
ARTICLES

THE LAW-AND-MARKETS MOVEMENT

MICHAEL ABRAMOWICZ*

Commentators increasingly have suggested market-based approaches to legal problems. These proposals, which range from tort-claims trading to bankruptcy auctions, rely on the information-processing capacity of capital markets to enhance existing legal institutions and to eliminate the need for some kinds of decisionmaking altogether. In this Article, Professor Abramowicz collects, critiques, and extends these proposals, describing various kinds of capital market mechanisms and imagining a number of potential legal uses. For market-based legal institutions to be viable, certain technical problems with capital market mechanisms, such as the potential for collusion, must be overcome. Such vulnerabilities are not intractable, however, and the solution often lies in using one type of market mechanism to address a weakness in another. By combining auction, exchange, and self-assessment, the Article constructs a “comprehensive market mechanism,” a general purpose tool for objectively predicting dollar amounts or other numbers useful for legal decisionmaking.

* Assistant Professor, *George Mason University School of Law*; Visiting Assistant Professor, *Northwestern University School of Law*. J.D., *Yale Law School*; B.A., *Amherst College*. I would like to thank participants in faculty workshops at the *George Mason University School of Law*, the *Northwestern University School of Law*, the *University of Pennsylvania Law School*, the *University of Wisconsin Law School*, and the *Wharton Department of Legal Studies*. Any remaining errors in the Article could be corrected by the creation of an appropriate market mechanism.

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INTRODUCTION

The decisionmaking institutions of finance and law are so different that any attempt to apply the mechanisms of one to the other seems almost unthinkable. As evidence, imagine the reaction to the modest proposals of two very different scholars. Roberto Unger urges that we not leave investment to the invisible hand.¹ Instead, all of society's

1. See ROBERTO MANGABEIRA UNGER, FALSE NECESSITY: ANTI-NECESSITARIAN SOCIAL THEORY IN THE SERVICE OF RADICAL DEMOCRACY 491-96 (1987) (proposing reorganization and restructuring of the economy).

financial capital should be distributed through a three-tiered quasi-governmental structure.² Meanwhile, A.C. Pritchard argues that the courts ordinarily should not assign appellate counsel to convicted indigent defendants.³ The right to serve as appellate counsel, he maintains, should be auctioned to the highest bidder, who would receive a contingency fee from the government if the appeal were successful.⁴ Most lawyers, financiers, and academics surely would find both proposals unattractive, at least on first impression. Yet they reflect nearly opposite premises. Unger's implies that stock and bond markets are inadequate means of making important social decisions about how resources should be allocated. Pritchard's suggests that competitive auctions are an effective way of making such decisions. Unger rejects capital market mechanisms, Pritchard embraces them, and most of us, it seems, are as reluctant to abandon such mechanisms for questions of finance as we are to adopt them for questions of law.

In this Article, I seek to undermine this divide. I cannot claim to be neutral between Unger's and Pritchard's views of capital market mechanisms. Although at times I will point out the limitations of capital market mechanisms and indicate how these weaknesses support Unger's position on capital markets,⁵ my thesis is that capital market mechanisms have strengths that our legal institutions might, in certain circumstances, harness. Legal systems process information about facts, law, and policy preferences.⁶ Capital markets process

2. Unger describes his three-tiered proposal in the following passage:

The key idea of the institutional proposal is the breakup of control over capital into several tiers of capital takers and capital givers. The ultimate capital giver is a social capital fund controlled by the decisional center of the empowered democracy: the party in office and the supporting representative assemblies. The ultimate capital takers are teams of workers, technicians, and entrepreneurs, who make temporary and conditional claims upon divisible portions of this social capital fund. The central capital fund does not lend money out directly to the primary capital users. Instead, it allocates resources to a variety of semi-independent investment funds. Each investment fund specializes in a sector of the economy and in a type of investment.

Id. at 491. For a critique, see David E. Van Zandt, *Commonsense Reading, Social Change, and the Law*, 81 NW. U. L. REV. 894, 923-24 (1987). More generally, see William Ewald, *Unger's Philosophy: A Critical Legal Study*, 97 YALE L.J. 665, 668 (1988).

3. See A.C. Pritchard, *Auctioning Justice: Legal and Market Mechanisms for Allocating Criminal Appellate Counsel*, 34 AM. CRIM. L. REV. 1161, 1166-70 (1997) (describing the problems that arise when all convicted indigent defendants are assigned counsel).

4. See *id.* at 1170-71 (proposing the idea of auctioning the right to represent defendants on appeal).

5. See, e.g., *infra* note 367 and accompanying text.

6. Typically, juries process factual information, judges process the law, and legislatures process policy preferences. Of course, the characterization of legal decisionmakers as information processors obscures the normative component of

information too. For example, stock prices reflect many variables including weather conditions, market trends, and consumer preferences.⁷ Perhaps capital market mechanisms might be structured to process the same kinds of information as do some of our legal institutions.

In the past few years, a small literature has arisen along these lines. Some scholars advocate using auctions as a means of selecting lawyers or other players in the legal system, or as a way of valuing particular entitlements. Driving Pritchard's proposal is the belief that participants at an auction will be well-positioned to assess which defendants would benefit from appellate counsel.⁸ Applying a similar insight, Jonathan Macey and Geoffrey Miller have endorsed an auction approach to class action and derivative litigation.⁹ Mark Cohen and Paul Rubin envision auctions as a means of identifying the best private enforcer of a public regulatory regime.¹⁰ Michael Kremer, meanwhile, has suggested using auctions to value patents and then, with the patent owners' consent, buying them out and placing them in the public domain.¹¹

their task. Technology limitations aside, this is the problem with the notion that computers someday might perform legal decisionmaking tasks. *See, e.g., Computers as Judge and Jury*, THE FUTURIST, 1996, at 32. In crafting market alternatives to legal institutions, we similarly will need to be attentive to any displacement of judgment that a market mechanism might effect. *See infra* Parts III.C.1, III.C.3.

7. *See generally* Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549, 551 (1984) (explaining that capital markets respond to an extraordinary variety of information).

8. *See* Pritchard, *supra* note 3, at 1175 ("The best attorneys will compete to represent defendants having the strongest appellate claims because those claims are the most likely to pay off for the attorney."); *see also infra* notes 73-80 and accompanying text.

9. *See* Jonathan R. Macey & Geoffrey P. Miller, *The Plaintiffs' Attorney's Role in Class Action and Derivative Litigation: Economic Analysis and Recommendations for Reform*, 58 U. CHI. L. REV. 1 (1991) [hereinafter Macey & Miller, *The Plaintiffs' Attorney's Role*] (suggesting that auctions for plaintiffs' claims could be a solution to some of the problems of class action and derivative litigation); *infra* notes 81-85 and accompanying text. The possibility of an auction approach was first noted by John C. Coffee, Jr. *See* John C. Coffee, Jr., *The Unfaithful Champion: The Plaintiff as Monitor in Shareholder Litigation*, LAW & CONTEMP. PROBS., Summer 1985, at 5, 77-78 (1985) (crediting Frank Easterbrook with proposing the idea of auctioning litigation rights). Literature continues to develop on the idea of auctioning class actions. For a favorable assessment, see Julie Rubin, *Auctioning Class Actions: Turning the Tables on Plaintiffs' Lawyers' Abuse or Stripping the Plaintiff Wizards of Their Curtain*, 52 BUS. LAW. 1441, 1446-50 (1997), which illustrates the advantages and problems of auctioning class actions. For a critique and reply, see Randall S. Thomas & Robert G. Hansen, *Auctioning Class Action and Derivative Lawsuits: A Critical Analysis*, 87 NW. U. L. REV. 423 (1992), and Jonathan R. Macey & Geoffrey P. Miller, *Auctioning Class Action and Derivative Suits: A Rejoinder*, 87 NW. U. L. REV. 458 (1993).

10. *See* Mark A. Cohen & Paul H. Rubin, *Private Enforcement of Public Policy*, 3 YALE J. ON REG. 167 (1985) (arguing that auctioning regulatory tasks would result in socially efficient gains); *infra* notes 61-65 and accompanying text.

11. *See* Michael Kremer, *Patent Buy-Outs: A Mechanism for Encouraging Innovation*,

Other commentators have proposed the creation of exotic securities markets to help accomplish various legal decisionmaking tasks. Peter Choharis, for example, has recommended the creation of a secondary market in tort claims, maintaining that the prices at which claims trade will provide objective assessments of their value.¹² Thomas Smith has suggested a market mechanism that would save courts the trouble of determining how much of a limited fund should be saved for future mass tort claimants.¹³ And I have described a secondary market for portions of legal claims by government agencies against corporations, arguing that this market might replace *qui tam* litigation.¹⁴

Novel as these proposals sound, they are not altogether fantastic. They complement a vigorous debate about the possible use of market mechanisms in bankruptcy law¹⁵ and expand on principles inherent

113 Q.J. ECON. 1137, 1146-47 (1998) (explaining the mechanism for patent buy-outs); *infra* notes 99-104 and accompanying text.

12. See Peter Charles Choharis, *A Comprehensive Market Strategy for Tort Reform*, 12 YALE J. ON REG. 435 (1995) (arguing that creating a market for tort claims would prevent inequity in recoveries and promote fairer settlements); *infra* notes 141-45 and accompanying text; see also Marc A. Shukastis, *A Market in Personal Injury Tort Claims*, 16 J. LEGAL STUD. 329, 337 (1987) (maintaining that a market for tort claims would enable victims and legal experts to recover larger sums).

13. See Thomas A. Smith, *A Capital Markets Approach to Mass Tort Bankruptcy*, 104 YALE L.J. 367 (1994) (suggesting that mass tort plaintiffs receive tradable shares in a trust consisting of the limited fund); *infra* notes 129-36 and accompanying text.

14. See Michael Abramowicz, *Market-Based Administrative Enforcement*, 15 YALE J. ON REG. 197 (1998) (describing a "supplemental administrative market"); *infra* notes 149-54 and accompanying text.

15. See Robert G. Hansen & Randall S. Thomas, *Auctions in Bankruptcy: Theoretical Analysis and Practical Guidance*, 18 INT'L REV. L. & ECON. 159, 164-82 (1998) (analyzing auctions as an alternative to Chapter 11 bankruptcy); see also THOMAS H. JACKSON, *THE LOGIC AND LIMITS OF BANKRUPTCY LAW* 218-24 (1986) (discussing various market alternatives to Chapter 11 bankruptcy); Philippe Aghion et al., *The Economics of Bankruptcy Reform*, 8 J.L. ECON. & ORG. 523, 524 (1992) (arguing that Eastern European countries should adopt a decentralized variation on Chapter 7 bankruptcy, which would include market mechanisms); Lucian A. Bebchuk, *A New Approach to Corporate Reorganizations*, 101 HARV. L. REV. 775, 781-90 (1988) (proposing an alternative method of market-oriented reorganization of bankrupt corporations); Frank H. Easterbrook, *Is Corporate Bankruptcy Efficient?*, 27 J. FIN. ECON. 411 (1990) (examining the efficiency of existing bankruptcy procedures and the alternative of using auctions); Thomas J. Jackson, *Comment on Baird: Revisiting Auctions in Chapter 11*, 36 J.L. & ECON. 663, 665 (1993) (assessing the efficiency of the auction process in comparison to Chapter 11 bankruptcy); Mark J. Roe, *Bankruptcy and Debt: A New Model for Corporate Reorganizations*, 83 COLUM. L. REV. 527, 559-60 (1983) (outlining a market-based solution to corporate reorganization); David A. Skeel, Jr., *Markets, Courts, and the Brave New World of Bankruptcy Theory*, 1993 WIS. L. REV. 465, 472-76 (1993) (analyzing several proposed replacements to Chapter 11 bankruptcy); Paul B. Lackey, Note, *An Empirical Survey and Proposed Bankruptcy Code Section Concerning the Propriety of Bidding Incentives in a Bankruptcy Sale of Assets*, 93 COLUM. L. REV. 720, 721 (1993) (arguing that asset sales in bankruptcy create a duty to conduct a fair market auction).

in existing emissions rights trading programs.¹⁶ Yet none of the new proposals, it seems, is taken seriously. Other scholars write on the same topics without comparing their solutions to the market approaches discussed above.¹⁷ Perhaps even more striking, the

16. See generally BUYING A BETTER ENVIRONMENT: COST-EFFECTIVE REGULATION THROUGH PERMIT TRADING (Erhard F. Joeres & Martin H. David eds., 1983) (presenting various papers on transferable discharge permits); J.H. DALES, POLLUTION, PROPERTY & PRICES 105 (1968) (arguing that charging for user rights is crucial to implementation of pollution policy); T.H. TIETENBERG, EMISSIONS TRADING: AN EXERCISE IN REFORMING POLLUTION POLICY (1985) (evaluating the implementation of the Environmental Protection Agency's emissions trading programs); Daniel J. Dudek et al., *Environmental Policy for Eastern Europe: Technology-Based Versus Market-Based Approaches*, 17 COLUM. J. ENVTL. L. 1, 3-4 (1992) (advocating that Eastern Europe adopt a scheme of market-based environmental policy); John P. Dwyer, *The Use of Market Incentives in Controlling Air Pollution: California's Marketable Permits Program*, 20 ECOLOGY L.Q. 103, 104-05 (1993) (discussing the obstacles faced by environmental regulatory programs that use emissions trading); Vivien Foster & Robert W. Hahn, *Designing More Efficient Markets: Lessons from Los Angeles Smog Control*, 38 J.L. & ECON. 19, 19-20 (1995) (examining how emissions trading patterns in Los Angeles are affected by transaction costs and regulations that govern exchange); Robert W. Hahn, *Innovative Approaches for Revising the Clean Air Act*, 28 NAT. RESOURCES J. 171, 173 (1988) (proposing new alternatives and approaches to the EPA's emissions trading policy); Robert W. McGee & Walter E. Block, *Pollution Trading Permits as a Form of Market Socialism and the Search for a Real Market Solution to Environmental Pollution*, 6 FORDHAM ENVTL. L.J. 51, 52 (1994) (claiming that a system of fully protected property rights would promote the evolution of a well-functioning permit market); W. David Montgomery, *Markets in Licenses and Efficient Pollution Control Programs*, 5 J. ECON. THEORY 395, 395-96 (1972) (providing a theoretical framework for emissions trading); Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1, 9-25 (comparing the cost and efficiency of environmental regulation strategies including rights trading); Martin L. Weitzman, *Prices v. Quantities*, 41 REV. ECON. STUD. 477 (1974) (assessing whether environmental regulation should focus on prices by imposing taxes or on quantity by allowing emission trading); Jonathan Baert Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 YALE L.J. 677 (1999) (arguing for emissions trading in international environmental regulation).

17. For example, at least 24 articles have cited Smith's *Yale Law Journal* article, but none has explained his proposal in more than a sentence or parenthetical, let alone offered counterarguments. Search of Westlaw, JLR database (Apr. 14, 2000). Macey and Miller's approach has received some attention, but articles discussing it offer only very brief rebuttals. See, e.g., Elliott J. Weiss & John S. Beckerman, *Let the Money Do the Monitoring: How Institutional Investors Can Reduce Agency Costs in Securities Class Actions*, 104 YALE L.J. 2053, 2107 (1995) (pointing out some alleged disadvantages of auctioning securities class actions). Even John Coffee, the originator of the class action auction idea, does not discuss it in more recent work. See John C. Coffee, Jr., *Class Wars: The Dilemma of the Mass Tort Class Action*, 95 COLUM. L. REV. 1343 (1995). Choharis's proposal is mentioned in two student works. See Ari Dobner, Comment, *Litigation for Sale*, 144 U. PA. L. REV. 1529, 1538 (1996) (concluding that trading legal claims may increase fairness and efficiency); Teal E. Luthy, Comment, *Assigning Common Law Claims for Fraud*, 65 U. CHI. L. REV. 1001, 1021 (1998) (comparing the proposals of Shukaitis and Choharis). Perhaps most strikingly, a paper in the same working paper series as Kremer's cites his for a tangential proposition, but ignores the proposal itself. See STEVEN SHAVELL & TANGUY VAN YPERSELE, REWARDS VERSUS INTELLECTUAL PROPERTY RIGHTS 4-5 (National Bureau Econ. Research Working Paper No. 6956, 1999). Yet Kremer's proposal, in my view, would make their argument for a prize system of intellectual property much more palatable, because the government would not need to establish a bureaucracy to

various market proposals rarely engage one another.¹⁸ Scholars have long thought systematically about the choice between regulation and free markets in goods and services.¹⁹ Only recently, in the literature described above, have scholars begun to consider the separate question of whether regulation might be accomplished through capital markets.²⁰ Those contributing answers to this question, however, have done so only in the context of particular proposals and have not addressed the potential for capital market mechanisms in law more generally. A literature has arisen, and no one has noticed.

This Article takes notice. It collects and classifies various market proposals and identifies their strengths and weaknesses. More importantly, this Article develops the normative foundations for the use of market mechanisms in legal decisionmaking. This theoretical exploration has a practical payoff. By systematically considering the marriage of markets and law, the Article does more than justify existing proposals. It also makes apparent other potential applications, and among its ambitions is to suggest and critique many hypothetical market mechanisms, and to develop one mechanism in particular detail. Just as importantly, this Article's construction of new market-based legal arrangements may enrich and challenge our understandings of existing legal institutions.

Part I identifies three types of market mechanisms—auction, exchange, and self-assessment—and explains how different proposals take advantage of them. The purpose of this section is not yet to conduct a full exploration of the uses of capital market mechanisms, but to outline the various ways the mechanisms might be structured. Each mechanism is examined in isolation, without inquiring how it

measure sales and other data in order to determine how much to compensate innovators. See *infra* note 69 (discussing prize system alternatives to traditional intellectual property regimes).

18. Choharis briefly discusses Macey and Miller but makes no attempt to assess whether the problems he sees in their proposal could be overcome. See Choharis, *supra* note 12, at 474 nn.139-42 (citing Macey and Miller in a discussion of the possibility of auctioning tort claims). Choharis also cites Smith, but only with respect to a tangentially related proposition. See *id.* at 486 n.177 (commenting that the fast information processing of capital markets could be beneficial to tort claimants). Pritchard similarly cites Macey and Miller for a tangential proposition. See Pritchard, *supra* note 3, at 1174 n.61 (explaining the difficulty of enforcing contractual commitments between attorneys and clients in the context of auctions).

19. For views from a variety of perspectives, see Neil Duxbury, *Law, Markets and Valuation*, 61 BROOK. L. REV. 657 (1995); Alfred E. Kahn, *Deregulation: Looking Backward and Looking Forward*, 7 YALE J. ON REG. 325 (1990); Michael H. Shapiro, *Regulation as Language: Communicating Values by Altering the Contingencies of Choice*, 55 U. PITT. L. REV. 681 (1994); Margaret Jane Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849 (1987); John A. Robertson, *Human Flourishing and Limits on Markets*, 95 MICH. L. REV. 2139 (1997) (book review).

20. See *supra* notes 8-16 and accompanying text.

might be combined with another or with a more traditional legal approach so that the strengths of one answer weaknesses of the other.

Part II describes some virtues and vices of the mechanisms described in Part I. The section on virtues discusses what capital markets are good at and why the use of market mechanisms in certain legal contexts might produce better results than traditional legal approaches. The section on vices identifies potential technical problems of using market mechanisms in law and explores how these glitches might be avoided.

In recommending solutions to the vices of market mechanisms, the Article gradually develops a comprehensive market mechanism combining auction, exchange, and self-assessment. Though some legal problems are better solved with a single market mechanism (or, of course, with no market mechanism at all),²¹ the combination of the three mechanisms is an efficient means of accomplishing a legal prediction task. That is, if it is useful for a legal system to predict some number that will become apparent in the future, it can use this combination of mechanisms to perform the prediction. This number might be a dollar figure, such as the verdict in a particular case, or any other number, from a measurement of air pollution in New York in a week, to a count of the number of criminals who will be incarcerated in Texas in a decade. The market prediction of these numbers offers objective data that the government can use in making resource allocation or other decisions.²²

The comprehensive market mechanism begins with an auction in which the government distributes a unique class of securities whose value will depend on the future value of the number being predicted. These securities may then be exchanged.²³ To facilitate such exchange, owners of securities are required to self-assess their value. A self-assessment subjects the security owner to the possibility of either selling the security or buying an additional security at the same price.²⁴ Eventually, the market will close, and the securities will be redeemed based on what the number being predicted turns out to be. At any time before this, the average valuations of the securities can be translated into a prediction of what this number will be. In addition to adding explanation and detail, Part II will show how this comprehensive market mechanism overcomes many of the vices of

21. See sources cited *supra* notes 16-19 (advocating trading of emission rights as a solution for pollution and condemning the use of market mechanisms for certain commodities).

