insurance and efficiency by accounting for an agent's risk aversion).

51. *See* Helvering v. LeGierse, 312 U.S. 531, 539 (1941) (noting that the "elements of risk-shifting and risk-distributing are essential to a life insurance contract is agreed by courts and commentators").

compensation for losses incurred by any individual member of the pool.[52] The principal objective of the insured is to exchange the *uncertainty* of an economic loss, which may have significant negative consequences, for the *certainty* of a fixed and predetermined payment into an insurance pool (i.e., the premium), which now represents the maximum monetary amount that the insured can lose on account of the risk specified in the insurance contract.

To determine the premium amounts paid by individual members of the insurance pool sufficient to cover all losses sustained during a given period (in addition to administrative and other operating costs), the insurer must correctly predict the frequency and magnitude of such losses. To do this successfully requires a sufficiently large number of members among whom the risk is distributed under the insurance plan; specifically, as the number of insureds increases, the expected accuracy of the prediction of total expected losses increases as well. This statistical phenomenon is known as the "law of large numbers," which states that as the number of observed events in a sample increases, the expected difference between the observed value of the sample and the true value decreases.[53] By providing insurance to a large class of individual policyholders, and distributing risk over a diversified pool of individual members, the insurer benefits from the law of large numbers, which, in effect, transforms predicted economic losses into actual realized losses.[54]

b.   Business of Insurance

Not all indemnity contracts with risk distribution are legally characterized as insurance. To fall within the ambit of the state regulation of insurance, courts generally further require that the indemnitor's activities constitute the "business of insurance."[55] To determine whether an enterprise

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52. *See* KENNETH S. ABRAHAM, DISTRIBUTING RISK: INSURANCE, LEGAL THEORY AND PUBLIC POLICY 64 (1986) (explaining that the heart of any insurance system is its method of classifying risks and setting prices; different methods of classification can produce very different safety incentives, distributions of risk, and protection against lost).

53. *See* Kenneth S. Abraham, *The Maze of Mega-Coverage Litigation*, 97 COLUM. L. REV. 2102, 2114 (1997) (explaining the disintermediation process whereby comparatively small losses are most easily predicted because they reflect the most frequent and severe liabilities, while larger liabilities occur less frequently, but more severely).

54. *See* ROBERT I. MEHR & EMERSON CAMMACK, PRINCIPLES OF INSURANCE 34–37 (1985). Insurable losses are ideally independent and non-catastrophic, meaning that (1) the losses do not happen all at once, and (2) individual losses are not severe enough to bankrupt the insurer. *Id.*

55. *See*, *e.g.*, Robert H. II Jerry & Steven E. Roberts, *Regulating the Business of Insurance: Federalism in an Age of Difficult Risk*, 41 WAKE FOREST L. REV. 835, 840 (2006) (highlighting the fragmented federal and state demarcation that regulates the business of

is engaged in the business of insurance, courts rely on what is commonly referred to as the "principal object and purpose" test.[56] In *GAF Corp. v. County School Board*, 629 F.2d 981 (4th Cir. 1980),[57] the Fourth Circuit described this judicial test as follows:

> [T]he appropriate rule is that a small element of "insurance" should not be construed to bring a transaction within the reach of the insurance regulatory laws unless the transaction involves "one or more of the evils at which the regulatory statutes were aimed" and the elements of risk transfer and distribution give the transaction its distinctive character.[58]

This judicial test requires a court to inquire into the principal nature of the contractual relationship. If the principal object is indemnity, then the contract constitutes "insurance" and falls within the reach of state regulation. If the principal object is not indemnity, however, then the contract is not insurance and will be enforced consistent with ordinary contract law principles.[59]

C. Gambling Defined

Unless changed by statute, state and federal law has defined gambling as any activity with the following three elements: (1) consideration, (2) chance, and (3) prize.[60]

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insurance).

    56. Jordan v. Grp. Health Ass'n, 107 F.2d 239, 247–48 (D.C. Cir. 1939); *see also* Guest v. Allstate Ins. Co., 244 P.3d 342 (N.M. 2010) (crediting *Johnson* with first announcing the principal object and purpose test).

    57. GAF Corp. v. Cnty. Sch. Bd., Etc., 629 F.2d 981 (4th Cir. 1980).

    58. *Id*. at 984 (quoting KEETON, *supra* note 41, at 552).

    59. *See*, *e.g.*, Kinkaid v. John Morrell & Co., 321 F. Supp. 2d 1090 (N.D. Iowa 2004) (finding that hog sale contracts were not insurance; the principal feature of the contract was the sale of swine, with indemnity provision being ancillary); Allen v. Burnet Realty, LLC, 784 N.W.2d 84 (Minn. App. Ct. 2010) (holding that the legal assistance program that a real estate broker offered to independent contractor sales associates was not insurance because its principal object and purpose was to sell real estate).

    60. *See* FCC v. Am. Broad. Co., 347 U.S. 284, 290 (1954) (defining gambling as (1) the distribution of prizes, (2) wholly or in part according to chance, (3) for a consideration); *see also* Morrow v. State, 511 P.2d 127, 128 (Alaska 1973) ("Where the term 'lottery' is not defined by statute, courts generally adopt a definition including three essential elements: consideration, chance, and prize."). *See generally* Anthony N. Cabot, Glenn J. Light & Karl F. Rutledge, *Economic Value, Equal Dignity, and the Future of Sweepstakes*, 1 UNLV GAMING L.J. 1, 2 (2010) (explaining that gambling is one of the three basic forms of prize gaming; most states also take a common approach to determining the legality of price gaming).

1. Consideration

For a game to qualify as gambling, a player must provide some form of consideration in exchange for the opportunity to participate in the game.[61] The consideration required for the creation of a gambling contract is usually more than the peppercorn (or nominal) consideration sufficient to satisfy the consideration requirement under ordinary contract law principles.[62] Most often, the consideration given in exchange for the opportunity to participate in a game is money.[63] A game that requires all players to bet cash, for example, clearly satisfies the consideration requirement.[64] A game in which players can enter free of charge, on the other hand, clearly lacks consideration.[65]

2. Chance

Gambling must involve a game of chance; games of skill cannot constitute gambling activity. For a game to qualify as a game of chance, the outcome must be determined by chance.[66] Courts have proposed several tests for distinguishing a game of skill from a game of chance.[67] Implicit in all these judicial tests is the notion that a continuum of games exists ranging from a game of pure chance to a game of pure skill, with games of mixed

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61. *See*, *e.g.*, I. Nelson Rose, *Gambling and the Law®: An Introduction to the Law of Internet Gambling*, 10 UNLV GAMING RES. & REV. J. 1, 2 (2006) (explaining that consideration can be any expenditure of effort by one side or any benefit to the other side).

62. *See* Alexandra M. Prati, *Video Games in the Twenty-First Century: Parallels between Loot Boxes and Gambling Create an Urgent Need for Regulatory Action*, 22 VAND. J. ENT. & TECH. L. 215, 229 (2019) (reiterating that the consideration necessary for gambling requires more than the consideration for nongambling contracts, and in most jurisdictions today, the thing of value must be money).

63. *Id*.

64. Online casinos, for example, typically operate on an account basis, requiring an initial "post-up" transfer of funds to a customer's secure online account by credit card, debit card, or wire transfer—consideration by any standard.

65. *See*, *e.g.*, Am. Broad. Co., 347 U.S. at 293-94 (holding that no-purchase-necessary sweepstakes in which a player can freely enter lacks consideration and, therefore, cannot constitute gambling); *see also* Yellow-Stone Kit v. State, 88 Ala. 196, 201 (1890) (holding that if tickets were available for free, then no consideration and, in turn, no gambling).

66. "Chance" refers to "a lack of control over events or the absence of controllable causation, that is, the opposite of intention." 38 AM. JUR. 2D *Gambling* § 2 (2022).

67. *See*, *e.g.*, Anthony N. Cabot, Glenn J. Light & Karl F. Rutledge, *Alex Rodriguez, a Monkey, and the Game of Scrabble: The Hazard of Using Illogic to Define the Legality of Games of Mixed Skill and Chance*, 57 DRAKE L. REV. 383, 391–92 (2009) (stating that under the Predominate Test, a trier of fact must "envision a continuum with pure skill on one end and pure chance on the other").

skill and chance lying between these two limit cases. Examples of games of mixed skill and chance include card games such as poker and blackjack.[68] A conventional understanding of these card games is participation in a continuous sequence of distinct hands over a sustained period of time.[69] The skill in these games becomes apparent only after multiple rounds of play. In playing a single hand of poker, for example, the most skilled player is not certain to win. But as more hands are played, the most skilled participant becomes more likely to prevail over the other less skilled competitors—this feature explains why many contests, including card games, are typically played for more than a single round.[70]

3. Prize

Lastly, if no prize can be won, then the contest in question is classified as an amusement game, and not gambling.[71] Although a "prize" has been defined as almost anything of value, including a free replay or credit, most courts today require that the prize be something that is readily convertible into money.[72] A replay that must be played, for example, would not be considered a prize, whereas a credit that can be readily redeemed for cash would.

III. THEORETICAL MODEL

Part III introduces a theoretical model of bilateral risk transactions and applies this model to the risk transactions surveyed in Part II. Other types of bilateral risk transactions are also considered, including asset exchange and derivative contracts.

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68. Steven D. Levitt, Thomas J. Miles & Andrew M. Rosenfield, *Is Texas Hold'Em a Game of Chance? A Legal and Economic Analysis*, 101 GEO L.J. 581, 597 (2013) (arguing that because poker is a game of mixed skill and chance, assessing repeated rounds of play is the appropriate standard for evaluating the game).

69. *Id*.

70. *Id*.

71. *See* Rose, *supra* note 61, at 2.

72. *See*, *e.g*., Sebastian Schwiddessen & Philipp Karius, *Watch Your Loot Boxes! – Recent Developments and Legal Assessment in Selected Key Jurisdictions from a Gambling Law Perspective*, 1 INTERACTIVE ENT. L. REV. 17, 28 (2018) (explaining that there is a clear tendency in U.S. case law where virtual items that cannot be cashed out do not constitute gambling, as they are not awarding a "prize" within the meaning of most U.S. gambling laws).

A. Model Setup

This Section introduces a simple theoretical model of bilateral risk transactions. The description of the basic setup of the model starts with a formal definition of a bet. A bet, B, is defined as a set of finite payouts, V, over a discrete set of states of nature, S. Suppose, for simplicity, that only two states of nature exist: $S = \{s_1, s_2\}$. The elements of a bet correspond to the payouts in each state of nature. The bet, $B = (5, -5)$, for example, yields a gain of \$5 if state s_1 occurs and a loss of $-\$5$ if state s_2 occurs. The probability of each state of nature is given by a discrete probability distribution, $P(v_i) = p_i$. For ease of exposition, assume that the two states of nature are realized with equal probability: $p_1 = p_2 = 0.5$. Given this formal apparatus, a *bilateral risk transaction* can now be defined as a contract where Party X agrees to give a bet, B_x, to Party Y in exchange for Party Y agreeing to give a bet, B_y, to Party X.

Further, assume that each contract party j has an initial risk endowment, V_j^0, that can be defined as a set of finite payouts over the discrete set of states of nature. The initial risk endowment, $V_j^0 = (0, -10)$, for example, yields a payout equal to \$0 if state s_2 occurs and a loss equal to $-\$10$ if state s_2 occurs. A party enters into a risk transaction to transform an initial risk endowment, V_j^0, into a new payout distribution, V_j^1.

A payout distribution, $V = \{v_1, v_2\}$, can be described by two statistical properties: (1) the domain, and (2) the standard deviation. *First*, the domain of a payout distribution can be defined as the set of payouts, $\{v_1, v_2\}$, where $v_1 \leq v_2$. A payout distribution is defined as having *positive risk* if $v_1 \geq 0$, meaning that the set of feasible payouts are all non-negative. Likewise, a payout distribution has *negative risk* if $v_2 \leq 0$, meaning that the set of feasible payouts are all non-positive.

Second, the risk connected with a given payout distribution can be formally defined as the standard deviation of the payout distribution.[73] In this

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73. The standard deviation of the random variable, V, can be expressed mathematically as follows:

$$SD[V] = \sigma = \sqrt{\frac{(v_1 - \mu)^2 + (v_2 - \mu)^2}{2}}$$

where the expected value (or mean) of the random variable, V, can be expressed mathematically as follows:

$$E[V] = \mu = \frac{v_1 + v_2}{2}$$

If $\mu = 0$, then the standard deviation, σ, can be rewritten more simply as follows:

stylized formal environment, the risk of a payout distribution can be set equal to the difference (or distance) between the two possible payoffs. That is, the *risk* of a payout distribution, $V = (v_1, v_2)$, is given by the following equality:

$$Risk = |v_2 - v_1|$$

Under this formulation, the riskiness of a payout distribution decreases (increases) as the distance between the two payouts, v_1 and v_2, decreases (increases).

B. Typography of Bilateral Risk Transactions

This Section introduces the three main baseline models of bilateral risk transaction and considers several extensions of these baseline models.

1. Baseline Model

This subsection sets forth the three baseline models of bilateral risk transaction: (1) bilateral risk transfer, (2) bilateral risk creation, and (3) bilateral risk destruction.

a. Bilateral Risk Transfer

If the risk transaction (1) *decreases* the risk exposure of one party, and (2) *increases* the risk exposure of the counterparty, then this risk transaction is categorized as a bilateral risk transfer: a party enters into the bilateral risk transaction to transfer preexisting risk onto a contract counterparty. This subsection defines two basic types of bilateral risk transfer: (1) positive risk transfer, and (2) negative risk transfer.

i.   Positive Risk Transfer

Assume that Party X has an initial risk endowment with *positive risk*. Specifically, let $V_X^0 = (0, 10)$, which implies a payout equal to $0 if state s_1 occurs and a payout equal to $10 if state s_2 occurs. Party X enters into a bilateral risk transaction with Party Y in which Party X agrees to give a bet, $B_x = (0, 5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_y =$

$$SD[V] = \sigma = \sqrt{\frac{v_1^2 + v_2^2}{2}}$$

Note that the standard deviation can be any real *non-negative* number.

