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GAINING ASSURANCES

JULIA Y. LEE*

This Article explores alternative legal mechanisms for solving a type of coordination problem known as the Assurance Game. The traditional approach has been to focus on changing the expectations of the parties. This Article focuses on altering the underlying payoff structure—not through sanctions, but through risk-reducing mechanisms such as guarantees.

One type of risk-reducing mechanism is the conditional money-back guarantee. Conditional money-back guarantees operate in settings ranging from federal deposit insurance to daily deal websites such as Groupon and LivingSocial. In each of these, a promise is made to return an individual's monetary contribution if an event or condition that depends on the actions of others is met. The condition may be (1) the reaching of a predetermined threshold, or (2) the happening of some event. This Article examines both types of conditional money-back guarantees and analyzes factors that may impact their effectiveness.

INTRODUCTION

Often, individuals act, or fail to act, based on predictions of how others will act. They continually make strategic decisions based on what they believe other people will do, whether it is to contribute to a cause, sell a falling stock, or invest in a new technology. In some situations, they will be better off if everyone else cooperates while they defect. In others, there are no gains to be had from defecting: the best result is if everyone cooperates. The former describes the well-known Prisoner's Dilemma; the latter, the Assurance Game or Stag Hunt. The problem in both is one of information and trust (or lack thereof).

Legal scholars have applied game theory to study how legal rules impact strategic behavior. The conventional paradigm assumes that (1) problems of cooperation, as represented by the Prisoner's Dilemma, are solved by changing incentives through sanctions; and (2) problems of coordination, as represented by the Assurance Game, are solved by changing expectations, not incentives.[1] A substantial body of scholarship has challenged the first assumption, demonstrating the ineffectiveness and counterproductivity of sanctions in correcting the problem of defection or free-riding in the Prisoner's Dilemma.[2] These scholars have argued that changing expectations—building trust and

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1.   *See, e.g.*, Robert B. Ahdieh, *The Visible Hand: Coordination Functions of the Regulatory State*, 95 MINN. L. REV. 578, 618 (2010) ("The solution to coordination games does not lie in the alteration of incentives, but in the facilitation of accurate expectations of one another.").

2.   *See, e.g.*, Samuel Bowles et al., Homo Reciprocans: *A Research Initiative on the Origins, Dimensions, and Policy Implications of Reciprocal Fairness*, UMASS AMHERST 1–4 (June 7, 2007), http://www.umass.edu/preferen/gintis/homo.pdf; Dan M. Kahan, *Trust, Collective Action, and Law*, 81 B.U. L. REV. 333, 333–34 (2001) (citing Ernst Fehr & Simon Gächter, *Reciprocity and Economics: The Economic Implications of* Homo Reciprocans, 42 EURO. ECON. REV. 845, 845–46 (1998)); Carlisle Ford Runge, *Institutions and the Free Rider: The Assurance Problem in Collective Action*, 46 J. POL. 154, 156–57 (1984).

increasing the *perception* that others are cooperating—can be far more effective in solving the Prisoner's Dilemma.[3]

However, the second assumption—that the solution to the Assurance Game lies in changing expectations expressively, rather than by altering underlying payoffs or incentives—largely has predominated.[4] Although preplay communication, norms, and learning have been suggested as potential solutions to the coordination dilemma,[5] those solutions presuppose repeated interaction or the ability to identify the other players. In diffuse, anonymous, non-repeat-player settings— settings where the transaction costs are prohibitively high—the focus has been on changing expectations by means of focal points.[6] "Focal points" are environmental features that attract the mutual attention of the players and make salient one way of playing the game over others.[7]

To date, legal scholars generally have approached the Assurance Game from the standpoint of law's expressive function.[8] Richard McAdams, for instance, has applied the focal point theory to coordination games, arguing that legal rules, by their mere expression, can serve as "focal point[s] around which individuals can coordinate their behavior."[9] Under this theory, when a legal rule is sufficiently

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3. *See, e.g.*, Dan M. Kahan, *Reciprocity, Collective Action, and Community Policing*, 90 CALIF. L. REV. 1513, 1516–18 (2002).

4. A notable exception is Lee Fennell's discussion of locks, bribes, norms, and pacts as potential strategies for solving collective action problems. Lee Anne Fennell, *Beyond Exit and Voice: User Participation in the Production of Local Public Goods*, 80 TEX. L. REV. 1, 45–53 (2001).

5. Russell Cooper et al., *Communication in Coordination Games*, 107 Q.J. ECON. 739 (1992); George J. Mailath, *Do People Play Nash Equilibrium? Lessons from Evolutionary Game Theory*, 36 J. ECON. LITERATURE 1348 (1998).

6. Richard H. McAdams, *Beyond the Prisoners' Dilemma: Coordination, Game Theory, and Law*, 82 S. CAL. L. REV. 209, 231–34 (2009).

7. THOMAS C. SCHELLING, THE STRATEGY OF CONFLICT 54–67 (1960); *see also* McAdams, *supra* note 6, at 231–32.

8. *See, e.g.*, Ahdieh, *supra* note 1, at 618; Robert B. Ahdieh, *Law's Signal: A Cueing Theory of Law in Market Transition*, 77 S. CAL. L. REV. 215, 219 (2004); McAdams, *supra* note 6, at 233–34; Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1650–51 (2000) [hereinafter McAdams, *A Focal Point Theory*]; Richard H. McAdams, *An Attitudinal Theory of Expressive Law*, 79 OR. L. REV. 339, 339–40 (2000) [hereinafter McAdams, *An Attitudinal Theory*]. For articles dealing with law's expressive function more generally, see, for example, Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585 (1998); Jason Mazzone, *When Courts Speak: Social Capital and Law's Expressive Function*, 49 SYRACUSE L. REV. 1039 (1999); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021 (1996).

9. McAdams, *A Focal Point Theory*, *supra* note 8, at 1651.

publicized, it provides a salient focal point that allows individuals to predict the likely behavior of others.[10]

This Article attempts to move beyond the expressive power of legal rules to explore an alternative means of solving coordination failures—the alteration of underlying payoffs or incentives. Law can change incentives in at least two ways: (1) through coercive, punitive sanctions; or (2) through risk-reducing mechanisms such as guarantees. I argue that because of the inherently different nature of the Assurance Game, mechanisms such as conditional money-back guarantees (MBGs) may be particularly apt. I do not seek to challenge the role, or even the primacy, of changing expectations through focal points and other expressive theories, but simply to broaden the existing discourse to include the adjustment of incentives.

By conditional MBGs, I refer not to the ubiquitous product-quality money-back guarantee, but to guarantees that an individual's monetary contribution will be returned if an event or condition that depends on the actions of others is met.[11] The condition may be the reaching of a predetermined threshold condition or the happening of some event. I examine both types of conditional MBGs and analyze factors that may impact their effectiveness, including the excludability of the good, the public or private nature of the guarantor, and the guarantor's credibility of commitment.

By making it less risky to hunt stag if the other person does *not* do so, conditional MBGs fundamentally change the dynamics of the Assurance Game. They encourage individuals to move from the riskless hare-hunting equilibrium to the riskier, but more rewarding stag-hunting equilibrium by altering the underlying payoffs. By minimizing or removing downside risk and changing the payoffs, conditional MBGs thereby change expectations of what others will do. Rather than making the normative argument that these types of mechanisms *should* be adopted, this Article sets out a framework for understanding how and under what circumstances these mechanisms effectively operate.

Part I briefly summarizes the differences between the Prisoner's Dilemma and the Assurance Game. Those familiar with these games should skip to Part II. Part II discusses coordination mechanisms and examines two types of conditional MBGs: threshold and nonthreshold.

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10.   *Id.* at 1666.

11.   This model also may be abstracted out as an assurance contract or conditional pledge. Because assurance contracts have been proposed chiefly in relation to the private provision of public goods, I have chosen to use the term "conditional money-back guarantee" to describe this model.

Part III analyzes factors that could influence the effectiveness of the conditional MBG, including the type of good and the characteristics of the guarantor. Part IV discusses larger implications, comparing the conditional MBG to two other mechanisms for solving the Assurance Game: focal points and sanctions. It then explores applications in other areas, including crowdfunding and the emergence of new payment technologies.

I. PRISONER'S DILEMMA VS. ASSURANCE GAME

The Prisoner's Dilemma and Assurance Game have frequently been used to model collective action problems from a rational choice perspective.[12] Theorists employ these "two-by-two" games to study strategic interaction between individuals who cannot communicate or "enter into binding agreements with one another."[13] Although the collective action setting involves many individuals, the interactions may nevertheless be reduced to two-person games for the purposes of analysis.[14] I briefly summarize the differences between the two games in terms of the nature of the problem, analytical structure and payoffs, and proposed solutions.

A. Prisoner's Dilemma

The Prisoner's Dilemma has been extensively applied to collective action problems in which every individual acts rationally to advance his or her own self-interest, yet the net result is collective (and ultimately individual) harm. In *The Logic of Collective Action*, Mancur Olson advanced the thesis that rational, self-interested individuals with a common interest will not act in furtherance of the interests of the group to which they belong.[15] Instead, they will always free-ride on the contributions of others absent coercion or other incentives.[16] The public goods problem and the tragedy of the commons exemplify this dilemma.[17] Whereas public goods involve individual costs that generate

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12.   DOUGLAS G. BAIRD ET AL., GAME THEORY AND THE LAW 188 (1994).

13.   *Id.*

14.   *Id.* at 31–32.

15.   MANCUR OLSON, JR., THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 1–2 (1965).

16.   *Id.* at 2.

17.   I discuss public goods in more detail in Part III. The "tragedy of the commons" refers to situations where individuals acting in their own self-interest deplete a common resource. Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244 (1968).

nonexcludable benefits shared by all, the tragedy of the commons involves individual benefits that result in collective costs.[18] Both have been analyzed primarily as Prisoner's Dilemmas, classic examples of which range from tax and environmental compliance to the dynamics of labor unions, plea bargaining, and pretrial discovery.[19]

Following is a classic illustration of the dilemma with the attendant payoffs. Two prisoners have been arrested for a crime and placed in separate cells. The prosecutor suspects them of having committed a felony, but only has enough evidence to prove a misdemeanor. So, the prosecutor offers each prisoner the following deal: If you confess and the other stays silent, all charges against you will be dropped (payoff of 0, as shown in Table 1) and your testimony will be used to ensure that the other prisoner gets the maximum penalty (payoff of -10). If both of you cooperate and stay silent, you will each face one year in prison for the misdemeanor (payoff of -1). If you both defect (confess), the judge will be urged to be lenient and give you each five years in prison (payoff of -5).[20]

Hence, if both prisoners stay silent, they are better off than if neither of them do. However, each will be better off defecting regardless of what the other player does: "[I]f Player 2 cooperates, Player 1 is better off defecting [(payoff of 0)] . . . . If Player 2 defects, Player 1 is [again] better off defecting [(payoff of -5)] . . . ."[21] Defecting, then, becomes the strictly dominant strategy, though the end result is to make both worse off.[22] Both prisoners receive a payoff of five years even though they could have received one year had they cooperated with one another.