22. See *infra* Part II.A.3.

23. See *infra* Part I.B (explaining the exchange market mechanism).

24. See *infra* Part II.B.1.

individual market mechanisms. It also describes refinements to this mechanism that might be used to accomplish more complicated tasks, including the prediction of a number that will become known in the future only if the government employs some expensive procedure, which it is willing to perform only some percentage of the time.

Part III discusses how the use of market mechanisms in the law might affect some of the values that the law seeks to promote. Market solutions are not magic wands that can guarantee perfect accuracy, costless administration, seamless incorporation of democratic preferences, or absolute consistency. Yet in many (though not all) instances, market mechanisms may further these goals. Ultimately, the benefits of market mechanisms in advancing these goals must be balanced against possible costs, for example in terms of legitimacy and continuity.²⁵ Part III explains, however, that market mechanisms may be more conducive to promotion of various values than might at first appear, and that it would be possible to test and transition market mechanisms before relying on them to replace more traditional approaches to legal decisionmaking.

I. THREE TYPES OF MARKET MECHANISMS

This Part presents three basic types of market mechanisms: auction, exchange, and self-assessment. In doing so, it describes existing legal proposals based on these mechanisms, as well as other legal problems whose solutions might lie in these mechanisms. At times, it might seem that I miss obvious flaws in the proposals, or fail to mention obvious benefits. My purpose at this point, though, is not to offer a detailed critique of these market mechanisms. Rather, I paint the proposals with broad strokes to illustrate their underlying logic, without describing yet the safeguards, both traditional and market-based, necessary to transform these devices into acceptable legal institutions. An examination of problems with the mechanisms and an exploration of potential solutions will be the project of Part II.

A. Auction

Let us begin with one of the least controversial uses of an auction in legal affairs: the public forfeiture auction.²⁶ To be sure, forfeiture

25. See *infra* Parts III.C.1 and III.C.3 (weighing the legitimacy and continuity problems presented by market mechanisms).

26. See, e.g., 21 U.S.C.A. § 881(e)(1)(B) (West 1999) (allowing for disposition of forfeited property in a "public sale"). See generally Jacob J. Finkelstein, *The Goring Ox: Some Historical Perspectives on Deodands, Forfeitures, Wrongful Death and the Western Notion*

is objectionable to those who believe that the government should not deprive someone of his property in a civil proceeding or that there should be additional procedural safeguards before such property is confiscated.²⁷ Given the decision to take property, however, few would object to disposition through auction.

Alternative regimes are easy to imagine. First, a government agency could be responsible for fixing a price and selling the property to the first interested purchaser. Second, confiscated property could be designated a commons; the keys would be left in a forfeited auto, and anyone could use it as desired, so long as no one took exclusive dominion over it.²⁸ Third, the government might take

of Sovereignty, 46 TEMP. L.Q. 169, 213-33 (1973) (providing a historical perspective on forfeiture); David Pimental, *Forfeiture Procedure in Federal Court: An Overview*, 183 F.R.D. 1, 4 (1999) (providing historical background, discussion, and recommendations for remedying alleged deficiencies in federal forfeiture procedure). In 1990 alone, total government revenues from sales of seized automobiles, vessels, and airplanes exceeded \$100 million. See BUREAU OF JUSTICE STATISTICS, DRUGS, CRIME AND THE JUSTICE SYSTEM 156 (1992) (reporting on the use of asset forfeiture by law enforcement to combat illegal drug trade). The use of public auctions has recently spread to non-Western countries. See, e.g., *Shanxi's First Public Property Auction*, Xinhua Eng. Newswire, Dec. 11, 1997, available at 1997 WL 15760495 (describing Chinese forfeiture auction).

27. See, e.g., HENRY HYDE, FORFEITING OUR PROPERTY RIGHTS: IS YOUR PROPERTY SAFE FROM SEIZURE? 4 (1995) (arguing that civil forfeiture impinges upon constitutional and political rights); Michael P. Harrington, *Rethinking In Rem: The Supreme Court's New (and Misguided) Approach to Civil Forfeiture*, 12 YALE L. & POL'Y REV. 281, 285 (1994) (criticizing recent holdings of the Supreme Court in the area of civil forfeiture); Michael Schechter, Note, *Fear and Loathing and the Forfeiture Laws*, 75 CORNELL L. REV. 1151, 1151-52 (1990) (arguing that the drug forfeiture statute is fundamentally unfair and that claimants should receive full due process protections); Richard Grimes, *Confiscating Property Is Wrong*, CHARLESTON DAILY MAIL, July 2, 1996, at 4A (arguing that confiscation of property in drug cases often produces unjust results). But see *Calero-Toledo v. Pearson Yacht Leasing Co.*, 416 U.S. 663, 686-87 (1974) ("Forfeiture of conveyances that have been used—and may be used again—in violation of the narcotics laws fosters the purposes served by the underlying criminal statutes, both by preventing further illicit use of the conveyance and by imposing an economic penalty, thereby rendering illegal behavior unprofitable."). The House of Representatives has recently approved legislation that would raise to "clear and convincing evidence" the standard that the government would need to meet before it could complete a confiscation of property. See H.R. 1658, 106th Cong. (1999) (reporting the text of the Civil Asset Forfeiture Act); 145 CONG. REC. H4858 (daily ed. June 24, 1999) (recording the debates, amendments, and vote on the Civil Asset Forfeiture Act); Stephen Labaton, *House Approves Measure That Would Curb Government's Authority to Seize Property*, N.Y. TIMES, June 25, 1999, at A1 (discussing the House's action).

28. The result of such a program is not difficult to predict. Tucson, Arizona officials decided to revamp discarded bicycles by painting them orange and allowing anyone to use them for commuting within the city. All the bicycles were stolen. See Keith Bagwell, *All 80 Bicycles Disappear from Free Public Use Program*, ARIZ. DAILY STAR, Apr. 5, 1996, at 1B (finding that the bicycles either vanished or were damaged so quickly that repair workers could not keep up). But see Diego Bunuel, *San Francisco Considers Rolling Out Free Bike Program*, SUNDAY OREGONIAN (PORTLAND), Sept. 29, 1996, at A23 (reporting that San Francisco was considering a similar program after a successful experiment in Portland). Thus, even where conversion of property into a

the property for its own purposes.²⁹ Fourth, it might select the recipient whose use of it would be most in the public interest.³⁰ Finally, it might simply destroy the property.³¹

These solutions are unattractive for two main reasons, and these reasons form the foundation upon which other uses of auctions rest. First, the government might as well get as much as it can for property it has confiscated. If the government were to designate a recipient or place the asset in the commons, it would not get anything at all. It would obtain some value by using the property itself; but when a governmental agency could benefit more from using the property than any private party, that agency could participate in the auction.³²

commons is economically efficient, it will be feasible only for property that is adequately protected or by its nature cannot be stolen. *See generally* Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968) (providing a classic account of the tragedy of the commons); Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 *U. CHI. L. REV.* 711, 722 (1986) (examining three theories of public property and their historic and modern implications).

29. Indeed, the government occasionally adopts this approach, distributing the property to an appropriate government agency. *See, e.g.*, 19 U.S.C.A. § 1616b-c (West 1999) (stating that the United States can transfer property to an appropriate state or local official or retain any property for official use).

30. Programs that give away unneeded government property, which may or may not have been confiscated, are sometimes designed to benefit nonprofit organizations or the poor. *See, e.g.*, 10 U.S.C.A. § 7542a (West 1999) (allowing the Navy to sell excess clothing at nominal prices for distribution to the poor). Such programs may be susceptible to abuse. *See, e.g.*, Editorial, *Don't Let Cities Donate Houses*, *ADVOCATE (BATON ROUGE)*, Oct. 21, 1996, at 8B (criticizing a Louisiana program that allowed homes to be leased to nonprofit organizations for a nominal fee, on the ground that family and friends of a nonprofit's organizers used the homes for their own purposes). A theoretical case against "givings" might be made along the same lines as a case against "takings." *See, e.g.*, Mark Cordes, *Leapfrogging the Constitution: The Rise of State Takings Legislation*, 24 *ECOLOGY L.Q.* 187, 234-38 (1997) (arguing that the existence of "givings" should figure in analysis of takings policy); Edward Thompson, Jr., *The Government Giveth*, in 140 *CONG. REC.* S4912-01 (Apr. 26, 1994) ("The best way to manage the risk of takings may be to eliminate 'givings.'").

31. This might make sense when a particular kind of property is likely to be put to ill use. *See, e.g.*, 18 U.S.C.A. § 2254(f)(2) (West 1999) (allowing sale only of that "forfeited property which is not required to be destroyed by law and which is not harmful to the public," in a statute providing for forfeiture of child pornography); *cf.* Janet C. Wetzel, *Police Auction: We've Pretty Much Got Something for Everyone*, *CINCINNATI ENQ.*, May 7, 1999, at D3 (reporting that some scales confiscated from narcotics dealers have been purchased from public auction and then confiscated again later).

32. Governments might need to pass new legislation or regulations to enable such participation, given the complexity of acquisition rules. The federal government has moved in this direction with the Federal Acquisition Streamlining Act of 1994, Pub. L. No. 103-355, §§ 4201-4301, 108 Stat. 3243, 3342-47 (codified in scattered sections of 41 U.S.C.), which simplifies the rules for small purchases. *See generally* Major Andy K. Hughes, *Simplified Acquisitions and Electronic Commerce: Where Do We Go from Here?*, *ARMY LAW.*, June 1995, at 38 (analyzing the changes and impact of the Federal Acquisition Streamlining Act). Even with reforms, however, annual budgeting may make it difficult for government agencies to bid on large items at government-sponsored auctions. An alternative is for the government to hold

Holding an auction is also more profitable than fixing a price and selling to the first comer, because some other buyer might be willing to pay more.³³

Second, the auction is an efficient way of matching an asset with the person or corporation that can best make use of it. If one person is willing to pay \$5,000 for an automobile, and another offers \$10,000, then we can assume that the second person has more use for it. Of course, that may not be true in a narrow utilitarian sense. Perhaps the high bidder wants the car only to show off, or even because he maliciously does not want the low bidder to get it.³⁴ Abandoning the auction to compensate for these problems, however, would accomplish the goals of distributive justice in an inefficient way. Better to let the tax system and other distribution engines determine who gets the dollars, and then assume that the best user is the one willing to pay the most for the good.³⁵

So far, I have used the word "auctions" as though there were only one way to structure them. That, of course, is not true.³⁶ In the

auctions with reserve prices or minimum bid requirements that represent its accounting of the benefits an agency would receive from retaining property. If no bids exceeded this threshold, the agency would keep the property.

33. At times, there might not be many buyers with an immediate need for the asset, so it might seem that the government should keep the asset and sell it at a later time. If this were the case, however, a third party would have incentives to purchase the asset immediately at the auction and hold it for later sale; competition among many third parties, in a competitive auction, will drive the auction price up to the level at which these third parties make zero economic profit for the service they perform in guarding the asset. Because the government has a looser profit incentive than such entrepreneurs, the government will usually find it more profitable to hold an auction and let third parties incur the cost of waiting for buyers than to incur those costs itself.

34. These are well-known problems in critiques of utilitarian theory. Richard Posner has argued that these and other limitations of utilitarianism support a different criterion, that of wealth maximization. See RICHARD A. POSNER, *THE ECONOMICS OF JUSTICE* 76-79 (1981). A number of scholars have criticized Posner's argument. See Jules Coleman, *The Normative Basis of Economic Analysis: A Critical Review of Richard Posner's The Economics of Justice*, 34 STAN. L. REV. 1105, 1115-17 (1982) (book review); Izhak England, *The Failure of Economic Justice*, 95 HARV. L. REV. 1162, 1166-67 (1982) (book review); Peter J. Hammond, *The Economics of Justice and the Criteria of Wealth Maximization*, 91 YALE L.J. 1493, 1499-500 (1982) (book review); Richard Schmalbeck, *The Justice of Economics: An Analysis of Wealth Maximization as a Normative Goal*, 83 COLUM. L. REV. 488, 499-507 (1983) (book review).

35. For a more general argument along these lines, see MILTON FRIEDMAN, *CAPITALISM AND FREEDOM* 174-75 (1962), which advocates a "negative tax." On the other hand, one could argue that the tax system itself promotes economic distortions. See generally Louis Kaplow, *The Optimal Supply of Public Goods and the Distortionary Cost of Taxation*, 49 NAT'L TAX J. 513, 514 (1996) (assessing the distortions of income taxation).

36. See R. Preston McAfee & John McMillan, *Auctions and Bidding*, 25 J. ECON. LIT. 699, 702 (1987) (describing four basic types of auctions); Paul Milgrom, *Auctions and Bidding: A Primer*, 3 J. ECON. PERSP. 3, 3-4 (providing a review of different auction structures); Paul Milgrom & Robert J. Weber, *A Theory of Auctions and Competitive*

familiar English auction, bidders offer increasingly larger amounts of money until no one else bids.³⁷ In a Dutch auction, the offering price is successively reduced until someone agrees to buy.³⁸ In a first-price sealed bid auction, each participant submits a single bid, and the high bidder wins.³⁹ A second-price sealed bid auction works the same way, but the winner pays the bid price of the second-highest bidder.⁴⁰ Many Internet auction sites approximate the second-price sealed bid auction by holding English auctions in which bidders can specify the maximum amount that they are willing to bid and allow the site to bid for them up to that maximum but no higher than necessary.⁴¹ Later, I will return to the question of auction design, but for now the salient point is that in a competitive auction, the high bid will be the same regardless of the mechanism used.⁴²

However structured, an auction can be used to distribute not only physical property, but less tangible rights as well. Until recently, the Federal Communications Commission ("FCC") invariably assigned

Bidding, 50 *ECONOMETRICA* 1089 (1982) (discussing auction theory); Terrence J. Schroepfer, *Allocating Spectrum Through the Use of Auctions*, 14 *HASTINGS COMM. & ENT. L.J.* 35, 39-43 (1991) (comparing different types of auctions).

37. See, e.g., ERIC RASMUSEN, *GAMES AND INFORMATION: AN INTRODUCTION TO GAME THEORY* 247 (1989) (outlining the rules, strategies, and payoffs of the English auction).

38. See Schroepfer, *supra* note 36, at 40. "This type of auction, though rare in the United States, is used for selling cut flowers in the Netherlands, fresh fish in Israel, and tobacco in Canada." *Id.*

39. Sealed-bid auctions are commonly used for procurement of government contracts. See, e.g., McAfee & McMillan, *supra* note 36, at 702.

40. This design originated in William Vickrey, *Counterspeculation, Auctions, and Competitive Sealed Tenders*, 16 *J. FIN.* 8, 20-23 (1961), which states that the "award will be made to highest bidder, but on the basis of the price set by the second highest bidder." See James D. Dana, Jr. & Kathryn E. Spier, *Designing a Private Industry: Government Auctions with Endogenous Market Structure*, 53 *J. PUB. ECON.* 127, 135 (1994).

41. See, e.g., Proxy Bidding (visited Oct. 18, 1999) <<http://www.ebay.com/aw/help/help-t-bid-prxy.html>> (explaining "proxy bidding"). Some web sites introduce new terminology for variants of auction mechanisms, and others use familiar terminology in a different way. For example, Ebay uses the term "Dutch auction" to refer to an auction in which there are a number of identical items for sale. In these auctions, in lieu of proxy bidding, all winning bidders pay the bid of the lowest winning bidder. See Auction Types (visited Feb. 11, 2000) <<http://pages.ebay.com/aw/help/help-t-bid-type.html>> (describing reserve price, private clutch and restricted access auctions); see also Auction Types (visited Feb. 11, 2000) <http://www.egghead.com/helpinfo/atauctions/bidders_guide/auction_types.htm> (defining a similar type of auction).

42. See James C. Cox et al., *OCS Leasing and Auctions: Incentives and the Performance of Alternative Bidding Institutions*, 2 *SUP. CT. ECON. REV.* 43, 69 (1983) (demonstrating that competitive English and second-price sealed bid auctions will yield the same price). The economics of noncompetitive auctions is more complicated and may produce surprising results. See, e.g., Ian Ayres & Peter Cramton, *Deficit Reduction Through Diversity: How Affirmative Action at the FCC Increased Auction Competition*, 48 *STAN. L. REV.* 761, 766-75 (1996) (explaining how bidding preferences can increase total government auction revenues, when there otherwise would be only a small number of bidders).

use of the spectrum in the “public interest” by holding hearings to identify the best user of spectrum.⁴³ In recent years, however, the FCC has used competitive bidding to distribute rights to certain portions of the spectrum.⁴⁴ This approach is better than user fees at

43. Comparative hearings were required by the Supreme Court in *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327 (1945). The statute governing the standard to be used in such hearings is 47 U.S.C. § 307 (1994), which provides, “The Commission, if public convenience, interest, or necessity will be served thereby, subject to the limitations of this chapter, shall grant to any applicant therefor a station license provided for by this chapter.” The “public interest” standard also was used to justify FCC control over the content of programming, but deregulation eliminated much of the FCC’s power over content. See *Deregulation of Radio*, 46 Fed. Reg. 13,888 (1981) (codified at 47 C.F.R. pts. 0, 73 (1999)); Cindy Rainbow, Comment, *Radio Deregulation and the Public Interest: Office of Communication of the United Church of Christ v. Federal Communications Commission*, 4 CARDOZO ARTS & ENT. L.J. 169, 174-77 (1985) (discussing the public interest standard and the FCC’s program content policy). For an account of current legal problems surrounding comparative hearings for licenses not yet distributed competitively, see K.C. Halm, Note, *Bechtel v. FCC: The Beginning of the End of the FCC’s Comparative Hearing Process*, 50 ADMIN. L. REV. 491, 512-14 (1998).

44. Congress authorized auctions for parts of the radio spectrum by passing the Telecommunications Authorization Act of 1992, Pub. L. No. 102-538, 106 Stat. 3533 (codified as amended at 47 U.S.C. §§ 901-927 (1994)) and the Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, § 6002, 107 Stat. 312, 387-97 (codified at 47 U.S.C. §§ 309, 332). The Acts instructed the FCC to initiate a competitive bidding process for various classes of spectrum not yet assigned or reassigned. Congress reiterated that the ultimate goal of the regulations was to promote the “public interest”: “In identifying classes of licenses and permits to be issued by competitive bidding, in specifying eligibility and other characteristics of such licenses and permits, and in designing the methodologies for use under this subsection, the Commission shall include safeguards to protect the public interest in the use of the spectrum . . .” 47 U.S.C. § 309(j)(3) (1994). Indeed, the statute specifies that the FCC “may not base a finding of public interest, convenience, and necessity solely or predominantly on the expectation of Federal revenues from the use of a system of competitive bidding.” *Id.* § 309(j)(7). A number of commentators have discussed and analyzed the conversion to a system of competitive bidding. See generally Nicholas W. Allard, *The New Spectrum Auction Law*, 18 SETON HALL LEGIS. J. 13, 30-35 (1993) (describing the legislative history of the competitive bidding provisions and analyzing their objectives); Jonathan Blake, *FCC Licensing: From Comparative Hearings to Auctions*, 47 FED. COMM. L.J. 179 (1994) (discussing the use of auctions as licensing mechanisms to replace comparative hearings and lotteries); Pablo T. Spiller & Carlo Cardilli, *Towards a Property Rights Approach to Communication Spectrum*, 16 YALE J. ON REG. 53 (1999) (recommending further reforms); Kurt A. Wimmer & Lee J. Tiedrich, *Competitive Bidding and Personal Communications Services: A New Paradigm for FCC Licensing*, 3 COMMLAW CONSPECTUS 17, 19-21 (1995) (advocating a switch from comparative hearings to auctions); Brian C. Fritts, Note, *Private Property, Economic Efficiency, and Spectrum Policy in the Wake of The C Block Auction*, 51 FED. COMM. L.J. 849, 852 (1999) (illustrating the difficulties of C block auctions in efficient distribution of spectrum property rights); William Kummel, Comment, *Spectrum Bids, Bets, and Budgets: Seeking an Optimal Allocation and Assignment Process for Domestic Commercial Electromagnetic Spectrum Products, Services, and Technology*, 48 FED. COMM. L.J. 511, 530-32 (1996) (discussing the bidding process for spectrum licenses); Andrea M. Settanni, Comment, *Competitive Bidding for the Airwaves: Meeting the Budget and Attaining Policy Goals in a Wireless World*, 2 COMMLAW CONSPECTUS 117, 128-31 (1994) (arguing that the creation of a bidding system for broadcast licenses will generate increased revenue while maintaining public policy goals). Articles written before the congressional reform include Schroepfer, *supra*

maximizing revenues for the public fisc.⁴⁵ At the same time, the high bidder for a slice of spectrum is presumably the entity capable of generating the highest profits from use of that spectrum.⁴⁶ These anticipated profits correspond to high anticipated consumer demand.⁴⁷

My praise of auctions should not be confused with a general endorsement of laissez-faire policies. Distribution of property rights through auction does not preclude government activity in the relevant area.⁴⁸ For example, public television might be undersupplied in an unregulated market, if the educational benefits it gives to children are a positive externality to society as a whole.⁴⁹ This does not mean, however, that the government must give spectrum to a public television station.⁵⁰ Instead, it could give the public television station money with which to purchase spectrum at auction.⁵¹

Where free market outcomes are suboptimal, auctions may provide a different kind of competition to achieve the same result. In Delaware corporate law, so-called *Revlon* auctions are required before

note 36, at 44-46, which proposed a second sealed bid auction for the government's distribution of spectrum; Sara Anne Hook, Comment, *Allocation of the Radio Spectrum: Is the Sky the Limit?*, 3 IND. INT'L & COMP. L. REV. 319, 349-52 (1993), which scrutinized the then current system of allocating radio spectrum and discussed the use of new methods of allocation, such as auctions, user fees and flexible use, as possible alternatives; and Michael C. Rau, Comment, *Allocating Spectrum by Market Forces: The FCC Ultra Vires*, 37 CATH. U. L. REV. 149, 153 (1987), which analyzed the "flexible radio service" program.