$(5, 0)$, to Party X. That is, Party X agrees to pay \$5 to Party Y if state s_1 is realized, and Party Y agrees to pay \$5 to Party X if state s_1 is realized. Under this risk transaction, Party X receives a total payout equal to \$0 + \$5 = \$5 if state s_1 occurs, and a total payout equal to \$10 − \$5 = \$5 if state s_2 occurs. Party X's new payout distribution is $V_X^1 = (5, 5)$, which is riskless.[74] Similarly, Party Y's new payout distribution is $V_Y^1 = (-5, 5)$, which is not riskless.[75] Because Party Y's initial risk endowment, $V_Y^0 = (0, 0)$, is riskless, Party Y has assumed risk in this transaction. Table 1 summarizes this discussion.[76]

Table 1. Positive Risk Transfer

States	V^0	B_X	B_Y	V^1
s_1	$(0, 0)$	0	5	$(5, -5)$
s_2	$(10, 0)$	5	0	$(5, 5)$

An investment contract can be viewed as a type of positive risk transfer. In terms of the above example, suppose that an entrepreneur undertakes a risky project that yields \$0 if state s_1 occurs and \$10 if state s_2 occurs. Having undertaken this investment, the entrepreneur then enters into a positive risk transfer contract with an investor in which the entrepreneur agrees to pay the investor a profit of \$5 if s_1 occurs (i.e., if the project succeeds) in exchange for the investor agreeing to pay the entrepreneur \$5 if s_2 occurs (i.e., if the project fails).[77] Under this risk transaction, the

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74. This follows because $v_2 - v_1 = 0$.
75. This follows because $v_2 - v_1 = 5 + 5 = 10 \neq 0$.
76. In Table 1, $V^0 = (V_X^0, V_Y^0)$. The first row in the second column of Table 1 gives the payouts for Party X and Party Y, respectively, *before* entering the contract, if state s_1 is realized. Likewise, the second row in the second column of Table 1 gives the payouts for Party X and Party Y, respectively, before entering the contract, if state s_2 is realized. The first row in the third column gives the amount that Party X must pay to Party Y under the contract if state s_1 is realized. Likewise, the second row in the third column of Table 1 gives the amount that Party X must pay Party Y if state s_2 is realized. The first row in the fourth column gives the amount that Party Y must pay to Party X under the contract if state s_1 is realized. Likewise, the second row in the fourth column of Table 1 gives the amount that Party Y must pay to Party X if state s_2 is realized. Finally, $V^1 = (V_X^1, V_Y^1)$, which gives the final payouts to Party X and Party Y, respectively, *after* entering the contract. To calculate Party X's final payout if state s_1 is realized, for example, the net bet, calculated by subtracting the third column from the second column, is added to Party X's payout in the second column.
77. In practice, the transaction will likely take the following form: Party X enters into a bilateral risk transaction with Party Y in which Party X agrees to give a bet, $B_x = (5, 5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (10, 5)$, to Party X. Netting out

entrepreneur has transformed an initial payout distribution, with risk, into a new payout distribution, with no risk, converting an *uncertain* gain of $10 into a *certain* gain of $5. This security contract transfers all investment risk to the investor. Unlike the entrepreneur who has eliminated exposure to risk, the investor has assumed risk in this transaction, transforming an initial risk endowment, $V_Y^0 = (0,0)$, with no risk, into a new payout distribution, $V_Y^1 = (-5,5)$, with risk.[78]

ii.   Negative Risk Transfer

Assume now that Party X has an initial risk endowment with *negative risk*; specifically, let $V_X^0 = (-10,0)$, which implies a payout equal to –$10 if state s_1 occurs and a payout equal to $0 if state s_2 occurs. Party X enters a bilateral risk transaction with Party Y in which Party X agrees to give a bet, $B_X = (0,5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (5,0)$, to Party X. That is, Party X agrees to pay $5 to Party Y if state s_1 is realized, and Party Y agrees to pay $5 to Party X if state s_1 is realized. Under this bilateral risk transaction, Party X receives a total payout equal to –$10 + $5 = –$5 if state s_1 occurs and a total payout equal to $0 + $5 = $5 if state s_2 occurs. Party X's new payout distribution under the risk transaction is $V_X^1 = (-5,-5)$, which is riskless.[79] Similarly, Party Y's new payout distribution is $V_Y^1 = (-5,5)$, which is *not* riskless.[80] Table 2 summarizes this discussion.

Table 2. Negative Risk Transfer

States	V^0	B_X	B_Y	V^1
s_1	(−10, 0)	0	5	(−5, −5)
s_2	(0, 0)	5	0	(−5, 5)

An insurance contract can be viewed as a type of negative risk transfer. In terms of the example above, suppose that a property owner has an insurable interest in property such that the owner incurs an economic loss equal to –$10 if state s_1 occurs and incurs no loss if state s_2 occurs. Given

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payments, the bet, $B_Y = (10,5)$, is equivalent to bet, $B_Y = (5,0)$.

78.   The risk associated with the new payout distribution, V_Y^1, is equal to $5 + 5 = 10 > 0$.

79.   This follows because $v_2 - v_1 = 0$.

80.   This follows because $v_2 - v_1 = 5 + 5 = 10 \neq 0$.

this insurable interest, the property owner enters a negative risk transfer contract with an insurance company in which the insurance company agrees to pay the property owner compensation equal to $5 if s_1 occurs (i.e., in the event of economic loss) in exchange for the property owner agreeing to pay the insurance company a premium equal to $5 if s_2 occurs (i.e., in the event of no economic loss). Under this risk transaction, the property owner has transformed an initial payout distribution, with risk, into a new payout distribution, with no risk, converting an *uncertain* loss of −$10 into a *certain* loss of −$5. This insurance contract transfers all risk of economic loss onto the insurance company. Unlike the property owner who has eliminated exposure to negative risk, the insurance company has assumed risk in this transaction, transforming an initial payout distribution, $V_Y^0 = (0, 0)$, with no risk, into a new payout distribution, $V_Y^1 = (-5, 5)$, with risk.

b. Bilateral Risk Creation

This subsection defines bilateral risk creation, distinguishing risk transfer from risk creation. If a bilateral risk transaction *increases* the risk exposure of both parties, then the risk transaction is categorized as bilateral risk creation: both parties enter the bilateral risk transaction to create new risk relative to their initial risk endowments. To illustrate, assume that both Party X and Party Y have initial risk endowments with zero risk, $V_X^0 = V_Y^0 = (0, 0)$. Party X enters a bilateral risk transaction with Party Y in which Party X agrees to give a bet, $B_X = (0, 5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (5, 0)$, to Party X. Under this bilateral risk transaction, Party X receives a total payout $0 + $5 = 5 if state s_1 occurs and a total payout $0 − $5 = −$5$ if state s_2 occurs. Party X's new payout distribution is $V_X^1 = (5, -5)$, which has risk. Likewise, Party Y's new payout distribution is $V_Y^1 = (-5, 5)$, which also has risk. Both parties assume risk under this bilateral risk transaction. Table 3 summarizes this discussion.

Table 3. Risk Creation

States	V^0	B_X	B_Y	V^1
s_1	(0, 0)	0	5	(5, −5)
s_2	(0, 0)	5	0	(−5, 5)

Importantly, gambling can be viewed as a type of bilateral risk creation contract. Unlike an entrepreneur who is exposed to positive risk, the gambler has no preexisting economic exposure to risk. Instead, the gambler *creates*

this risk by entering into a bilateral risk transaction where the gambler agrees to pay $5 to a counterparty (e.g., the House, bookmaker, another gambler) if s_1 occurs in exchange for the counterparty agreeing to pay $5 to the gambler if s_2 occurs.[81] By entering into this risk transaction, the gambler has transformed an initial risk endowment, with no risk, into a new payout distribution, with risk, converting a certain payout of $0 into an uncertain gain or loss of $5. Likewise, the contract counterparty has transformed an initial risk endowment with no risk into a new payout distribution with risk, converting a certain payout of $0 into an uncertain gain or loss of $5. Both parties have voluntarily increased their exposure to risk though contract, or, more specifically, through the bilateral exchange of bets as defined here. This feature of the risk transaction defines a risk creation contract.[82]

To clarify the relationship between risk transfer and risk creation, this Article defines "risk exchange" as a bilateral risk transaction in which a contract party "swaps" the outcomes of the two possible states of nature, transferring a preexisting economic gain or loss from one state of nature to the other. To illustrate, suppose that Party X has an initial risk endowment with negative risk, $V_X^0 = (-10, 0)$. Party X enters a risk exchange contract with Party Y in which Party X agrees to give a bet, $B_X = (0, 10)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (10, 0)$, to Party X. Under this risk transaction, Party X receives a total payout equal to $-$10 + $10 = $0 if state s_1 occurs and a total payout equal to $10 + $0 = $10 if state s_2 occurs. Party X's new payout distribution is $V_X^1 = (0, -10)$. Party X has swapped the outcomes of the two possible states of nature, now incurring

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81. Many actions create risk, such as serving on the board of a public company or opening a restaurant. The key defining feature of a risk creation contract is that the contract itself creates the risk of economic profit or loss; the random event that defines the discrete set of states of nature, S, does not result in an economic profit or loss for either contract party. The outcome of a card game or the spin of a roulette wheel, for example, does not, standing on its own, create a risk of economic profit or loss. Such economic risk is created solely by the contract that assigns profits or loss depending on the outcome of an event that would otherwise have no financial impact on the contract parties. In other words, the payouts are defined by the terms of the contract itself and not by the underlying random event that independently defines the states of nature upon which the contractual payouts are based.

82. *See* EDWARD J. MURPHY, RICHARD E. SPEIDEL & IAN AYRES, STUDIES IN CONTRACT LAW 612 (6th ed. 2003) (claiming that those insured seek insurance "to compensate them for the possible occurrence of an existing risk" while "[g]amblers by their contract create the risk at issue"); THOMAS A. HIERONYMUS, ECONOMICS OF FUTURES TRADING 140 (1971) ("Gambling involves the creation of risks that would not otherwise exist while speculation involves the assumption of necessary and unavoidable risks of commerce . . . ."); *see also* Ted S. Helwig & Christian T. Kemnitz, *Synthetic Security Transactions Under the Security Laws, Old and New*, 21 FUTURES & DERIVATIVES L. REP. 6 (2001) ("A synthetic stock trade is not a swap. . . . The synthetic stock transactions [in *Caiola v. Citibank*] did not allocate risk, but instead created risk and therefore were more sales than swaps.").

the loss of −\$10 in state s_2 and not in state s_1. Table 4 summarizes this discussion.

Table 4. Risk Exchange

States	V^0	B_X	B_Y	V^1
s_1	$(-10, 0)$	0	10	$(0, -10)$
s_2	$(0, 0)$	10	0	$(-10, 10)$

In this example, the risk exchange has *not* reduced Party X's exposure to risk. Instead, the risk exchange has merely transferred the economic loss from state s_1 to state s_2. Party Y's exposure to risk, by contrast, has significantly increased under the swap contract, from $V_Y^0 = (0, 0)$ to $V_Y^1 = (-10, 10)$. In fact, this risk exchange has increased the total risk borne by the two contract parties, suggesting that some aspect of this bilateral risk transaction involves risk creation.

Specifically, risk exchange can be loosely defined by the following equation:

$$Risk\ Exchange = Risk\ Transfer + Risk\ Creation$$

To see this, consider the following two bilateral risk transactions:

Negative Risk Transfer

States	V^0	B_X	B_Y	V^1
s_1	$(-10, 0)$	0	5	$(-5, -5)$
s_2	$(0, 0)$	5	0	$(-5, 5)$

and

Risk Creation

States	V^0	B_X	B_Y	V^1
s_1	$(-5, -5)$	0	5	$(0, -10)$
s_2	$(-5, 5)$	5	0	$(-10, 10)$

In this example, Party X first enters a negative risk transfer contract,

transforming an initial payout distribution, $V_X^0 = (-10, 0)$, with risk, into a new payout distribution, $V_X^1 = (-5, -5)$, with no risk. The risk has been transferred to Party Y, whose initial risk endowment, $V_Y^0 = (0, 0)$, has been transformed into a new payout distribution, $V_Y^1 = (-5, 5)$. Party X next enters a risk creation contract, doubling the total risk borne by the two contract parties. Under this second risk transaction, Party X has transformed the risk endowment, $V_X^0 = (-5, -5)$, into a new payout distribution, $V_X^1 = (0, -10)$, which is no longer riskless. Similarly, Party Y has transformed the risk endowment, $V_Y^0 = (-5, 5)$, into a new payout distribution, $V_Y^1 = (-10, 10)$, which has relatively more risk.[83] In this way, the contract parties can replicate a risk exchange contract with a properly chosen combination of risk transfer and risk creation contracts.

Figure 1 depicts a more general continuous relationship between risk creation, risk transfer, and risk exchange as it applies specifically to the preceding example.