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18.   Peter Kollock, *Social Dilemmas: The Anatomy of Cooperation*, 24 ANN. REV. Soc. 183, 188 (1998).

19.   *See, e.g.*, Kahan, *supra* note 3, at 1519–20; Daphna Lewinsohn-Zamir, *Consumer Preferences, Citizen Preferences, and the Provision of Public Goods*, 108 YALE L.J. 377, 386–87 (1998).

20.   McAdams, *supra* note 6, at 215.

21.   *Id.* at 215–16.

22.   Amartya K. Sen, *Isolation, Assurance and the Social Rate of Discount*, 81 Q.J. ECON. 112, 122 (1967).

TABLE 1

Player 1

		Cooperate (Keep Silent)	Defect (Confess)
Player 2	Cooperate (Keep Silent)	-1, -1	-10, 0
	Defect (Confess)	0, -10	-5, -5

The suboptimal nature of this (-5, -5) outcome has been used to justify legal rules aimed at creating incentives not to defect.[23] Conventional theory holds that the imposition of sanctions is necessary to align selfish, though rational, individual interests with the collective interests of society.[24] Laws and regulations change the payoffs so that defection is no longer the dominant strategy.[25] However, a considerable body of social science research has since challenged this theory and cast doubt on the effectiveness of sanctions.[26] These theorists have argued that rather than promoting cooperation, sanctions dissipate trust and increase the perception that others are not cooperating, thereby triggering further noncooperation.[27]

B. Assurance Game

The Stag Hunt, or Assurance Game, models a separate problem of strategic interaction—the problem of coordinating one's actions with others in situations where everyone does best by cooperating, but otherwise should all defect.[28] The players have common interests in that they achieve the best outcome if they coordinate their actions and match

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23.   BAIRD ET AL., *supra* note 12, at 188. To be clear, this (-5, -5) outcome is suboptimal from the perspective of the defendants.

24.   Kahan, *supra* note 3, at 1518–19.

25.   McAdams, *A Focal Point Theory*, *supra* note 8, at 1650.

26.   Ernst Fehr & Simon Gächter, *Fairness and Retaliation: The Economics of Reciprocity*, 14 J. ECON. PERSP. 159, 162 (2000); Kahan, *supra* note 3, at 1516.

27.   Kahan, *supra* note 3, at 1519.

28.   Although the two are often equated, there are technical differences between the two games. In the Assurance Game, if one player decides to defect, that player is better off if the other player cooperates. In the Stag Hunt, each player prefers cooperating to defecting, but only if the other cooperates as well. *See* BAIRD ET AL., *supra* note 12, at 301, 315.

strategies. If the other person cooperates, there is little incentive to defect or free-ride.[29] In this respect, the game is inherently different from the Prisoner's Dilemma, where the dominant strategy is to defect no matter what the other player chooses to do.[30]

As shown in Table 2, the Assurance Game payoff structure fundamentally differs from that of the Prisoner's Dilemma. Unlike the Prisoner's Dilemma, both players face the same binary choice and the same payoffs. Each has a choice of hunting stag (Strategy A) or hunting hare (Strategy B). Although a hare can be caught regardless of what the other hunter does, there is no chance of catching a stag alone. Both players have a common interest in catching stag (a better meal, hence a superior equilibrium, with a payoff of 4). However, neither player can be sure that the other will not act selfishly and go after the hare, in which case the player who hunts stag will starve (payoff of 0).[31] Hunting hare involves no such risk: the payoff is 3 regardless of what the other player chooses.[32]

TABLE 2

Player 1

		Strategy A (Stag)	Strategy B (Hare)
Player 2	Strategy A (Stag)	4, 4	0, 3
	Strategy B (Hare)	3, 0	3, 3

Unlike the Prisoner's Dilemma, the Assurance Game has no strictly dominant strategy: it involves two stable Nash equilibria—(4, 4) and (3, 3).[33] If Player 2 hunts stag (i.e., cooperates), then Player 1 is better off hunting stag and receiving a payoff of 4, rather than 3. If Player 2 hunts hare (i.e., defects), it is better for Player 1 to hunt hare

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29. *See id.* at 35–36; THOMAS C. SCHELLING, MICROMOTIVES AND MACROBEHAVIOR 231–32 (1978); McAdams, *supra* note 6, at 220–21.

30. *See* BRIAN SKYRMS, THE STAG HUNT AND THE EVOLUTION OF SOCIAL STRUCTURE 1–4 (2004); Brian Skyrms, *The Assurance Game*, 75 PROC. & ADDRESSES AM. PHIL. ASS'N 31, 31–33 (2001).

31. Skyrms, *supra* note 30, at 32.

32. *Id.*

33. Sen, *supra* note 22, at 122. A "Nash equilibrium" is a set of strategies where no player has an incentive to choose a different strategy given the strategies of the other players. *See* BAIRD ET AL., *supra* note 12, at 310.

and receive a payoff of 3, rather than 0. Whether the outcome will be optimal (4, 4) or suboptimal (3, 3) depends on what each individual expects the other to do.[34] A player's willingness to hunt stag will depend on his assessment of the probability that the other player will defect and hunt hare. Because of the riskiness of hunting stag, both players could play it safe and hunt hare, thereby trapping them in the inferior equilibrium.[35] Players in the Assurance Game fail to coordinate because they are unsure of what the other players will do, not because they wish to take advantage of the other players.[36] It is fear of getting "suckered"—fear of being left in the lurch if the other person does not cooperate—that traps individuals in the inferior hunting hare equilibrium, though everyone would be better off hunting stag.[37] The solution, according to conventional theory, is to get each of the players to *expect* that the other player will hunt stag.[38] Mechanisms that can assure each player that the other will cooperate and hunt stag are thus central to solving the coordination dilemma.[39]

II. COORDINATION MECHANISMS

How can these assurances be fostered to the mutual benefit of the players and the greater good of society? Where transaction costs are low—such that there are few practical impediments to voluntary exchange and bargaining between the parties—communication, norms, and contracts provide the most obvious solutions.[40] Communication, for instance, has been shown to significantly increase cooperative behavior

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34.   Sen, *supra* note 22, at 122.

35.   McAdams, *supra* note 6, at 220; *see also* SCHELLING, *supra* note 29, at 232 ("People can get trapped at an inefficient equilibrium, everyone waiting for the others to switch, nobody willing to be the first unless he has confidence that enough others will switch to make it worthwhile.").

36.   Gary Bornstein & Zohar Gilula, *Between-Group Communication and Conflict Resolution in Assurance and Chicken Games*, 47 J. CONFLICT RESOL. 326, 331 (2003); Runge, *supra* note 2, at 155 (coordination problems require "assurance in the face of uncertainty").

37.   Robyn M. Dawes et al., *Organizing Groups for Collective Action*, 80 AM. POL. SCI. REV. 1171, 1171 (1986); *see also* Earl R. Brubaker, *Free Ride, Free Revelation or Golden Rule?*, 18 J.L. & ECON. 147 (1975).

38.   SCHELLING, *supra* note 29, at 232.

39.   *See id.*; Mailath, *supra* note 5, at 1351 n.11; Skyrms, *supra* note 30, at 32.

40.   Eric A. Posner, *Law, Economics, and Inefficient Norms*, 144 U. PA. L. REV. 1697 (1996); Daniel F. Spulber, *Consumer Coordination in the Small and in the Large: Implications for Antitrust in Markets with Network Effects*, 4 J. COMPETITION L. & ECON. 207 (2008).

in a wide range of studies.[41] Communication allows individuals to gather information about the choices others are likely to make, to commit to what they will do, and to persuade others to do the right thing.[42] In addition, it builds trust and "create[s] or reinforce[s] a sense of group identity."[43] Social norms—informal systems of social consensus of what ought or ought not to be done—perform a similar function, "influenc[ing] the costs and benefits of particular choices" in repeat-player settings.[44] Contracts seek to ensure that both parties will work to their mutual benefit by providing for legally enforceable damages in the event of breach.[45]

A. Focal Points

But, when parties cannot readily communicate or bargain in advance, what can effect this change of expectations? In *The Strategy of Conflict*, Thomas Schelling advanced one potential solution: focal points. Focal points are simply conspicuous, unique signals in the environment that are mutually recognized by the players, thereby coordinating their behavior.[46] For instance, imagine that a husband and wife become separated in a department store. According to focal point theory, they would likely find one another if there were a conspicuous sign saying that all persons who become separated should meet at the information booth on the ground floor. This sign, according to Schelling, would serve as the focal point that could coordinate actions in the absence of communication.[47]

Richard McAdams's focal point theory of expressive law posits that legal rules guide behavior simply by changing expectations of how other people will behave.[48] For instance, consider a pure coordination

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41. *See* Bornstein & Gilula, *supra* note 36, at 337; Robyn M. Dawes et al., *Behavior, Communication, and Assumptions about Other People's Behavior in a Commons Dilemma Situation*, 35 J. PERSONALITY & SOC. PSYCHOL. 1, 6 (1977); Kollock, *supra* note 18, at 194.

42. Kollock, *supra* note 18, at 194.

43. *Id.*; *see* Elinor Ostrom, *A Behavioral Approach to the Rational Choice Theory of Collective Action*, 92 AM. POL. SCI. REV. 1, 6 (1998).

44. Randal C. Picker, *Simple Games in a Complex World: A Generative Approach to the Adoption of Norms*, 64 U. CHI. L. REV. 1225, 1232 (1997); *see also* Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 914 (1996).

45. BAIRD ET AL., *supra* note 12, at 56.

46. SCHELLING, *supra* note 7, at 57–58.

47. *Id.* at 66.