45. For a discussion of the difficulties in implementing an efficient user fee regime, see Terrence J. Schroepfer, *Fee-Based Incentives and the Efficient Use of Spectrum*, 44 FED. COMM. L.J. 411, 419-28 (1992).

46. See Settani, *supra* note 44, at 122 (stating that a competitive bidding system will result in the assignment of spectrum to its highest valuing user).

47. See Kummel, *supra* note 44, at 540 (stating "[t]he developed countries' emphasis on consumer demand . . . foreshadowed the federal government's use of competitive bidding").

48. *Cf., e.g.*, *Action for Children's Television v. FCC*, 564 F.2d 458, 470 (D.C. Cir. 1977) (holding that the FCC followed established policies in relying upon industry self-regulation of children's television programming).

49. See Henry John Uscinski, Comment, *Deregulating Commercial Television: Will the Market Watch Out for Children?*, 34 AM. U. L. REV. 141, 163-70 (1984) (arguing that the deregulated market does not protect the special needs of children).

50. Indeed, the former Speaker of the House, Newt Gingrich, advocated the sale of spectrum granted to public television stations through auction, arguing viewers may find programming diversity through cable. See Ronald J. Krotoszynski, *Into the Woods: Broadcasters, Bureaucrats, and Children's Television Programming*, 45 DUKE L.J. 1193, 1244 n.235 (1996).

51. Alternatively, the government could subsidize the development of educational programming. See National Endowment for Children's Educational Television Act of 1990, Pub. L. No. 101-437, 104 Stat. 997 (codified at 47 U.S.C. § 394) (creating a group to consider making grants promoting high-quality children's educational programming).

a transfer of control of a publicly held corporation.⁵² When such a corporation is up for sale, the theory goes, shareholders of the target should receive as much for their shares as possible.⁵³ In addition, Delaware presumably wishes to ensure that the acquirer is the company that will make best use of the target.⁵⁴ Requiring the target to auction itself off eliminates the danger that target managers will place their own interests ahead of those of the corporation.⁵⁵ The competition at auction thus replaces the free wheeling and dealing ordinarily encouraged in the marketplace.

Auctions also may be used as a way to select a provider of a good that the market alone cannot be relied on to supply.⁵⁶ When the

52. See *Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc.*, 506 A.2d 173, 182 (Del. 1986) (holding that members of the board of directors breached their fiduciary duty to shareholders by refusing to sell stock to highest bidder during a takeover); Kenneth J. Nachbar, *Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc.: The Requirement of a Level Playing Field in Contested Mergers, and its Effect on Lock-ups and Other Bidding Deterrents*, 12 DEL. J. CORP. L. 473, 477 (1987) (analyzing the holding and implications of *Revlon*). *Revlon* requires the directors to obtain "the highest price for the benefit of the stockholders" once "breakup of the company [is] inevitable." 506 A.2d at 182.

53. After *Revlon* is triggered, "[t]he role of the target board then becomes that of an auctioneer, whose sole task is to facilitate further bidding from all sources as a means of maximizing the opportunities for the shareholders to profit from their corporate investments." Richard C. Brown, *The Role of the Courts in Hostile Takeovers*, 93 DICK. L. REV. 195, 257 (1989) (examining *Revlon* and the Delaware auction rule). Some commentators have agreed that auctions promote target shareholder wealth maximization, but questioned whether this is the appropriate goal of takeover policy. See Peter Cramton & Alan Schwartz, *Using Auction Theory to Inform Takeover Regulation*, 7 J.L. ECON. & ORG. 27, 45-47 (1991) (discussing the need to give appropriate incentives for acquirers to undertake the cost of research). But see Roberta Romano, *A Guide to Takeovers: Theory, Evidence, and Regulation*, 9 YALE J. ON REG. 119, 164 (1992) ("A no auctions policy would impose a social cost, a higher price for equity capital, as common stock owners would no longer share in takeover gains."). For a discussion of the structural issues involved in *Revlon* auctions, see Steven B. Katz, Note, *Designing and Executing a 'Fair' Revlon Auction*, 17 FORDHAM URB. L.J. 163, 182-88 (1989), which proposes optimal techniques for corporate-controlled auctions.

54. Much of the law-and-economics literature on takeovers focuses on the issue of whether legal rules and particular contractual arrangements make it more or less likely that the highest-valuing bidder will ultimately take control of a company. See, e.g., Ian Ayres, *Analyzing Stock Lock-ups: Do Target Treasury Sales Foreclosure or Facilitate Takeover Auctions?*, 90 COLUM. L. REV. 682, 698 (1990); Stephen Fraidin & Jon D. Hanson, *Toward Unlocking Lockups*, 103 YALE L.J. 1739, 1788-89 (1994).

55. The thesis that target managers should be required to be passive in the face of a takeover attempt is argued most forcefully in Frank H. Easterbrook & Daniel R. Fischel, *The Proper Role of a Target's Management in Responding to a Tender Offer*, 94 HARV. L. REV. 1161, 1194-1204 (1981), and in Frank H. Easterbrook & Daniel R. Fischel, *Auctions and Sunk Costs in Tender Offers*, 35 STAN. L. REV. 1, 9-15 (1982), which disputes the contention that managerial passivity leads to excessive searching and under-investment in target companies.

56. That is, an auction can be used to determine who will be paid to supply a "public good." See generally Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. & STAT. 387 (1954) (providing the seminal discussion of public goods). When a good is not entirely nonrivalrous, i.e. when it is possible to charge users for consumption of the good, it may be more economically efficient to allow

government selects the low-cost bidder for a particular contract, it is executing a kind of auction.⁵⁷ The result is no different from the government's setting a high initial fee that it would pay for the project and then auctioning the right to do the project and receive the fee.⁵⁸ Either way, auction participants calculate their total economic cost of performing the project, and the contractor that calculates its cost the lowest will win the right to perform the project.⁵⁹ The government, meanwhile, must have some means of ensuring that the high bidder is able to produce work of sufficient quality.⁶⁰

In some contexts, quality and quantity may be one and the same. Cohen and Rubin, for example, attack the problem of enforcement of pollution emissions limits.⁶¹ The government, they worry, might not be as capable of vigorously and efficiently prosecuting environmental offenders as private parties.⁶² They suggest that the government auction the right to sue such offenders.⁶³ The most

private provision of the good. *See, e.g.*, James M. Buchanan, *An Economic Theory of Clubs*, 32 *ECONOMICA* 1, 2 (1965).

57. An alternative to competitive procurement is a kind of negotiated procurement, in which prospective contractors submit proposals instead of bids. *See* 48 C.F.R. § 15.402 (1999). For a critique of negotiated procurement, see Howard L. Speight, Comment, *Current Procedures for Performing Meaningful Discussion in Federal Negotiated Procurements Are Uneconomical, Inefficient, and Ineffective—A Proposal for Improvement*, 21 *ST. MARY'S L.J.* 985, 987 (1990) (stating that factors such as current procurement practices, limited discussions, hidden costs and a lack of motivation to solve procurement problems outside meaningful discussions defeat procurement goals).

58. *See* Thomas & Hansen, *supra* note 15, at 440 nn.93-94 (distinguishing government contracts procured through low bidding and first-prize sealed bid auctions).

59. *See generally* Katz, *supra* note 53, at 176-81 (discussing the factors that affects a bidder's decision on how to value an item).

60. Some commentators have argued that public procurement has become so structured that government administrators have insufficient discretion to obtain useful, high quality products. *See generally* Jerry L. Mashaw, *The Fear of Discretion in Government Procurement*, 8 *YALE J. ON REG.* 511 (1991) (reviewing STEVEN KELMAN, *PROCUREMENT AND PUBLIC MANAGEMENT: THE FEAR OF DISCRETION AND THE QUALITY OF GOVERNMENT PERFORMANCE* (1990)).

61. *See* Cohen & Rubin, *supra* note 10, at 181-86.

62. *See id.* at 172 (citing "evidence that government bureaucracies are often unable to monitor adequately compliance with their own regulations"). Cohen and Rubin also worry that the government enforcement agency will lack appropriate incentives to make efficient decisions in setting rules:

The concentration of enforcement authority in a single body permits the reallocation of a property right (in clean air, for example) where such reallocation could promote social welfare but would not otherwise be achieved because of high transaction costs. Unfortunately, there is no reason to believe that the allocation chosen will be socially optimal, because government enforcers lack incentives to regulate efficiently.

Id. at 174.

63. *See id.* at 182.

efficient private prosecutor, and thus the one likely to be the high bidder, will maximize net profits, that is, total fine recoveries minus total expenses.⁶⁴ Because the highest quality prosecutor will be the prosecutor able to maximize net fines, the government, Cohen and Rubin argue, need not concern itself with the means that the selected enforcement agency uses to attain its goals.⁶⁵

An auction mechanism might even be used to encourage work on a project that the government is not sure can be performed successfully. Suppose, for example, that the government wishes to encourage research on the answer to a particular scientific question for which intellectual property regimes provide inadequate pursuit incentives.⁶⁶ The government might simply give a research grant to the group with the best proposal; this is, of course, how much of basic research is funded.⁶⁷ Problems with this approach are that it alone

64. *See id.* Cohen and Rubin write that:

Since bidding for the right to collect taxes is competitive, the contract will go to the firm that is able to pay the largest amount, collect the fines, and still earn a profit. Assuming competitive bidding by expected profit maximizing firms, this will be by definition the firm that is able to monitor and collect emission fees in the least costly manner.

Id.

65. Cohen and Rubin offer the following example:

To illustrate the dynamic process whereby private enforcement will lead to efficient enforcement of public policy, suppose that the enforcer's current monitoring technique involves taking readings of polluters' emissions once a week. Suppose also that the polluting firm is able to adjust its pollution daily, thus reducing its emission fees—at the expense of the enforcer—by depressing emissions on days when the monitor is present. Finally, suppose that the enforcement agent is considering adoption of a new monitoring technique which would monitor emissions daily. The initial effect of this new and more accurate daily monitor will be to increase the pollution observed, thus raising the polluter's fees. The polluter will respond by increasing tax payments, reducing pollution, or both The enforcer will seek to implement the daily monitor if the sum of the additional fees and the increased government compensation is greater than the increase in cost to the enforcer of the daily monitor.

Id. at 184.

66. For example, patent law grants monopolies over particular products for limited periods of time. If research into some question cannot be transformed into a marketable product within a relatively short period of time, then patent law will not encourage such research, regardless of how socially useful it is. For discussions of the innovation incentives provided by intellectual property rules, see Aryeh S. Friedman, *Law and the Innovative Process: Preliminary Reflections*, 1986 COLUM. BUS. L. REV. 1, and Alexander E. Silverman, Note, *Myth, Empiricism, and America's Competitive Edge: The Intellectual Property Antitrust Protection Act*, 43 STAN. L. REV. 1417 (1990).

67. Basic research, i.e., research not directly aimed at particular applications, accounts for about half of national research and development expenditures, but corporations spend only about six percent of their research dollars on basic research. *See* Linda R. Cohen & Roger G. Noll, *Privatizing Public Research*, SCI. AM., Sept. 1994, at 72, 75. The government typically supports basic research indirectly by funding universities. "Universities are more likely to produce basic research than their proprietary counterparts because universities are at least partially free of the profit motive that forces the commercial enterprises to neglect research that does not

does not provide strong incentives for the grant recipients to follow through on their project, and that the government may not be as well situated as insiders to determine which group should receive the grant.⁶⁸ One possible solution to these problems would be for the government to offer a cash prize to the first group to provide a satisfactory answer.⁶⁹ This solution, however, could promote wasteful repetition of the same research by groups competing in secret to find the answer.⁷⁰ Instead, the government might prefer to encourage concentration of all research effort in the single large group with the best shot at a successful end result. To do this, it could auction the

promise reasonable returns within a relatively short time.” James T.Y. Yang, Note, *Collaboration Between Nonprofit Universities and Commercial Enterprises: The Rationale for Exempting Nonprofit Universities from Federal Income Taxation*, 95 YALE L.J. 1857, 1865 (1986) (explaining the rationale behind tax exemption for research universities). The government also, however, gives grants for specific research projects proposed by individuals or institutions. See generally Wendy Baldwin, *An Introduction to Extramural NIH* (visited Oct. 30, 1999) <<http://www.nih.gov/grants/intro2oer.htm>>.

68. See Kremer, *supra* note 11, at 1143 (encouraging methods of financial support for research besides advance government payments). “When the government pays for research input, rather than output, it is difficult to prevent researchers from shirking, either by applying little effort or by focusing on areas of purely scientific interest.” *Id.*

69. For discussions of the possibility of a “prize system” alternative to intellectual property, see SHAVELL & VAN YPERSELE, *supra* note 17, which argues for a system that compensates an innovator through a choice of a reward or the patent; Steve P. Calandrillo, *An Economic Analysis of Property Rights in Information: Justifications and Problems of Exclusive Rights, Incentives to Generate Information, and the Alternative of a Government-Run Reward System*, 9 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 301, 326-54 (1998), which explains the incentives of a government-sponsored reward system; Douglas Gary Lichtman, *The Economics of Innovation: Protecting Unpatentable Goods*, 81 MINN. L. REV. 693, 704 n.36 (1997), which mentions the historical use of reward systems; and Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 37 AM. ECON. REV. 691, 696-700 (1983), which evaluates the benefits of different incentive mechanisms. Examples of governments’ encouraging innovation in this way are provided in DAVA SOBEL, LONGITUDE 53-60 (1995), which discusses the British government’s offer of a prize for an invention to determine longitude at sea; and Wright, *supra*, at 704 n.15, which describes Napoleon’s offering of a prize for development of a military food storage technology. These examples are discussed in Kremer, *supra* note 11, at 5-6, who argues that “paying for research output through prizes creates much stronger incentives for researchers than paying for research inputs through grants.”

70. Patent law guards against such duplication by encouraging early disclosure of inventions. See 35 U.S.C. § 102 (1994) (specifying the bars to patentability); see also *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983) (stating that patent law favors early public disclosure as between an inventor who benefits by selling her product but suppresses, conceals, or otherwise keeps the process from the public, and a later inventor who promptly files a patent application from which the public will gain a disclosure of the process). A prize system could require potential prize recipients to disclose their research as results become available, but when one competitor builds on the work of another, it would be difficult to determine how to allocate the prize. Cf. A. Samuel Oddi, *Un-Unified Economic Theories of Patents – the Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 268, 284 (1996) (arguing that societal benefits are diminished when multiple competitors compete to receive the single patent prize).

right to attempt to win the prize. The better chance a group believes it has of being successful, and the lower the cost the group believes the attempt will require, then the higher that group will bid. Thus, the most efficient group is likely to win the right to try for the prize. If some other group stumbles on the answer first, meaning that the prize offer was unnecessary, the government would not be required to pay anything.

When deciding how large the prize should be, the government need not know the feasibility of accomplishing the goal. It need know only the value to society of a successful resolution. The more easily achieved the goal, the more research groups will pay for the right to try for the prize. Indeed, if the answer to the scientific question were already known to everyone, the government would lose almost nothing from holding the auction because research teams would bid an amount almost equal to the prize.⁷¹ At the same time, the greater likelihood that a goal is achievable, the more resources a winning bidder will be willing to put into pursuing the prize.⁷²

Transposed to a legal context, this logic underlies Pritchard's proposal.⁷³ He urges that the government auction the opportunity to represent indigent criminal defendants on appeal.⁷⁴ If the auction winner also wins on appeal, the government would pay a contingency fee.⁷⁵ The contingency fee in this proposal is akin to the potential scientific prize. The higher the stakes, the greater the potential contingency fee that the government could offer.⁷⁶ Lawyers who can

71. If the result were known only to one team, then the government would have to pay to that team approximately the amount that it would have had to pay another team to discover the correct answer. In a second-price sealed bid auction, for example, the team already possessing the information would end up paying for the right to the prize the amount bid by the next highest bidder. *See* Vickrey, *supra* note 40, at 20-23. Its profit would thus be the amount of the prize less the amount of the bid. In the absence of this auction or some other incentive system, however, the government might not have been able to induce the team to release its information.

72. *See* Katz, *supra* note 53, at 176-81 (discussing the factors that affect a bidder's decision on how to value an item).

73. *See* Pritchard, *supra* note 3.

74. *See id.* at 1162.

75. Pritchard explains:

Based on this prospectus [prepared by trial counsel with supplementation by the defendant], appellate lawyers would bid for the right to represent the defendant on appeal, and a court administrator would award that right to the low bidder. The state would pay the bidder, however, only if the appeal succeeded. "Success" is defined in this context as any ground warranting reversal, including acquittal, remand for a new trial, or a reduced sentence. *Id.* at 1170. Pritchard also would give trial counsel an incentive to prepare a strong prospectus by paying the counsel a percentage of winning bids if the appeal is successful. *See id.* at 1171.

76. Pritchard does not ask the government to set a particular contingency fee. Rather, in his auction, attorneys bid the amount that they will require as a

litigate cases most effectively and cost-efficiently will tend to be the highest bidders.⁷⁷ Appeals perceived to be losers will receive low bids, and lawyers will not be willing to put much time into them.⁷⁸ If an appeal is clearly an easy winner, the government will receive in auction revenues almost as much as the contingency fee.⁷⁹ If the appeal is a likely winner but only with considerable work from counsel, the government will receive less in auction revenues, because of the large amount of time that bidders anticipate spending on the case.⁸⁰

contingency fee, and the low bidder then receives the right to represent the defendant. *See id.* at 1172 (discussing some problems with this system). I would prefer a system in which the government sets the size of the contingency fee and the high-bidding lawyer is paid up front for the right to try for that contingency fee. The advantage of this auction is that the government can channel resources to more important cases. For example, it could set a higher contingency fee for a lawyer who successfully challenges a death penalty than it would for a lawyer who saves a client a two-week jail sentence. For a particular penalty, the government should establish a contingency fee to a level that equals the total amount of social resources the government is willing to spend to reverse one erroneous conviction (or, perhaps more accurately, to have one conviction reversed based on the appellate court's finding that it was legally invalid). Thus, if the contingency fee were \$100,000, an attorney would be willing to spend up to \$50,000 (in bidding costs and representation costs) to appeal the conviction of a client with an even chance of winning. The attorney would thus be willing to bid something to take the case if representation costs were no greater than \$50,000. Pritchard's proposal would cause larger amounts of money to be spent on more important cases only indirectly, that is only because death penalty cases will typically be more complex and thus require more work than cases involving brief jail sentences. *Cf.* Sara Sun Beale & Paul H. Hagen, *Revenge for the Condemned*, 94 MICH. L. REV. 1622, 1649 (book review) (noting the expense of appellate review of a criminal conviction).

77. *See* Pritchard, *supra* note 3, at 1173-74 ("Market exchange benefits rich and poor alike by allowing goods to go to the users who value them most highly. So, too, with a market system for allocating criminal appellate counsel. Appellate counsel would go to the defendants most likely to benefit: the wrongfully convicted.") (citation omitted). It would be more accurate for Pritchard to say only that defendants in this auction would be more likely to receive higher-quality attorneys. *See id.* at 1174 ("[C]ompetition will protect the public fisc from exorbitant fees as more efficient appellate counsel underbid their competitors."). Under Pritchard's version of the system, if a claim is half as likely to succeed, attorneys would bid twice as much and work equally hard. Pritchard proposes contingency fee caps to weed out frivolous appeals, but these are only a partial solution. *See id.* at 1172. My version of Pritchard's system, by contrast, would tend to channel resources toward defendants with stronger cases.

78. *See id.* at 1175.