$B_Y - B_X =$ 0   5   10

|---------------------------|---------------------------|---------------------------|---------------------------|

Risk Creation   *Risk Transfer*   *Risk Exchange*   *Risk Creation*
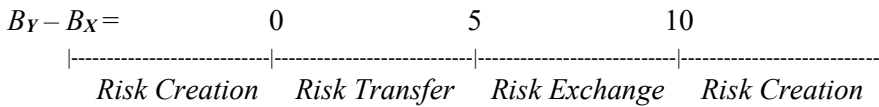
Figure 1. Relationship Between Risk Creation,
Risk Transfer, and Risk Exchange

To amplify, if Party X makes a bet that loses in the same state of nature in which Party X incurs an economic loss, then this bet amplifies Party X's exposure to risk and the transaction is, therefore, risk creation.[84] If Party X makes a bet that wins in the same state of nature in which Party X incurs an economic loss and does not exceed the payout to Party Y if the bet loses, then this bet reduces Party X's exposure to risk and the transaction is, therefore, risk transfer. If Party X makes a bet that wins in the same state of nature in which Party X incurs an economic loss and pays out an amount that exceeds the payout to Party Y if the bet loses, but does not exceed the economic loss, then this transaction exchanges the outcomes of the two possible states of nature and the transaction is, therefore, risk exchange. Lastly, if Party X makes a bet that wins in the same state of nature in which Party X incurs an economic loss and pays out an amount that exceeds the economic loss, then this risk transaction amplifies Party X's exposure to risk and the transaction

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83. Specifically, the risk of the payout distribution, $V_Y^0 = (-5, 5)$, is equal to $5 + 5 = 10$. The risk of the new payout distribution, $V_Y^1 = (-10, 10)$, is equal to $10 + 10 = 20$.

84. Assume that Party Y's initial risk endowment is riskless.

is, therefore, risk creation.

c. Bilateral Risk Destruction

Finally, this subsection defines bilateral risk destruction. If a bilateral risk transaction *decreases* the risk exposure of both parties, then the risk transaction is categorized as risk destruction: both parties enter the bilateral risk transaction to destroy risk relative to their initial risk endowments. To illustrate, suppose that Party X has an initial risk endowment, $V_X^0 = (-5, 5)$, and that Party Y has the "opposite" initial risk endowment, $V_Y^0 = (5, -5)$.[85] Party X enters into a bilateral risk transaction with Party Y in which Party X agrees to give a bet, $B_X = (0, 5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (5, 0)$, to Party X. Under this risk transaction, Party X receives a total payout equal to $-\$5 + \$5 = \$0$ if state s_1 occurs and a total payout equal to $\$5 - \$5 = \$0$ if state s_2 occurs. Party X's new payout distribution is $V_X^1 = (0, 0)$, which has no risk. Likewise, Party Y's new payout distribution is $V_Y^1 = (0, 0)$, which also has no risk. By entering this bilateral risk transaction, both parties have eliminated their initial exposure to risk. Table 5 summarizes this discussion.

Table 5. Risk Destruction

States	V^0	B_X	B_Y	V^1
s_1	(−5, 5)	0	5	(0, 0)
s_2	(5, −5)	5	0	(0, 0)

Under this risk transaction, a contract party has transformed an initial risk endowment, with risk, into a new payout distribution, with no risk, converting an uncertain gain or loss of $5 into a certain payout of $0. From the point of view of *both* contract parties, this bilateral risk transaction represents risk destruction, and not risk transfer: this transaction eliminates risk with respect to both parties. Importantly, this analysis highlights that the key difference between risk creation and risk destruction lies entirely in the contract parties' initial risk endowments, and not in the bets that define the bilateral risk transactions, which are the same in both.

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85. As discussed in Section IV.C.2, *infra*, "opposite" means that the initial risk endowments of the two contract parties are negatively correlated.

2.   Extensions

This subsection extends the baseline model of bilateral risk transactions to include two additional variables: (1) endogenous risk, and (2) risk mitigation. The addition of these two variables narrows the broad definition of a bilateral risk transaction to include the risk transactions surveyed in Part II of this Article.

a.   Investment Contracts

Under the *Howey* definition of an investment contract, the expectation of profit must be the principal motivation for the financial investment.[86] The expectation of profit implies the existence of positive risk. Accordingly, an investment contract can be viewed as a type of positive risk transfer in which the investment promoter transfers expected profit, or positive risk, to an investor.[87] The *Howey* definition of an investment contract further requires that these expected profits derive "solely from the efforts of others."[88] In terms of the analytic framework, this judicial requirement implies that the expected profit, or positive risk, is endogenous, meaning that the probabilities of different states of nature are a function of the investment promoter's effort choice: the entrepreneurial or managerial efforts of the investment promoter directly impact the likelihood that the investment will succeed. In other words, economic profit does not appear like "manna from heaven," but, instead, is the product of individual effort.[89]

In addition, recall that some courts have defined the "common enterprise" prong of the *Howey* test to require horizontal commonality.[90] In terms of the analytical framework set forth here, this judicial requirement implies that the investment contract involves risk distribution, meaning that positive risk is distributed across multiple investors. To illustrate, suppose that the investment promoter enters a bilateral risk transaction with two separate investors, agreeing to pay $2.5 to each investor if the investment succeeds and each investor agreeing to pay $2.5 if the investment fails. In this bilateral risk transaction, the investment promoter not only *transfers* positive risk to an investor, but also *distributes* this positive risk across multiple investors who each bear less risk than did the investor promoter

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86. *Howey*, 328 U.S. at 298.
87. Formally, an "investment" can be defined as an entrepreneur taking some *action* that yields economic profit with non-zero probability.
88. *Howey*, 328 U.S. at 301.
89. *See Numbers* 11:9 (describing "manna" as arriving with the dew during the night).
90. *Howey*, 328 U.S. at 298.

initially. More formally, the investment promoter's initial risk endowment, $V_X^0 = (0, 10)$, with risk equal to $v_2 - v_1 = 10 - 0 = 10$, is transformed into two new investor payout distributions, $V_Y^1 = V_Z^1 = (-2.5, 2.5)$, with risk equal to $v_2 - v_1 = 2.5 + 2.5 = 5$. Distributing risk across multiple investors, this bilateral risk transaction has reduced the risk borne by any individual contract party, evenly dividing the preexisting positive risk across two separate investors. Table 6 depicts this example of risk distribution.[91]

Table 6. Distribution of Positive Risk

States	V^0	B_X	B_Y	B_Z	V^1
s_1	(0, 0, 0)	0	2.5	2.5	(5, −2.5, −2.5)
s_2	(10, 0, 0)	2.5	0	0	(5, 2.5, 2.5)

Table 7 summarizes the preceding discussion.

Table 7. Taxonomy of Positive Risk Transactions

	Exogenous Risk	*Endogenous Risk*
No Risk Distribution	Manna from Heaven	Vertical Commonality
Risk Distribution	Manna from Heaven	Horizontal Commonality

Observe that this analytic framework provides insight on the question of whether a promissory note should be defined as a security for purposes of the securities laws. Under the family resemblance test, if the seller's purpose is to raise money for general business operations and the buyer is primarily interested in profit, then the promissory note will likely be deemed a security.[92] In terms of the analytic framework, this transaction naturally corresponds to Table 1. The entrepreneur transfers expected profit, or positive risk, to a lender in the form of interest paid on the principal, and the entrepreneur uses this principal to raise money for general business operations or to otherwise finance an investment.

On the other hand, if the seller is merely seeking to correct a cash flow issue and the buyer is not interested primarily in profit, then the promissory

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91. In Table 6, $V^0 = (V_X^0, V_Y^0, V_Z^0)$.
92. *Reves*, 494 U.S. at 66–67.

note will likely not be deemed a security.[93] In terms of the analytic framework, this transaction naturally corresponds to Table 2; the promissory note is better categorized as a special type of indemnity contract. To illustrate, suppose that Party X has \$5 in the bank. Party X's initial risk endowment is $V_X^0 = (-10, 0)$, implying that Party X experiences a loss in cash flow of −\$10 if state s_1 occurs. In a typical indemnity contract, Party X receives a payout from Party Y *only* in the event of economic loss. In a loan contract, by contrast, Party X receives the payout from Party Y at the formation of the contract—in this case, \$5. Party X "keeps" this payout only if Party X incurs an economic loss that precludes Party X from paying back Party Y—here, an economic loss equal to \$10 that wipes out the principal received from Party Y as well as the \$5 in the bank. If Party X does not incur an economic loss, however, then Party X pays back the \$5 of principal plus the premium (or interest owed on the debt)—in this case, \$5. Party X is borrowing against uncertain future income, receiving the certain expected value of that future income from Party Y in the present period. Accordingly, the key distinction in determining if a promissory note should be classified as a security is whether a party is transferring to a contract counterparty either (1) the *positive risk* of an investment, or (2) the *negative risk* of a loss in future cash flow.

b.   Insurance Contracts

Recall that an insurance contract requires an insurable interest, meaning that the insured experiences an economic loss in the event of loss of, or damage to, an asset.[94] An insurable interest implies the existence of negative risk.[95] Accordingly, an insurance contract can be viewed as a type of negative risk transfer in which an insured transfers expected economic loss, or negative risk, to an insurer. This Article has argued that the definition of insurance should further require that the expected economic loss depend, in part, upon the precautionary effort of the insured. In terms of our analytic framework, this posited requirement implies that the expected economic loss, or negative risk, is endogenous, meaning that the probabilities of different states of nature are a function of the insured's effort: the precautionary (or fraudulent) effort of the insured directly impacts the probability of economic loss.

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93. *Id*.
94. *See supra* Section II.B.1.a.
95. Formally, the "insurable interest" requirement implies that the insured has taken an *action* that results in an economic loss with non-zero probability.

The legal definition of insurance further requires risk distribution.[96] Risk distribution distinguishes insurance contracts from indemnity contracts.[97] An indemnity contract transfers expected economic loss, or negative risk, from one contract party to another. An insurance contract, by contrast, transfers the risk of economic loss from the insured and *distributes* this risk among multiple parties subject to the same type of risk. To illustrate, suppose that the insurer enters a bilateral risk transaction with two separate insureds who each agree to pay $2.5 to the insurer if the economic loss is realized in exchange for the insurer agreeing to pay $2.5 to the insureds if the economic loss is not realized. Under this bilateral risk transaction, an insurer not only *transfers* positive risk to an insured, but also *distributes* this negative risk across multiple insureds who each bear less risk than did the insurer initially. Table 8 depicts this specific example of risk distribution. Table 9 summarizes the preceding discussion.

Table 8. Distribution of Negative Risk

States	V^0	B_X	B_Y	B_Z	V^1
s_1	$(-10, 0, 0)$	0	2.5	2.5	$(-5, -2.5, -2.5)$
s_2	$(0, 0, 0)$	2.5	0	0	$(-5, 2.5, 2.5)$

Table 9 highlights that insurance, as defined here, involves both risk distribution and endogenous risk.

Table 9. Taxonomy of Negative Risk Transactions

	Exogenous Risk	*Endogenous Risk*
No Risk Distribution	Risk Management	Indemnity
Risk Distribution	Risk Management	Insurance

C. Other Types of Bilateral Risk Transactions

This Section considers additional types of bilateral transactions

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96. *See supra* Section II.B.2.a.
97. *Id.*

involving the transfer of risk through contract.

1. Asset Exchange

Although an asset exchange can involve a transfer of risk from one contract party to another, this transaction does not constitute a bilateral risk transaction. In the model of a bilateral risk transaction developed above, a party possesses an initial risk endowment that may represent preexisting exposure to positive or negative risk deriving from ownership of an asset. A homeowner, for instance, is exposed to the risk that the real property will be damaged or destroyed by fire, flooding, or some other natural disaster. To reduce or eliminate this exogenous risk of economic loss, the property owner can enter into a negative risk transfer contract (i.e., purchase homeowners insurance) to transfer this preexisting risk of property damage to an insurance company, transforming an initial risky payout distribution into a payout distribution with no risk. Alternatively, the property owner can enter a standard real estate transaction in which the owner sells the property to a homebuyer for a fixed amount of money, transforming an initial risky payout distribution into a payout distribution with no risk. In both transactions, the homeowner transfers the risk of economic loss onto a contract counterparty.

The two means by which the homeowner transfers negative risk are fundamentally different, of course. In a bilateral risk transaction, the parties exchange bets: the homeowner agrees to pay a premium to the insurer in the event of no economic loss in exchange for the insurer agreeing to pay compensation to the homeowner in the event of economic loss. In both states of nature, however, the homeowner retains ownership of the real estate asset. In a real estate transaction, the parties do not exchange bets. Rather, the homeowner agrees to deed the property to the homebuyer in exchange for the homebuyer agreeing to pay the purchase price to the homeowner: the homeowner *simultaneously* exchanges an asset for a fixed purchase price. In both states of nature, the homeowner does not retain ownership of the property. The difference between the two transactions lies in the consideration exchanged by the homeowner. In a bilateral risk transaction, the consideration is a bet; in an asset exchange, the consideration is the asset itself.

This distinction between a bilateral risk transaction and an asset exchange helps explain the "business of insurance" requirement element of insurance. To fall within the ambit of the regulation of insurance, courts generally require that the indemnitor's activities constitute the "business of insurance" and have set forth the "principal object and purpose" test that

requires a court to determine the principal object of the contract.[98] If the principal object is indemnity, then the contract constitutes "insurance" and falls within the reach of state regulation.[99] In an asset exchange, the principal object of the transaction is the exchange of the asset itself, and not indemnity, and thus, the contract is not insurance and does not constitute a bilateral risk transaction. When an owner sells a tangible asset, such as real property or a consumer good, for a fixed price, indemnity generally lies at the periphery of the main purpose of the transaction; the owner wishes to sell the asset to a buyer at a particular price, and indemnity is merely incidental to the principal object of the sale, which is ownership of the asset.[100]

2.   Derivative Contracts

A derivative contract can be defined as a special type of bilateral risk transaction in which the discrete set of states of nature correspond to the different prices that a buyer must pay to acquire a specific asset in the next period; in other words, the random states of nature are set equal to the different price realizations of a given asset. The payoffs of each contract party's initial risk endowment are defined over this support of possible prices.[101]

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98.   *See supra* Section II.B.2.b.