48. McAdams, *A Focal Point Theory*, *supra* note 8, at 1651.

dilemma: the decision of whether to drive on the left- or right-hand side of the road. To avoid a head-on collision, it is in the mutual interest of both drivers to drive on the same side of the street—i.e., to drive on the left if the other drives on the left, and to drive on the right if the other drives on the right. If the drivers cannot communicate in advance and no norm or convention has yet developed, focal points become instrumental. In this case, McAdams argues, a simple proclamation by the state saying, "drivers stay on the left," even without the threat of sanctions, could easily solve the coordination problem and create a norm of drivers driving on the left.[49] The legal proclamation serves as a focal point that guides expectations—each driver drives on the left because he expects the other to do so.[50]

This Article contends that this change of expectations can be effected not only through focal points and other expressive theories of law,[51] but also by changing underlying payoffs. In certain situations, a legal proclamation alone may be insufficient to change expectations. Where an individual faces the prospect of a quantifiable monetary loss, or where the challenges to achieving or maintaining cooperation are particularly high, mechanisms such as conditional MBGs may be more effective at solving the coordination dilemma. As demonstrated below, unlike sanctions, conditional MBGs counter the core problem of fear in the Assurance Game by reducing or eliminating the risk of losing one's financial investment.

B. Conditional MBGs

I distinguish between two types of money-back guarantees: (1) product-quality, satisfaction-guaranteed MBGs; and (2) conditional MBGs. Product-quality, satisfaction-guaranteed MBGs are what we traditionally associate with MBGs in the consumer context. They simply guarantee that if a buyer is not fully satisfied with a product or service, she will receive a full refund of the purchase price.[52] They perform a *signaling* function, "signal[ing] product quality . . . when

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49.   *Id.* at 1667–68.

50.   *Id.* at 1668.

51.   Other expressive theories include correlated equilibria and signaling theory. *See* Richard H. McAdams, *The Expressive Power of Adjudication*, 2005 U. ILL. L. REV. 1043.

52.   Scott Davis et al., *Money Back Guarantees in Retailing: Matching Products to Consumer Tastes*, 71 J. RETAILING 7, 8 (1995).

buyers cannot directly assess product quality before purchase."[53] Mail-order businesses, for instance, have made frequent use of money-back guarantees to counter customers' uncertainty about a product's quality at the point of purchase.[54] Second, by deferring *finality* of a purchase at point of sale, they reduce the risk associated with purchasing an unknown product.[55] They are perhaps the prototypical antithesis of the old doctrine of *caveat emptor*, or "let the buyer beware."

My focus is not on product-quality MBGs, but on the second type—conditional MBGs. These are MBGs that take effect if some predetermined event or condition that is dependent on the actions of others is met. I discuss two types of conditional MBGs: (1) threshold conditional MBGs—MBGs that are dependent on the reaching of some preset threshold condition, and (2) nonthreshold conditional MBGs— MBGs that are dependent on the happening of some event. In Section 1, I introduce two examples of threshold conditional MBGs: (a) peer purchasing in the consumer context, and (b) best-efforts underwriting in the securities context. In Section 2, I discuss deposit insurance as a type of nonthreshold conditional MBG.

1. THRESHOLD CONDITIONAL MBGS

a. Peer purchasing

In recent years, we have witnessed the rapid and dramatic growth of an intriguing phenomenon: group buying, or what I term "peer purchasing" in the spirit of Yochai Benkler's apt phrase "peer production."[56] In a seminal article, Benkler coined the term to describe the then-emerging phenomenon of collaborative production systems. These were systems operating outside of traditional markets or managerial hierarchies that could coordinate the creative energy of large numbers of diffuse, individual agents into complex productive projects.[57] I use the term "peer purchasing" to describe a similar phenomenon: the use of the Internet to coordinate the purchasing power

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53.   Sridhar Moorthy & Kannan Srinivasan, *Signaling Quality with a Money-Back Guarantee: The Role of Transaction Costs*, 14 MARKETING SCI. 442, 442 (1995).

54.   *Id.*

55.   *Id.* at 442–43.

56.   Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 YALE L.J. 369, 376 (2002).

57.   *Id.* at 376–77.

of large numbers of dispersed, autonomous agents for the purpose of obtaining volume discounts.

The idea of allowing strangers to band together to purchase products and services at bulk prices is by no means novel. Trade associations and cooperative buying organizations (co-ops) formed to pool the purchasing power of participating business existed for centuries. In the 1920s, cooperative buying groups of small retail grocers and other businesses were formed to counter the purchasing power of large chain retailers.[58]

The online intermediary model popular today made its initial, though short-lived debut in the late 1990s before dissolving during the dot-com crash of 2001. Mercata, MobShop, and other web-based group-buying companies allowed consumers to use their collective buying power to obtain lower prices on various consumer products listed on the companies' sites.[59] Instead of having a predetermined price, each item listed on the companies' websites showed a maximum price and how many others had agreed to buy at that price. The larger the number of buyers during the limited purchase period, the greater the price drop for the customer.[60]

In China, tuángòu (pronounced "twango"), or team buying, has become the latest shopping sensation. As of the first half of 2011, there were nearly 5000 tuángòu websites in existence.[61] The sites have taken sundry forms, but in its original conception, tuángòu involved aggressive bargain hunters finding one another over the Internet, then agreeing to meet at a designated time and place to collectively pummel a discount out of a willing or unwilling storeowner.[62] The idea quickly spread to online intermediary websites that negotiate discounts in

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58. Andrew C. Selden, *An Analysis of Cooperative Buying Associations— Including New Concerns for Franchise Systems*, 37 BUS. LAW. 1569, 1570 (1982).

59. *See* Dorte Toft, *Shoppers Band Together on Mercata*, IDG NEWS (May 20, 1999, 8:57 AM), http://web.archive.org/web/19991008222307/http:// www.pcworld.com/pcwtoday/article/0,1510,11049,00.html; Laurie J. Flynn, *MobShop, a Group-Buying Site, Drops Its Consumer Business*, N.Y. TIMES, Jan. 15, 2001, *available at* http://www.nytimes.com/2001/01/15/business/mobshop-a-group-buying-site-drops-its-consumer-business.html.

60. *See* Bruce Gottlieb, *Does Group-Shopping Work?*, SLATE (July 26, 2001, 3:00 AM), http://www.slate.com/articles/briefing/articles/2000/07/does_groupshopping _work.html.

61. Tae-Hyung Kim et al., *The Groupon Effect in China*, KNOWLEDGE@WHARTON (Jan. 3, 2012), http://knowledge.wharton.upenn.edu/ article.cfm?articleid=2899.

62. *See* Simon Montlake, *China's Newest Shopping Craze: 'Team Buying,'* CHRISTIAN SCI. MONITOR, May 11, 2006, *available at* http://www.csmonitor.com/2006/0511/p01s01-woap.html.

advance in return for a fee of thirty to fifty percent of the whole deal, similar to the Groupon business model.[63] In one variation of tuángòu, Air China introduced a promotional "V-Flight" in June 2011 that would only fly if enough people signed up to purchase a seat between June 1 and June 15 on the popular microblogging site Sina.[64] Purchasers were given the option of selecting their meal options as well as members of the cabin crew.[65]

In the United States, "peer purchasing" has taken the form of daily deal websites featuring steep discounts on products and services in a given geographical region. An online intermediary such as Groupon or LivingSocial negotiates a discount with local businesses in advance of the deal in return for a promise that the discount will not be offered unless a certain minimum number of customers sign up.[66] The model differs from early group-buying companies such as Mercata and MobShop, which focused on selling consumer goods such as personal electronics, software, DVDs, and sports equipment over the course of several weeks.[67] Today's generation of group-buying intermediaries tends to focus more on services and leisure activities within a given geographical region, with deals expiring within twenty-four hours. A typical deal might offer a $20 voucher that can be redeemed for $40 in value at a local restaurant, clothing store, or spa. The customer purchases the voucher online with a credit card and, if the threshold minimum number of purchasers is met, redeems it with the local merchant.[68] If the minimum threshold is not met, the individual's credit card is not charged and no one gets the deal of the day.[69]

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63.   *See* Xu Fang & Jason Cheung, *Tuangou-Revitalizing the Service Sector and Stimulating Domestic Demand?*, ACCENTURE INST. FOR HIGH PERFORMANCE 1, http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Tuangou-Revitalizing-the-Service-Sector-and-Stimulating-Domestic-Demand.pdf (last visited Oct. 5, 2012).

64.   *Chinese Airline's Group-Buying Flight is Latest Example of 'Tuangou Fever,'* INDEPENDENT (June 6, 2011), http://www.independent.co.uk/travel/news-and-advice/chinese-airlines-groupbuying-flight-is-latest-example-of-tangou-fever-2293732.html. The flight took off on July 1, 2011, the first of its kind. *See Air China's First V-Flight Airborne*, AIR CHINA NEWS CENTER (July 5, 2011), http://www.airchinagroup.com/en/news/07/203233.shtml.

65.   *Id.*

66.   *See, e.g.*, *FAQ*, GROUPON, http://www.groupon.com/faq (last visited Oct. 5, 2012); *Terms and Conditions*, LIVINGSOCIAL, https://www.livingsocial.com/terms (last visited Oct. 21, 2012).

67.   *See* Gottlieb, *supra* note 60.

68.   *See FAQ*, *supra* note 66.

69.   *Id.* Because the credit card is not charged until the deal "tips," Groupon's model also could be characterized as a conditional pledge. However, for purposes of

The conditional component of the peer purchasing model reduces risk for both consumers and retailers. For retailers, it reduces risk because the discounts can be offset by the quantity of goods or services sold—the vouchers would, in effect, serve as quantity discounts in addition to a form of advertising.[70] For consumers, the group buying model reduces risk because a consumer's credit card is not charged until the deal has "tipped," or reached the minimum threshold. Consumers can purchase the product or service with little to no risk of monetary loss,[71] thereby increasing their willingness to buy into the deal.

Imagine a variant of Groupon, Gambleon. Gambleon operates in exactly the same manner as Groupon, with one notable difference: consumers buy into the deal without a guarantee that they will not be charged if the threshold condition is not met. For instance, the consumer buys a $10 voucher for $40 worth of value and hopes that there will be enough other takers that the deal will go forward. If not, the consumer will lose $10. Why would any consumer take such a gamble?