79. In Pritchard's system, an attorney would bid the expected representation cost for a sure winner and receive this amount. *Cf. id.* at 1170-71 (showing that a lawyer will receive four times the expected representation costs for an appeal that has a 25% chance of being successful). In my version of Pritchard's system, an attorney would bid the amount of the contingency fee less the expected representation cost and initially pay this amount. Either way, the government on net would pay the expected representation cost.

80. *Cf.* Pritchard, *supra* note 3, at 1172 (noting that a certification procedure would be required before defendants with particularly complicated cases could receive representation if, as a result of fee caps, no bids were initially received). In my version of Pritchard's system, some defendants with particularly high costs of

Macey and Miller offer a similar proposal for class action and derivative litigation.⁸¹ They propose that lawyers bid on a right to take over the litigation and receive any recovery.⁸² Auction revenues would be distributed, after deduction for expenses, to the parties in whose benefit the litigation is undertaken, either the class action plaintiffs or the corporation.⁸³ Not only does this ensure that the most capable lawyers will undertake the representation, but it also prevents a lawyer from obtaining a windfall by being the first to file.⁸⁴ A defendant could bid against potential plaintiffs' lawyers; if the defendant were the high bidder, it effectively would have settled the claim.⁸⁵

This competition and Pritchard's rely on the incentive of potential attorneys to make bids based on their likelihood of winning the case.⁸⁶ In some legal contexts, however, it may be useful to have third

representation (and low probability of success) would not receive representation. If this is seen as an undesirable result, then the government must have set the contingency fees at too low a level. *See supra* note 76.

81. *See* Macey & Miller, *The Plaintiffs' Attorney's Role*, *supra* note 9, at 6-7 (advocating an auction approach to class action and derivative litigation).

82. *See id.* at 6.

83. *See id.* at 107 (explaining that after deducting an amount for expenses and compensating the initial filing attorneys, the residual amount would be distributed to the corporate treasury in the event of derivative litigation, or to class members if the case is a class action). Macey and Miller do not appear to consider that auction revenues alternatively could be paid to the government. In such a system, the government after the litigation's conclusion would distribute an amount equivalent to any recovery, less some amount to compensate for legal fees, to the class or the corporation. For example, if the attorney's bid \$100,000 and then won \$150,000, the government would initially pocket the \$100,000 and later pay to the plaintiffs \$150,000 minus some amount sufficient to make it so that the government is not subsidizing the cost of representation. A comparison of these two systems depends on two factors: (1) whether it is preferable for plaintiffs to receive the expected value of the litigation up front or the actual litigation recovery once it is complete; and (2) the feasibility of determining how much in attorneys' fees the government should deduct from fee awards.

84. For discussions of the "race to the courthouse" problem, see James Bohn & Stephen Choi, *Fraud in the New-Issues Market: Empirical Evidence on Securities Class Actions*, 144 U. PA. L. REV. 903, 916-17 (1996), which notes the incentive of a plaintiff's attorney to be the first to file a class action suit to obtain a greater chance of becoming lead counsel, a position that often receives a large portion of the legal fees; and Richard M. Phillips & Robyn J. Lipton, *Impact of the Reform Act on Federal Securities Class Actions*, SC88 ALI-ABA 351, 354 (1998), which maintains that whenever stock prices suffer an unexpected drop, potential plaintiffs and their lawyers immediately go to the courthouse to file a complaint to increase the chance of being the controlling party in the litigation.

85. *See* Macey & Miller, *The Plaintiffs' Attorney's Role*, *supra* note 9, at 108 (stating that if the defendant is the highest bidder, the defendant can move for dismissal of the action with prejudice). Defendants would need to be prevented from bidding in a variant of Macey and Miller's proposal, which would allow the attorneys to bid on a right to just a percentage of any recovery. *See id.* at 113-14 (explaining that attorneys would bid for the right to litigate the claim, not the claim itself).

86. *See* Pritchard, *supra* note 3, at 1170-71 (observing that bidders would incorporate the risk of losing and receiving no fees into their bids); *cf.* Macey &

parties bid on the right to select a provider of a service. As long as the high bidder's return depends on whether it picks well, the third party that is most confident of its ability to select the best provider will win the auction. For example, Macey and Miller could alter their proposal by having third parties bid on a right to select the class counsel. After judgment, the high bidder would receive a percentage of the difference between the judgment award and the representation costs. This would be an improvement over the Macey and Miller approach if third parties' evaluations of lawyers' competency are superior to those lawyers' self-evaluations.⁸⁷

Sometimes, an auction might be used purely as a way of finding out how much auction participants believe an asset to be worth.⁸⁸ For example, suppose that Macey and Miller's proposal, for whatever reason, is deemed undesirable. The legal system still might benefit from taking into account the expected recovery when a suit is filed, among other variables, for determining the appropriate legal fee when the litigation ends with a judgment for the plaintiffs.⁸⁹

Miller, *The Plaintiffs' Attorney's Role*, *supra* note 9, at 108-09 (noting that after a winning bidder becomes the owner of a claim, it would have the same incentive to litigate the claim as in traditional litigation).

87. Even if most lawyers accurately assess their abilities, all it takes is one misguided egomaniac to make the auction result suspect. *See infra* Part II.B.3 (describing the "winner's curse" and solutions).

88. *See* Kremer, *supra* note 11, at 1146 (noting that auctions can serve as a means of placing a value on goods).

89. The most popular method for court-established legal fees is the lodestar method, which adjusts a "reasonable" hourly fee by various factors, including the probability that the litigation will fail. *See, e.g.,* *Lindy Bros. Builders v. American Radiator & Standard Sanitary Corp.*, 540 F.2d 102, 114 (3d Cir. 1976) (elaborating on the lodestar concept, which considers the amount of time spent on various projects, the status of individual attorneys, and the reasonable hourly rate for each person for each service performed); Macey & Miller, *The Plaintiffs' Attorney's Role*, *supra* note 9, at 50 (describing the lodestar method of calculating fees as requiring the court to multiply the reasonable number of hours by a reasonable hourly fee and then adjust the amount to account for factors such as risk of nonsuccess in the litigation). Not all jurists have agreed, however, that the hourly fee should be multiplied by the inverse of the probability of success. Judge Wright offered the following approach:

[I]t falls to the District Court to determine whether, measured from the outset of the litigation, the probabilities of success were of sufficient magnitude that providing the attorney with some incentive to take the case is consistent with the congressional design. Once having made this determination, the District Court must exercise its judgment as to how much monetary incentive the rational attorney would require to compensate for the risk of large, uncompensated outlays of time and money.

Laffey v. Northwest Airlines, 746 F.2d 4, 39 n.19 (D.C. Cir. 1984) (Wright, J., dissenting) (noting that although Congress believed civil rights suits should be pursued even when the prospects of success were uncertain, Congress did not intend to encourage suits when the chances of success were extremely remote); *see also* John Leubsdorf, *The Contingency Factor in Attorney Fee Awards*, 90 YALE L.J. 473, 474 (1981) ("[P]rofound difficulties attend the notion that, the less likely a case was to be won,

Currently, courts estimate this *ex post* as best they can.⁹⁰

An alternative would be to have third parties bid on a right to an amount equivalent to a percentage of whatever the plaintiffs recover. The words "equivalent to" signify that payouts to the auction winners need not come out of the plaintiffs' recovery; the government, which has an interest in ensuring appropriate attorneys' fees, could provide the funding and collect the auction revenues.⁹¹ If the court is interested in the expected probability of recovery as well as the expected magnitude of recovery, it could auction off the right to some fixed amount of money, say \$10,000, which the high bidder will receive if and only if the plaintiffs receive some recovery. If the high bid were \$5,000, that would indicate a recovery probability of approximately fifty percent.⁹²

In some situations, the legal system may need to choose between an auction conducted for purely informational purposes and one intended to distribute the right to an entitlement.⁹³ Auction proposals for bankruptcy can come in two forms. The dominant proposal, in terms of discussion if not acceptance, is that when a firm goes bankrupt, it should be auctioned to the highest bidder, with the proceeds going to creditors.⁹⁴ The purchaser, the logic goes, is best situated to determine whether the firm is more valuable sold piecemeal or as a going concern.⁹⁵ A cheaper alternative,⁹⁶ though, is

the larger the fee that the court should award the lawyer who wins it."); *cf.* William J. Lynk, *The Courts and the Plaintiff's Bar: Awarding the Attorney's Fee in Class-Action Litigation*, 23 J. LEGAL STUD. 185, 186-209 (1994) (offering an economic analysis, including graphical and tabular representation, of the courts' practice in choosing between the lodestar approach and the alternative percentage-of-recovery approach).

90. *See, e.g., Lindy Bros.*, 540 F.2d at 113-14 (outlining certain factors relevant to determining the probability of success for the civil suit, including uncertainty of class membership, the outcome in other cases involving the same defendant, and the settling defendants' denials of any violations of antitrust laws); Leubsdorf, *supra* note 89, at 485-88 (discussing the difficulties of retroactively determining a contingency factor to award attorney fees). The point here is not to endorse the lodestar method, but to suggest making it less "demoralizing and cumbersome," *id.* at 488, if it is used.

91. The government already pays to determine attorneys' fees by hiring the judge who makes the assessment of *ex ante* probability of success. Creating a market, of course, could be more expensive, depending largely on the percentage of the recovery auctioned off. If government subsidy of this determination is inappropriate, the plaintiffs, defendants, or plaintiffs' attorneys could be required to bear the cost.

92. In fact, it would indicate a recovery probability of somewhat more than 50%, because bidders would demand some compensation for the risk they are undertaking. *See infra* Part II.B.5 (reviewing the transaction costs of an auction, which includes legal costs and bidders' research expenses).

93. *Compare, e.g., Kremer, supra* note 11, at 1146 (stating that auctions can be a method of eliciting information), *with Hansen & Thomas, supra* note 15, at 164 (describing auctions as means of reallocating assets in bankruptcy proceedings).

94. *See Hansen & Thomas, supra* note 15, at 164.

95. Hansen and Thomas outline the logic:

simply to auction off rights to a percentage of stock in the firm.⁹⁷ The proceeds of this auction can be extrapolated to determine the value of the firm, which can then be used as a variable in customary bankruptcy proceedings.⁹⁸

Kremer's proposal illustrates the potential usefulness of an auction whose primary purpose is informational.⁹⁹ His goal is to provide an objective means of determining how much a patent is worth, so that, with the owner's consent, the government can purchase the patent at

Auctions have a well-deserved reputation as efficient mechanisms for simultaneously transferring ownership of an asset and determining the price at which the transfer will occur. In a bankruptcy proceeding, auctions of the insolvent company could be an efficient method for accomplishing the valuation of assets and the reallocation of control of assets that are at the heart of the current bankruptcy procedures. Rather than the "hypothetical sale" of assets in a Chapter 11 proceeding, an auction would value assets by a real sale.

Id. at 164.

96. Judge Easterbrook has criticized auction proposals on the ground that they are too expensive. *See* Easterbrook, *supra* note 15. *But see* Hansen & Thomas, *supra* note 15, at 159-60 (disputing the conclusion that the costs of auctions are higher than Chapter 11).

97. Roe discusses this possibility briefly and notes:

The intermediate solution we are examining would employ the comparatively efficient capital market for trading securities representing a slice of the enterprise, irrespective of the marketability of the entire firm, to establish a fair market value of the entire firm. Although this market-based approach must stand on its own feet, it can gain some support by analogy to merger decisions, where courts have ruled that market price would determine share value, as long as an active market had no "artificial" influences.

Roe, *supra* note 15, at 573-74 (footnote omitted). On the problem of "'artificial' influences," see *infra* Part II.B.1, which notes manipulability concerns associated with market mechanisms and discusses solutions.

98. As Bebchuk explains, once a bankruptcy court knows the value of the firm, much of its work is done:

It is generally impossible to place an objective and indisputable figure on the value that the reorganized company will have (the "reorganization value"). If such a figure were available, the distribution of tickets in the reorganized company would be easy to determine. Without such a figure, however, it is difficult to decide where, down the rank of creditors and preferred shareholders, it is necessary to stop issuing tickets in the newly reorganized entity.

Bebchuk, *supra* note 15, at 778 (footnote omitted). Of course, if part of a firm is auctioned to determine whether to reorganize or liquidate, the stock value will reflect a weighted average of the value to shareholders of the firm reorganized or liquidated. It thus would be preferable for the court to conduct a cancelable auction, i.e., one in which sales will be consummated if and only if the results of the auction indicate that the reorganization value is greater than the court's estimate of liquidation value. *See infra* notes 102, 155-156 and accompanying text (discussing other proposals in which auctions may be canceled). The court could conduct a similar auction to determine liquidation value, if estimating that also presents empirical difficulties.

99. *See* Kremer, *supra* note 11, at 1146 (stating that the buy-out or auction of a patent is a way of eliciting information about its value).

a price equal to some multiple of its private value.¹⁰⁰ To determine the value of a patent, an auction is held, but only some randomly selected auctions are consummated.¹⁰¹ The rest of the time, the bids are used to determine the value of the patent, and the auctions are in effect cancelled.¹⁰² Thus, the entire purpose of the auction—and the occasional patent sale to bidders—is to determine the value of the patent for the government buy-out that will occur in the remainder of cases if the patent owner agrees.¹⁰³ By placing patents in the public domain, Kremer's proposal seeks to avoid the monopoly distortions associated with intellectual property protections.¹⁰⁴

B. Exchange

Auctions allow for the distribution and valuation of assets at a particular point in time.¹⁰⁵ Exchange allows for the distribution and valuation of assets across time.¹⁰⁶ The stock market is the paradigmatic example of an exchange. Private individuals hold shares in particular corporations, and they may buy and sell these shares.¹⁰⁷ Thus, a stock market exchange provides an easy way to value a company at any point in time: simply multiply the number of shares by the current trading value.¹⁰⁸ This number reflects a market prediction, at that point in time, of future events and how they will affect the company's future profits, discounted to present value.¹⁰⁹

100. *See id.* (stating that the multiple depends on the ratio of the social value of a patent to its private value).

101. *See id.* at 1146-47 (mentioning that a small, randomly chosen proportion of patents would be sold to the highest bidders as a means of encouraging auction participants to reveal their true valuations of the patents).

102. *See id.* (proposing that most patents bought by the government would be placed in the public domain, thus nullifying any auction results).

103. *See id.* (diagramming the auction process as a means of determining the government buy-out price).

104. Thus, his approach is a means of accomplishing a prize system alternative to intellectual property. *See* sources cited *supra* note 69 (discussing the possibility of a "prize system").

105. *See, e.g.,* Hansen & Thomas, *supra* note 15, at 164 (explaining that auctions are known as efficient mechanisms that simultaneously transfer ownership and determine the price of an asset).

106. What I call "exchange," many simply call "market." *E.g.,* Smith, *supra* note 13, at 371 (using the word "market" to describe an exchange mechanism). I use the term "exchange" to differentiate it from other market mechanisms.

107. For useful background on stock markets from an investing perspective, see generally BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET* (7th ed. 1999).

108. Sometimes, analysts do not rely on stock price to estimate value, for example because their purpose is to determine whether the stock is worth buying. *See generally* Samuel C. Thompson, Jr., *A Lawyer's Guide to Modern Valuation Techniques in Mergers and Acquisitions*, 21 J. CORP. L. 457, 460 (1996) (providing a discussion of various methods of valuing a company).

109. For a brief mathematical treatment, see Ian Ayres, *Back to Basics: Regulating How Corporations Speak to the Market*, 77 VA. L. REV. 945, 960 n.64 (1991) (citing R.

Trading in an exchange often follows an auction. Stock is traded, for example, only after it is distributed through an initial public offering.¹¹⁰

The success story for the use of an exchange mechanism in law is emissions trading.¹¹¹ In such a regime, the government initially allocates entitlements to emit a certain amount of pollution, either through an auction or through some other means, such as allowing companies to pollute some percentage of the amount that they polluted in a prior year.¹¹² The holders of the entitlements may then trade them, though often only within certain geographical areas.¹¹³

BREALEY & S. MYERS, PRINCIPLES OF CORPORATE FINANCE 173-99 (3d ed. 1988)).

110. IPOs are not straight auctions, but controlled sales through experts. See generally Randolph P. Beatty & Ivo Welch, *Issuer Expenses and Legal Liability in Initial Public Offerings*, 39 J.L. & ECON. 545, 549 (1996) (discussing how shares are distributed to the general public via a syndicate of securities underwriters).

111. See sources cited *supra* note 16 (discussing emissions trading). Many environmentalists initially opposed to emissions trading have shifted positions because of the substantial pollution reductions achieved. Compare, e.g., Alan S. Blinder, *Needed: Planet Insurance*, N.Y. TIMES, Oct. 22, 1997, at A27 ("By now we have enough experience with emissions trading to predict that it will reduce pollution as a fraction of the cost of regulation."), and John J. Fialka, *EPA Plans Emissions-Trading Program to Reduce Nitrogen-Oxide Pollution*, WALL ST. J., Apr. 30, 1998, at B11 ("Analysts say the sulfur-dioxide trading program has worked well, cutting nationwide emissions by 30%."), with Robert W. Hahn, *Last Gasp for Bush Clean Air Reforms*, WALL ST. J., Nov. 7, 1989, at A30 (noting that almost all environmental groups at the time opposed emissions trading programs). Policymakers have taken advantage of the experience of emissions trading programs to eliminate some problems with early programs, such as fuzzy property rights and high transactions costs that inhibited trading. See, e.g., Edith Brown Weiss, *Environmentally Sustainable Competitiveness: A Comment*, 102 YALE L.J. 2123, 2140-41 (1993).

112. Though the focus here is on exchange, auctions may be both a fairer and an economically more efficient means of distributing pollution entitlements than preservation of the status quo.

[A]uctioning of allowances theoretically promotes efficiency and deters hoarding because polluters will purchase no more allowances than necessary. Grandfathering systems, on the other hand, present efficiency problems because they facilitate trading only through standard sales. Such a system enables polluters to hoard allowances for fear that these allowances will be unavailable in the future.

Tanya L. Forsheit, Comment, *International Emissions Trading: Equity Issues in the Search for Market-Based Solutions to Global Environmental Degradation*, 18 U. PA. J. INT'L ECON. L. 689, 721 (1997).

113. See *Emissions Trading Policy*, 51 Fed. Reg. 43,814, 43,844-45 (1986) (providing some of the geographical restrictions). Geographical restrictions may decrease liquidity and thus the effectiveness of an emissions trading program:

[U]nder the CAA, emissions trades were not allowed if they resulted in local ambient air concentrations exceeding the standards. Consequently, trading was limited to sources within the same air region, and proposals for local trades often had to be accompanied by complex and expensive modeling data that showed that ambient air standards would not be exceeded. The concern over ambient air quality placed substantial administrative burdens and transaction costs on emissions trading and seriously reduced the overall trading level and potential cost savings of the program.

Gary E. Marchant, *Freezing Carbon Dioxide Emissions: An Offset Policy for Slowing Global*

As a result of exchange, pollution rights will tend to flow to those for whom pollution abatement is most expensive.¹¹⁴ Thus, the exchange mechanism allows for achievement of a specified level of pollution reduction at lowest possible cost.¹¹⁵ At the same time, trading prices indicate the marginal cost of additional pollution reduction.¹¹⁶ This pricing information allows companies to change their plans as market prices for pollution, production goals, and economic conditions evolve.¹¹⁷ This dynamic adjustment could not be achieved if the initial pollution entitlements were fixed, for example after a one-shot

Warming, 22 ENVTL. L. 623, 636 (1992) (footnotes omitted). Some pollutants' effects are dominantly global and thus geographical restrictions are inappropriate. *See id.* (stating that carbon dioxide's effects are global and therefore the focus of a carbon dioxide emissions trading program will be on national pollution levels). One reason for geographical limitations is that pollution may cause more damage in some areas than others, or because concentrated pollution may do more damage than dispersed pollution. *See, e.g.*, David M. Driesen, *Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Convention*, 26 B.C. ENVTL. AFF. L. REV. 1, 71 (1998) ("Most trading proponents recognize the need to avoid trading that creates 'hotspots,' concentrations of pollutants with locally significant effects. For example, one cannot ethically justify allowing local pollution to cause cancer in Baton Rouge, Louisiana, by claiming a credit for a reduction in New Jersey."); Note, *A Remedy for the Victims of Pollution Permit Markets*, 92 YALE L.J. 1022 (1983) (suggesting that victims of hotspots receive compensation). Governments may not wish to accept increased pollution, even if the solution is globally efficient. *See, e.g.*, John H. Cushman, Jr., *Talks on Global Warming Treaty Resuming Today*, N.Y. TIMES, Nov. 2, 1998, at A6 (noting that some nations would support an international emissions trading program only if there were caps on individual nations' ability to meet their obligations by buying pollution rights from other countries).