99.   *Id.*

100.   In a similar vein, the distinction between a risk transaction and an asset exchange also provides support for the U.S. Supreme Court's rejection of the sale of business doctrine in *Landreth Timber Co. v. Landreth*, 471 U.S. 681, 690 (1985). Under the sale of business doctrine, if a corporate business is sold by means of a sale of the corporation's stock, then the stock is not a "security" as the term is used in the federal securities laws. Irving P. Seldin, *When Stock is Not a Security: The "Sale of Business" Doctrine under the Federal Securities Laws*, 37 BUS. LAW. 637 (1982). In terms of the analytic framework developed here, the sale of business doctrine improperly fails to make a distinction between an asset exchange and a bilateral risk transaction in which the corporation retains ownership of the assets but transfers the profits generated from such assets to investors in the form of sale of stock.

101.   Derivatives can be further classified by either (1) cash settlement, or (2) physical delivery. Donald Lien & You Kuen Tse, *A Survey of Physical Delivery Versus Cash Settlement in Future Contracts*, 15 INT. REV. ECON. & FIN. 15, 15–16 (2006). Cash settlement does not involve physical delivery of the asset underlying the derivative contract; rather, at the conclusion of the derivatives contract, the owner of the asset transfers to the counterparty the net cash position. *See id*. at 16. The net cash position is the difference between the market price of the asset and the contract (or strike) price. Physical delivery involves physical delivery of the underlying asset on the settlement date of the contract. *See id*. at 15–16. The counterparty acquires ownership of the asset, and, thus, assumes the accompanying risk of asset ownership post-settlement.

a. Baseline Model

This subsection applies the baseline model of bilateral risk transactions to derivative contracts. Derivatives can be divided into two basic categories: (1) forward commitments, and (2) contingent claims.

i.   Forward Commitments

The prototypical forward commitment is a forward contract. A forward contract can be defined as an agreement between two parties to buy or sell an asset at a specified future time, referred to as the delivery date, at a price agreed upon at the time the contract is formed, referred to as the delivery price.[102] In terms of our analytic framework, suppose that Party X owns an asset whose price will either increase by \$5 or decrease by \$5. Party X's initial risk endowment is $V_X^0 = (-5, 5)$, which implies a loss of −\$5 if state s_1 occurs and a gain of \$5 if state s_2 occurs. Party X enters into a forward contract with Party Y in which Party X agrees to sell the asset to Party Y at the current market price at a specified future time. In terms of risk transactions, Party X gives a bet, $B_X = (0, 5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (5, 0)$, to Party X. Under this risk transaction, Party X's new payout distribution is $V_X^1 = (0, 0)$. Likewise, Party Y receives a total payout \$0 − \$5 = −\$5 if state s_1 occurs and a total payout \$0 + \$5 = \$5 if state s_2 occurs. Hence, Party Y's new payout distribution is $V_Y^1 = (-5, 5)$. Table 10 summarizes this discussion.

Table 10. Forward Contract

States	V^0	B_X	B_Y	V^1
s_1	(−5, 0)	0	5	(0, −5)
s_2	(5, 0)	5	0	(0, 5)

As Table 10 shows, the owner of the asset can enter into a forward contract to transfer the economic risk of asset ownership to a counterparty for a specified time period. Although the transferee remains the legal owner of the asset throughout the duration of the contract, the owner of the asset can enter a forward contract to transfer the risk of asset ownership to a

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102. The party agreeing to buy the underlying asset in the future assumes a *long* position, and the party agreeing to sell the asset in the future assumes a *short* position. Frank Partnoy, *Adding Derivatives to the Corporate Law Mix*, 34 GA. L. REV. 599, 604 (2000).

contractual counterparty for a fixed duration of time.

ii.   Contingent Claims

The prototypical contingent claim is an option contract. An option contract can be defined as a contract that conveys to its owner or holder the *right*, but not the legal obligation, to buy or sell an underlying asset at a specified strike price on a specified date.[103] Two basic types of option contracts exist: (1) call options, and (2) put options.[104] Consider first a call option. If a trader expects the price of an asset to increase, the trader can buy a call option from the owner of the asset to purchase the asset at a fixed price (strike price) at a future date (expiration date). The cash outlay on the option is the premium. The trader is under no obligation to buy the asset from the owner, but has the right to do so, on the expiration date. The trader's risk of loss is limited to the premium paid. From the perspective of the owner of the asset, selling (or "writing") a call option is an example of positive risk transfer: the owner of the asset transfers the risk of an *uncertain* gain in exchange for a *certain* monetary benefit or premium.

Next, consider a put option. The owner of an asset who expects the price of the asset to decrease can buy a put option to sell the asset at a fixed strike price at a later expiration date. The owner of the asset is under no obligation to sell the asset, but has the right to do so, on the expiration date. If the price of the asset at expiration is below the strike price, then the owner exercises the option and collects the difference between the current market price and the strike price minus the premium paid. If the asset price at expiration is above the strike price, then the owner of the asset lets the put contract expire and loses only the premium amount. From the perspective of the owner of the asset, buying a put option (or "going long") is an example of negative risk transfer: the owner of the asset transfers the risk of an uncertain loss in exchange for a fixed monetary loss (i.e., payment of the premium).

In the terms of our analytic framework, suppose that Party X owns an asset whose price will either remain unchanged or decrease by $10. Party X's initial risk endowment is $V_X^0 = (-10, 0)$, which implies a loss equal to −$10 if state s_1 occurs and a payout equal to $0 if state s_2 occurs. Party X can buy a put option from Party Y in which Party X acquires the option to sell the

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103. A *European* option sets the strike date as the only date for exercise; an *American* option, by contrast, sets the strike date as the last date by which the option holder may exercise its right. Norman Menachem Feder, *Deconstructing Over-The-Counter Derivatives*, 2002 COLUM. BUS. L. REV. 677, 693 (2002).

104. For a general discussion of option contracts, see JOHN C. HULL, OPTIONS, FUTURES, AND OTHER DERIVATIVES (2018).

asset to Party Y at the current market price at a specified future date in exchange for paying a premium to Party Y, equal to \$5 in this example. If the price of the asset at expiration of the option contract has decreased, then the owner of the option, Party X, exercises the option to sell the asset to Party Y and collects the \$10 difference between the prevailing market price and the strike price minus the \$5 premium. If the asset price at expiration is above the strike price, however, then Party X will let the put contract expire and pays only the \$5 premium. Under this bilateral risk transaction, Party X receives a total payout equal to $-\$10 + \$5 = -\$5$ if state s_1 occurs and a total payout equal to $\$0 + \$5 = \$5$ if state s_2 occurs. Party X's new payout distribution is $V_X^1 = (-5, -5)$. Table 11 summarizes this discussion.

Table 11. Long Put

States	V^0	B_X	B_Y	V^1
s_1	$(-10, 0)$	0	5	$(-5, -5)$
s_2	$(0, 0)$	5	0	$(-5, 5)$

From the perspective of the owner of the asset, buying a put option operates as insurance against economic loss—in this case, a decrease in the price of the underlying asset. The owner of the asset, in purchasing the put option, transfers this risk of economic loss equal to –\$10 to a contractual counterparty in exchange for paying a fixed premium equal to \$5.[105]

b. Extensions

This subsection extends the baseline model of bilateral risk transactions to include two additional variables: (1) endogenous risk, and (2) risk mitigation. To start, derivatives can be classified according to whether changes in the price of the underlying asset are endogenous, meaning, in terms of our analytic framework, that the probabilities of different asset prices are a function of a contract party's effort choice. A security, such as corporate stock or bond, is an example of an asset with endogenous risk: the entrepreneurial efforts of the investment promoter directly impact the likelihood that the investment will increase in price. A commodity, such as corn or foreign currency, by contrast, is an example of an asset with exogenous risk. Unlike an investment whose value depends upon the costly

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105.   The observation that a long put is a form of insurance informs the policy discussion of credit default swaps below.

efforts of the entrepreneur, the price of a commodity is independent of the effort choices of the contract parties and is determined by broader macroeconomic factors beyond the immediate control of the parties.

Derivatives can be further classified as (1) cleared, or (2) non-cleared. To mitigate the counterparty credit risk created by bilateral trading, derivatives can be cleared by a central clearing counterparty (CCP). Serving the same function as the House in a banked casino game,[106] a CCP is a well-capitalized intermediary between buyers and sellers of derivative instruments that legally substitutes its credit for that of the contracting parties when two investors agree to the terms of a derivative contract.[107] A CCP reduces individual counterparty risk by guaranteeing the performance of a derivative contract if one of the parties fails to perform under the contract.[108] To facilitate the clearing of a transaction through a CCP, the parties can use a derivative contract with standard legal and economic terms.[109] Table 12 summarizes this discussion.

Table 12 highlights that derivatives can be classified according to whether the risk of the underlying asset is endogenous to the contract parties and whether the contract has standard legal and operational terms that qualifies the contract for risk mitigation in the form of clearing.

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106. *See supra* Section III.B.1.b.

107. Steven L. Schwarcz, *Central Clearing of Financial Contracts: Theory and Regulatory Implications*, 167 U. PA. L. REV. 1327, 1329 (2019).

108. *See*, *e.g*., Robert T. Cox & Robert S. Steigerwald, *A CCP is a CCP is a CCP* 1 (F. Reserve Bank of Chi., Policy Discussion Paper No. 2017-01, 2017), https://www.chicagofed. org/-/media/publications/policy-discussion-papers/2017/pdp-2017-01-pdf.pdf [https://perma. cc/8LTJ-MXBR] ("CCPs are best seen as commitment mechanisms that assure the performance of financial contract obligations. How they perform that function sets them apart from other infrastructures, intermediaries and financial institutions."); Richard Squire, *Clearinghouses as Liquidity Partitioning*, 99 CORNELL L. REV. 857, 862 (2014) ("The clearinghouse interposes itself between the parties, serving as the counterparty to each. Instead of selling the cattle future to Buyer, Seller sells it to the clearinghouse, which sells an identical future to Buyer."). *See generally* Viral V. Acharya & Alberto Bisin, *Counterparty Risk Externality: Centralized versus Over-the-Counter Markets*, 149 J. ECON. THEORY 153 (2014) (explaining that the counterparty risk externality is reduced when trading takes place through a centralized clearing mechanism).

109. *See* CHE SIDANIUS & ANNE WETHERILT, THOUGHTS ON DETERMINING CENTRAL CLEARING ELIGIBILITY OF OTC DERIVATIVES 10 (2012). As the CCP shifts counterparty risk onto itself, concentrating the risk just like bookmaker in wagering, the CCP must be properly managed and well-capitalized to ensure its survival in the event of a significant adverse event. *See* FIN. STABILITY BD., INCENTIVES TO CENTRALLY CLEAR OVER-THE-COUNTER (OTC) DERIVATIVES: A POST-IMPLEMENTATION EVALUATION OF THE EFFECTS OF THE G20 FINANCIAL REGULATORY REFORMS 3 (2018), https://www.fsb.org/wp-content/uploads/R191118-1-1.pdf [https://perma.cc/43YW-HLY6] (observing that "[s]urvey responses and market outreach are also consistent with a view that concentration in clearing service provision could amplify the consequences of the failure" of a "major" derivatives counterparty).

Table 12. Taxonomy of Derivative Contracts

	Exogenous Risk	*Endogenous Risk*
Non-Cleared	Nonstandard Commodity-Based	Nonstandard Security-Based
Cleared	Standard Commodity-Based	Standard Security-Based

3. Trading Positions

Finally, this subsection examines two types of trading positions that can be created using derivatives: (1) synthetic positions, and (2) fully hedged positions.

    a. Synthetic Positions

In a synthetic trading position, investors use derivative contracts to create or simulate the payoff of an asset that neither party owns. In a synthetic collateralized debt obligation (CDO), for example, the contract parties do not own the underlying fixed income assets; rather, investors use credit default swaps to gain credit exposure to a portfolio of fixed income assets where neither party has an ownership interest.[110] Under the swap contracts, the credit protection seller receives periodic cash payments, called premiums, in exchange for agreeing to compensate the credit protection buyer if the underlying asset, which the credit protection buyer does not own, experiences a default.[111]

As a more straightforward example of a synthetic trading position, suppose that an investor wishes to place a bet that the price of a stock will

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110. *See* Gerald P. Dwyer & Paula Tkac, *The Financial Crisis of 2008 in Fixed-Income Markets*, 28 J. INT'L. MONEY & FIN. 1293, 1299 (2009).

111. David Mengle, *Credit Derivatives: An Overview*, 93 ECON. REV., no.4, 2007, at 1, 1–2, https://www.atlantafed.org/-/media/Documents/research/publications/economic-review/2007/vol92no4_mengle.pdf [https://perma.cc/8W2J-XC8F]. A CDS in which the buyer does not own the underlying debt is referred to as a "naked" credit default swap. *See The Effective Regulation of the Over-The-Counter Derivatives Market: Hearing Before the Subcomm. on Cap. Mkts., Ins., and Gov't. Sponsored Enters. of the Comm. on Fin. Servs.*, 111th Cong. 35 (2009) (estimating that roughly eighty percent of CDS protection was naked at the start of the 2008 crisis).

increase. The investor can place this bet by purchasing the stock, paying the current market price to acquire ownership from a seller. If the stock price increases as the buyer expects, then the buyer can sell the stock back to the seller at the higher price, pocketing the difference as the payout of this asset exchange. On the other hand, if the stock price decreases as the seller expects, then the buyer can sell the stock back to the seller at the lower price, with the seller pocketing the difference as the payout of this asset exchange.[112] Alternatively, the investor can enter into a bilateral risk transaction in which the investor agrees to pay the contract counterparty the difference between the current market price and the future market price in the event that the stock price *increases*, and the counterparty agrees to pay the investor the difference between the future market price and the current market price in the event that the stock price *decreases*. This bilateral risk transaction allows an investor to create or simulate the payoffs of a traditional stock exchange without either contract party owning or otherwise acquiring any shares of the stock.