Reducing the decision to a two-person, two-by-two game yields a classic Assurance Game. There are two equilibria, one preferable to the other, but the players' rational decisions may not lead to the preferred equilibrium. The best outcome would be for both Player 1 and Player 2 to cooperate by buying the coupon voucher. The worst outcome would be for one player to buy, while the other defects by not buying. Because the efficacy of the coupon depends on both players signing up, the player who buys the coupon when the other player does not loses his investment of $10. Neither player wishes to be the one "suckered," so both could refrain from buying the coupon (0, 0). The players defect not out of a desire to take advantage of the other player, but out of fear that the other player will defect.

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the issues addressed in this Article, conditional MBGs and conditional pledges are functionally the same.

70.   However, retailers would continue to face the risk that the deals would attract mostly bargain hunters who do not spend more than the coupon's face value and do not become repeat customers.

71.   Consumers, of course, could lose out by neglecting to use their voucher after purchase, but this would be a loss within their control.

TABLE 3

	Player 2	
	B (Buy)	N (Not Buy)
B (Buy)	30, 30	-10, 0
N (Not Buy)	0, -10	0, 0

Player 1 is labeled to the left of the B (Buy) / N (Not Buy) rows.

To establish the conclusion stated above, Table 3 displays the payoffs. It is easy to see how the one-shot game with two rational, self-interested players can end at the (0, 0) payoff instead of the more advantageous (30, 30) payoff. Let p be Player 1's assessment of the probability that Player 2 cooperates (buys the voucher). If Player 1 buys the voucher, he gets $40 of value with probability p at a cost of $10. His expected gain therefore is $40p - 10$.[72] If he does not buy, his gain is $0. A risk-neutral Player 1 will buy the voucher as long as $40p - 10 > 0$, or $p > 1/4$. The same is true for Player 2. Both must believe that the other has at least a twenty-five percent probability of cooperating (buying the voucher) to achieve the optimal outcome.

Mechanisms such as conditional MBGs provide the assurance necessary to move the players from the suboptimal (0, 0) to the optimal (30, 30) equilibrium point, even when they doubt that the other player is likely to cooperate. Groupon, LivingSocial, and other online intermediaries achieve the same effect by guaranteeing that the customer's credit card will not be charged until the threshold condition is reached. With the conditional MBG, if Player 1 buys the coupon while Player 2 does not, Player 1's payoff is 0 rather than -10. Similarly, if Player 2 buys the coupon while Player 1 does not, Player 2's payoff is 0 rather than -10. The conditional MBG alters the underlying payoffs so that it is no longer an Assurance Game. For both players, the clear choice, as shown in Table 4, is to buy the voucher, with a (30, 30) payoff.

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72. If p is the probability that Player 2 buys, $(1-p)$ is the probability that Player 2 does not buy. Player 1's expected payoff for buying equals $30(p) + (1-p)(-10) = 40p - 10$. Player 1's expected payoff of not buying equals $0(p) + (1-p)(0) = 0$.

TABLE 4

Player 2

	B (Buy)	N (Not Buy)
B (Buy)	30, 30	0, 0
N (Not Buy)	0, 0	0, 0

Player 1

b. Best-efforts underwriting

The threshold conditional MBG model also has been implemented in the securities context. Companies engaged in a public offering of their securities may undertake either a firm commitment or a best-efforts underwriting. In a firm commitment underwriting, the underwriter purchases the securities from the issuer, then sells them to the public, thereby assuming the risks of the offering.[73] In a best-efforts underwriting, the underwriter simply pledges to use its best efforts to sell the securities, but does not purchase them.[74] Best-efforts underwritings may take various forms. In a conditional "mini/max" best-efforts underwriting, a preset minimum number of shares must be sold during a limited time period before an offering of securities can be completed.[75] If the underwriter does not succeed in selling the minimum number of shares, the deal does not go forward and the funds are returned to the investor.[76] In an "all-or-none" best-efforts underwriting, if the underwriter fails to sell *all* of the securities in the offering in the required time, the funds are returned.[77] By contrast, the "straight" best-efforts offering does not incorporate the conditional threshold aspects of the "mini/max" or "all-or-none" offerings. Any securities

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[73]   *See* Craig G. Dunbar, *The Choice between Firm-Commitment and Best-Efforts Offering Methods in IPOs: The Effect of Unsuccessful Offers*, 7 J. FIN. INTERMEDIATION 60, 60 (1998), *available at* http://www.ivey.uwo.ca/faculty/CDunbar/my_papers/withdrawn_IPO.pdf; Jeffrey N. Gordon, *The Mandatory Structure of Corporate Law*, 89 COLUM. L. REV. 1549, 1561 n.42 (1989); Donald C. Langevoort, *Information Technology and the Structure of Securities Regulation*, 98 HARV. L. REV. 747, 752 n.19 (1985).

[74]   Dunbar, *supra* note 73, at 60–61.

[75]   *See* JAMES D. COX ET AL., SECURITIES REGULATION: CASES AND MATERIALS 120 (6th ed. 2009); LOUIS LOSS & JOEL SELIGMAN, FUNDAMENTALS OF SECURITIES REGULATION 85 n.11 (5th ed. 2004).

[76]   *See* COX ET AL., *supra* note 75, at 120.

[77]   *See* LOSS & SELIGMAN, *supra* note 75, at 85 n.11.

sold by the underwriter are considered sold; there is no money-back guarantee component.[78]

Both the "mini/max" and "all-or-none" best-efforts offerings incorporate the conditional threshold MBG concept as a means of countering risk. While large, established issuers have little trouble finding underwriters to assume the risk of distribution and engage in firm commitment underwritings, newer, more obscure companies enjoy no such luxury.[79] Take the case of an innovative, new electric car company that needs to raise at least $100 million in order to purchase the requisite machinery and raw materials to begin production. Not only would underwriters most likely be unwilling to purchase the shares directly from the company and assume the risk of a failed distribution, but investors also could be skittish. An investor considering an investment of $100 would want to part with his funds only if enough other investors come in so that the $100 million is raised. If only $50 million is raised, the company cannot purchase the state-of-the-art technology necessary to manufacture the cars, and the investor loses his $100 investment.

If structured as a straight best-efforts offering, the investors face an Assurance Game. As shown in Table 5, although everyone would be better off if the $100 million is raised (20, 20), representing a twenty percent return on the $100 investment, no one investor wishes to take the risk that enough others will not invest. If Investor 1 chooses to buy the shares, but Investor 2 does not, Investor 1 will lose his $100 investment (-100, 0). Because of the fear that the other investor will not cooperate and buy the shares, each investor may choose to play it safe and refrain from buying the shares (0, 0), a stable but value-decreasing equilibrium.[80]

TABLE 5

Investor 2

		B (Buy)	N (Not Buy)
	B (Buy)	20, 20	-100, 0
Investor 1	N (Not Buy)	0, -100	0, 0

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78.   *See* COX ET AL., *supra* note 75, at 120.

79.   *See* LOSS & SELIGMAN, *supra* note 76, at 85.

80.   Both investors must believe that the other has at least an 83.33% probability of buying the shares in order to reach the optimal (20, 20) equilibrium.

The conditional MBG component of the "mini/max" and "all-or-none" best-efforts offerings effectively solve the dilemma. As shown in Table 6, the conditional MBG removes the element of risk: each investor no longer faces the risk that he will lose his investment if enough other investors do not purchase shares in the offering. If Investor 1 purchases the shares while Investor 2 does not, Investor 2's payoff becomes (0) rather than (-100). The dominant equilibrium is to purchase the shares, with a payoff of (20, 20).

TABLE 6

		Investor 2	
		B (Buy)	N (Not Buy)
Investor 1	B (Buy)	20, 20	0, 0
	N (Not Buy)	0, 0	0, 0

"Mini/max" and "all-or-none" best-efforts offerings present instances of private sector innovation by contract. Perhaps recognizing the difficulties faced by new or obscure issuers in raising capital among widely dispersed investors, underwriters and issuers devised a mechanism that potentially could overcome, by contract, what would otherwise have been limited capital formation prospects for these companies. The Securities and Exchange Commission has implemented measures to protect the integrity of the threshold requirement and the money-back guarantee feature. Rule 10b-9 makes it "a manipulative or deception device or contrivance" to sell a security on an "all-or-none" or other conditional basis unless funds are promptly refunded to customers in the event the conditions are not met.[81] Additionally, Rule 15c2-4 provides that proceeds received in connection with "all-or-none" or other conditional distributions must be kept in an escrow account, with funds to be returned to investors if the contingency does not occur.[82]

2. NONTHRESHOLD CONDITIONAL MBGS

The conditional element of the money-back guarantee could also take the form of the happening of some event. I refer to these types of money-back guarantees as nonthreshold conditional MBGs because they

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81. *See* 17 C.F.R. § 240.10b-9 (2012).
82. *See* § 240.15c2-4(b).

are not contingent on the reaching of some predetermined threshold condition. Deposit insurance, for instance, is a nonthreshold conditional MBG because depositors receive their deposits back upon the happening of an event—the failing of the bank—not upon the reaching of a certain amount in deposits or number of total depositors.[83]

Although it has often been misidentified as a Prisoner's Dilemma,[84] the bank run is in fact a classic Assurance Game.[85] Imagine a bank that is in danger of failing (in a world without deposit insurance). Everyone would be better off keeping their money in the bank—their funds would be safe, they would get interest, and they would avoid the transaction costs of having to move their money to another bank. However, no one knows what the other depositors will do. If enough other depositors remove their funds from the bank, it would be rational for a depositor to remove his funds too. Otherwise, he would lose his entire deposit in the event the bank fails. The difficulty of determining what the other depositors will do results in the bank run.[86]

Table 7 illustrates the payoffs in a two-by-two game of two depositors in a world without deposit insurance. Imagine two depositors who each have $100 deposited in AA Bank, which is in imminent danger of failing: if one more depositor withdraws his funds, the bank will fail. However, the bank has only $100 in reserves remaining, so if both depositors try to withdraw their deposits at once, they will each only receive $50. Depositor 1 has two choices: he can keep his money in the bank (K) or take it out (T). His choice is influenced by what he thinks Depositor 2 will do. If Depositor 2 keeps his money in, Depositor 1 will be better off keeping his money in and getting a net payoff of $10 (representing ten percent interest on his $100), rather than taking it out and getting a payoff of 0. If Depositor 2 takes his money out, Depositor 1 will be better off taking his money out as well, thereby receiving a payoff of -$50 rather than -$100. Both players are better off if they keep their money in the bank (10, 10), but because of the risk of a -$100 outcome if one depositor keeps his money in while

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83.   *When a Bank Fails – Facts for Depositors, Creditors, and Borrowers*, FDIC, http://www.fdic.gov/consumers/banking/facts/ (last visited Oct. 8, 2012). A related example is presented by home equity insurance plans intended to protect homeowners against loss in property values caused by white flight. *See* Abraham Bell & Gideon Parchomovsky, *The Integration Game*, 100 COLUM. L. REV. 1965, 2005–08 (2000).