114. "Because costs for controlling emissions vary among plants, some sources will install pollution control devices, reduce their emissions, and sell their excess emissions use rights. Others can purchase these credits if the cost of implementing pollution control devices exceeds that of the credits." James T.B. Tripp & Daniel J. Dudek, *Institutional Guidelines for Designing Successful Transferable Rights Programs*, 6 YALE J. ON REG. 369, 374 (1989).

115. The following hypothetical provides a useful explanation:

If it were more expensive for polluter *A* to eliminate ten tons of emissions than for polluter *B* to eliminate ten tons over and above its required reductions, then it would be less expensive for all parties in the aggregate if the government were to permit *A* to meet its reduction requirements by paying *B* to reduce its emissions of the regulated pollutant by an additional 10 tons. The same reduction in emissions would be achieved (twenty tons), but in the most cost-effective manner and at a cost savings to both *A* and *B*.

Brennan Van Dyke, Note, *Emissions Trading to Reduce Acid Deposition*, 100 YALE L.J. 2707, 2708-09 (1991).

116.

Sources with abatement costs that are higher than the price of an allowance have an incentive to purchase allowances, whereas firms with relatively low abatement costs will tend to decrease their emissions and sell "excess" allowances. Trading emissions allowances among sources enables marginal abatement costs for different sources to be equalized

Fredric C. Menz, *Transborder Emissions Trading Between Canada and the United States*, 35 NAT. RESOURCES J. 803, 811 (1995).

117. *See id.* at 810 (reasoning that emissions trading markets provide a continuing incentive to discover new methods of pollution control).

auction.

Whenever the purpose of an auction is to determine valuation of a particular divisible asset, permitting exchange of that asset allows for continued valuation information over a period of time. Indeed, an exchange mechanism can be used to produce dynamic predictions about any number whose identity will become clear in the future.¹¹⁸ For example, the Iowa Electronic Futures Market allows trading in political futures, such as securities whose redemption value depends on the percentage of votes that a particular candidate receives in a given election.¹¹⁹ Traders in such a market have an incentive to take into account all available sources of information, from polling data to information about how much money particular candidates still have left to spend on advertising.¹²⁰ This market thus may provide a more accurate prediction than polls alone about the number of votes a candidate is likely to receive. The same mechanism can be used to determine the probability of victory, if a share in a particular candidate will pay off a preset amount of money if and only if the candidate wins the election.¹²¹ Such markets might be used purely for informational purposes, or more radically, as a way of distributing public campaign financing to the most promising candidates.¹²²

118. See University of Iowa, Henry B. Tippie College of Business, *Iowa Electronics Markets* (last modified Oct. 25, 1999) <<http://www.biz.uiowa.edu/iem/>> (describing the futures markets in which contract payoffs depend upon political and economic events).

119. See *id.*

120. See, e.g., Greg Burns, *As the U. of Iowa Goes, So Goes the Nation?: The Election Futures Market May Be More Accurate Than Polls*, BUS. WK., Nov. 11, 1996, at 118 (identifying turnout and inaccurate statements to pollsters as two factors for which the market may be better able than pollsters to compensate).

121. In the lingo of the Iowa Electronic Markets, this is a "winner takes all" market. E.g., *Iowa Electronic Market 2000 U.S. Senate Election in New York Market* (last modified Oct. 14, 1999) <<http://www.biz.uiowa.edu/iem/markets/nysenate.html>> (providing a brief overview of the trading information for the 2000 New York Senate Market).

122. Under existing federal law, the amount of money in matching funds presidential candidates are eligible to receive is directly proportional to the number of votes the party's candidate received in the preceding presidential election. See I.R.C. § 9004(a)(2)(A) (1994); see also *id.* §§ 9031-9042 (providing rules for funding of presidential primaries). Though the performance of a minor party's past candidate is a proxy for the current candidate's chance of success, it is a very rough proxy, just as Michael Dukakis's performance in 1988 would have been a poor predictor of Bill Clinton's in 1992. The candidate of a minor or new party thus may receive only a small amount of federal support (or, in the case of a new party, no pre-election financial support) even if that candidate is thought generally to have a good chance of electoral success. See *id.* § 9002(7)-(8). An alternative to the existing regime would be to make the amount of funds a candidate could receive proportional to a market's assessment of that candidate's probability of victory. Such a system might even be designed to provide greater funds to minor party candidates who have been able to establish some upward momentum. Even assuming that the market would not be subject to manipulation, see *infra* Part II.B.1, I take no position

Decisions about allocation of legal resources often depend on predictions about the future. Market mechanisms offer one means of making such predictions. For example, decisions about which federal courts need more judges depend in part on present caseloads, but these decisions ideally might take into account sound predictions of future caseloads.¹²³ A market easily could be used to estimate what the caseloads will be at some point in the future. For example, the government could auction off 100 securities, each of which would pay one dollar per case filed in the Southern District of New York in 2005. If these securities were traded, the price at any time, when adjusted for risk and interest rates, would offer a prediction of the caseload in that year. A similar mechanism might be used to predict future crime rates in different areas,¹²⁴ the economic growth rates that particular regions of the country are likely to experience,¹²⁵ or even the number of pages of regulations in the *Federal Register*.¹²⁶ In each of these cases, a market would be an alternative to hiring agency personnel to make the best forecast they can. The more useful such information is (and some of it may well be useless), the greater the payoffs the government sponsoring such markets could promise.

In mass tort class actions, prediction is essential to legal

on whether a market-based system of distributing funds would be advisable, let alone politically feasible.

123. For a description of how the Judicial Conference decides whether to recommend new judgeships, see REPORT OF THE JUDICIAL CONFERENCE COMMITTEE ON LONG RANGE PLANNING app. C (Sept. 20, 1993). Professor Tobias suggests that the Judicial Conference take predictions of prolonged vacancies into account when assigning new judgeships. See Carl Tobias, *Federal Judicial Selection in a Time of Divided Government*, 47 EMORY L.J. 527, 569-70 (1998). He notes, however, that "[p]remising requests for judgeships on such a variable consideration may also erode the credibility of the judiciary's current methodology for ascertaining needed judicial resources." *Id.* at 569. If there were a politically insulated mechanism for estimating future caseloads, or the number of cases that an average judge would dispose of in a year, this might be less of a concern.

124. The Federal Bureau of Investigation, for example, routinely publishes crime rates for past years. See, e.g., FBI, *Uniform Crime Reports* (last visited Oct. 25, 1999) <<http://www.fbi.gov/ucr.htm>>. It also could publish consensus estimates of future crime rates. Although its experts could estimate future rates themselves, such in-house predictions are subject to the critique that they are designed to cast FBI predictions in a favorable light.

125. The Survey of Professional Forecasters currently publishes macroeconomic projections by taking the mean and median predictions of different forecasters. See Federal Reserve Bank of Philadelphia, *Survey of Prof'l Forecasters* (last visited Oct. 25, 1999) <<http://www.phil.frb.org/page.asp?page=prof forecasting>>. A market would determine how much weight should be given to different forecasts, for example considering the reputation of different forecasters or the methodologies those forecasters are using, thus producing a single consensus forecast.

126. This number is sometimes used as a proxy for the size of the government and the amount of law. See, e.g., Robert C. Clark, *Judicial Decisionmaking and the Growth of the Law*, 17 HARV. J.L. & PUB. POL'Y 1, 2 (1994).

decisionmaking. When there is a limited fund available to pay claims attributable to a mass tort, courts must determine how much of the fund to leave for future claimants.¹²⁷ These claimants have not yet sued, not yet been injured, or in some cases not yet been born. This, along with the incentives of litigants on both sides to underestimate the number of future claimants, makes it difficult to determine the total damages that future claimants will be able to prove.¹²⁸

Enter Smith's market proposal.¹²⁹ Smith urges that a limited fund should be placed aside and invested in government bonds, with payoff on a specified date by which all claims that conceivably might arise will have been processed.¹³⁰ For each dollar in damages declared by a court, a plaintiff would receive a share in the ultimate payoff.¹³¹ Plaintiffs immediately could sell their shares, which would be traded on an exchange.¹³² The trading price would depend on

127. The Supreme Court has rejected settlements that inadequately compensate future claimants. See *Ortiz v. Fibreboard Corp.*, 119 S. Ct. 2295, 2318-19 (1999) (rejecting asbestos settlement proposal because the class was insufficiently inclusive and the distributions to class members were unfair); *Amchem Prod., Inc. v. Windsor*, 521 U.S. 591, 625-28 (1997) (finding that the requirements for certifying a class action for current and future asbestos-related claims were not met where the proposed class action sought to achieve global settlement of all such current and future claims). See generally Coffee, *supra* note 17, at 1422-42; Frederick Tung, *Taking Future Claims Seriously: Future Claims and Successor Liability in Bankruptcy*, 49 CASE W. RES. L. REV. 435, 442 (1999) (discussing the problem of claims in connection with bankruptcy proceedings); Jeremy Gaston, Note, *Standing on Its Head: The Problem of Future Claimants in Mass Tort Class Actions*, 77 TEX. L. REV. 215, 215-17 (1998) (urging that standing requirements for mass tort future claimants be vigorously enforced); Daniel M. Weddle, Note, *Settlement Class Actions and "Mere-Exposure" Future Claimants: Problems in Mass Toxic Tort Liability*, 47 DRAKE L. REV. 113, 114 (1998) (discussing problems involving future claimants and proposed solutions).

128. For an excellent proposal of a methodology for determining how much of a limited fund should be left to future claimants, see Alex Raskolnikov, Note, *Is There a Future for Future Claimants After Amchem Products, Inc. v. Windsor?*, 107 YALE L.J. 2545 (1998).

129. See Smith, *supra* note 13 (suggesting the use of a market mechanism for determining the amount of a limited fund that should be saved for future mass tort claimants).

130. See *id.* at 396. Smith suggests:

Under the capital markets approach, the court would structure the trust as a liquidating trust with a definite term at least as long as, and preferably somewhat longer than, the best available estimate of the time period over which all or virtually all of the injuries caused by the tort would fully manifest themselves.

Id.

131. See *id.* at 397.

The trust would distribute trust shares to tort claimants so that the face amount of the shares it issued to a given claimant equaled the liquidated value of that person's claim. For example, the trust would issue 50,000 shares in the trust fund to a tort claimant with a proven claim for \$50,000.

Id.

132. See *id.* at 398 ("The heart of the capital markets approach is its making the mass tort shares issued by the trust tradable on capital markets.").

third parties' predictions about the number of future claimants and the size of their damages.¹³³ As in any exchange, the value of a share may change as new information develops about the damages future claimants are likely to receive.¹³⁴ Two plaintiffs who are adjudicated to have the same damages but who sell their shares on different dates thus may receive different dollar recoveries.¹³⁵ This, however, is inevitable in a legal system that must allow payment to plaintiffs before all evidence is in. Because the size of the pro rata share of the remaining limited fund is a best guess based on information current at the time the plaintiff sells her shares,¹³⁶ the legal system can hope to achieve no more.

An exchange could be used to predict not only information relevant to a legal decision that must be made in the present, but also the result of a legal decision that will be rendered in the future.¹³⁷ Consider, for instance, the auctions designed to assess the ex ante expected recovery and probability of recovery in class action litigation proposed earlier.¹³⁸ Perhaps attorneys' fees should depend not just on the initial expected recovery, but also on the expected recovery at different points in time.¹³⁹ For example, if the bulk of work in

133. *See id.* (furnishing a demonstration of the pricing of trust shares).

134. *See id.* at 401-03 (arguing that new information would be incorporated much faster than in an alternative regime not relying on an exchange mechanism).

135. This is because new information released after the court's valuation of damages in a particular case will change market participants' valuation of the shares. *See id.* at 403 (discussing how market participants would adjust their valuations on the basis of new information).

136. This will be the case because the amount at which shares will trade depends on how many other shares are expected to be issued. For example, if the trust ultimately will pay out \$1,000,000, but market participants expect shares with a total face value of \$2,000,000 to be issued, then shares will be valued at half of face value. Should the expectation of the total shares that will be issued rise to \$3,000,000, then shares will be traded at one-third of face value. At both times, the tort plaintiff who cashes in receives a pro rata share based on present information. *Cf. id.* at 405 (explaining that "efforts by liquidators to favor present claimants by inflating estimates of their damages will tend to be self-defeating" because "the market will expect future liquidations to be inflated as well").

137. *Cf. supra* notes 60-80 and accompanying text (arguing that auctions can be used to predict the outcome of litigation).

138. *See supra* notes 73-98 and accompanying text (arguing that the legal system might benefit from a mechanism to estimate the expected recovery of a suit, at the time of filing, "for determining the appropriate legal fee when the litigation ends with a judgment for the plaintiffs").

139. *See* Peter H. Huang, *A New Options Theory for Risk Multipliers of Attorneys' Fees in Federal Civil Rights Litigation*, 73 N.Y.U. L. REV. 1943 (1998). Huang explains:

[I]t is difficult to determine whether a civil rights lawsuit is or should be considered meritorious by only considering the initial probability of the plaintiff prevailing at trial. In fact, many factors influence that initial probability, and that probability changes in response to discovery as the lawsuit proceeds. . . . An options approach to litigation recognizes that a lawsuit consists of a sequence of options to continue with the case instead of

tobacco litigation occurred after it became clear that there was a reasonable probability of success in such litigation, then basing attorneys' fees only on the initial expected recovery may be supercompensatory.¹⁴⁰ Allowing exchange of shares in a right to an amount equivalent to some fraction of the judgment could allow a later judicial decisionmaker to tailor fees based on the probability of success at different time periods.

Just as it is possible to trade a right to an amount equivalent to a percentage of the judgment in a pending case, so too could a market allow the exchange of entire legal claims. Choharis's proposal is to allow tort victims to sell claims that they may have.¹⁴¹ Similar proposals could be made for other areas of law.¹⁴² For example, a slip-and-fall plaintiff could sell the right to sue the merchant to a third-party lawyer-investor. As with Smith's proposal, this system allows a plaintiff to gain a quick recovery without waiting for all judicial processes to conclude.¹⁴³ A plaintiff also might sell rights to a portion of any recovery that the plaintiff receives; by retaining rights to some portion of the claims, the plaintiff assures buyers of the purchased portion of the claim that the seller will be an active and willing participant in the lawsuit.¹⁴⁴ The price at which such shares

a once-and-for-all irreversible commitment.

Id. at 1946-47. Although Huang focuses specifically on civil rights litigation, his theory may be generalized to any litigation in which the court ultimately must calculate reasonable attorneys' fees.

140. *Cf.* Ann Davis, *Tobacco-Industry Largess Puts Plaintiffs' Lawyers in Fat City*, WALL ST. J., Oct. 8, 1998, at B1 (discussing the over half-billion dollars in fees attorneys might receive from tobacco litigation); Bob Van Voris, *That \$10 Billion Fee: The New Tobacco Deal Will Generate the Largest Fee Ever—And It May Grow*, NAT'L L.J., Nov. 30, 1998, at A1 (commenting on the supercompensatory attorneys' fees expected from the legal work furnished in the tobacco suits). Responses to the large attorneys' fees in tobacco litigation have been crude, including, for example, fee caps for litigation initiated after a particular date. *See* S. 1570, 105th Cong. § 3(a) (1998) (proposing a cap of \$125 per hour for fees on tobacco suits filed after June 20, 1997); *see also* H.R. 3907, 105th Cong. (1998) (proposing a 95% income tax on attorneys' fees from tobacco settlements).

141. *See* Choharis, *supra* note 12 (suggesting that the government allow trading of tort claims).

142. *See, e.g.*, Luthy, *supra* note 17 (proposing a market in unmaturing fraud claims).

143. Choharis notes:

In contrast to the present tort regime in which the process of discovery, settlement negotiations, and trial often takes years, such a sale will provide an accident victim with an immediate payment for her injuries. In the case of severe injury, where medical and other expenses may exceed a victim's insurance coverage, a quick payment could spare the victim and her family considerable additional hardships beyond the immediate ones brought about by the injury.

Choharis, *supra* note 12, at 480.

144. *See id.* (emphasizing that "a potential buyer must be assured that the tort claimant is reliable and will assist, if necessary, in the vigorous prosecution of a claim

trade in the secondary market provides an indication of the plaintiff's expected recovery at trial and thus may dampen parties' abilities to puff in pretrial settlement bargaining.¹⁴⁵

If such a market permitted insider trading, anyone with private information relevant to a claim could trade on that information.¹⁴⁶ Though insider trading generally is condemned in conventional securities markets,¹⁴⁷ it might be useful in this type of market to encourage the release of information.¹⁴⁸ This observation underlies my previous proposal for a market in portions of any recovery that administrative agencies might obtain against a corporation for a particular type of regulatory violation.¹⁴⁹ Such a market could serve as an alternative to whistleblower suits.¹⁵⁰ For example, one security might be worth a portion of any judgment that the Environmental Protection Agency ("EPA") obtains against Exxon for any illegal

she no longer owns").

145. A defendant could achieve a settlement simply by purchasing the claim on the secondary market. *See id.* at 469. For a discussion of strategic bargaining in settlement, see Robert H. Gertner, *Asymmetric Information, Uncertainty, and Selection Bias in Litigation*, 1993 U. CHI. L. SCH. ROUNDTABLE 75, 84-87.

146. Lawyers representing clients might still be prohibited from trading on those cases without their clients' consent. *See, e.g.*, MODEL RULES OF PROFESSIONAL CONDUCT Rule 1.6(a) (1999) (mandating confidentiality of information); MODEL CODE OF PROFESSIONAL RESPONSIBILITY DR 4-101 (1983) (same). *But cf.* Stephen M. Bainbridge, *Insider Trading Under the Restatement of the Law Governing Lawyers*, 19 J. CORP. L. 1, 3 (1993) (arguing that Restatement drafters "erred significantly" in revising the Restatement by permitting insider trading by lawyers).

147. For the classic argument that insider trading should be legal because it promotes market efficiency, see HENRY G. MANNE, *INSIDER TRADING AND THE STOCK MARKET* 99-103 (1966). *See generally* FRANK H. EASTERBROOK & DANIEL R. FISCHEL, *THE ECONOMIC STRUCTURE OF CORPORATE LAW* 253-75 (1991) (assessing whether insiders should be permitted to trade on insider information); Stephen Bainbridge, *The Insider Trading Prohibition: A Legal and Economic Enigma*, 38 U. FLA. L. REV. 35 (1986) (examining arguments favoring and opposing deregulation of insider trading).

148. I do not mean to imply that such an exchange necessarily requires abandonment of insider trading law, which generally prohibits profiting on "material, nonpublic information." *E.g.*, *Dirks v. SEC*, 463 U.S. 646, 660 (1983) (extending prohibition against insider trading based on material, nonpublic information to tippees). The exchange also could function based solely on traders' evaluating publicly released information. Allowing insider trading in this exotic securities market, however, may be a useful way of encouraging employees to reveal information that their employers might prefer to hide.

149. *See* Abramowicz, *supra* note 14, at 207-28 (suggesting that the "supplemental administrative market" may be a substitute for *qui tam* litigation because it furnishes the government with "private information relevant to assessing individual corporations' liabilities").

150. *See generally* MYRON PERETZ GLAZER & PENINA MIDGAL GLAZER, *THE WHISTLEBLOWERS: EXPOSING CORRUPTION IN GOVERNMENT AND INDUSTRY* 4 (1989) (defining whistleblowers as "ethical resisters" or those "employees who publicly disclose unethical or illegal practices in the workplace"); Elletta Sangrey Callahan & Terry Morehead Dworkin, *Do Good and Get Rich: Financial Incentives for Whistleblowing and the False Claims Act*, 37 VILL. L. REV. 273 (1992) (analyzing whistleblowing).

pollution it produces in 2000.¹⁵¹ Suppose an Exxon employee knows the company has surreptitiously dumped pollutants. Instead of suing on behalf of the government, as in a *qui tam* suit,¹⁵² the employee would simply buy shares sold on the exchange, release her information publicly, and sell the shares at a higher price.¹⁵³ This exchange not only encourages release of information, but also provides a price indication of how strong market participants believe the case against a corporation to be at any time.¹⁵⁴

In each of the cases so far, the exchange mechanism predicts some number that in fact will be determined in the future. That number might be the percentage of votes of a political candidate or the total recovery a plaintiff will receive in a particular case, whether from settlement or from trial. These numbers will all be observable at some point in the future, and the knowledge that these numbers ultimately will determine the securities' value disciplines traders' pricing. An exchange mechanism also might be used to predict what the result of some numeric assessment procedure would be, even though the procedure in fact will be performed only some percentage of the time.

This may be accomplished in two ways. First, transactions in the exchange could be cancelable, just as, in Kremer's proposal, auction purchases of patents are canceled some percentage of the time.¹⁵⁵ In

151. See Abramowicz, *supra* note 14, at 208.

152. A *qui tam* suit is

an action brought by an informer, under a statute which establishes a penalty for the commission or omission of a certain act, and provides that the same shall be recoverable in a civil action, part of the penalty to go to any person who will bring such action and the remainder to the state or some other institution.