Significantly, the analytic framework developed above implies that this financial transaction constitutes risk creation or gambling—specifically, a *wager* between two parties where the external random event is the realization of the stock price.[113] No different than betting on the outcome of a sporting event or the spin of a roulette wheel or whether a stock price will be odd at the close of next day's trading session, the parties make a wager in which one party wins and the other loses depending upon expected movements in the price of a stock that neither owns.[114] The parties can place a large number of such bets that is not limited by the number of shares of stock in their possession. Moreover, although the price of the stock might increase by only a few dollars, the parties can use bilateral risk creation transactions to amplify this risk, wagering substantial amounts of money on relatively small movements in the stock price. Placing bets unconnected to their actual risk exposure to the underlying asset, the parties can use bilateral risk creation to expose themselves to the risk of enormous financial gains or losses that depend entirely upon relatively small movements in the price of a single underlying stock.

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112.   The number of times that these two parties can enter into this transaction is limited by the number of shares of stock in the investor's possession.

113.   Traditionally, the law has referred to this as a "difference contract" and has deemed this contract to be illegal gambling. *See* Thomas Lee Hazen, *Rational Investments, Speculation, or Gambling? Derivative Securities and Financial Futures and Their Effects on the Underlying Capital Markets*, 86 Nw. U. L. REV. 987, 1015 (1992).

114.   *See*, *e.g*., Andrew Leonard, *Credit Default Swaps: What Are They Good For?*, SALON (April 20, 2010, 11:21 PM), https://www.salon.com/2010/04/20/naked_credit_default_sw aps/ [https://perma.cc/56PJ-DX8Y] (discussing why credit default swaps are legal).

To further illustrate how investors can use derivative contracts to engage in bilateral risk creation or gambling, consider a naked (or uncovered) option contract. Two types of naked option contracts exist: (1) naked call options, and (2) naked put options. In a naked call, an investor writes, or sells, a call option, meaning that the investor has sold the buyer the right to *buy* from the investor an asset at a fixed price in exchange for a premium, where the seller of the option does not, in fact, own the asset that the buyer has a right to purchase. In terms of our analytic framework, neither party is exposed to risk with respect to the underlying asset.[115] If the price of the asset at expiration of the option contract has increased, then the owner of the option, Party Y, exercises the option to "buy" the asset from Party X and collects, say, a \$10 difference between the prevailing market price and the strike price minus a \$5 premium. On the other hand, if the asset price at expiration is below the strike price, then Party Y will let the put contract expire and pays only the premium amount of \$5. Under this bilateral risk transaction, Party X receives a total payout equal to $-\$10 + \$5 = -\$5$ if state s_1 occurs and a total payout equal to $\$0 + \$5 = \$5$ if state s_2 occurs. Party X's new payout distribution is $V_X^1 = (-5, -5)$, and Party Y's new payout distribution is $V_Y^1(-5, -5)$. Table 13 summarizes this discussion.

Table 13. Naked Call Option

States	V^0	B_X	B_Y	V^1
s_1	(0, 0)	0	5	(5, −5)
s_2	(0, 0)	5	0	(−5, 5)

Note that the bilateral risk transaction depicted in Table 13 is identical to the bilateral risk transaction depicted in Table 3.[116] As this simple analytic framework thus illustrates, a naked call option constitutes bilateral risk creation if the buyer of the call option does not have a short position in the underlying asset.[117] If the counterparty is similarly naked, as Table 14 posits, meaning that the counterparty has no risk exposure to the underlying asset, i.e., if $V_X^0 = (0, 0)$, then the naked call option constitutes bilateral risk

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115.   That is, $V_X^0 = V_Y^0 = (0, 0)$.
116.   *See supra* Section III.B.1.b.
117.   If the buyer of the call option has a short position in the underlying asset, i.e., if $V_X^0 = (10, 0)$, then this transaction constitutes positive risk transfer, and the transaction is not bilateral risk creation.

creation and must be defined as gambling.[118]

b. Fully Hedged Positions

In a fully hedged trading position, investors use derivative contracts not to transfer or create risk, but to destroy the risk exposure of *both* contract parties. To illustrate, suppose that Party X owns an asset that yields an initial risk endowment of $V_X^0 = (-5, 5)$, and Party Y owns a different asset that yields an initial risk endowment of $V_Y^0 = (5, -5)$. To fully hedge both parties' exposure to risk, the parties can enter a bilateral risk transaction in which Party X agrees to give a bet, $B_X = (0, 5)$, to Party Y in exchange for Party Y agreeing to give a bet, $B_Y = (5, 0)$, to Party X. Under this bilateral risk transaction, the new payout distribution for each party is $V_X^1 = V_Y^1 = (0, 0)$; *both* parties have transformed initial risk endowments, with risk equal to ten, into new payout distributions, with risk equal to zero. Table 14 summarizes this discussion.

Table 14. Fully Hedged Trading Position

States	V^0	B_X	B_Y	V^1
s_1	(−5, 5)	0	5	(0, 0)
s_2	(5, −5)	5	0	(0, 0)

Notably, a bilateral risk transaction may not be risk-destroying when netted out over *all* relevant contractual parties. To illustrate, suppose that Party X owns stock and enters into a risk transaction with a counterparty who has a short position in the stock. To create this short position, assume that this counterparty borrowed the stock from a lender and immediately sold the stock on the open market at the current market price. At a specified point in the future, the counterparty will repurchase the stock on the open market at the existing market price to return the stock to the lender. This short position in the stock represents an existing ownership interest in the stock where the owner of the short position profits if the stock price falls and loses if the stock price rises. As Table 14 shows, these two parties can enter into a risk transaction that eliminates both parties' exposure to risk, transforming each party's initial risk endowment, $V_X^0 = V_Y^0 = (-5, 5)$, into new payout distributions with zero risk, $V_X^1 = V_Y^1 = (0, 0)$.

The simple analytic framework suggests, however, how this risk

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118.   A similar argument applies to naked (or uncovered) put options.

transaction may not reduce or destroy risk, *on net*. To create the short position, the contract counterparty entered a risk creation contract with the market where the "market" acquires a long position in the stock, profiting if the counterparty repurchases the stock at a higher price and losing if the counterparty repurchases the stock at a lower price. When risk is netted out over the two contract parties *and* the "market," the risk transaction depicted in Table 14 destroys risk only with respect to the two contract parties—the positive risk associated with Party *X*'s stock ownership has not been destroyed more broadly, but has merely been transferred from Party *X*, the existing owner of the stock, to the market through a contractual counterparty with a short position in the stock.

IV.   CURRENT REGULATORY ENVIRONMENT

The analytic framework developed in Part III highlights two main regulatory concerns in connection with bilateral risk transactions: (1) fraud or moral hazard, and (2) risk mitigation. Part IV summarizes how the present regulatory environment addresses these two concerns and explores possible regulatory gaps suggested by the baseline models introduced in Part III.

A.   Regulation of Bilateral Risk Transactions

This Section considers the regulatory environment related to two of the main bilateral risk transactions: (1) securities investments, and (2) insurance.

1.   Securities Investments

This subsection first considers the regulation of securities investments.

a.   Incentives

The primary objective of securities law is to prohibit deceit, misrepresentations, or other fraud in the registration and sale of securities.[119] The primary means by which financial regulators accomplish this objective is the mandated disclosure of material financial information to investors, under the guidance of state and federal administrative agencies.[120] The

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119. *See* L. Guy Clinton, Comment, *Over-The-Counter Securities Markets*, 1 VAND. L. REV. 602, 602 (1948).

120. *See* Cynthia A. Williams, *The Securities and Exchange Commission and Corporate Social Transparency*, 112 HARV. L. REV. 1197, 1221–22 (1999) (explaining the development of securities law in the United States, its priorities, and methods).

principal regulatory philosophy of securities law is full and fair disclosure, rather than a more merit-based approach in which regulators determine if the quality of a given issue of securities is adequate for sale.[121] Mandated disclosure of material non-public information enables investors, not the government, to make informed judgments about whether to purchase a company's securities. Although the SEC requires that the information provided be accurate, the SEC does not guarantee the veracity of public filings; instead, an investor who purchases securities and incurs financial losses has important remedial rights if the investor can prove incomplete or inaccurate disclosure of material information.[122]

State corporate law, and not state or federal securities law, more squarely addresses the principal-agent problem between the differing interests of management (i.e., the "agent") and the shareholders of the firm (i.e., the "principal") created by the separation of ownership and control. In general, shareholders desire the maximization of their returns on investment through profits and dividends, while upper management may also be influenced by other motives, such as management remuneration or wealth interests, working conditions and perquisites, or relationships with other parties within or outside the corporation.[123] Corporate governance mechanisms and controls are designed to reduce the inefficiencies that arise from moral hazard through both internal and external monitoring systems. Internal disciplining mechanism include monitoring by a board of directors, corporate fiduciary duties, and shareholder voting.[124] Examples of external disciplining mechanism include the market for corporate control and coordinated investor sell-offs.[125]

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121. *Accounting and Investor Protection Issues Raised by Enron and Other Public Companies: Hearing Before the S. Comm. on Banking, Hous. & Urb. Affs.*, 107th Cong. (2003) (written statement of Harvey L. Pitt, Chairman, SEC).

122. *See* Brian A. Lavelle, *Evaluating the Risk and Risk-Adjusted Performance of Micro-Cap Mutual Funds*, 6 J. STOCK & FOREX TRADING 1, 2 (2018).

123. *See generally* KENNETH J. ARROW, THE LIMITS OF ORGANIZATION (1974) (arguing that, in organizations, a balance must be struck between those who wield power and the obligations they have to those tasked with implementing their decisions); Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,* 3 J. FIN. ECON. 305, 312–13 (1976) (discussing a theory of firm ownership structure with a focus on agency costs); Eugene F. Fama & Michael C Jensen, *Separation of Ownership and Control*, 26 J.L. & ECON. 301 (1983) (arguing that organizations where the decision-makers are not the same as the risk-bearers survive because they separate the ratification of decisions from the implementation of those decisions).

124. *See* Jill E. Fisch, *Taking Boards Seriously*, 19 CARDOZO L. REV. 265, 268–69 (1997).

125. *See generally* Oliver Hart, *Corporate Governance: Some Theory and Implications*, 105 ECON. J. 430, 685 (1995) (discussing strategies by which corporate governance mechanisms reduce inefficiencies).

b.   *Risk Mitigation*

As predicted by our analytic framework, the regulation of securities investments is less focused on risk mitigation and the potential insolvency of the issuer. An entrepreneur invests in a financial project that provides a positive return with some probability. The entrepreneur can choose to bear this risk alone, retaining full ownership of the company, or the entrepreneur can transfer this risk to investors who may be better positioned to bear the risk of failure to the extent that the investment is part of a well-diversified portfolio of financial assets. Unlike other forms of risk transfer where the counterparty may not have the funds required to pay off a losing bet, the existence of such funds is guaranteed, by definition, in a positive risk transfer. If the investment succeeds, then the entrepreneur can pay out investors from the realized profits of the investment. Provided the residual claim on firm profits is a floating claim, and not a fixed claim, investors in this type of transaction are not exposed to any counterparty risk.[126]

In the context of securities investments, risk distribution poses a regulatory concern mainly insofar as the distribution of risk across multiple investors exacerbates the agency costs between shareholders and managers of the firm.[127] The existence of multiple investors introduces a potential collective action problem in which investors are disincentivized to take costly action to monitor or control the entrepreneurial efforts of management. Individual investors can "free-ride" off the efforts of other investors, benefiting from such efforts without paying for their cost. As discussed in Section II.A, some courts have interpreted the "common enterprise" prong of the *Howey* test for a security to require horizontal commonality.[128] Under this view, the agency cost between the investment promoter and the investor is not sufficient to justify the protection of the

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126.   With respect to the solvency of investors, "Federal Reserve Board Regulations T and U govern the extension of credit by broker-dealers, banks, and other lenders to customers for the initial purchase of certain securities, including common stocks." *See* Simon Kwan, *Margin Requirements as a Policy Tool?*, FED. RSRV. BANK OF SF (Mar. 24, 2000) https://www.frbsf.org/economic-research/publications/economic-letter/2000/march/margin-requirements-as-a-policy-tool/ [https://perma.cc/7KFV-GHYJ] (noting that SEC is charged with enforcing these regulations). The current initial margin requirement is fifty percent. *See id*. ("The maintenance margin, which determines the leverage on a continuing basis, is set by the exchanges and brokers. Currently, the New York Stock Exchange (NYSE) and the National Association of Securities Dealers (NASD) generally require member firms to impose a minimum 25% maintenance margin requirement on their customers.").

127.   Ryan C. Farha, SEC v. Edwards*: An Opportunity to Knock on the Viability of the* Howey *Test as the Gatekeeper for the Federal Securities Laws*, 31 OKLA. CITY U. L. REV. 161, 171 (2006).