84.   *See* McAdams, *supra* note 6, at 217.

85.   *Id.* at 221.

86.   Charles K. Whitehead, *Destructive Coordination*, 96 CORNELL L. REV. 323, 359–60 (2011).

the other takes it out (0, -100) or (-100, 0), both depositors may choose to take their money out (-50, -50), in which case the bank will fail.

TABLE 7
NO DEPOSIT INSURANCE

		Depositor 2	
		K (Keep In)	T (Take Out)
Depositor 1	K (Keep In)	10, 10	-100, 0
	T (Take Out)	0, -100	-50, -50

Again, there are two stable equilibria, (10, 10) and (-50, -50). Confronted with this Table, Depositor 1 reasons as follows: My estimate of the probability that Depositor 2 will keep his money in the bank is some number p. If I choose K, my expected gain is $10p + (-100)(1 - p) = 110p - 100$. If I choose T, my expected gain is $0p + (-50)(1 - p) = 50p - 50$. If I want to maximize my expected gain, I should choose K if $110p - 100 > 50p - 50$. Solving for p, I conclude that I should keep the money in the bank as long as $p > 5/6$ or 83.33%. Unless every depositor is nearly certain that the other depositors will cooperate by leaving their money in the bank, there will be a run on the bank.

Notice here that unlike Tables 2, 3, and 5 above, the bank run Assurance Game presents a slightly different preference ordering. Each depositor does best if everyone cooperates and keeps their money in (10, 10). However, if Depositor 1 decides to defect and remove his money, he receives a higher payoff if the other depositor cooperates and keeps his money in (0) than if they both defect (-50). The worst outcome is if Depositor 1 cooperates and the other depositor defects (-100). In Tables 2, 3, and 5 above, the player who defects receives the same payoff regardless of whether the other player cooperates or defects. Hence, the bank run presents a more fragile cooperative outcome: in the face of uncertainty of what the other depositors will do, each depositor has an added incentive to essentially "outrun" the other depositors and get his deposit out ahead of the others. This arguably increases the need for robust, payoff-altering mechanisms such as the conditional MBG.

Deposit insurance—which, from the depositor's standpoint, is a money-back guarantee conditional on the bank's failure—transforms the game from an Assurance Game to one in which the other players' choices are irrelevant. With deposit insurance, if Depositor 1 keeps his money in the bank while Depositor 2 takes it out, Depositor 1's net

payoff is $10 rather than -$100.[87] Rather than facing the prospect of losing his $100 deposit, Depositor 1 can rest assured that in the event the bank fails, he will receive a return of his full deposit plus accrued interest, provided it is within deposit insurance coverage limits.[88] Deposit insurance obviates the need to coordinate with the other players—it takes the risk out of keeping the money in the bank even if the other depositor does not do so. In other words, "deposit insurance prevents runs because . . . participating in the run [does not] pay[]."[89]

Table 8 shows the change in payoffs brought about by the introduction of deposit insurance. Because each depositor will receive $10 rather than lose $100 by keeping the deposit in regardless of what the other depositor does, there will be no run on the bank.[90] The depositors will arrive at the optimal equilibrium point (10, 10).

TABLE 8
WITH DEPOSIT INSURANCE

		Depositor 2	
		K (Keep In)	T (Take Out)
Depositor 1	K (Keep In)	10, 10	10, 0
	T (Take Out)	0, 10	0, 0

The depositor's calculus no longer turns on the expected actions of other depositors. Hence, nonthreshold MBGs that are contingent on the happening of some event also may be effective mechanisms for solving the Assurance Game.

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87.   The converse is also true. If Depositor 1 takes his money out while Depositor 2 keeps it in, Depositor 2's payoff is $110 rather than -$100.

88.   Currently, the maximum coverage is $250,000 per depositor, per insured bank, for each account ownership category. *See* 12 U.S.C. § 1821(a)(1)(E) (Supp. IV 2010).

89.   Douglas W. Diamond & Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 24 FED. RES. BANK MINNEAPOLIS Q. REV. 21 (2000).

90.   The source of the payout should be irrelevant to the utility maximizer—in the event of bank failure, a rational person should not care whether he or she is paid by the FDIC or by the bank.

III. Factors Influencing the Effectiveness of MBGs

The analysis of Part II is, of course, oversimplified. For example, one cannot be certain that the conditional MBG will be paid,[91] and it is not costless to enforce it. For both threshold and nonthreshold MBGs, the effectiveness of the MBG may be influenced by a variety of other factors. I discuss two such factors below: (1) the type of good, and (2) the characteristics of the guarantor. I conclude that the excludability of the good and the guarantor's credibility of commitment are most critical.

A. Type of Good

In economic terms, goods can be public, private, or mixed. A "public good" is one that benefits everyone rather than just those who pay for it.[92] Clean air, national defense, and public television are classic examples. Two key features characterize public goods: they are (1) nonrivalrous, meaning that one person's use of the good does not diminish its use or enjoyment by another person; and (2) nonexcludable, meaning that those who do not contribute to the good cannot be prevented from enjoying its benefits.[93] By contrast, "private goods" are both rivalrous and excludable. "Mixed goods" may be rivalrous, but not excludable ("common goods") or nonrivalrous, but excludable ("club goods"),[94] as shown in Table 9 below.

TABLE 9

	Excludable	Nonexcludable
Rivalrous	Private Goods	Common Goods
Nonrivalrous	Club Goods	Public Goods

Conditional MBGs operate differently depending on whether they involve nonexcludable (public and common) goods or excludable (private or club) goods. Below, I analyze the relevance of excludability

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91. Of course, if every depositor in the country were to simultaneously withdraw all of their money from their banks, the government would be unable to shoulder the burden.

92. Kollock, *supra* note 18, at 188.

93. *Id.* at 188–89; Lewinsohn-Zamir, *supra* note 19, at 377.

94. *See, e.g.*, Lawrence B. Solum, *Questioning Cultural Commons*, 95 Cornell L. Rev. 817, 822–24 (2010).

on the effectiveness of the conditional MBG in solving the Assurance Game.

1. NONEXCLUDABLE GOODS

Conditional MBGs for nonexcludable goods—e.g., public and common goods—suffer from a potentially fatal defect: free-riding, a problem that has long been studied in the Prisoner's Dilemma context. Imagine a group of state system faculty members who wish to raise money to retain a lobbyist at the state legislature.[95] The faculty seeks to encourage contributions by guaranteeing that any contributions would be returned if a minimum target of $30,000—the amount needed to retain the lobbyist—is not met. However, any noncontributing faculty members would nevertheless benefit because any pay increases produced by the lobbyist would inure to the benefit of the entire faculty.[96] Experimental results indicate that in such a situation, where the temptation to free-ride remains, a money-back guarantee would not be an effective means of inducing members to contribute.[97] The money-back guarantee proves to be self-defeating: many faculty members assume that the guarantee makes it even more likely that other faculty members will contribute, making their own contributions unnecessary.[98] In short, expectations of the money-back guarantee's success undermine its very success.[99]

The classic response to the problem of free-riding is government coercion or sanctions.[100] However, numerous private mechanisms have been proposed, including enforced contribution,[101] conditionally binding assurance contract,[102] and dominant assurance contract.[103]

The "enforced contribution" or "fair share" method stipulates that if a certain threshold number of individuals contribute to a good, all

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95. This example is taken from an experimental study conducted by Robyn Dawes. *See* Dawes et al., *supra* note 37, at 1172.

96. *Id.*

97. *See id.* at 1171, 1183.

98. *Id.* at 1174.

99. *Id.* at 1183.

100. Lewinsohn-Zamir, *supra* note 19, at 377; McAdams, *A Focal Point Theory*, *supra* note 8, at 1650.

101. Dawes et al., *supra* note 37, at 1172.

102. David Schmidtz, *Contracts and Public Goods*, 10 HARV. J.L. & PUB. POL'Y 475, 476 (1987).

103. Alexander Tabarrok, *The Private Provision of Public Goods via Dominant Assurance Contracts*, 96 PUB. CHOICE 345, 345 (1998).

others must do so.[104] Labor unions and condominium conversions are two examples. If a majority of workers vote to be represented by a union, "even those who voted against unionization are compelled . . . to pay union dues."[105] Similarly, with condominium conversions, if a sufficient number of residents "contribute" to the apartment dwellers' effort by withstanding the developer's buyout offer, the conversion does not occur.[106] Enforced contributions have been found to be far more effective than money-back guarantees, presumably because they remove the possibility of free-riding.[107]

Assurance contracts, which make contributions contingent on some preset threshold being reached, have been suggested to encourage the private provision of public goods. "[C]onditionally binding assurance contract[s are] contractual agreement[s] to contribute to . . . public goods project[s]."[108] Contributions are enforced only if enough people agree to contribute so that the project's total funding produces a return that exceeds costs.[109] Take, for instance, conditional charitable pledges. A philanthropist pledges to give to a charity or other organization if the organization raises a certain amount from other sources. For example, a donor agrees to a matching pledge of $500,000 to fund a new university research facility, contingent upon ten other donors making the same pledge. If the condition is not met, the university does not receive the $500,000 and the facility is not built. The research facility is a public good in that those who do not donate may still benefit from the good, a classic free-rider problem.