BLACK'S LAW DICTIONARY 1251 (6th ed. 1990). It is called a "*qui tam* action" because the plaintiff states that he sues for himself as well as for the state. See *id.* See, e.g., 31 U.S.C. § 3730 (1994) (permitting private individuals to bring a civil action in the name of the United States and to share in the recovery of penalties assessed against persons who knowingly defraud the government).

153. See Abramowicz, *supra* note 14, at 209-10. The release of the information would alert the EPA to the regulatory violation and thus increase the odds of a successful prosecution. If the government had insufficient resources to prosecute all claims, it could employ the market and auction off the right to bring *qui tam* actions on its behalf, thus combining the informational benefits of the market mechanism with the private prosecution function of *qui tam* suits. See *id.* at 209.

154. I have explained this as follows:

The value at which a security trades is a function of the ultimate amount that market participants expect a corporation to pay. . . . For example, if traders disbelieved a company's claims that the release of a chemical was exempt from a tax, the securities corresponding to that company's liability for emission of that chemical would be relatively high in value.

Id.

155. See *supra* note 99 and accompanying text (noting that both cancelled and consummated auctions would furnish objective data for determining the value of the

the exchange context, all trading money invested would be refunded if the numeric assessment procedure were not performed. For example, the administrative agency claims exchange might be canceled if the administrative agency chose not to bring a suit. The security prices then would reflect only the amount the administrative agency could expect to receive at trial and would not be discounted by the probability the agency in fact chooses to pursue the claim.¹⁵⁶ Second, if the numeric assessment procedure is not performed, the security could be redeemed at zero. As long as the probability that this will occur is clear, security prices can still be used to obtain a prediction of what the result of the numeric assessment procedure will be.¹⁵⁷

Either of these approaches could be used as an alternative to traditional statistical sampling techniques for estimating some numbers based on others.¹⁵⁸ For example, the Census Bureau recently proposed using statistical sampling to refine census population predictions.¹⁵⁹ Households in approximately 25,000 blocks nationwide would be reexamined after an initial count to determine the degree of undercount, and the total population calculated for each state ultimately would depend on the degree of undercount found.¹⁶⁰ Demographic variables, such as the racial composition of residents in a census tract, would likely turn out to be a strong indicator of the degree of undercount in particular neighborhoods.¹⁶¹ Aside from political,¹⁶² statutory,¹⁶³ and

patent).

156. See Abramowicz, *supra* note 14, at 223 (noting that in the absence of such a cancellation mechanism, prices would depend in part on how the administrative agency responds to the demand for prosecution).

157. Because of the effect of risk on security prices, this prediction cannot be obtained precisely by simply multiplying the security price by the inverse of the probability that the procedure will be performed. See *infra* Part II.B.5 (discussing how transaction costs can affect security prices).

158. See generally WILLIAM R. ARNEY, UNDERSTANDING STATISTICS IN THE SOCIAL SCIENCES 171 (1990).

159. See BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, CENSUS 2000 OPERATIONAL PLAN (1998); NATIONAL RESEARCH COUNCIL, PREPARING FOR THE 2000 CENSUS: INTERIM REPORT II (A. White & K. Rust eds., 1997). In 1991, the Census Bureau had decided not to make statistical adjustments to the 1990 Census. See Decision of the Secretary of Commerce on Whether a Statistical Adjustment of the 1990 Census of Population and Housing Should Be Made for Coverage Deficiencies Resulting in an Overcount or Undercount of the Population, 56 Fed. Reg. 33,582 (1991) (concluding that evidence in favor of a statistical adjustment of the 1990 census was inconclusive and not persuasive enough to abandon a 200-year tradition of actually counting every person).

160. See BUREAU OF THE CENSUS, *supra* note 159, at 30.

161. See *Wisconsin v. City of N.Y.*, 517 U.S. 1, 7-8 (1996) ("Since at least 1940, the Census Bureau has thought that the undercount affects some racial and ethnic minority groups to a greater extent than it does whites.").

constitutional¹⁶⁴ concerns, one problem with such a procedure might be the potential for political manipulation.¹⁶⁵ Statistical methodologies are contestable, and some superficially methodological choices might be masks for political preference.¹⁶⁶

A market approach to the census would begin just like a statistical census, with an initial count of all census tracts.¹⁶⁷ After information from this count is released, the Census Bureau would auction off securities corresponding to each tract, and these securities could be traded on an exchange. After some period of time in which this information can be evaluated and traded on, a fraction of tracts, such as ten percent, would be selected at random for more intense scrutiny.¹⁶⁸ After such a district is reexamined, its security would be

162. See, e.g., Steven A. Holmes, *Tentative Pact Will Allow Census to Test the Sampling Method*, N.Y. TIMES, Nov. 1, 1997, at A2 (noting Republicans' concerns that allowing statistical sampling would lead to reapportionment that would hurt them politically); see also Benjamin J. Razi, Comment, *Census Politics Revisited: What to Do When the Government Can't Count*, 48 AM. U. L. REV. 1101, 1137 (1999) (arguing that the undercount of racial minorities has significant implications for our democracy).

163. The Supreme Court voided the Census Bureau's plan on statutory grounds. See *Department of Commerce v. United States House of Representatives*, 525 U.S. 316 (1999) (finding the plan inconsistent with the Census Act, 13 U.S.C. § 195 (1994)).

164. See generally Michael V. McKay, Note, *Constitutional Implications of a Population Undercount: Making Sense of the Census Clause*, 69 GEO. L.J. 1427, 1450-57 (1981) (arguing that the Clause merely requires the most accurate count possible).

165. Aside from constitutional arguments, this was the most important argument levied against statistical sampling for census purposes. See, e.g., 143 CONG. REC. E1505, E1505 (daily ed. July 24, 1997) (statement of Rep. Gingrich) ("[S]tatistical sampling techniques are open to partisan political manipulation of whichever administration is in charge of the Commerce Department at that time."); 143 CONG. REC. H8216, H8229 (daily ed. Sept. 30, 1997) (statement of Rep. Miller, a former statistics professor). Representative Miller stated that:

Statistics can be manipulated in a variety of ways that can be legitimately defended. I do not trust statistics. I teach my students to be suspicious of statistics, to be cautious of the use of statistics. I used to make the statement, tell me the point you want me to prove and I will prove it with statistics, because it can be done.

Id.

166. Even some proponents of statistical sampling for the census have recognized the possibility of political manipulation. See, e.g., *National Head Count*, COMM. APPEAL, July 19, 1997, at A6 ("Statistical sampling can be prone to political manipulation, and certainly the stakes are high enough to make it worthwhile for someone to try. Better their efforts be directed to ensure that the statistical sampling is subject to stern, independent, outside scientific scrutiny and audit.").

167. The similarities end there. See *Glavin v. Clinton*, 19 F. Supp. 2d 543, 546 (E.D. Va. 1998), *aff'd sub nom. Department of Commerce v. United States House of Representatives*, 525 U.S. 316 (1999) (explaining that in a statistical census households initially not counted would be selected and information received from neighbors or computer-generated imputations, based on the assumption that these households have characteristics like the other residences in the area, would be used to complete the database).

168. To ensure that the final census numbers take advantage of any new general information obtained from this more intense sampling, the announcement of tracts selected could proceed gradually. Traders would update their models to take the

redeemed based on the number of people found in the more intensive scrutiny of that district, one cent per person. When a district is not selected, the initial auction and subsequent trading would be canceled (or, alternatively, the securities could be redeemed at zero). The population of districts not selected would be determined for census purposes based on the market price immediately before the lottery. Because these predictions will reflect expectations of the final, more intensive scrutiny, they will impound demographic variations expected to lead to differential rates of undercounting. Traders in such a market almost certainly would use statistical methods, but the market approach would spare the government the task of making particular methodological decisions.

C. *Self-Assessment*

To the familiar market mechanisms I have described, I will add one not ordinarily thought of as a market mechanism at all: self-assessment.¹⁶⁹ Simply defined, self-assessment is a procedure that requires someone to announce some number, typically a dollar figure, with some legal consequences attaching to the announcement.¹⁷⁰ I classify self-assessment as a market mechanism because, like auction and exchange, it allows for decentralized valuation determinations that can be used as the basis of legal decisions.¹⁷¹ The legal consequences are designed to ensure that the valuer has an incentive to be honest, or at least not too dishonest.¹⁷²

information into account for the remaining tracts. *See supra* note 134 and accompanying text (discussing how information developments would affect security prices).

169. For a short but useful comment on self-assessment, see Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1108 n.38 (1972).

170. This definition differs from the dictionary definition of "self-assessment," which does not require that there be some consequence to the assessment. *See* OXFORD ENGLISH DICTIONARY 914 (2d compact ed. 1991) (defining self-assessment as "assessment or evaluation of oneself, one's actions or attitudes by oneself, an instance of this").

171. A useful example of the decentralized power of self-assessment mechanisms can be found in one of the earliest—and to this day still among the most innovative—proposals for a self-assessment regime, known as "demand-revealing preferences." *See* T. Nicolaus Tideman & Gordon Tullock, *A New and Superior Process for Making Social Choices*, 84 J. POL. ECON. 1145 (1976). The idea is to induce taxpayers to reveal how much they would value public goods, with the proviso that their valuations might affect their tax liability. *See id.* at 1145-46; *see also* Saul Levmore, *Self-Assessed Valuation Systems for Tort and Other Law*, 68 VA. L. REV. 771, 778-79 (1982).

172. *See id.* at 1148 (developing a rule in which giving a dishonest response would never be advantageous and would carry with it the risk that one might be worse off than if one had told the truth).

The most obvious example is the civil tax collection apparatus.¹⁷³ A taxpayer self-assesses the amount of liability.¹⁷⁴ Two legal consequences emerge. First, the taxpayer must pay the amount he announces. Second, if he states too low a number, this might invite the scrutiny of the tax authorities, who may then subject him to fines.¹⁷⁵

With any self-assessment mechanism, after the valuation announcement is made, some other party makes a choice based on that announcement. In the tax example, the government has the choice of whether to pursue the taxpayer. A self-assessment mechanism also could assign the choice to some non-governmental party. Consider the classic Coasean problem of the farmer and the rancher.¹⁷⁶ The rancher's cattle destroys some of the neighboring farmer's crops. The question is always to whom the law will assign an entitlement and whether this entitlement will be in the form of a property rule or a liability rule.¹⁷⁷ To make this a scenario involving asymmetric information, suppose that the rancher knows both the benefits he receives from having roaming cattle and the costs that these cattle impose upon the farmer, but the farmer knows only his own damages.¹⁷⁸ This might be because the value of destroyed crops

173. See, e.g., Edward Yorio, *Federal Income Tax Rulemaking: An Economic Approach*, 51 *FORDHAM L. REV.* 1, 47 (1982) (discussing the use of self-assessment in the U.S. tax system). Self-assessment may seem like an inevitable component of a civil tax regime, but it is not. See, e.g., Damien Lockie, *Australia Overhauls Tax System with Self-Assessment Approach*, 3 *J. INT'L TAX.* 180, 183 (1992) (discussing Australia's switch to a self-assessment system).

174. See Yorio, *supra* note 173, at 47 (explaining that in a self-assessment regime, it is the taxpayer who calculates what he owes the government rather than the government calculating what the taxpayer owes).

175. See, e.g., Debra Cohen-Whelan, *Protecting the Hand that Rocks the Cradle: Ensuring the Delivery of Work Related Benefits to Child Care Workers*, 32 *IND. L. REV.* 1187, 1199 (noting that taxpayers risk detection and prosecution if they do not pay their taxes).

176. See R.H. Coase, *The Problem of Social Cost*, 3 *J.L. & ECON.* 1 (1960).

177. There are many discussions of the farmer-rancher hypothetical. See ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* 2 (1991); Jerry Ellig, *The Economics of Regulatory Takings*, 46 *S.C. L. REV.* 595, 605-07 (1995); Donald H. Gjerdingen, *The Coase Theorem and the Psychology of Common-Law Thought*, 56 *S. CAL. L. REV.* 711, 712 (1983); Stewart J. Schwab, *Collective Bargaining and the Coase Theorem*, 72 *CORNELL L. REV.* 245, 286-87 (1987); Stewart E. Sterk, *Neighbors in American Land Law*, 87 *COLUM. L. REV.* 55, 69-88 (1987); Stewart Schwab, *Coase Defends Coase: Why Lawyers Listen and Economists Do Not*, 87 *MICH. L. REV.* 1171, 1173-74 (1989) (book review). Many commentators discuss the problem in new guises. See, e.g., Ian Ayres & J.M. Balkin, *Legal Entitlements as Auctions: Property Rules, Liability Rules, and Beyond*, 106 *YALE L.J.* 703, 717-39 (1996) (using an example of a factory and a laundry).

178. The conventional approach to this situation would be to give the farmer the benefit of a liability rule if bargaining costs are sufficiently great to make a property rule impractical. See Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 *YALE L.J.* 1027, 1058 (1995) (explaining how

is easy to calculate, but the costs of fencing in cattle and providing an alternative source of nourishment are not.

A self-assessment rule might require the rancher to announce some dollar figure, with the proviso that the farmer would then choose (1) to pay that dollar figure for the right to ban the cattle, or (2) to receive that amount from the rancher, who could then graze his cattle as he pleased. The course this game will take is simple enough.¹⁷⁹ If the benefit to the rancher of grazing is less than the cost to the farmer, then the rancher will announce a figure one dollar less than the cost to the farmer.¹⁸⁰ The farmer will then pay the rancher this amount of money, and his right to exclude the cattle subsequently will be protected by a property rule.¹⁸¹ If the benefit to the rancher is greater than the cost to the farmer, then the rancher will announce a figure one dollar greater than the farmer's cost. The farmer will then choose to have the rancher pay this amount, and the rancher will then own the property right.

The self-assessment rule thus does not produce perfectly honest valuations, but whichever course the game takes, the efficient result is achieved. The transaction costs of bargaining under a property rule are avoided,¹⁸² as are the litigation costs imposed by a liability rule when the right holder is entitled to compensation.¹⁸³ This does not

a liability rule can facilitate Coasean trade). An important counterargument, however, is that the rancher should receive the benefit of the liability rule, because this might allow the rancher, who possesses information not available to the other party, credibly to signal his valuation. *See id.* at 1063 (explaining that liability rules may induce information revelation by the non-option holder). A more exotic solution would be to give the farmer the right to force the rancher to graze the cattle and pay for the right to do so. *See* Ian Ayres, *Protecting Property with Puts*, 32 VAL. U. L. REV. 793, 809 (1998).

179. In the language of game theory, this is an "extensive form game" because it involves sequential decisionmaking. *See* DOUGLAS G. BAIRD ET AL., *GAME THEORY AND THE LAW* ch. 2 (1994).

180. *Cf.* Coase, *supra* note 176, at 6-7 (finding that in this case it would be efficient for the farmer to pay the rancher not to graze the cattle).

181. *But cf. id.* at 7 (noting that the farmer would only be willing to pay this sum if it did not reduce his profit for cultivation to the point that he would have to abandon his farm).

182. Property rules tend to increase bargaining costs by inducing strategic bargaining, though they may decrease bargaining costs relative to liability rules by clarifying ownership rights. *See, e.g.,* Carol Rose, *The Shadow of the Cathedral*, 106 YALE L.J. 2175, 2187 n.50 (1997) ("[P]roperty rules can enhance bargaining by overcoming Type I costs (finding parties, clarifying rights), but may at the same time exacerbate Type II costs (strategic bargaining), at least in conditions of bilateral monopoly."). Essentially, I have assumed away the costs of finding parties, and the self-assessment mechanism itself would serve to clarify rights.

183. Litigation costs are incurred when a court ex post must appraise the value of the entitlement. *See, e.g.,* Louis Kapow & Steven Shavell, *Property Rules versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 765 (1996) (explaining that, under a liability rule, unfair takings result should a court erroneously appraise the damages for an entitlement too low). It is possible, however, that litigation costs

necessarily mean that a legislature should adopt a self-assessment system for such rancher-farmer problems. A legislature would need to consider, for example, the distributional consequences of this self-assessment regime, which has the interesting feature of making the party that wins with respect to the cattle lose with respect to the money. Certainly it would be inappropriate in “coming to the nuisance” cases because it might give an undue incentive for people to become ranchers.¹⁸⁴ The example succeeds, however, in illustrating the power of a self-assessment rule to produce information and distribute entitlements with only minimal supervision of legal process. The only law needed is some means of recording the rancher’s valuation announcement and the farmer’s choice, plus what would be required anyway, a means of enforcing whichever property rule results.

Sometimes a self-assessment mechanism can provide a means of inducing third parties to assess objectively some issue of interest to the government. For example, suppose, along with a pair of recent commentators,¹⁸⁵ that the government decided that it wished to allow some group of criminal defendants to go free on bond as long as the probability of the defendants’ flight is less than a specified percentage, such as ten percent.¹⁸⁶ The government could have

paradoxically may increase the relative efficiency of liability rules when the parties can bargain about a liability rule. See Ian Ayres & Eric Talley, *Distinguishing Between Consensual and Nonconsensual Advantages of Liability Rules*, 105 YALE L.J. 233, 249-50 (1995).

184. The most famous case illustrating the “coming to the nuisance” problem is *Spur Industries v. Del E. Webb Development Co.*, 494 P.2d 700, 706-08 (Ariz. 1972), which invoked the “Rule 4” solution of Calabresi & Melamed, *supra* note 169, at about the same time that article was written. For a discussion, see James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440, 444-45 (1995), which explains the change from three to four rules that a court should use to resolve a nuisance suit between individuals where one’s activities pollute another.

185. See, e.g., Ian Ayres & Joel Waldfogel, *A Market Test for Race Discrimination in Bail Setting*, 46 STAN. L. REV. 987, 989 (1994) (proposing that auctioning off bail prices would decrease a judge’s influence in setting bail).

186. In this premise, my proposal and theirs are identical. In other details, however, we diverge. See *infra* notes 247-49 and accompanying text. They explain their proposal as follows:

The auction mechanism would allow bond dealers’ competitive bids to determine a defendant’s bail. The proposed auction mechanism would operate as follows: Imagine that lawmakers want to ensure that defendants are released on bail only if there is no more than a 10 percent chance they will fail to appear. Bond dealers who wished to compete for a chance to write a bond for a particular defendant would enter a bid for the nonrefundable fee, and the lowest bid would win the right to bail the defendant. The crucial feature of this proposed system is that the bond dealer who wins the bid would have to pay 10 times the winning bid if the defendant failed to appear.

Ayres & Waldfogel, *supra* note 185, at 1037. Ayres and Waldfogel ultimately reject

judges estimate the flight risk, or instead attempt to harness the expertise of bail bondsmen by offering the following deal: A defendant, after consulting with bondsmen, may set his own bail, dividing it into three components: (1) the amount the defendant places in escrow with the court, (2) the amount the bondsman places in escrow, and (3) a nonrefundable fee to the bondsman.¹⁸⁷ There are two conditions. First, the amount the bondsman places in escrow must be at least a prespecified minimum, such as \$1000, large enough that a bondsman would care about losing it.¹⁸⁸ Second, and more significantly, the nonrefundable fee could be no greater than ten percent of the amount the bondsman places in escrow.¹⁸⁹ The defendant could not offer any collateral to compensate the bondsman should he flee, and all amounts deposited with the court would be forfeited if the defendant failed to appear and were not captured. The third-party bondsman's self-interest thus induces him to offer bond only if the probability of flight is less than the governmentally specified level.¹⁹⁰

the mechanism, noting the danger of "hidden side-payments to bond dealers in order to induce lower bids," *id.*, as well as the possibility of collusion among bond dealers, *see id.* at 1037-38. My proposal also would be unpalatable unless the prospect of such manipulation could be overcome. *See infra* Part II.B.1 (discussing possible means of preventing market manipulation by participants with ulterior motives).

It may seem peculiar that I am recharacterizing what its originators call an "auction mechanism" as a self-assessment mechanism. *See* Ayres & Waldfoegel, *supra* note 185, at 1037. On careful examination, however, the auction in the Ayres and Waldfoegel proposal accomplishes nothing other than ensuring that the defendant receives the smallest nonrefundable fee possible without negotiating. Indeed, negotiation would be superior to an auction in overcoming the possibility of collusion, since a defendant free to find his own bondsman could look beyond those deciding to participate in a particular auction.

187. *Cf.* Ayres & Waldfoegel, *supra* note 185, at 1037-38 (proposing that bond dealers enter bids for a nonrefundable fee, with the lowest bidder winning the right to bail the defendant).

188. Ayres and Waldfoegel appear to ignore the possibility that a sympathetic bondsman might bid, say, ten cents, thus entering the lowest bid, and willingly suffer the dollar loss. The establishment of a floor overcomes this problem, but begs the question of what the floor should be. This problem, as well as the general problem of manipulation, could also be answered by allowing other bondsmen to challenge the low bidder repeatedly to back up the bet and, in effect, double it. *See infra* notes 289-90 and accompanying text.