128.   *See supra* Section II.A.1.b.

securities laws; the contention is that an investor can adequately protect her financial interests through contract. To qualify for further protection under state or federal securities law, this agency cost must be additionally exacerbated by the collective action problems created when positive risk is *distributed* across multiple investors.

2. Insurance

This subsection next considers the regulation of insurance.

a. *Incentives*

To prohibit deceit, misrepresentations, or other fraud in the sale of insurance, insurance law relies upon a form of mandated disclosure rooted in contract law. An insurance contract is governed by the legal doctrine of *uberrimae fides*, or utmost good faith, which means that all parties to an insurance contract must deal in good faith, making a full disclosure of all material facts in the insurance proposal, in contrast to the legal doctrine of *caveat emptor* where the buyer is responsible for checking the quality and suitability of goods before purchase.[129] To ensure the disclosure of all material facts such that the contract accurately reflects the actual risk undertaken by the insurer, a higher duty is expected from parties to an insurance contract than from parties to most other contracts. As Lord Mansfield stated in the oft-quoted case of *Carter v. Boehm*:

> Insurance is a contract upon speculation. The special facts, upon which the contingent chance is to be computed, lie most commonly in the knowledge of the insured only: the under-writer trusts to his representation, and proceeds upon confidence that he does not keep back any circumstance in his knowledge, to mislead the under-writer into a belief that the circumstance does not exist. . . . Good faith forbids either party by concealing what he privately knows, to draw the other into a bargain, from his ignorance of that fact, and his believing the contrary.[130]

The insured must disclose all material facts to the insurer. A fact is considered material if knowledge of that fact would influence a prudent insurer in determining whether to underwrite the risk—and if so, upon what

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129. *See*, *e.g*., Sun Mut. Ins. Co. v. Ocean Ins. Co., 107 U.S. 485, 510 (1883) (establishing the obligation of *uberrimae fides* in insurance contracts); Unigard Sec. Ins. Co. v. North River Ins. Co., 762 F. Supp. 566, 588 (S.D.N.Y. 1991) (determining that the relationship between a reinsurer and its ceding insurer is characterized by *uberrimae fides*, or utmost good faith).

130. Carter v. Boehm (1766) 97 Eng. Rep. 1162, 1164 (KB).

terms.[131]

With respect to the problem of moral hazard, insurance law is generally content to let the insurer solve this problem through private contracting. Most insurance policies, for example, contain moral hazard clauses. A family exclusion clause is a common example: this contractual provision excludes coverage for liability of the insured to "any member of the family of the insured residing in the same household as the insured."[132] To motivate this type of clause, suppose that the insured is sued on an automobile accident claim by a stranger. In this case, the insured has a strong incentive to cooperate with the insurer to obtain a verdict. If the insured injures a family member, however, where the intra-familial immunity principle has been abrogated, then the insured-defendant has an economic incentive to help the plaintiff-family member win as large a judgment against the insured as possible within the automobile liability policy limits, because the insured-defendant also benefits from the proceeds paid to the plaintiff-family member.[133]

Courts have frequently interpreted moral hazard clauses restrictively against the insurer, in some cases even voiding these contractual clauses as contrary to public policy. In the case of family exclusion, a majority of jurisdictions have consistently voided family exclusion in automobile liability policies. In the case of *Lewis by Lewis v. West American Insurance*,[134] for example, the Kentucky Supreme Court stated that: "We have not seen, nor been directed to, any evidence that there has been an increase in collusive claims by family members. . . . [I]t is unreasonable to surmise that family members will be collusive in the presentation of claims above the statutory minimum."[135] The analytic framework suggests that courts should temper this incredulity and construe insurance contracts such that insurers have maximal discretion to combat the problem of moral hazard and insurance fraud.[136]

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131.   John Dwight Ingram, *Misrepresentations in Applications for Insurance*, 14 U. MIA. BUS. L. REV. 103, 110 (2005). An insurer may avoid or rescind the insurance contract if the insured fails to disclose a material fact, or if a material misrepresentation about such fact is made. *Id*. at 103.

132.   Kirk v. State Farm Mut. Auto. Ins. Co., 289 S.W.2d 538, 539 (Tenn. 1956).

133.   Another example of a moral hazard clause is a clause requiring visible evidence of forcible entry in policies insuring against theft or burglary from a locked car, building, or other enclosure. *See*, *e.g*., Exhibitor, Inc. v. Nationwide Mut. Fire Ins. Co., 494 So. 2d 288, 288 n.1 (Fla. Dist. Ct. App. 1986) (providing an insurance policy provision clause exempting loss or damage caused by theft).

134.   Lewis *ex rel.* Lewis v. W. Am. Ins. Co., 927 S.W.2d 829 (Ky. 1996).

135.   *Id*. at 835.

136.   Interestingly, in the subsequent case of *Kentucky Farm Bureau Mutual Insurance Co. v. Thompson*, the Kentucky Supreme Court concluded that the holding in *Lewis* was not

b.   Risk Mitigation

Unlike securities regulation, the principal focus of the regulation of insurance is to ensure the solvency of insurers such that sufficient capital is available to pay the claims of policyholders as these claims come due. This difference in regulatory focus follows immediately from our analytic framework. Insurance is based on a contractual promise in which the insured pays a premium to the insurer in exchange for the right to receive compensation from the insurer in the event of economic loss.[137] The problem of insolvency arises from the fact that the insurer may not have the funds required to fully compensate the insured for the economic loss. As noted, insurers rely upon the law of large numbers to determine the premium amounts paid by individual members of the insurance pool that are sufficient to cover losses sustained during a given period (in addition to administrative and other operating costs).[138] But mistakes can be made, or an insurer may simply get unlucky. Also, competitive market pressures may cause insurers to reduce their capital cushions to dangerously low levels.[139]

To help guarantee the solvency of insurance companies, state regulators require that insurers meet minimum capital and surplus thresholds. The National Association of Insurance Commissioners (NAIC), for example, introduced the Risk-Based Capital for Insurers Model Act in 1993, which has since been adopted, at least in part, by every state in the United States.[140] Risk-based capital regulates the amount of risk that an insurance company may expose itself to by requiring that the company maintain an amount of capital suitable to support the company's overall business operations, based on its size and risk profile.[141] State insurance regulators also place limits on

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predicated upon a disdain for family exclusion but only those that violate public policy—in this case, a financial responsibility act for the operation of motor vehicles. *See* Ky. Farm Bureau Mut. Ins. Co. v. Thompson, 1 S.W.3d 475, 477 (Ky. 1999) (holding that only those family exclusions that appeared in automobile liability policies to be void; upholding such exclusions as applied to farm-owner's liability insurance policy).

137. ROGER C. HENDERSON & ROBERT H. JERRY, II, INSURANCE LAW CASES AND MATERIALS 135 (2d ed. 1996).

138*.   See supra* Section II.B.2.a.

139*.   See* Robert W. Klein, *Insurance Regulation in Transition*, 62 J. RISK & INS. 363, 363 (1995) ("Competitive pressures have led insurers to assume greater risk in order to offer consumers more attractive prices and products, resulting in larger and more frequent insurer failures.").

140*.   Id*. at 369–71. *See generally* J. David Cummins, & Richard D. Phillips, *Capital Adequacy and Insurance Risk-Based Capital Systems*, 28 J. INS. REG. 25 (2009) (providing an analysis and evaluation on the U.S. risk-based capital system).

141. The NAIC also adopted the Model Regulation Requiring Annual Audited Financial Reports (Model Audit Rule) in 2006. Enya He, Steve M. Miller & Tina Yang, *The Impact of*

the types of investments that insurance companies are permitted to use.[142] Under Delaware law, for example, the aggregate value of an insurer's stock investments may not exceed forty percent of the insurer's assets.[143] Similarly, some states also prohibit specific types of investments. New York property-casualty insurers, for example, are prohibited from purchasing shares of the insurer's parent company and securities issued by a corporation that is majority-owned by the insurer's officers or directors.[144]

Unlike securities law, the regulation of insurance primarily protects the party transferring risk, and not the party to whom the risk has been transferred.[145] Again, this difference in regulatory focus follows directly from the analytic framework set forth in Part III, and, specifically, the discussion on risk distribution. Unlike a security investment, in which a single entrepreneur transfers positive risk to multiple investors, multiple insureds transfer negative risk to a single insurer. The existence of multiple insureds presents a potential collective action problem in which insureds are disincentivized to take costly action to monitor or control the efforts of the insurer: individual insureds can "free-ride" off the efforts of other insureds, benefiting from such efforts without paying for their cost. Here, the collective action problem characterizes the transferor of risk (i.e., the insureds), and not the transferee (i.e., the investors). As a result of this social dilemma, insurance companies, unlike investors to whom risk is transferred in a positive risk transfer, tend to be in a superior bargaining position relative to a given policyholder, typically offering a take-it-or-leave contract with no meaningful opportunity for the policyholder to negotiate contractual terms or conditions.[146]

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the Sarbanes-Oxley Act on Board Structure of Publicly Traded and Privately Owned Insurance Companies, 31 J. INS. REG. 105, 110 (2012). The Model Audit Rule, which took effect in 2010, requires that insurers arrange for annual audits by independent certified public accountants and file annual audited financial reports with state insurance regulators. Id.

142. See, e.g., CAL. INS. CODE § 1192.8 (West 2003) (regulating investments in specified interest-bearing notes, bonds, and obligations); N.Y. INS. LAW. §§ 1402, 1404 (McKinney 2003) (establishing a minimum capital and minimum surplus to policyholder investments).

143. DEL. CODE. ANN. tit. 18, § 1305(2) (2022).

144. N.Y. INS. LAW. §§ 1402, 1403 (2012). Guaranty funds have also been established on a state-by-state basis. Most of the funds are overseen by a board comprised of representatives elected by member insurers, and each fund protects only policyholders who reside within the given state. See, Richard Bromley, A History of the Development of the Life and Health Insurance Guaranty Association Model Act, in LAW AND PRACTICE OF INSURANCE COMPANY INSOLVENCY 611, 613, 637–73 (David M. Spector ed., 1986) (discussing the structures and processes behind fund oversight).

145. See generally Daniel Schwarcz, Transparently Opaque: Understanding the Lack of Transparency in Insurance Consumer Protection, 61 UCLA L. REV. 394 (2014) (examining the pitfalls of protecting the risk transferring party over the risk receiving party).

146. See, e.g., Garcia v. Truck Ins. Exch., 682 P.2d 1100, 1106 (Cal. 1984) ("[I]n the

Recognizing the potential imbalance in bargaining power between the contract parties, courts tend to construe insurance policies in favor of insureds, and not the insurer.[147] Under the doctrine of reasonable expectations, for example, courts interpret insurance policies to reflect the reasonable expectations of the insured even in the face of contradictory language in the insurance policy.[148] In addition, courts have expanded the doctrine of *uberrima fides* discussed above into an implied covenant of good faith and fair dealing that applies *after* the formation of the insurance contract.[149] If an insurance company violates this covenant, then the policyholder can sue the company on a tort claim, known as insurance bad faith, in addition to a standard breach of contract claim.[150] Further, most insurance policies (at least those marketed to consumers) must be approved by state regulators who consider fairness to the consumer, among other aspects of the policy.[151] In this way, insurance law has adopted a merit-based approach that seeks to determine whether the quality of a given insurance policy is adequate for sale—an approach rejected by Congress in the context of securities regulation, where investors are generally considered to be less in need of regulatory protection than ordinary consumers of insurance.[152]

B. Derivative Contracts

This Section explores the regulation of derivatives in connection with (1) risk mitigation, and (2) moral hazard.

1. Risk Mitigation

Adopting the G20 regulatory scheme, the regulation of derivatives in

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typical situation, the policy represents a contract of adhesion 'entered into between two parties of unequal bargaining strength, expressed in the language of a standardized contract, written by the more powerful bargainer to meet its own needs, and offered to the weaker party on a take it or leave it basis.'" (quoting Gray v. Zurich Ins. Co., 419 P.2d 168 (Cal. 1966))).

147. *See*, *e.g*., James M. Fischer, *Why Are Insurance Contracts Subject to Special Rules of Interpretation?: Text Versus Context*, 24 ARIZ. ST. L.J. 995, 996–97 (1992) (analyzing the profound pro-insured bias that courts adopt when interpreting insurance contracts).

148. *See*, Robert A. Hillman & Jeffrey J. Rachlinski, *Standard-Form Contracting in the Electronic Age*, 77 N.Y.U. L. REV. 429, 459 (2002) (expounding on the prominence of the reasonable-expectations doctrine in insurance contract contexts).

149. *See* Jeffrey M. Judd, *The Implied Covenant of Good Faith and Fair Dealing: Examining Employees' Good Faith Duties*, 39 HASTINGS L.J. 483, 506–07 (1988).

150. *See id*.

151. *See*, *e.g*., Kenneth J. Meier, *The Politics of Insurance Regulation*, 58 J. RISK & INS. 700, 702 (1991).