Similarly, threshold pledge systems, which are functionally equivalent to conditional MBGs, have been successfully applied to fund creative works in the public domain. A public good—the artist's work—is provided once a predetermined amount of money is raised through individual contributions. Mozart, for instance, funded new works and concerts partly by requiring a threshold amount of contributions or subscriptions before the work would be produced or the concert given.[110] Today, such websites as SellaBand.com promote the same idea: a band announces a set fundraising goal for a project, be it a new

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104. JON ELSTER, THE CEMENT OF SOCIETY: A STUDY OF SOCIAL ORDER 42 (1989).
105. *Id.*
106. Dawes et al., *supra* note 37, at 1172.
107. *Id.* at 1183.
108. Schmidtz, *supra* note 102, at 483.
109. *Id.* at 484.
110. *See* OTTO ERICH DEUTSCH, MOZART: A DOCUMENTARY BIOGRAPHY 205–06, 212 (Eric Blom et al. trans., 1965).

album or a tour, and fans contribute online through the site.[111] If the threshold goal is not met, the band does not produce the album and the fans can contribute their funds to a different project on the site.[112] At any time before the goal is reached, contributing fans may withdraw their funds, but once it is reached, the funds are released and are nonreturnable.[113] If the threshold is met and the good is produced, the artist's work becomes available for all to enjoy.[114]

One proposed solution to the free-rider problem has been to require unanimous contribution from all the players in order for any contribution to be enforceable.[115] However, this approach suffers the drawback of holdouts. A single noncontributor could prevent the good from coming into existence at all. Economist Alexander Tabarrok proposes an alternative: dominant assurance contracts. If the threshold condition is not met, everyone who contributed to the public good is given their money back plus a bonus.[116] Regardless of what the players believe the other players will do, they will have an incentive to accept the contract because of the bonus.[117] In the SellaBand example above, pledgors could be induced to contribute by being rewarded with free MP3 downloads or other small incentives in order to discourage free-riding.[118]

2. EXCLUDABLE GOODS

In contrast to nonexcludable goods, excludable goods do not suffer from free-riding and are thus not as susceptible to self-defeating negative expectations. With both club goods and private goods, the conditional MBG could be an effective device to encourage contributions because it would not be undermined by self-seeking behavior.

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111.   *See How It Works*, SELLABAND, http://www.sellaband.com/en/pages/how_it_works (last visited Oct. 21, 2012).

112.   *See* Jeroen van Doom, *Believer FAQ*, SELLABAND (May 7, 2010, 2:02 PM), http://support.sellaband.com/entries/168648-believers-f-a-q.

113.   *Id.*

114.   *Id.*

115.   ELSTER, *supra* note 104, at 42.

116.   *See* Tabarrok, *supra* note 103, at 348.

117.   *Id.* at 350.

118.   *See How It Works*, *supra* note 111; Eric Crampton, *Assurance Contracts and Dominant Assurance Contracts*, OFFSETTING BEHAVIOUR (Nov. 26, 2010, 7:00 AM), http://offsettingbehaviour.blogspot.com/2010/11/assurance-contracts-and-dominant.html.

Online coupon intermediaries such as Groupon and LivingSocial offer mostly club goods. They are excludable because if an individual does not buy into the deal, he or she cannot benefit from it. They are nonrivalrous because each person's consumption does not affect the next person's consumption or enjoyment (at least until reaching a point of congestion).[119] Similarly, deposit insurance qualifies as a club good. It is excludable because only bank depositors can benefit from the insurance coverage. Although there is a larger societal benefit to avoiding bank runs and maintaining a stable banking system, an individual who does not retain funds at the bank cannot directly benefit from deposit insurance. It is nonrivalrous because each depositor can enjoy deposit insurance without diminishing the ability of others to benefit from it as well.

B. Characteristics of Guarantor

In addition to the type of good, certain characteristics of the guarantor can also influence the effectiveness of the conditional MBG. Below, I examine two factors: (1) whether the guarantor is public or private, and (2) the degree to which the guarantor can credibly commit to the MBG. I suggest below that the ability of the guarantor to credibly commit is more important than its public or private nature.

1. PUBLIC OR PRIVATE GUARANTOR

Does the identity of the actor—whether the guarantor is public or private—bear on the effectiveness of the conditional MBG? A public or quasi-public guarantor could have the advantage of inducing greater trust and confidence, as well as being easier to monitor and control than wholly private entities. But this is not always the case. Some have argued that because deposit insurance requires "authority to tax or create money to pay deposit insurance," deposit insurance ought to be offered by the government.[120] Private parties such as insurance companies do not have the power of taxation, so they must hold reserves to make credible a promise to provide deposit insurance.[121]

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    119.   Vouchers for restaurants, spa appointments, haircuts, movie tickets, etc. are excludable and nonrivalrous (up to the point of reaching the threshold required for the deal to tip), but could become rivalrous after reaching a point of congestion. Discount vouchers for cable TV or satellite radio would be pure club goods because they are excludable but nonrivalrous.
    120.   Diamond & Dybvig, *supra* note 89, at 20.
    121.   *Id.*

Yet, the federal deposit insurance fund is not financed through tax dollars, but through "premiums that banks and thrift institutions pay for deposit insurance coverage."[122] Conceivably, a private entity with a record of trust and reliability could assess the premiums and manage the deposit insurance fund, much like a typical insurance company.[123]

The success of innovative private networks such as the Certificate of Deposit Account Registry Service (CDARS) casts further doubt on the salience of the public-private distinction. CDARS is a program sponsored by Promontory Interfinancial Network, a network of more than 3000 financial institutions connected to allow each member institution to compete more efficiently.[124] CDARS allows depositors to spread large deposits out among as many different member institutions as necessary to qualify for deposit insurance coverage.[125] For instance, if a customer were to deposit $5 million in a depository institution, normally only $250,000 of that amount would be eligible for federal deposit insurance. However, if the customer were to deposit that $5 million through a CDARS network member bank, the entire amount would be insured because twenty different network banks would each issue a certificate of deposit of $250,000. The FDIC has issued an advisory opinion agreeing that deposits placed through the CDARS system would be insured on a pass-through basis.[126]

Although the CDARS network ultimately relies on federal deposit insurance, it shows how private actors can refashion and improve upon goods offered by public actors. One could easily imagine a system whereby reputable private actors such as Promontory Interfinancial Network could assess and pool premiums paid by its members to provide private deposit insurance. The success of private online intermediaries such as Groupon and LivingSocial is further indication

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122. *See Who Is the FDIC?*, FDIC, http://www.fdic.gov/about/learn/symbol/ (last updated Aug. 11, 2010).

123. Deposit insurance is technically more of a "guaranty" rather than insurance because "premiums are levied against the bank . . . not the beneficiary-depositor, and are not . . . ascertainable on an actuarial basis . . . ." *Legislation*, 36 COLUM. L. REV. 809, 809 n.3 (1936); *see also* Guy Emerson, *Guaranty of Deposits under the Banking Act of 1933*, 48 Q.J. ECON. 229, 229 (1934).

124. *See Overview*, PROMONTORY INTERFINANCIAL NETWORK, http://www.promnetwork.com/about-us/overview.aspx (last visited Oct. 6, 2012).

125. *See CDARS Overview*, PROMONTORY INTERFINANCIAL NETWORK, http://www.promnetwork.com/our-services/cdars/overview.aspx (last visited Oct. 6, 2012).

126. Joseph A. DiNuzzo, *Do 'Pass Through' Deposit Insurance Rules Apply to Funds Placed in the 'Certificate of Deposit Account Registry Service,'* FDIC (July 29, 2003) (advisory opinion), http://www.fdic.gov/regulations/laws/rules/4000-10220.html.

that the offeror of the conditional MBG need not be public, particularly when the good is a consumer item.

2. CREDIBILITY OF COMMITMENT

Rather than the public or private nature of the actor, credibility of commitment may be more probative of the effectiveness of the conditional MBG. I identify three elements underlying credibility of commitment: (1) capacity, (2) will, and (3) reputation. Does the public or private actor have the capacity or resources at its disposal to honor its commitment? Second, even if the actor has the capacity to commit, does it have the will or resolve to do so? Third, does the actor possess a reputational foundation that stems from its past record (or lack of record)?

Although public actors are often perceived to be more trustworthy, the public nature of the actor does not necessarily imply credibility of commitment. Take, for instance, the Icelandic financial crisis of 2008, when both capacity and will were lacking. In October 2008, all three of Iceland's major commercial banks—Kaupthing Bank, Landsbanki, and Glitnir Bank—failed.[127] The government lacked the capacity to guarantee deposits because years of speculation had resulted in "the assets of the three . . . banks [being] 11 times greater than the entire $14 billion GDP of the nation."[128] When the United Kingdom and the Netherlands demanded that the country stand behind the $5.5 billion owed to foreign depositors of Icesave, the online arm of Landsbanki, the voters (and the President) simply rejected the parliamentary bill committing to repay the amount owed.[129] This demonstrated lack of will, combined with the government's inability to honor its deposit guarantee, had far-reaching consequences for the government's credibility of commitment.

A similar fate befell Ireland's banking system. In September 2008, the Irish government extended a blanket guarantee to all bank deposits and bonds, without limit.[130] The government had the will to save the banks, but not the capacity. The three largest Irish banks had a total

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127. Bruce Walker, *Lesson from Iceland's 2008 Financial Crisis: Let Banks Fail*, NEW AM. (Nov. 9, 2011, 11:10 AM), http://www.thenewamerican.com/world-news/europe/item/8874-lesson-from-icelands-2008-financial-crisis-let-banks-fail.html.

128. *Id.*

129. *Icelandic Finance: Is It a Blizzard?*, ECONOMIST, Jan. 9–15, 2010, at 52, *available at* http://www.economist.com/node/15213434.

130. Tom Petruno, *European Banks Get Needed Help*, L.A. TIMES, Oct. 1, 2008, at C4, *available at* http://articles.latimes.com/2008/oct/01/business/fi-moneyblog1.

balance sheet twice the size of the Irish economy, effectively discrediting the government's claims.[131] A run on the banks ensued, leading to a bailout by the European Union and International Monetary Fund in November 2010.[132]

Today, the United States has the capacity, will, and reputation to honor the deposit insurance guarantee, but this has not always been the case. Both Presidents Herbert Hoover and Franklin Delano Roosevelt had the same or similar resources on hand to deal with the banking crisis of the early 1930s, but differed in their will and reputational capital. Hoover believed in limited government intervention, telling Congress in 1930 that the road to economic recovery lay not in legislative or executive action, but in voluntary cooperative action by the producers and consumers themselves.[133] James Sundquist argues that disapproval of Hoover was so widespread by 1932 that the election of an activist administration was inevitable.[134] Whereas Roosevelt benefited in many ways from the absence of a record of failure, Hoover lacked reputation due in large part to his long record of ineffectiveness in dealing with the crisis.[135]

Credibility can be undermined when capacity or reputation alone are lacking. A recent example of the loss of capacity was the February 22, 2010 bankruptcy of SellaBand, the Dutch music startup that allowed fans to invest in their favorite bands.[136] Although the company, acting partly as an online record label, "kept one third of revenue from the sale of released albums," as well as interest earned on escrow accounts before the funding goal was met, it nevertheless failed to make a profit.[137] The company survived in large part due to its acquisition by

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131. Simon Johnson, *Geithner's Gamble*, PROJECT SYNDICATE (Feb. 22, 2011), http://www.project-syndicate.org/commentary/geithner-s-gamble (explaining that, in Ireland, "banks built balance sheets valued at two times Irish GDP").