189. Assuming risk neutrality for simplicity, a bondsman would be willing to place into escrow \$10,000 in exchange for a nonrefundable fee of \$1000 if the bondsman thought that there was no greater than a ten percent risk of flight, given the amount the defendant personally puts at risk. If initially all bondsmen thought there was greater than a ten percent risk, the defendant might try to lower this risk by putting more into escrow himself.

190. The essential difference between my proposal and Ayres and Waldfoegel's is that by using only a nonrefundable fee, their proposal results in the bond dealer bonding himself, but not the prisoner bonding himself. That is, they note that in their proposal "higher bail amounts [might] deter flight by inducing greater ex ante monitoring and ex post search." Ayres & Waldfoegel, *supra* note 185, at 1038. A

A self-assessed valuation may also harness third-party evaluation and information by giving everyone other than the self-assessor an option based on the self-assessment.¹⁹¹ For example, Saul Levmore has offered a proposal that would require all property owners to announce valuations of their property for tax purposes.¹⁹² These valuations would be alternatives to centralized property assessments, such as those used to determine local property taxes.¹⁹³ A property owner's valuation would give everyone else a call option on the property.¹⁹⁴ That is, anyone else could purchase the property at the announced price.¹⁹⁵ The property owner, therefore, will typically announce her true valuation of the property, i.e., the amount that

refundable fee paid by the defendant, however, gives the defendant a direct incentive to appear in court. Indeed, the observation that both fees play an important role is central to Ayres and Waldfogel's brilliant construction of a market test for discrimination, which notes discrepancies between the premia specific groups pay in bail and the amount they paid in bond. *See id.* at 1013. My proposal, accordingly, allows a defendant who otherwise would be too great a flight risk to use his own funds (or the funds of his family or friends, as long as the bondsmen know where the money was coming from) to lower his perceived risk of flight to the appropriate level. It also encourages defendants who know that they will not flee to place even more funds of their own at risk than would be necessary to secure a bond, in order to reduce the nonrefundable fee.

191. Options also may give rise to market proposals that do not involve self-assessed valuations. For example, Lucian Bebchuk develops a complex proposal for accomplishing bankruptcy reorganization by giving each class of creditors different options to buy stock in the firm if it fails to pay back their debts, with lower classes of creditors required to pay more to exercise these options than those in higher classes. The system is designed so that any creditor will exercise an option only if that creditor believes there is sufficient equity in the firm so that there will be money left for her class after all senior classes are paid back in full. *See* Bebchuk, *supra* note 15. I do not provide a full account of options here, in part because of the scarcity of legal proposals taking advantage of them. *But cf.* Ayres, *supra* note 178, at 809 (illustrating that options are an inherent aspect of liability rules and may be used to construct alternative regimes). As Bebchuk's proposal shows, however, options are a fourth market mechanism that may be a useful component in accomplishing some legal tasks.

192. *See* Saul Levmore, *Self-Assessed Valuation Systems for Tort and Other Law*, 68 VA. L. REV. 771, 773-90 (1982).

193. *See id.* at 772 n.3 (describing how property taxes are calculated). An alternative to individualized assessments of market value is to base tax decisions on the price a property owner initially paid for the property. *See, e.g.*, CAL. CONST. art. XIII A, § 2 (West Supp. 1999). *But see* John A. Miller, *Rationalizing Injustice: The Supreme Court and the Property Tax*, 22 HOFSTRA L. REV. 79, 138-39 (1993) (criticizing California's property tax system for its lack of horizontal equity).

194. A call option is a right to purchase a specific asset for a specified price. *See, e.g.*, Charles T. Terry, *Option Pricing Theory and the Economic Incentive Analysis of Nonrecourse Acquisition Liabilities*, 12 AM. J. TAX POL'Y 273, 327 n.181 (1993). *See generally* Kenneth A. Froot et al., *A Framework for Risk Management*, 72 HARV. BUS. REV. 91, 99 (1994) (defining and providing examples of options). The call option described here differs from most call options in that it is not owned by a specific person; instead, anyone may exercise the option, at which time no one else has it.

195. *Cf.* Terry, *supra* note 194, at 327 (explaining that if the price of the optioned asset is greater than the exercise price, a call option holder would want to buy that asset and retain it or sell it for profit).

someone would have to pay her to give it up.¹⁹⁶ At the least, she will announce a valuation higher than the amount she expects anyone else would be willing to pay for the property.¹⁹⁷

A put option works in reverse by giving anyone else the right to sell another of the good to the valuer.¹⁹⁸ Suppose as part of an agricultural or environmental program, the government, instead of paying farmers to let their fields lie fallow,¹⁹⁹ decides that it wishes to assume ownership of half the land in a certain area and to give owners a lump sum payment compensating them. There are a number of farmers in the relevant area, and the land is of equal quality throughout. Farmers might be required to announce per-acre valuations of their land. Anyone else would then have a put option to sell additional acres of land within the area to the farmers at the announced prices, and could then announce new prices. After any options are exercised, the government could purchase half the land at the last announced prices.

A self-assessment mechanism might give other parties both a put option and a call option at the announced valuation price. Recall the market used to assess the expected recovery in class actions, i.e., the exchange allowing trading of rights to an amount equivalent to a portion of the final class action judgment.²⁰⁰ Suppose there is reason to doubt that the trading values are reliable indicators of the expected recovery.²⁰¹ The government could supplement the exchange with a pair of self-assessment rules. The owner of a security in this market would be required to value the right. Anyone else could purchase the security at the announced price (thus deterring undervaluations), or could sell to the valuer an equivalent security, already existing or manufactured,²⁰² at the announced price (thus

196. Cf. Ayres & Talley, *supra* note 178, at 1063 (noting that without a call option, a bilateral monopoly exists in which the seller can ask for an exceedingly high price while the buyer can hold out for an unfairly low price the seller will never provide).

197. See Levmore, *supra* note 192, at 780.

198. See Terry, *supra* note 194, at 327 (contrasting the right to purchase in a call option from the right to sell in a put option).

199. See, e.g., 16 U.S.C. § 3832(a)(7) (1994) (providing that participants in a conservation program agree not to harvest land in exchange for receiving cash payments).

200. See *supra* notes 138-40 and accompanying text (describing an exchange allowing the trading of rights to an amount equivalent to a portion of a final class action judgment).

201. See *infra* Part II.B.1 (discussing the problem of manipulation); Part III.A.1 (discussing accuracy more generally).

202. That is, the exerciser of the put option would not have to first buy a security from an existing holder. Rather, the rules could simply require the existing security owner to buy from the exerciser a right equivalent to the right already owned. In the absence of a physical sheet of paper representing the security, some mechanism would be needed for keeping track of such agreements.

detering overvaluations). The average valuations of all such securities at any point in time would provide an indication of the market's valuation of the security.

Just as rights based on events that may never occur can be traded on an exchange, so too may it be useful to require self-assessment even when there is only some probability of the event that could discipline the self-assessment. The civil tax regime with which we began this section reflects this logic.²⁰³ The taxpayer recognizes that there is only some probability of an audit that will catch a tax cheat, but fines in theory can compensate for this if they are a multiple of the amount of understatement.²⁰⁴ Indeed, one might imagine permitting corporate taxpayers, for whom the paperwork of the tax process may be a large burden, to estimate their taxes. A certain prespecified percentage, say ten percent, of corporations electing to pay estimated taxes, could be selected at random. These firms would be required to fill out tax returns, and the government in these cases could challenge only these returns in court. If there were an underpayment, the corporation would pay ten times the difference to the government; if there were an overpayment, the corporation would receive ten times the difference from the government.²⁰⁵ This system would be useful if there were some corporations that could approximate their tax liability much more cheaply than determining it exactly.

A similar multiplier approach might be used to obtain third-party assessments about the outcome of litigation even if only some percentage of cases in fact will be litigated.²⁰⁶ I have suggested such a mechanism for resolution of suits that government agencies may have

203. See *supra* notes 169-74 and accompanying text (discussing self-assessment in the civil tax regime).

204. See Michael K. Block, *Optimal Penalties, Criminal Law and the Control of Corporate Behavior*, 71 B.U. L. REV. 395, 397-98 (1991) (discussing the optimal size of government fines); Louis Kaplow, *The Optimal Probability and Magnitude of Fines for Acts That Definitely Are Undesirable*, 12 INT'L REV. L. & ECON. 3, 5-8 (1992) (discussing how to set government fines optimally to deter individuals from committing certain acts); A. Mitchell Polinsky & Steven Shavell, *Enforcement Costs and the Optimal Magnitude and Probability of Fines*, 35 J.L. & ECON. 133, 135-39 (1992) (discussing government fines used to control harmful activities and the costs incurred in connection with the enforcement process).

205. The burden on small businesses of filling out tax forms is also great. See, e.g., Paul R. Verkuil, *A Critical Guide to the Regulatory Flexibility Act*, 1982 DUKE L.J. 213, 222 n.55 (providing an estimate of the amount of time spent by small businesses in filling out tax forms). Such businesses, however, are likely to be much more risk-averse than large, publicly traded corporations, and thus for them saving the expense of filling out forms is less likely to be worth the risk of large fines should they be randomly selected and penalized for underestimation of their tax liability.

206. See Abramowicz, *supra* note 14, at 228-36.

against corporations that have violated regulatory requirements.²⁰⁷ For example, suppose the EPA potentially could sue 10,000 different companies for environmental violations, but only has the resources to pursue 1000 of them. The EPA, assuming valid congressional authorization, might decide to use some type of market mechanism to obtain a prediction of what the outcome of litigation would be if each case were adjudicated, and then simply require 9000 companies to pay the liability corresponding to the prediction.

As the previous section suggested, rights to a percentage of the judgment, say twenty-five percent, against each of the corporations could be traded on an exchange.²⁰⁸ The government could rely on trading prices as a prediction of the result of adjudication in a randomly selected 9000 of the 10,000 cases and then cancel all trading on these securities. Alternatively, each rights holder might be asked to value the twenty-five percent right just before the one-in-ten random selection occurs. In nine of ten cases, the company would be required to pay the amount corresponding to the third party's prediction, without any further EPA action.²⁰⁹ In one of ten, the EPA could seek a monetary settlement with the company, or failing that, fight the company in court.²¹⁰ The third party would always receive the amount of the self-assessment, plus, in the one of ten cases selected for litigation, ten times the difference between the actual value of the twenty-five percent right as determined by litigation and the original prediction.²¹¹

For example, suppose the rights holder predicted that the right would be worth \$25,000 (corresponding to a prediction of \$100,000 liability for the corporation). If the case were subsequently among

207. *See id.*

208. *See supra* Part I.B.

209. *See Abramowicz, supra* note 14, at 230 (explaining that a security holder would pay a fine or receive a bonus depending on whether the security was overvalued or undervalued).

210. Settlement is relatively likely in these remaining cases, because the market price provides an objective indication of liability, thus reducing problems of asymmetric information and making strategic bargaining more difficult. *See id.* at 227.

211. This incentive system can be described in more general terms:

After the conclusion of adjudication of [a case randomly selected], those who held the securities at the moment of the lottery announcement (in addition to receiving an amount equal to the valuations they specified) either would pay a fine or receive a bonus, depending on whether they had overvalued or undervalued the relevant security. Specifically, the security holders would be required to pay (or receive) an amount equal to the product of the inverse of the proportion of cases selected for traditional adjudication and the amount by which the security price at the moment of the lottery exceeded (or fell short of) the court-determined price.

Id. at 230.

the one-in-ten selected for litigation, and the final judgment, from settlement or as determined by a court, were \$80,000, of which twenty-five percent is \$20,000, the third party initially would receive \$25,000.²¹² The third party then would “receive” ten percent (\$20,000-\$25,000), i.e., would pay \$50,000 to the government, resulting in a total loss of \$25,000.²¹³ With these self-assessment rules, the third party will always receive the same amount of money in expected value terms no matter what the actual value of the litigation right. Making a prediction \$5,000 too high means that one will receive an extra \$5,000 all the time, but ten percent of the time will have to give \$50,000 back to the government.²¹⁴ As long as the third party is risk-averse, however, it will minimize its risk costs by predicting the outcome of litigation as accurately as possible.²¹⁵

II. THE VIRTUES AND VICIES OF MARKET MECHANISMS

The mechanisms, as sketched so far, are idealized abstractions, not yet ready to confront the real world of imperfect markets and conniving manipulation. This Part explains both what these mechanisms do well, as well as the obstacles they must overcome to be practical. Within each section, I list virtues and vices in rough order of importance, with the caveat that my estimation of importance is necessarily a function of the particular market proposals that I have considered and explored. Though I list five virtues and six vices, one cannot meaningfully weigh the benefit of each virtue and the cost of each vice to reach some overall verdict about the use of market mechanisms in law. Any market-based proposal must be considered on its own terms. Are the virtues meaningful in this area of law? Can the vices be overcome for this proposal? Moreover, the virtues and vices ultimately must be compared against those of existing legal institutions and of hypothetical nonmarket alternatives.²¹⁶ The ultimate question for a particular proposal is whether it advances the aims of law more than it detracts from them.

212. *See id.* at 230 & n.89 (discussing how in one of ten cases selected for litigation, the third party receives the amount of self-assessment plus ten times the differences between the actual value of the 25% right as determined by litigation and the original prediction).

213. *See id.* (explaining how the third party receives a negative return in some cases).

214. *See id.*

215. *See id.* at 236 (discussing the robustness of the risk aversion assumption).

216. *See generally* NEAL K. KOMESAR, IMPERFECT ALTERNATIVES: CHOOSING INSTITUTIONS IN LAW, ECONOMICS, AND PUBLIC POLICY 3-14 (1994) (advocating a comparative institutional analysis approach to law).

A. *Virtues*

The timeless metaphor of economics is the invisible hand, gently guiding prices to appropriate levels and promoting optimal allocation of resources.²¹⁷ The magic of markets for goods and services in the classical model is that the aggregated decisions of consumers and producers, wholesalers and retailers, exporters and importers move the economy ever closer to an efficient result without any conscious consideration, debate, or decision. Though also governed by supply and demand, capital markets are different in a significant way. Those deciding whether to buy or sell stocks and bonds, gold and pork bellies think deliberately, often even mathematically, about the future.²¹⁸ So too with capital market mechanisms serving legal ends. A participant in a legal capital market will consider the same factors a court or administrative agency might in more traditional decisionmaking.²¹⁹ Yet, the decentralization of decisionmaking and the profit incentive that market mechanisms offer may make some types of decisions better

217. The metaphor dates back to Adam Smith:

As every individual, therefore, endeavours as much as he can both to employ his capital in the support of domestick industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the publick interest, nor knows how much he is promoting it. By preferring the support of domestick to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it.

ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 456 (Roy Hutcheson Campbell et al. eds., Liberty Fund Glasgow 1981) (1776). For a brief critique of the metaphor's relevance in modern economies, see George L. Priest, *The Ambiguous Moral Foundations of the Underground Economy*, 103 YALE L.J. 2259, 2274-75 (1994).

218. See, e.g., Greg Ip, *By the Numbers: Trading Vast Volumes, Stock Firm Consults Only Its 'Black Box'*, WALL ST. J., Dec. 16, 1997, at A1 (describing a trading firm that relies exclusively on mathematical analyses of market data); Craig Torres, *Mathematicians Race to Develop New Kinds of Trading Instruments*, WALL ST. J., Oct. 18, 1991, at C1 (explaining how mathematical models are revolutionizing the pricing of complex derivative securities). A particularly important tool for risk management is the Capital Asset Pricing Model, initially developed in articles such as Fischer Black, *Capital Market Equilibrium with Restricted Borrowing*, 45 J. BUS. 444 (1972); Fischer Black & Myron Scholes, *The Pricing of Options and Corporate Liabilities*, 81 J. POL. ECON. 637 (1973); John Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolio and Capital Budgets*, 47 REV. ECON. & STAT. 13 (1965); William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425 (1964).

219. See Abramowicz, *supra* note 14, at 203-04 (noting that traders in a legal capital market will base purchasing decisions on the facts and law of particular cases).

sued to market-based than to judicial resolution. The following subsections provide some reasons that this may be so, and, at the same time, point out certain drawbacks associated with market mechanisms. I will address these qualifications in the section discussing vices.²²⁰

1. *Assimilation of existing information*

Markets are famous for their ability to process gargantuan amounts of public information.²²¹ The price of a company's stock reflects internal politics, trends in the market for the goods or services the company sells, national political developments, and international economic health.²²² We could imagine a system without stock markets, in which judges estimate companies' expected profitability, with financing contingent on these decisions.²²³ The judicial task, however, would be monstrous, because a judge would need to be familiar with each of these areas, as well as have the ability to translate these apparently incommensurate variables into a single financial scale.²²⁴ Inevitably, some factor would be omitted or given too much or too little weight in the final analysis. When this happens in a stock, bond, or currency market, participants have incentives to trade on any mispricing. Similar dynamics would exist on legal exchanges. Participants in a market used to ensure equity among present and future claimants, for example, would need to predict the total magnitude of mass tort damages, as well as more conventional economic variables such as interest rates.²²⁵ Courts implicitly estimate this magnitude whenever they approve class action settlements as being fair to future claimants, presumably taking into account

220. See *infra* Part II.B.

221. See Eugene F. Fama, *Efficient Capital Markets: II*, 46 J. FIN. 1575, 1582-86 (1991) (reviewing empirical evidence on market efficiency). The market's effectiveness as an information processor will depend on the cost of acquiring the information. See, e.g., Jeffrey N. Gordon & Lewis A. Kornhauser, *Efficient Markets, Costly Information and Securities Research*, 60 N.Y.U. L. REV. 761, 787 (1985) ("[T]he efficient market hypothesis should be embedded in a general model that simultaneously explains both investors' decisions to acquire information and the process of market aggregation of information held by investors."); Gilson & Kraakman, *supra* note 7, at 597-609 (explaining the relationship between information costs and market efficiency); *infra* Part II.B.5 (discussing transaction costs).

222. See generally W. Terrance Schreier & O. Maurice Joy, *Judicial Valuation of "Close" Corporation Stock: Alice in Wonderland Revisited*, 31 OKLA. L. REV. 853, 858-66 (1978) (discussing various approaches to stock valuation).

223. Such a system is reminiscent of Unger's proposal. See *supra* notes 1-2 and accompanying text.

224. See Schreier & Joy, *supra* note 222, at 866 (noting that the courts have been baffled by questions of corporate valuation).

225. See Smith, *supra* note 13, at 398-403.

scientific and demographic data.²²⁶ Yet there is no reason to believe that such assessments are within courts' competence.

Even where courts must make numeric assessments more straightforwardly legal, they may at times be groping. In calculating expected recoveries in a class action for the purpose of setting attorneys' fees, for example, a court might look to the results of similar suits, but ultimately it would be hazarding a guess about how similar the cases are.²²⁷ An exchange cannot offer perfect guesses, but trading prices reflect the consensus predictions of various individuals who have backed up their assessments with their wallets. Moreover, a court's guess may be exacerbated by hindsight bias.²²⁸ When a suit proves a winner, it may be hard to see that at one time it might have seemed nearly frivolous when undertaken. An exchange used to assess expected recoveries provides contemporaneous evaluations. These evaluations are colored not only by assessments of the law and of the facts, but also by less tangible evaluation of the proclivities of judges and juries, and the ethos that drives the legal system in a particular time and place. This type of information may be more accessible to lawyers in the trenches than to judges on the bench.

Exchange is thus a valuable way of assimilating public information, whereas an auction is quintessentially a means of harnessing private information. In an auction for spectrum, potential users of the ether must estimate the profits they can expect by considering both consumer demand for the service offered and the cost of supplying it. The FCC might weigh similar factors when it allocates spectrum for

226. *See id.* at 384 (explaining that to estimate future claims, courts or agencies must consider many factors that bear on the magnitude of future claims).

227. Logically, judgments in other cases are relevant to determining whether the results obtained in a particular case differ from the average. This inquiry, however, is so difficult that courts will often assess success only by reference to the instant lawsuit, and look to prior suits only to examine the fees awarded in those cases. *See, e.g.,* *Beovich v. C.G. Gredvig, Inc.*, No. CIV92-920-FR, 1994 WL 661257, at *2-3 (D. Or. Nov. 14, 1994) (listing awards in similar cases as one factor in determining the reasonableness of the award in the instant lawsuit).