152. *See* Hazen, *supra* note 1, at 432.

the United States has shifted "from a *laissez-faire* paradigm to a bank regulatory paradigm focused on safety and soundness."[153] Echoing the risk of insolvency highlighted by the analytical framework developed in Part III, clearing requirements lie at the heart of this new regulatory paradigm.[154] Title VII of the Dodd-Frank Act creates largely parallel clearing requirements for derivative contracts, prohibiting trades in derivative contracts, over which either the Commodities Futures Trading Commission (CFTC) or SEC has authority, that have not been cleared by a registered clearing agency (or by a clearing agency exempt from registration).[155] A derivative trade becomes subject to mandatory clearing upon issuance of a mandatory clearing determination by either the CFTC or the SEC.[156] Moreover, clearing agencies must submit all derivative trades that they would like to accept for clearing to the CFTC or SEC for review and final determination on clearing.[157] Hence, the final decision on clearing rests with either the CFTC or the SEC. Notably, Dodd-Frank exempts from these clearing requirements any swap or security-based swap in which a non-financial party is using the instrument to hedge or mitigate ordinary commercial risk.[158]

Not every derivative contract, however, has standardized legal or operational terms necessary for clearing through a central counterparty.[159] Some risk transactions require greater flexibility that can only be achieved through customized, nonstandard derivative contracts.[160] These contracts are available in the over-the-counter (OTC) markets and are not cleared by a CCP.[161] Dodd-Frank allows bilateral trading in nonstandard derivatives unsuitable for clearing by a CCP, but mandates that such transactions be subject to initial margin and variation margin requirements to help minimize counterparty risk.[162] Whether an entity falls within the ambit of these margin

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153. Arthur W.S. Duff & David Zaring, *New Paradigms and Familiar Tools in the New Derivatives Regulation*, 81 GEO. WASH. L. REV. 677, 678 (2013).

154*. See* 7 U.S.C.A. § 2; 15 U.S.C.A § 78q-1; *see also* Letter from Sen. Christopher Dodd, Chairman, S. Comm. on Banking, Hous. & Urban Affairs, and Sen. Blanche Lincoln, Chairman, S. Comm. On Agric., Nutrition & Forestry, to Rep. Barney Frank, Chairman, Fin. Servs. Comm., and Rep. Colin Peterson, Chairman, Comm. on Agric. (June 30, 2010) ("Congress determined that clearing is at the heart of reform - bringing transactions and counterparties into a robust, conservative and transparent risk management framework.").

155. 7 U.S.C.A. § 2; 15 U.S.C.A. § 78c-3.

156*. Id*.

157*. Id.*

158*. Id.*

159. JON GREGORY, CENTRAL COUNTERPARITES: MANDATORY CENTRAL CLEARING AND BILATERAL MARGIN REQUIREMENTS FOR OTC DERIVATIVES 3 (2014).

160*. Id*.

161*. See id*.

162. 7 U.S.C. § 6s(e)(3)(A) (2012). Former Treasury Secretary Timothy Geithner

rules depends upon whether the entity's average aggregate notional amount of non-cleared OTC derivatives exceeds a certain threshold over a certain time period.[163]

2. Incentives

Regulatory jurisdiction over derivative contracts is split between the SEC and CFTC.[164] Broadly speaking, the SEC regulates derivative contracts in which the underlying asset is a security, and the CFTC regulates derivative contracts in which the underlying asset is a commodity.[165] This regulatory division of labor differs from above, where the applicable regulatory environment was determined by the type of bilateral risk transaction involved. Here, regulatory oversight is determined not by the type of bilateral risk transaction, but by the type of asset that underlies the bilateral risk transaction. In terms of our analytic framework, the SEC has regulatory

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explained the rationale for stringent uncleared margin requirements:

> Imposing appropriate margin requirements on uncleared swaps will also help create incentives for market participants to use centralized clearing and standardized contracts so that they do not needlessly externalize risks to the financial system by avoiding central clearing. New margin requirements will also mitigate the increased risks presented by derivatives that are appropriately executed outside of central clearing, and therefore do not benefit from the protections of a central counterparty.

Timothy Geithner, Sec'y, Dep't of Treasury, Remarks to the International Monetary Conference (June 6, 2011) (transcript available at http://www.treasury.gov/press-center/press releases/Pages/tg1202.aspx [https://perma.cc/X9MU-6NNS]).

163. *See* 12 C.F.R. §§ 45, 237, 349, 624, 1221 (covering swap entities); 17 C.F.R. §§ 23, 140 (covering swap dealers and major swap participants). The phase-in of these requirements started in 2016 and continued through 2020, with thresholds dropping during each phase to expand the obligation to post initial margin to a sequentially larger group of derivative market participants. *See* BNY MELLON, YOUR GUIDE TO THE NON-CLEARED MARGIN RULES 5 (2018) https://www.bnymellon.com/content/dam/bnymellon/global-assets/documents/content/ncmr -brochure-intl-edition.pdf.coredownload.pdf [https://perma.cc/5N29-WM3C] (stating that the first three phases in 2016, 2017, and 2018 primarily captured the largest banks and broker-dealers and that the majority of buy-side firms were to be captured in 2019 and 2020). As of the time of this Article, the U.S. Securities and Exchange Commission has not yet finalized margin requirements.

164*. See generally* Roberta Romano, *The Political Dynamics of Derivatives Securities Regulation*, 14 YALE J. ON REG. 279 (1997) (analyzing the political history of the regulation of derivative securities in the United States and explaining the institutional difference between the U.S. regime and other nations', and its staying power).

165. The regulation of swaps, for example, is broken down between security-based swaps (SBS), which are regulated by the SEC, and non-security-based swaps (NSBS), which are regulated by the CFTC. *See* William K. Sjostrom, Jr., *Afterword to The AIG Bailout*, 72 WASH. & LEE L. REV. 795, 821 (2015).

jurisdiction over derivatives where the underlying asset is characterized by endogenous risk, whereas the CFTC has regulatory jurisdiction over derivatives where the underlying asset is characterized by exogenous risk.

Derivatives where the underlying asset is characterized by exogenous risk do not implicate the ability to control the unobservable effort choices of counterparties through contract, implying that the transacting parties do not need to design contracts to account for moral hazard or other problems created by asymmetric information. In large part, the CFTC, for this reason, has generally been less focused on investor protection than the SEC, with the CFTC relying primarily on market mechanisms rather than mandated disclosure to regulate the behavior of contract parties.[166]

By contrast, derivatives in which the underlying asset is characterized by endogenous risk do implicate moral hazard. Endogenous risk in this context generates certain distinct moral hazard problems. To illustrate, consider a simplified example of the securitization process. Assume that an asset originator collects a group of assets into a reference portfolio and then sells this portfolio to an issuer who offers tradable securities to investors. The created securities represent a stake in the assets in the portfolio. Investors buy the created securities from the issuer for a specified fixed rate of return. In this example, the use of derivatives creates distinct moral hazard problems with respect to both (1) the issuer, and (2) the originator.[167] *First*, assume that an issuer can exert costly effort, which is hidden from investors (and hence not contractible), to increase the profitability of the reference portfolio. An issuer, for instance, may exert effort to acquire a reference portfolio of loans from the originator with a lower average default rate. The issuer, through this securitization process, exchanges an uncertain residual claim on the reference portfolio for a certain purchase price from investors. Given that the issuer now has a fixed, and not residual, claim on the profits of the reference portfolio, the investor's problem is to offer a "contract" to the issuer that maximizes the profitability of the reference portfolio subject to the constraint that the issuer is incentivized to exert optimal screening effort. If the investor fails to solve this problem correctly, then the securities structured from the reference portfolio may yield sub-optimally low profits.

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166. *See President-Elect Obama Names SEC and CFTC Chairmen and Fed Governor*, ORRICK CLIENT ALERT (Orrick, Dec. 19, 2008), http://www.orrick.com/fileupload/1575.pdf [https://perma.cc/V5XM-77XD] (quoting a 2005 interview with Mary Schapiro in which she conceded that the CFTC is less focused on investor protection than the SEC); *see also* Richard Carlucci, *Harmonizing U.S. Securities and Futures Regulations*, 2 BROOK. J. CORP. FIN. & COM. L. 461, 467–78 (2008) (describing differences between SEC and CFTC customer protection rules).

167. These two entities can be the same financial entity.

Second, the risk transfer from issuer to investors may unravel the solution to the original moral hazard problem between the originator and the borrower. Suppose that the borrower can exert costly effort, which is unobservable, to increase the profitability of the reference portfolio. The originator seeks to maximize the profitability of the reference portfolio subject to the constraint that borrowers exert optimal effort. Depending upon the relationship between portfolio profits and the payment from the issuer, the originator might no longer have an economic incentive to optimally solve the original moral hazard problem.[168] In the extreme, suppose that the portfolio profits and the payment from the issuer are negatively correlated, meaning that the originator profits if the portfolio loses money. In this case, the originator may not only fail to offer a contract that maximizes portfolio profits, but the originator may, in fact, have an economic incentive to minimize the profitability of the refence portfolio, selecting assets for the portfolio that are specifically designed to generate losses, and not profits.[169]

The regulation of derivative instruments addresses the possible misalignment of incentives between investors and various participants in the securitization process, as well as other bilateral risk transactions involving derivatives, through at least two means: (1) mandated disclosure, including conflict of interest rules, and (2) credit risk retention. *First*, title VII of the Dodd Frank Act subjects dealers and "select" market participants to internal and external business conduct requirements, such as establishing procedures for detecting internal conflicts of interests and requiring increased disclosures of material information about a swap or security-based swap to counterparties. Section 431 of the Act, for example, requires select market participants to make disclosures regarding the material risks of specific derivative transactions, including market, credit, liquidity, foreign currency, legal, operational risks, and other applicable risks.[170] These same select market participants are also required to make disclosures related to the

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168. In the case of mortgage loan origination, for example, a suboptimal contract may incentivize an underwriter to collect no borrower information and to extend a loan to all mortgage applicants, resulting in a reference portfolio with a sub-optimally high default rate.

169. *See*, *e.g*., HSH Nordbank AG v. UBS AG, 941 N.Y.S.2d 59, 64 (App. Div. 2012) (describing plaintiff's allegation that UBS, who took the entire short position in the transaction, purposefully selected BBB-rated securities for the reference portfolio that were actually riskier than their BBB ratings); *see also* Will Bunting, *The Trouble with Investment Banking: Cluelessness, Not Greed*, 48 SAN DIEGO L. REV. 993, 1042–44 (2011).

170. *See* 17 C.F.R. § 23.431(a)(1). The International Swaps and Derivatives Association (ISDA) makes publicly available documents to facilitate these disclosure requirements. *See* INT'L SWAPS & DERIVATIVES ASS'N, GENERAL DISCLOSURE STATEMENT FOR TRANSACTIONS (2018), https://www.isda.org/a/nE8EE/ISDA-General-Disclosure-Statement-March-2018.pdf [https://perma.cc/CH9V-WM8V].

material characteristics of specific derivative instruments, which include the material economic terms, the terms relating to the operation of the instrument, and the rights and obligations of counterparties during the term of the instrument.[171]

Second, section 941 of the Dodd-Frank Act calls for loan originators or sponsors to retain a part of the credit risk of securitized assets, aligning incentives by requiring certain participants in the securitization process to hold an economic interest in the credit risk of securitized assets (i.e., to have some "skin in the game").[172] The credit risk retention rules apply to sponsors of virtually all securitizations (other than synthetic structures), whether the asset-backed securities are publicly or privately offered, and permit only limited circumstances in which the required risk retention may be held by an originator or party other than the sponsor.[173] In general, the required risk retention must be calculated under a "fair value" approach, with the notable exception of the vertical risk retention option.[174] Although the potential

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171. *See* 17 C.F.R. § 23.431(a)(2). In addition, the Dodd-Frank Act contains a provision intended to prohibit certain conflicts of interest in the creation of derivatives. Section 621(a) states, in pertinent part, that:

> An underwriter, placement agent, initial purchaser, or sponsor, or any affiliate or subsidiary of any such entity, of an asset-backed security (as such term is defined in section 3 of the Securities Exchange Act of 1934 (15 U.S.C. 78c), which for purposes of this section shall include a synthetic asset-backed security), shall not, at any time for a period ending on the date that is one year after the date of the first closing of the sale of the asset-backed security, engage in any transaction that would involve or result in any material conflict of interest with respect to any investor in a transaction arising out of such activity.

Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 621(a), 124 Stat. 1376 (2010) (codified at 15 U.S.C. § 77z-2a(a) (2012)).

  The SEC proposed rules to implement the provision in 2011, clarifying which activities section 621 covers, but, since then, has not advanced the proposal. Prohibition Against Conflicts of Interest in Certain Securitizations, 76 Fed. Reg. 60320 (proposed Sept. 28, 2011) (to be codified at 17 C.F.R. pt. 230). Because the rules have not been finalized, section 621 has not yet taken effect. *See* Dodd-Frank § 621(b) ("[Section 621], shall take effect on the effective date of final rules issued by the Commission under subsection (b) of such section.").

172. *See* Dodd-Frank § 941; *see also* DEP'T OF THE TREASURY, FINANCIAL REGULATORY REFORM, A NEW FOUNDATION: REBUILDING FINANCIAL REGULATION AND SUPERVISION, 44–45 (2009).

173. *See* William P. Cejudo et al., *Will the SEC's Proposed Credit Risk Retention Rules Fuel Interest in Mortgage REITs: A Summary of the Proposed Rules and Tax Concerns for Mortgage REIT Securitizations*, 10 J. TAX'N FIN. PROD., no. 1, 2012, at 25. The required risk may be retained in one of several forms, including vertical, horizontal, and a combined method; no representative sample method was adopted. *Id.*

174. *See* Patrick Dolan, *Potential Legal and Regulatory Issues Affecting the Securitization Industry in 2017*, 23 J. STRUCTURED FIN. 72, 72–73 (2017); *see also* Stephen J. Choi & A.C. Pritchard, *Behavioral Economics and the SEC*, 56 STAN. L. REV. 1, 22 (2003) ("Disclosure

inefficiencies implied by section 941 are obvious, this legislative provision is motivated by a clear recognition of the very serious distinct moral hazard problems, highlighted by our analytic framework, created when derivatives are used to engage in bilateral risk transfer.