132. *Ireland's Crash: After the Race*, ECONOMIST, Feb. 19–25, 2011, at 25, *available at* http://www.economist.com/node/18176072.

133. *See* President Herbert Hoover, Annual Message to the Congress on the State of the Union (Dec. 2, 1930), *in* 1 PUB. PAPERS 509, 511–13, *available at* http://www.presidency.ucsb.edu/ws/?pid=22458.

134. *See* JAMES L. SUNDQUIST, DYNAMICS OF THE PARTY SYSTEM: ALIGNMENT AND REALIGNMENT OF POLITICAL PARTIES 195–96 (1973).

135. AMOS KIEWE, FDR'S FIRST FIRESIDE CHAT: PUBLIC CONFIDENCE AND THE BANKING CRISIS 33 (2007); *see* DAVID W. HOUCK, RHETORIC AS CURRENCY: HOOVER, ROOSEVELT, AND THE GREAT DEPRESSION 54–93 (2001).

136. Patrick de Laive, *Sellaband Files for Bankruptcy*, NEXT WEB (Feb. 23, 2010), http://thenextweb.com/eu/2010/02/23/sellaband-deadpool-files-bankruptcy/.

137. Eliot Van Buskirk, *Bankrupt, Crowd-Funded SellaBand Acquired by German Investors*, WIRED (Feb. 24, 2010, 6:53 PM), http://www.wired.com/epicenter/2010/02/bankrupt-crowd-funded-sellaband-acquired-by-german-investors/.

German investors within days of its bankruptcy, and has continued as a going concern under new management.[138]

Similarly, a loss of reputation can occur when the provider of the conditional MBG does not make good on its promises. For instance, Fundable.com, a website intermediary devoted to aggregating funds online for various fundraising projects, suffered a considerable loss of reputation in 2009 when it failed to promptly credit the account of a well-known author, who had used Fundable to raise money to purchase a new computer.[139] Fundable had adopted the conditional pledge or conditional MBG model, promising contributors that they would not be charged until the money raised had reached a preset threshold amount.[140] If the target was reached, the donation was collected, and Fundable kept ten percent of the proceeds.[141] The problems began when users reported that even after they had received confirmation that the pledges had reached the target amount, they failed to receive prompt payment from Fundable.[142] The negative publicity associated with the incident culminated in the dissolution of the company in October 2009.[143] Although like SellaBand, the company reinvented itself as Fundable.org and has survived under new management, the consequences of the company's loss of credibility are still being felt.[144] These examples suggest that credibility of commitment plays a larger role in the success of the conditional MBG than the public or private nature of the actor.

IV. IMPLICATIONS

The preceding Sections have identified several factors that impact the effectiveness of the conditional MBG—the excludability of the good

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138. *Id.*

139. Mary Robinette Kowal, *My Experience with Fundable.com*, MARY ROBINETTE KOWAL (Aug. 21, 2009), http://www.maryrobinettekowal.com/journal/my-very-bad-experience-with-fundable-com/.

140. *FAQ*, FUNDABLE, http://www.fundable.com/FAQ#FEE_STRUCTURE (last visited Oct. 7, 2012).

141. Krysten Crawford, *Fund-Raising Goes Peer-to-Peer*, BUS. 2.0 MAG. (Mar. 1, 2006), *available at* http://money.cnn.com/magazines/business2/business2_archive/ 2006/03/01/8370559/index.htm; *see also The Sad Story of Fundable.com*, BLUE SKY COLLABORATIVE (Oct. 19, 2009), http://blueskycollaborative.typepad.com/blog/2009/ 10/the-sad-story-of-fundablecom.html.

142. *See, e.g.*, heatherknox, Comment to *Is Fundable.com a Scam?*, MYLOT, http://www.mylot.com/w/discussions/1936462.aspx (last visited Oct. 7, 2012).

143. *See Online Fundraising*, FUNDABLE.ORG, http://www.fundable.org/ online-fundraising (last visited Oct. 7, 2012).

144. *Id.*

and the characteristics of the guarantor. In this Part, I offer some preliminary thoughts on the larger implications of understanding conditional MBGs as a solution to the coordination dilemma. Below, I highlight the advantages of the conditional MBG relative to two other mechanisms—focal points and sanctions. I then analyze the substance of the distinction between incentives and expectations. Finally, I explore the application of conditional MBGs to two areas that have suffered from coordination failures—capital formation and the introduction of new payment technologies.

A. MBGs, Focal Points, and Sanctions

1. MBGS AS AN ALTERNATIVE TO FOCAL POINTS

Recognizing that expectations can be changed not only through focal points, but also by changing incentives, can be valuable for several reasons. In certain situations—for example, where an individual faces the risk of a discrete, quantifiable monetary loss, or where there are added barriers to achieving or maintaining cooperation—law's expressive capacity may not be sufficiently robust to move individuals away from suboptimal equilibria. Where the incentives are such that achieving cooperation in the first place is difficult, payoff-altering mechanisms may be particularly valuable.

Take, for instance, the classic bank run. Not only can individuals quantify the amount of money they have at risk, but also cooperation may be more difficult due to the dynamics of the game. Although depositors know that they will all receive the highest payoff if everyone keeps their money in the bank, they also know that they will receive the second-highest payoff if they defect and take their money out before the others. This added dimension increases uncertainty and renders the cooperative outcome inherently more unstable and fragile. In such a situation, the expressive theory of law would appear to have less force. A simple pronouncement by the state that funds will be safe most likely will be inadequate to stop the run and solve the coordination dilemma. Indeed, history has proven as much. By 1933, despite desperate government efforts, more than 11,000 of the nation's 25,330 banks had collapsed after millions of Americans had withdrawn their deposits.[145]

Similarly, where there is real uncertainty about whether the other players wish to cooperate in the first place, threshold conditional MBGs

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145.   THOMAS E. HALL & J. DAVID FERGUSON, THE GREAT DEPRESSION: AN INTERNATIONAL DISASTER OF PERVERSE ECONOMIC POLICIES 83 (1998).

may be particularly useful. In certain situations, the desirability of the superior equilibrium may be more apparent than in others. Consider the example of an insurgency under a tyrannical or oppressive regime, or African-Americans during the civil rights movement—both of which have been modeled as Assurance Games.[146] In both situations, the preferences of the other members are known. The challenge is countering the fear that enough others will not participate. In such a situation, the expressive presence of a charismatic and magnetic leader can be an extraordinarily powerful coordinating force.[147]

Contrast this with an offering of securities in an unknown and risky company, or a daily deal offer for fly fishing. Players are less certain of the preferences of the members, although if enough like-minded players can come together, it would be an optimal outcome for those players. If individuals could be certain that enough other people have a preference for the offered item, simply announcing the deal could suffice. However, in the absence of such certainty, the threshold conditional MBG serves a useful function in eliciting information about whether enough people are interested to make cooperation worthwhile. In this respect, the conditional MBG mechanism proves instrumental in achieving initial cooperation. Thus, in situations of heightened uncertainty or where individuals face the prospect of some quantifiable loss, mechanisms that change underlying incentives and directly target that fear of loss may be particularly effective.

2. MBGS AS AN ALTERNATIVE TO SANCTIONS

In addition, mechanisms such as conditional MBGs may be a more effective means than sanctions for altering incentives. The state traditionally employs sanctions to change payoffs so as to deter individuals from defecting.[148] An example of sanctions in the Assurance Game context would be to charge a penalty of ten percent of deposited funds if an individual withdraws funds during a restricted period, such as during a potential bank run. But sanctions are costly and their effectiveness has been called into question in at least some circumstances.[149] By providing individuals the assurance that they will not lose out even if others do not cooperate, conditional MBGs may

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146. *See* DENNIS CHONG, COLLECTIVE ACTION AND THE CIVIL RIGHTS MOVEMENT (1991).

147. *Id.* at 234–35.

148. McAdams, *A Focal Point Theory*, *supra* note 8, at 1650.

149. *See supra* note 2 and accompanying text.

present a more effective or less costly alternative to sanctions. Not only can they be as easily offered by private as by public actors, but they also perform an inherently different function than sanctions. Sanctions in effect counter fear with more fear, whereas conditional MBGs counter fear with assurances.

As noted above, in certain situations, such as where credibility of commitment has been impaired, conditional MBGs may not be a feasible or effective means of coordinating individual behavior. A deposit insurance guarantee from a country like Iceland or Greece does not possess the same weight—in terms of the ability to prevent a bank run—as from a country like the United States or the United Kingdom. In those situations, sanctions may prove to be a more appropriate tool for changing incentives.

B. Incentives vs. Expectations

Is there a real difference between changing incentives and changing expectations? In many situations, there is considerable overlap: changing incentives or payoffs (gains or losses), can change expectations.[150] However, expectations can be changed without changing incentives, as suggested by expressive theories of law.[151] As we have seen, changing payoffs alters the game so that it is no longer an Assurance Game; changing expectations does not.[152] One way of conceiving the difference is to consider the extreme situation in which payoffs are changed so much that the individual no longer cares what other people will do. With nonthreshold conditional MBGs such as deposit insurance, rational persons should no longer care how other depositors behave, as long as the government can credibly commit. If the government cannot credibly commit, however, the underlying risk of losing one's funds remains, and the depositor continues to fear the consequences of resisting the stampede.

By contrast, with threshold conditional MBGs, where the guarantee is contingent on some predetermined threshold condition being reached, even after the underlying payoffs are changed, rational

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150. In economic terms, the expectation (E) is the probability value (p), multiplied by the payoff (μ). I am arguing that expectations can be changed by altering the payoff (μ), rather than by changing the probability value (p) (what one player believes to be the likelihood of what the other player will do—i.e., the probability that a particular payoff (μ) will be realized). Expressive theorists are changing the probability value (p), the beliefs of the agents; I am discussing changes to the underlying payoff (μ).

151. *See supra* note 51 and accompanying text.

152. *See supra* notes 2–6 and accompanying text.

individuals will still care how other individuals behave. With the dominant peer purchasing model in existence today, even though the buyer is assured against losing a financial investment, concern over the purchasing behavior of others continues at least until the threshold condition is met. Online coupon intermediaries such as Groupon and LivingSocial address this concern by providing a visible forum for coordination: anyone can track in real time how many others have bought into the deal.[153]

Conditional MBGs may be viewed as mechanisms that alter both incentives and expectations. By removing, or at least minimizing, downside risk, conditional MBGs change underlying payoffs, resulting in a shift in expectations. Even though it minimizes underlying risk, the very existence of deposit insurance changes individuals' expectations of what other depositors will do. Likewise, purchasers are more likely to buy into Groupon's deals because they expect that other purchasers will be attracted by the risk-reducing features of the conditional MBG.

C. Crowdfunding and New Payment Technologies

In this Section, I explore the application of conditional MBGs to two areas that have suffered from coordination failures: capital formation and the introduction of new payment technologies.

1. ALTERNATIVE CAPITAL FORMATION: CROWDFUNDING

Conditional MBGs have been implemented in a number of different areas, including alternative modes of financing such as crowdfunding. "Crowdfunding" refers to the pooling of money from disparate sources outside of traditional public markets.[154] The idea of aggregating small amounts of money from a large number of people has long been associated with charitable projects, but has in recent years expanded to general fundraising, lending, and capital formation efforts. On websites such as Kickstarter.com, Indiegogo.com, Sponsume.com, and ThePoint.com, individuals can pledge money to fund campaigns or creative projects in music, art, film, technology, design, and

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153.   *See, e.g.*, *5 Things about Groupon*, SQUIDOO, http://www.squidoo.com/5-things-about-groupon (last visited Oct. 8, 2012).

154.   *See, e.g.*, J. Haskell Murray & Edward I. Hwang, *Purpose with Profit: Governance, Enforcement, Capital-Raising and Capital-Locking in Low-Profit Limited Liability Companies*, 66 U. MIAMI L. REV. 1, 45 & n.240 (2011).

publishing, among other fields.[155] If the total amount pledged reaches a preset threshold, the project is "on"—pledges are collected and the project or campaign is developed; if the threshold amount is not reached, the pledges are refunded from the intermediary's escrow account.[156]

In August 2007, MyFootballClub (MyFC) initiated a worldwide Internet campaign to gather a minimum threshold of 50,000 football enthusiasts to collectively purchase an English association football club, Ebbsfleet United.[157] In return for their investments, members were promised the ability to exercise control over the football club through a democratic voting process conducted over the Internet.[158] The idea was a success. In January 2008, 95.89% of MyFC members voted to purchase a 75% share in the Ebbsfleet, making MyFC the first online community to own and manage run a professional sports club.[159]

Using an Internet intermediary for the purpose of funding an investment is quickly gaining traction, challenging traditional notions of capital formation and investment. On April 5, 2012, President Obama signed the Jumpstart Our Business Startups (JOBS) Act into law.[160] Title III of the Act provides a crowdfunding exemption to securities registration requirements, setting a maximum of one million dollars in crowdfunded securities that any issuer can offer within any twelve-month period.[161] For investors with less than $100,000 of annual income or net worth, it sets the aggregate amount that can be sold by any issuer to the greater of $2,000 or 5% of annual income or net worth; for investors with incomes or net worth of $100,000 or greater,

155.   *Kickstarter Basics*, KICKSTARTER, http://www.kickstarter.com/help/faq/ kickstarter%20basics?ref=nav (last visited Oct. 7, 2012); *Indiegogo FAQ*, INDIEGOGO, http://www.indiegogo.com/indiegogo-faq (last visited Oct. 7, 2012); *Crowdfund with Sponsume*, SPONSUME, http://www.sponsume.com/getting-started (last visited Oct. 7, 2012); *Learn More about The Point*, THE POINT, http://www.thepoint.com/ doc/learn_more (last visited Oct. 7, 2012).

156.   *See, e.g.*, *Backer Questions*, KICKSTARTER, http://www.kickstarter.com/ help/faq/backer%20questions (last visited Oct. 7, 2012).

157.   *See* Simon Cowan, *For The Love of Gold, Let's Find a Better Way to Fund Sport*, INCISE (Aug. 21, 2012, 8:00 AM), http://www.incise.org.au/2012-08-21/ for-the-love-of-gold-lets-find-a-better-way-to-fund-sport/; *History*, MYFOOTBALLCLUB, http://www.myfootballclub.co.uk/history (last visited Sept. 29, 2012).

158.   *See History*, *supra* note 157.

159.   *Fans' Website Approves Fleet Deal*, BBCSPORT (Jan. 23, 2008. 12:11), http://news.bbc.co.uk/sport2/hi/football/teams/g/gravesend_and_northfleet/7190175.st m.

160.   Jumpstart Our Business Startups Act, Pub. L. No. 112-106, 126 Stat. 306 (2012).

161.   § 302.

the aggregate amount is set at 10% of annual income or net worth, not to exceed $100,000.[162] The Act is widely anticipated to open a new mode of capital formation for small businesses and startups, which have struggled to raise funds from traditional sources such as banks and venture capitalists.[163] The success of peer purchasing sites such as Groupon and LivingSocial suggest that incorporating a threshold pledge or conditional MBG component to these capital raising efforts could prove instrumental in encouraging potential investors to contribute.

2. PAYMENTS LAW: EMERGING TECHNOLOGIES

Another potential application of conditional MBGs lies in the introduction of new technologies. Payments law, for instance, has been plagued by obstacles to the adoption of new, more efficient payment technologies. Despite their notorious costs, checks continue to be widely used in the United States, with "[t]he number of checks paid in 2009 . . . estimated to have been 24.5 billion, with a value of $31.6 trillion."[164] Meanwhile, sophisticated chip-enabled stored-value cards and electronic money have failed to take hold, and early developers of these technologies—DigiCash, First Virtual, Mondex, Beenz.com, and Flooz.com, among others—have failed miserably.[165]

One way of viewing the problem is as a coordination game among payment service providers, merchants, and consumers. Payment service providers may be unwilling to invest in developing new technologies lest their initial outlay of time, money, and effort comes to naught. Merchants may be unwilling to purchase expensive new equipment without some kind of assurance that a critical mass of consumers and other businesses will adopt the payment form. And consumers may be reluctant to embrace a new payment form until enough other merchants and consumers begin using it so that its benefits and risks become

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162. *Id.*

163. *See, e.g.*, Lee Barken, *The Wisdom of the Crowd: Social Networking Meets Capital Formation*, XCONOMY (Nov. 8, 2011), http://www.xconomy.com/national/2011/11/08/the-wisdom-of-the-crowd-social-networking-meets-capital-formation/.

164. GEOFFREY R. GERDES ET AL., THE 2010 FEDERAL RESERVE PAYMENTS STUDY: NONCASH PAYMENT TRENDS IN THE UNITED STATES: 2006–2009, at 7 (2010), *available at* http://www.frbservices.org/files/communications/pdf/press/2010_payments_study.pdf.

165. *See* RONALD J. MANN, PAYMENT SYSTEMS AND OTHER FINANCIAL TRANSACTIONS 336 (5th ed. 2011); Jane Kaufman Winn, *Clash of the Titans: Regulating the Competition between Established and Emerging Electronic Payment Systems*, 14 BERKELEY TECH. L.J. 675, 692–93 (1999).

known and familiar. Though everyone would benefit from the introduction of the new payment technology, fear traps them in the less risky equilibrium of using existing, though less efficient, payment mechanisms.

The coordinative potential of the conditional MBG should by now be apparent. A conditional MBG could be offered by a payment service provider to induce merchants to adopt a new payment technology. Perhaps it could take the form of a guarantee that the merchant's commitment to purchase an innovative new smart card reader would be enforced only if a certain number of other vendors agreed to purchase the reader or a certain number of consumers applied for the new card. Any number of variations is possible.

CONCLUSION

In this Article, I have sought to demonstrate the coordinative potential of risk-reducing mechanisms such as conditional MBGs. In many situations where individuals have a shared interest in reaching (or avoiding) certain outcomes, anonymity, information asymmetries, risk aversion, and lack of trust form obstacles to coordination. Conventional theory assumes that problems of coordination are solved by changing expectations expressively. Little attention has been paid to the potential value of changing expectations through the alteration of underlying payoffs.

This Article has attempted to highlight conditional MBGs as an alternative to focal points and sanctions. Because fear locks individuals in suboptimal coordination points, mechanisms that directly target that fear would seem appropriate. In diffuse, anonymous collective action settings where losses are salient and easily quantifiable, conditional MBGs, which alter underlying payoffs, may be particularly useful in facilitating coordination in the Assurance Game. I have suggested two characteristics that could optimize the effectiveness of the conditional MBG: the excludability of the good and the credibility of commitment.

In many respects, this Article is highly preliminary; like any theory, it requires empirical testing. My primary aim has been to explore the immense potential of conditional MBGs in remedying strategic coordination failures. This analysis easily could be extrapolated out to other risk-reducing mechanisms in settings far removed from the consumer context. Consider the mutiny, a classic Assurance Game—an individual is only willing to participate if he can be assured that enough others will participate as well. Altering underlying payoffs can solve the coordination dilemma by destroying it. Combined with the inherent coordinative capacity of the Internet, the results could well be dramatic. One need only consider the role, still

debated, of social networking sites in the so-called "Arab Spring" in Egypt and Tunisia[166] to grasp the potentially explosive power of this combination. It is a story of the empowerment of the individual as much as the power of the crowd. In closing, I leave the reader with that indelible image of the aggressive mob of bargain-hungry tuángòu shoppers in China. It takes no stretch of the imagination to envision how mass coordination driven by the will to get a good bargain could one day ripen into the will and courage to make far more significant demands for political reform and individual liberties.

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166.   *See* Anupam Chander, Essay, *Jasmine Revolutions*, 97 CORNELL L. REV. 1505, 1520–21 (2012); Peter Swire, *Social Networks, Privacy, and Freedom of Association: Data Protection vs. Data Empowerment*, 90 N.C. L. REV. 1371, 1379 (2012).