Some have argued that these regulatory safeguards are insufficient to remedy the distinct moral hazard problems highlighted above.[175] In light of these perceived regulatory shortcomings, some critics have suggested that certain types of derivative contracts ought to be legally or statutorily defined as insurance, focusing on credit default swaps in particular.[176] Presently, credit default swaps are not regulated as insurance contracts. In an opinion commissioned by the International Swaps and Derivatives Association (ISDA), Robin Potts articulated the standard basis for not treating credit default swaps as insurance, concluding that credit derivatives are not insurance because these contracts are structured to pay out on the occurrence of a default or other credit event *irrespective* of whether the buyer incurs an economic loss.[177] In other words, credit default swaps do not seek to protect an insurable interest on the part of the payee, and, therefore, do not satisfy the insurable interest requirement.[178]

This rationale, however, applies only to synthetic positions. As Professors Nirenberg and Hoffman argue, "[t]o facilitate a determination that a particular credit default swap is not insurance, the transaction should be structured so that payment to the protection buyer is not contingent on the protection buyer incurring a loss."[179] That is, a clear distinction must be drawn between risk transfer and risk creation. If a derivative contract constitutes risk transfer, and not risk creation, then the contract can be regulated as insurance. Part of the regulatory appeal of this proposed

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may be ineffective in educating investors who suffer from biases in decision-making.").

175.   Henry T.C. Hu & Bernard Black, *Equity and Debt Decoupling and Empty Voting II: Importance and Extensions*, 156 U. PA. L. REV. 625, 682–84 (2008).

176.   Arthur Kimball-Stanley, *Insurance and Credit Default Swaps: Should Like Things be Treated Alike*, 15 CONN. INS. L.J. 241, 261-66 (2008); *see also* Hazen, *supra* note 1, at 426.

177.   *See* Opinion by Robin Potts QC, Erskine Chambers, prepared for the Int'l Swaps & Derivatives Ass'n 7 (June 24, 1997), https://www.isda.org/a/BNEDE/edcreditderivatives.pdf [https://perma.cc/D9CS-YZLT] (stating that CDS "plainly differ from contracts of insurance" because "the payment obligation is not conditional on the payee's sustaining a loss or having a risk of loss"); *see also* Robert F. Schwartz, *Risk Distribution in the Capital Markets: Credit Default Swaps, Insurance and a Theory of Demarcation*, 13 FORDHAM J. CORP. & FIN. L. 167, 200 (2007) ("Where a party enters a contract for contingent recovery possessing no economic interest in protecting the covered property from loss or damage, the contract is not insurance.").

178.   *Id*.

179.   David Z. Nirenberg & Richard J. Hoffman, *Are Credit Default Swaps Insurance?*, 3 DERIVATIVES REP. 7, 16 (2001).

classification is that insurance, unlike credit default swaps, requires *all* buyers to disclose all known risks to the insurer, which is important in the case of certain non-traded instruments, such as CDOs, where a protection seller may struggle to understand the true nature of the debt being insured.[180] In addition, classification of certain types of derivative contracts, including credit default swaps, as insurance provides regulatory authorities with greater, more intrusive tools to solve the significant moral hazard problems that specifically characterize these types of bilateral risk transactions.[181]

Although legally recategorizing specific types of derivative contracts as insurance may reduce moral hazard in certain instances, this proposed fix is likely to create unnecessary regulatory confusion. Regulating derivative contracts as insurance in some cases creates additional layers of conflict between regulatory agencies, exacerbating the bureaucratic tensions that already exist between the SEC and CFTC.[182] Moreover, the argument that credit default swaps constitute insurance would appear to apply, with equal force, to put options as well, significantly expanding the share of derivative contracts that should, in theory, be regulated as insurance contracts. Rather than classifying certain derivatives as insurance, the analytic framework set forth in Part III contends that derivative contracts should be viewed, consistent with the current regulatory approach, as a distinct form of bilateral risk transaction encompassing both positive and negative risk transfer and be regulated differently than other types of bilateral risk transactions. Operating within a distinct regulatory framework that applies only to derivative instruments with endogenous risk, such as security-based swaps, the SEC can promote and enforce rules or guidelines specifically designed to address the unique types of moral hazard problems implied by these financial instruments.

C. Trading Positions

Finally, this Section explores the regulation of (1) synthetic positions, and (2) fully hedged positions.

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180. Michel G. Crouhy, Robert A. Jarrow & Stuart M. Turnbull, *The Subprime Credit Crisis of 2007*, 16 J. DERIVATIVES 81, 93 (2008).

181. Kimball-Stanley, *supra* note 176, at 251–52.

182. Jerry W. Markham, *Merging the SEC and CFTC—A Clash of Cultures*, 78 U. CIN. L. REV. 537, 591–94 (2009) (discussing cultural and other regulatory differences between SEC and CFTC).

1.   Synthetic Positions

Synthetic trading positions do not constitute a violation of state or federal securities law unless the synthetic position is entered into with the intent of manipulating the price of a security.[183] Like derivatives more generally, the regulation of synthetic positions has been primarily focused on risk mitigation. One of the principal risks identified by financial regulators with respect to synthetic positions is the failure to deliver securities to the buyer when delivery is due.[184] To reduce the likelihood of failures to deliver, the SEC enacted Regulation SHO, which requires broker-dealers to "locate securities to borrow" before executing a short sale in any equity security.[185]

Although regulators have correctly recognized the counterparty risk implied by synthetic positions, regulators have been reluctant to condemn synthetic positions more broadly, with the SEC expressly stating that such trading positions can be beneficial in contributing to market liquidity: without speculators buying and selling synthetic products, financial entities wanting to hedge might not find a ready and willing counterparty.[186] As the analytic framework set forth highlights, this justification blurs an important distinction between risk transfer and risk creation. If an economic actor assumes a risk as part of its ordinary business operations and wishes to transfer that risk to a party better positioned to bear it, then this party can use a derivative instrument to engage in socially beneficial risk transfer. If there is no such preexisting risk, however, then the derivative instrument is synthetic and constitutes bilateral risk creation—or gambling. Risk creation

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183.   *See*, *e.g.*, Jennifer O'Hare, *Synthetic CDOs, Conflicts of Interest, and Securities Fraud*, 48 U. RICH. L. REV. 667, 700 (2014).

184.   *See* MARK JICKLING, CONG. RSCH. SERV., RS22099, REGULATION OF NAKED SHORT SELLING 2 (2005), https://www.everycrsreport.com/files/20050330_RS22099_f45b056f2ba 13003ef89f4ae673bea0d7ca20287.pdf [https://perma.cc/4WAY-CEBX].

185.   Regulation SHO, 69 Fed. Reg. 48008, 48008 (Aug. 6, 2004) (codified at 17 C.F.R. §§ 240–242). The locate requirement is met where the broker-dealer has "reasonable grounds to believe that the security can be borrowed so that it can be delivered on the date delivery is due." 17 C.F.R. § 242.203(b)(1)(ii). Regulation SHO also requires firms that clear and settle trades to take action to close out failures to deliver by borrowing or purchasing securities of like kind and quantity. *See id.* at § 242.204.

186.   *See Investor Bulletin: An Introduction to Short Sales*, SEC https://www.sec.gov/oiea/ investor-alerts-bulletins/ib_shortsalesintro.html [https://perma.cc/65GF-JMBE] (last modi-fied Feb. 6, 2017); *see also* Timothy E. Lynch, *Gambling by Another Name; The Challenge of Purely Speculative Derivatives*, 17 STAN. J.L. BUS. & FIN. 67, 118–19 (2011) ("[W]ithout speculators, potential hedgers would have to find other hedgers with an exactly (or nearly exactly) opposite position. . . . Finding such hedgers . . . may be costly and often impossible.").

is not possible if a party transfers risk that flows from ownership of an asset; risk creation is only possible if the position is synthetic or naked. Hence, in addition to reducing failures to deliver, the analytic framework developed here suggests, as other commentators have as well, an additional justification for enhanced regulatory scrutiny of synthetic positions—that such bilateral risk transactions constitute gambling.[187]

The financial system does not exist to create risk. The financial system exists to transfer risk created by ordinary business activity to others who can bear that risk at lower cost—or, in some cases, to destroy or fully hedge that risk—but never to create risk itself. Risk creation is antithetical to one of the core social functions of the financial sector, which is to help businesses minimize or otherwise manage the risks that arise out of ordinary business conduct.[188] Capital markets allow businesspeople to transfer this socially beneficial risk to investors who, in this way, thus indirectly participate in productive business activity.[189] Capital markets are not casinos and should not permit investors to engage in pure gambling activity, placing bets on expected movements in asset prices no different than placing a wager on the outcome of a sporting contest.[190] Not only is this type of risk creation contrary to the broader social mission of the financial sector, but these types of bilateral risk transactions render the financial system less sound, amplify volatility, and, ultimately, leave the economy susceptible to financial crisis and, in turn, economic recessions unrelated to the socially beneficial risk-taking of actual businesspeople.[191]

The difficulty, however, confronted by a financial regulator seeking to monitor or limit such trading is that the initial risk endowment of a contract party in a bilateral risk transaction, which the analytical framework has emphasized is necessary to differentiate between risk transfer and risk creation, may be difficult to correctly identify or measure. One can readily

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187. *Id.*; Hazen, *supra* note 1, at 395 ("This article takes the position that there is still some merit to the gambling/investment analogy."); *see also* Wolfgang Münchau, *Time to Outlaw Naked Credit Default Swaps*, FIN. TIMES (Feb. 28, 2010), https://www.ft.com/content/7b56f 5b2-24a3-11df-8be0-00144feab49a [https://perma.cc/JC4E-9VZU] ("A naked CDS purchase means that you take out insurance on bonds without actually owning them. It is a purely speculative gamble. There is not one social or economic benefit.").

188. *See* MARTIN NEIL BAILY & DOUGLAS J. ELLIOT, THE ROLE OF FINANCE IN THE ECONOMY: IMPLICATIONS FOR STRUCTURAL REFORM OF THE FINANCIAL SECTOR 13 (2013).

189. *See generally* Ronald J. Gilson & Charles K. Whitehead, *Deconstructing Equity: Public Ownership, Agency Costs, and Complete Capital Markets*, 108 COLUM. L. REV. 231 (2008).

190. *See* JOHN MAYNARD KEYNES, THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY 159 (1936) ("It is usually agreed that casinos should, in the public interest, be inaccessible and expensive. And perhaps the same is true of Stock Exchanges.").

191. *See* O'Hare, *supra* note 183, at 680.

identify a wager placed on the spin of a roulette wheel or on the outcome of hand of blackjack as gambling, because participants in these activities are unlikely to have preexisting risk exposure to the outcome of a roulette wheel or a hand of blackjack. The participants in these games are not seeking to transfer preexisting risk; instead, risk is created by virtue of participation in the game itself. But suppose that a party has previously bet on red, and now that very same party also places a bet on black. This second bet is no longer gambling; the party is, in effect, closing out a position (at a net loss). The complex task facing financial regulators is to determine whether a given trade is a naked bet on red or whether that party has also made a corresponding bet on black.

2.   Fully Hedged Positions

Lastly, a party can enter a bilateral risk transaction not only to transfer risk from one contract party to another, but to reduce or eliminate the level of risk borne by *both* contract parties. In reducing the total amount of risk in society, which is normally considered an economic bad, bilateral risk destruction increases total social welfare. As Table 5 illustrates, this type of risk destruction is feasible only if the initial risk endowments of the two contract parties are negatively correlated.[192] In the case of a security investment, for example, the investor must own an asset that generates returns that are negatively correlated with the returns on the investment. The stock of a market competitor may constitute such an asset.[193] In theory, market forces can be relied upon to match contract parties with initial risk endowments that are negatively correlated because, all else equal, a risk transaction that reduces risk is more valuable to a counterparty than one that creates risk.

If market forces, however, systematically fail to push contract parties to favor bilateral risk destruction over bilateral risk transfer, then some form of government intervention may be justified to facilitate social welfare-improving bilateral risk destruction. For this market intervention to succeed, financial regulators must be able to differentiate between risk transfer and risk destruction, which implies, as noted above, that a regulator must know the existing initial risk endowments of all relevant contract parties. To determine if a bilateral risk transaction, standing on its own, destroys risk, a

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192*.   See supra* Section III.B.1.c.

193.   This is simply an example of the broader concept of diversification in finance where assets whose returns are negatively correlated with broader market returns command higher prices than assets not possessing this property. *See generally* James C. T. Mao, *Essentials of Portfolio Diversification Strategy*, 25 J. FIN. 1109 (1970).

regulator must know the initial risk endowment of both contract parties to determine each party's preexisting net exposure to the underlying asset. This information is unlikely to be readily available to the regulator. Further, to determine whether the bilateral risk transaction destroys risk when netted out over all relevant risk transactions, a regulator must additionally track how the risk has been transferred to different parties through various risk transactions and have information on all such contract parties' net exposure to this risk. Again, this information is unlikely to be available to the regulator—or very costly to obtain. If some type of market intervention is warranted, then regulatory steps, such as expanding the scope of mandated disclosure, should be taken to make this information related to existing risk exposure more accessible to regulatory authorities.

V.   CONCLUSION

This Article introduced three main baseline models of bilateral risk transaction: (1) bilateral risk transfer, (2) bilateral risk creation, and (3) bilateral risk destruction, and extended these baseline models to include two additional variables: (1) endogenous risk, and (2) risk mitigation. The addition of these two elements narrows the broad definition of a bilateral risk transaction to include (1) securities investments and (2) insurance. Other types of bilateral risk transactions were also considered, including derivative contracts. Highlighting two main regulatory concerns in connection with bilateral risk transactions, namely, (1) fraud or moral hazard, and (2) risk mitigation, this Article summarized how the current regulatory environment addresses these two concerns and explored possible regulatory gaps suggested by the baseline models.