228. *See generally* Baruch Fischhoff, *For Those Condemned to Study the Past: Heuristics and Biases in Hindsight*, in *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* 335, 341 (Daniel Kahneman et al. eds., 1982). The courts have occasionally noted the dangers of hindsight in applying the lodestar test. *See, e.g.,* *Grant v. Martinez*, 973 F.2d 96, 99-100 (2d Cir. 1992) (noting that assessment of attorney fees ideally should not be affected by hindsight); *In re Arizona Escrow Fee Antitrust Litigation*, No. CIV80-840A PHX CAM, 1982 WL 1938, at *15 (D. Ariz. Sept. 22, 1982) ("[T]he contingent nature of the litigation cannot be judged with the benefit of hindsight but must instead be measured as of the time that suit was commenced."). One way of overcoming hindsight bias in legal decisionmaking is to focus on ex ante proxies, for example by considering custom to determine whether activity was negligent. *See* Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 *U. CHI. L. REV.* 571, 608-15 (1998).

free in the public interest,²²⁹ but it is not as well situated as individual firms to calculate potential profits. Similarly, a law firm bidding for the right to represent a convicted criminal defendant on appeal would presumably have a more accurate perception of its chance of winning than a court familiar only with the firm's reputation. At least, a law firm is best positioned to determine whether it has the time and resources to undertake an appeal.²³⁰

A self-assessment system, meanwhile, is a means of harnessing information about the value of a particular entitlement without auctioning off the right. Indeed, some self-assessment mechanisms could be restructured as auctions. As an alternative to the rancher-farmer self-assessment mechanism,²³¹ we might auction off the property right to exclude or to fence, with the loser receiving the winner's bid.²³² We could not, however, feasibly auction off a property owner's land whenever we need to know what it is worth, so a self-assessment mechanism provides a more palatable means of valuing the property.²³³

A self-assessed value will reflect not only an owner's value determination, but also the owner's assessment of how others will value it. In the hypothetical rancher-farmer self-assessment, the rancher considers not only his own valuation of the entitlement to let his cattle roam, but also the value to the farmer of exclusion.²³⁴ Similarly, a property owner's self-assessed valuation may be lower than what the property is truly worth to the owner, because the owner will have no incentive to self-assess more than a dollar above what the property would be worth to the next highest valuer. Thus, in assessing the proposal requiring property owners to self-assess the value of their land, we must ask, among other questions, whether it is fair to impose a tax that depends in part on an owner's own valuation of the property, and in part on how much the owner believes others

229. *But see* STEPHEN G. BREYER ET AL., ADMINISTRATIVE LAW AND REGULATORY POLICY 462-63 (4th ed. 1999) (listing factors that the FCC indicated that it would take into account, a list that does not include potential profitability or even consumer demand).

230. *See* Pritchard, *supra* note 3, at 1175-76 (noting that an auction of the right to handle appeals will allow lawyers to allocate resources more efficiently).

231. *See supra* notes 176-84 and accompanying text (discussing the rancher-farmer self assessment mechanism).

232. If the auction were a second-price sealed bid auction, the winner would pay the loser the amount of the loser's bid. *See supra* note 40 and accompanying text (discussing this type of auction).

233. *See supra* notes 191-94 and accompanying text (explaining a self-assessed valuation system that would result in honest valuations of property).

234. *See supra* notes 179-207 and accompanying text (discussing what a rancher considers when valuing property).

will be willing to pay.²³⁵

This type of concern will not be present in all self-assessment proposals. When a self-assessment mechanism relies on a third party to value some entitlement and the third party bears the full consequences of error, the self-assessor will always have incentives to value as accurately as possible.²³⁶ In an administrative claims market that uses third parties to assess the value of suits that the EPA potentially could file against polluters, the self-assessor will always have an incentive to be as accurate as possible, assuming that the self-assessor has no direct interest in the litigation. The mechanism thus successfully induces this third party to declare an individual assessment of public (and, in some cases, private) information. This does not necessarily mean, however, that this assessment is accurate. A limitation of a self-assessment is that it is based on only one party's knowledge, and it thus fails to assimilate information from multiple parties.²³⁷ Improving on this self-assessment device to facilitate assimilation of multiple parties' information will be part of the project of Part II.B.

2. *Information production*

In addition to assimilating existing information, public or private, market mechanisms may encourage the production of additional information. For example, in an auction for the right to represent a criminal defendant on appeal in exchange for a contingency fee, law firm bidders will do more than simply give their knee-jerk reactions to particular cases. Reading the trial transcript and recording a conclusion about the prospect of winning itself creates a kind of information. Beyond that, law firms might research particular legal issues, or in some cases might even investigate factual issues, to better estimate the chance of winning an appeal.²³⁸ Thus, the auction

235. Levmore argues that although his proposal might require those with "idiosyncratic tastes" to pay higher taxes than someone whose tastes are equivalent to market value, this may be normatively defensible. See Levmore, *supra* note 192, at 780-82. Levmore also offers an alternative proposal that would not have this problem. The government, in effect, would conduct an auction at which third parties would announce assessments of a particular property. The property owner could then choose to pay the tax corresponding to the highest assessment, in which case the assessor would receive a commission, or to sell to the highest assessor. See *id.* at 784-85 (discussing an alternative proposal that responds to the criticism that idiosyncratic owners should not bear a heavier tax burden).

236. See Abramowicz, *supra* note 14, at 230 & n.89.

237. See Levmore, *supra* note 192, at 778 (recognizing that a core problem of any self-assessment system is that owners may underassess or selfishly announce a dishonest assessment).

238. See Pritchard, *supra* note 3, at 1173 (noting that in a market-based system, economic self-interest provides a strong incentive for appellate attorneys to assess

process itself gives incentives for the creation of legal information. Once a law firm wins the auction, it will have a financial incentive (in addition to its own professional pride) to develop additional information that will help it craft an effective brief and offer a persuasive oral argument. In the absence of such a process, all this information might never be developed.²³⁹

Exchange mechanisms also can encourage the production of information. Traders in a market predicting the political fortunes of particular candidates might hold their own polls or perform statistical analysis of past elections to determine who in the electorate is most likely to vote.²⁴⁰ Similarly, in an exchange trading shares in a limited fund for the benefit of both present and future mass tort claimants, market participants might conduct scientific, demographic, statistical, or legal research to improve their predictions of the total volume of damages that ultimately would be approved.²⁴¹ In theory, courts evaluate the same types of information to make similar predictions, but they have little incentive to do much empirical research.²⁴² Indeed, we might prefer that courts refrain from such research lest judges become too invested in particular academic perspectives and methodologies.²⁴³ This concern is absent in the exchange, because

claims accurately).

239. For example, if a court considered whether to appoint appellate counsel based on a convicted defendant's statement of issues, some potentially important issues for appeal might never be found. Even when a defendant has appointed counsel, the attorney may not recognize that the defendant has a viable issue for appeal. Our criminal courts attempt to combat this by requiring an attorney in such a situation to request withdrawal from the case, so that the court can determine for itself whether there are any nonfrivolous issues. See *Anders v. California*, 386 U.S. 738, 744-45 (1967). With the auction approach, law firm bidders would have incentives to find nonfrivolous issues that others would miss. They would not have an incentive to identify frivolous issues, unless such issues actually have a chance of prevailing on appeal.

240. Traders in such a market might generate information because the market rewards those good at predicting elections. See Burns, *supra* note 120, at 118 (discussing a political futures market); see also *supra* note 120 and accompanying text (explaining that traders in a political futures market have an incentive to take into account all available sources of information).

241. See Smith, *supra* note 13, at 399 (noting that capital market participants have incentives to follow both a particular case and relevant science to make their tort liability estimates as accurate as possible).

242. Occasionally, courts make factual assertions that empirical inquiry fails to verify. See David L. Faigman, "Normative Constitutional Fact-Finding": *Exploring the Empirical Component of Constitutional Interpretation*, 139 U. PA. L. REV. 541, 550 (1991) ("Increasingly, commentators and litigants are checking the modern [Supreme] Court's fact-finding on the basis of empirical research that only sometimes supports, and often contradicts, the Court's 'best guesses' about the world."). But empirical research by judges also could be flawed, particularly given the danger that empiricists may seek to confirm what they already believe.

243. See RICHARD A. POSNER, *OVERCOMING LAW* 210 (1995) ("[J]udges are not allowed to have private consultations with academics about pending cases; nor do

no one researcher controls the outcome.

Some exchange mechanisms could inspire information development by various classes of people. The administrative claims exchange, for example, might encourage employees to search for potential violations of environmental regulations. At the same time, third parties might attempt to monitor companies, with or without their permission.²⁴⁴ To assess the desirability of this exchange, we must first decide whether we want to encourage citizens to search for regulatory violations.²⁴⁵ Assuming that the answer is yes, we must compare the exchange to alternative incentives, such as permitting employees to file whistleblower suits. One problem with such suits is that parties may have an incentive to free ride off public information, repackaging it to look like the result of an employee's own whistleblowing.²⁴⁶ This would not be possible in the alternative exchange mechanism, because public information already will be impounded in security prices.

Self-assessment mechanisms involving third parties also encourage the development of information.²⁴⁷ The self-assessment mechanism allowing criminal defendants to set their own bail subject to finding someone to put up bond would encourage bondsmen to do research into the risk of flight.²⁴⁸ A bondsman might talk to the defendant's acquaintances, or examine past cases involving similar defendants and similar charges. This example, however, illustrates a problem with relying on market mechanisms to produce information. Even when information is produced, the producer will not necessarily have

judges have the time or the resources required for competent empirical research . . ."). Even if courts cannot conduct empirical research on their own, arguably they should encourage the parties to present empirical issues in legal briefs. See, e.g., Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 VA. L. REV. 559, 588 (1987) (arguing that parties should present empirical research to the courts in legal briefs rather than by testimony). But see Michael Rustad & Thomas Koenig, *The Supreme Court and Junk Social Science: Selective Distortion in Amicus Briefs*, 72 N.C. L. REV. 91, 143-51 (1993) (arguing that briefs often misrepresent social science findings).

244. See Abramowicz, *supra* note 14, at 224-27 (explaining that companies also will have incentives to submit voluntarily to third-party auditing and monitoring).

245. See *id.* at 207-08 ("[T]he usefulness of such markets depends on the desirability of harnessing private information. If it is not normatively desirable to give private individuals incentives to investigate . . . then the government should not create an administrative market to stimulate collection of . . . fines.").

246. See, e.g., John C. Coffee, Jr., *Rescuing the Private Attorney General: Why the Model of the Lawyer as Bounty Hunter Is Not Working*, 42 MD. L. REV. 215, 222 (1983) (stating that although exceptions exist, "a recurring pattern is evident under which the private attorney general simply piggybacks on the efforts of public agencies . . . in order to reap the gains from the investigative work undertaken by these agencies").

247. See *supra* Part I.C.

248. See *supra* notes 188-90 and accompanying text.

an incentive to share this information, except in the form of a single dollar figure that encapsulates various aspects of the research. Something more than a single market mechanism is needed to stimulate information sharing. In the auction for the right to represent a criminal defendant on appeal, the winning bidder eventually will have an incentive to reveal the research conducted, or at least that research tending to support the appeal.²⁴⁹ We might prefer, however, to know this information earlier or in a more complete form. As we will see later, market mechanisms, and in particular a regime of repeated self-assessment, might be used to stimulate such revelations.²⁵⁰

3. *Unbiased decisionmaking*

Adjudication is not only about assimilating and producing information, but also about generating the best possible decision based on the information. Because market-based decisionmaking techniques are driven solely by participants' profit incentives, the resulting decisions are insulated from decisionmaker bias.²⁵¹ A *Revlon* auction, for example, eliminates bias by preventing a company's management from picking a "white knight" acquirer that would let the managers retain their positions at the expense of the company.²⁵² In the class action context, the market used to allocate a limited fund among present and future claimants counters the bias that existing litigants would naturally have for the present claimants at the expense of the future claimants.²⁵³ Allowing a criminal defendant to set his own bail subject to finding a willing bondsman eliminates the concern that a particular judge would treat a particular defendant

249. See Pritchard, *supra* note 3, at 1174 (noting that "appellate attorneys will have every incentive to work hard for their clients because they are only paid for winning").

250. See *infra* Part II.B.4.

251. See Cramton & Schwartz, *supra* note 53, at 29.

252. In *Revlon* itself, the Delaware Supreme Court declared:

Favoritism for a white knight to the total exclusion of a hostile bidder might be justifiable when the latter's offer adversely affects shareholder interests, but when bidders make relatively similar offers, or dissolution of the company becomes inevitable, the directors cannot fulfill their enhanced . . . duties by playing favorites with the contending factions.

Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc., 506 A.2d 173, 184 (Del. 1986). Under this formulation, when a bid is viewed as adversely affecting shareholder interests but dissolution is not inevitable, managers may still be able to play favorites. Thus, *Revlon* auctions in practice may not be entirely fair auctions. See Crampton & Schwartz, *supra* note 53, at 48-49.

253. See Smith, *supra* note 13, at 385. Judges may also have incentives to underestimate the damages that future claimants will receive in order to promote bankruptcy settlements. See *id.* (asserting that "[c]apital markets can be used to provide a fair distribution between present and future claimants").

unduly leniently or unduly harshly based on personal antipathy.²⁵⁴

Courts, of course, also seek to reduce bias in adjudication. Recusal rules are an attempt to ensure that the decisionmaker is neutral and disinterested.²⁵⁵ Out-and-out self-interest, however, is not the whole of the bias problem. In the course of becoming acquainted with a case, a judge's decisions might be affected, especially in marginal cases, by the results desired on the merits.²⁵⁶ For example, a judge entrusted with the task of assigning appellate counsel to indigent defendants might choose a less able attorney for a defendant the judge believes is clearly guilty than for one believed to be innocent, even if actual innocence is not an issue on appeal.²⁵⁷ Auctioning off

254. It also addresses systemic concerns that certain classes of defendants might be treated unfairly. *Cf.* Ayres & Waldfogel, *supra* note 185, at 1013-15 (concluding, using a market analysis that controls for flight risk, that minority defendants must pay greater amounts in bail than white defendants). For a study of how bail policies may differ from one court or city to another, see ROY B. FLEMMING, PUNISHMENT BEFORE TRIAL: AN ORGANIZATIONAL PERSPECTIVE OF FELONY BAIL PROCESSES (1982).

255. *See, e.g.*, MODEL CODE OF JUDICIAL CONDUCT Canon 3(E) (1990) (mandating that "a judge shall disqualify himself or herself . . . where the judge has a personal bias or prejudice concerning a party or a party's lawyer"). Judicial recusal rules, however, do not require disqualification based on ideological beliefs or legal opinions. *Cf.* Laird v. Tatum, 409 U.S. 824, 830-36 (1972) (Rehnquist, J.) (rejecting a motion to disqualify himself on the basis that the Justice had previously made public statements about a particular legal issue implicated in a case).

256. Recent political science scholarship has suggested that, at least in some areas of law, political beliefs may affect legal outcomes. *See, e.g.*, LEE EPSTEIN & JACK KNIGHT, THE CHOICES THAT JUSTICES MAKE 11 (1998) (asserting that all Supreme Court Justices share the goal of having the law reflect their policy positions and arguing that Justices take actions deliberately advancing these policy objectives); JEFFREY A. SEGAL & HAROLD J. SPAETH, THE SUPREME COURT AND THE ATTITUDINAL MODEL 65 (1993) (declaring that the Supreme Court makes judicial decisions "in light of the facts of the case vis-à-vis the ideological attitudes and values of the Justices"); Frank B. Cross & Emerson H. Tiller, *Judicial Partisanship and Obedience to Legal Doctrine: Whistleblowing on the Federal Courts of Appeals*, 107 YALE L.J. 2155 (1998) (offering an empirical study demonstrating the effect of political affiliation); Richard J. Pierce, Jr., *Two Problems in Administrative Law: Political Polarity on the District of Columbia Circuit and Judicial Deterrence of Agency Rulemaking*, 1988 DUKE L.J. 300, 303-07 (discussing the political ideology of the D.C. Circuit and its effect on the court's review of government agency actions). For a treatment that recognizes both the role of policy preference in judging and the role of legal doctrine, see Frank B. Cross, *Political Science and the New Legal Realism: A Case of Unfortunate Interdisciplinary Ignorance*, 92 NW. U. L. REV. 251 (1997).

Judge Wald has recently attacked this literature, stating that one proposal effectively "impugn[s] the integrity of panel judges, who are both intelligent enough to know the law and conscientious enough to abide by their oath to uphold it." Patricia M. Wald, *A Response to Tiller and Cross*, 99 COLUM. L. REV. 235, 261 (1999) (citing *Bartlett v. Bowen*, 824 F.2d 1240, 1243-44 (D.C. Cir. 1989) (Edwards, J., concurring)). My concern is not so much that results-oriented judges intentionally would ignore the law as that different judges' views of law are necessarily colored by their views on particular issues. That researchers are able to show a correlation between so rough a proxy as party membership and outcomes reinforces the conclusion that the judge or judges selected to decide a particular issue will often affect the outcome.

257. *See* Pritchard, *supra* note 3, at 1168 (discussing the large number of "frivolous

the right to represent defendants on appeal does not eliminate such disparities altogether, as attorneys might be willing to pay more for a case that brings with it the personal satisfaction of a worthy cause, but it significantly reduces them, because bidders will have to pay for any faulty assessments.²⁵⁸

In addition, some tasks may be too politically charged to entrust to an administrative agency or even a judge. Suppose that it were desirable to base subsidies of political candidates' campaigns on their individualized chance of winning.²⁵⁹ We might nonetheless be wary of having an administrative agency assess such probabilities. An agency might be required to base its results on polling data, but that leaves questions about which polls to consider, or how to phrase the polling questions if the agency conducts the polls itself.²⁶⁰ Perhaps it might be possible to create a truly independent or almost independent agency,²⁶¹ but questions regarding that agency's motives would remain. If an exchange could be used accurately and uncontroversially²⁶² to assess various candidates' probability of victory, the results would be unbiased. For the same reasons, a census prediction exchange might be preferable, assuming there is sufficient confidence in the accuracy of the exchange mechanism, to allowing an administrative agency to estimate the populations of various districts.²⁶³

appeals" that have driven courts to perform "judicial triage" in order to sort out which cases are frivolous and which cases deserve "close judicial attention").

258. See *id.* at 1171 (stating that bidders would compete for the strongest claims, because those claims would be most likely to provide a payoff for the attorney).

259. See *supra* notes 118-22 and accompanying text.

260. The wording and order of polling questions can affect their results.

[T]he task of drafting survey questions which will yield unbiased and accurate results is not an easy one. While it is tempting to think that straightforward answers to survey questions can be evoked by simple, straightforward questions, this is not always the case. As one expert observed, each questionnaire constructor and each respondent brings his or her particular (and often highly unusual) meanings and nuances to the process.

Susan J. Becker, *Public Opinion Polls and Surveys as Evidence: Suggestions for Resolving Confusing and Conflicting Standards Governing Weight and Admissibility*, 70 OR. L. REV. 463, 480 (1991).

261. For an assessment of how independent so-called "independent agencies" in fact are, see Symposium, *The Independence of Independent Agencies*, 1988 DUKE L.J. 215. Alan Morrison argues that in fact such agencies are not very independent. See Alan B. Morrison, *How Independent Are Independent Regulatory Agencies?*, 1988 DUKE L.J. 252, 253 (asserting that although independent agencies are more independent than executive agencies, they are still "heavily affected" by the White House, especially on "important issues").

262. I acknowledge that for now, an exchange would be an extraordinarily controversial means of predicting candidate success and is thus unlikely to be normatively acceptable in the immediate future. See *infra* Part III.C.1 (discussing the legitimacy of using market mechanisms in a democratic society).

263. In some contexts, the concern may not be bias for or against a party, but that

Unbiased decisionmaking is a particularly important virtue when valuing legal claims. In setting attorneys' fees after a class action settlement favorable to the plaintiffs, it would be awkward, particularly in those cases heavily dependent on resolution of legal questions, for a judge to announce that success on the merits seemed unlikely *ex ante*.²⁶⁴ If there had been no intervening change in the law, such an announcement would be an admission that the court's judgment was not what neutral parties would have expected. A market-based means of predicting expected recoveries eliminates the possibility of judicial inconsistency.²⁶⁵ An administrative claims exchange, meanwhile, might provide the EPA an objective guide to determining which corporations to pursue, assuming that it has no means of litigating every case.²⁶⁶

4. *Management of scarce resources*

The flip side of bias is caprice, and one danger in any decisionmaking system is that a decision may be made arbitrarily. This danger is particularly great when there are a large number of decisions to be made, and full justification of every decision exceeds the decisionmaker's capabilities.²⁶⁷ Even if an administrative agency

the true basis of a judicial or administrative decision might not be the same basis required by law. Suppose, for example, that the FCC was required to allocate spectrum to the companies that could use it most profitably, but without holding an auction. Some FCC commissioners purportedly assessing profitability might in fact rely on other unstated factors: whether they believe wireless telephones are more important to society than HDTV, or whether college radio stations offer better content than their private competitors. Perhaps these considerations are germane, but if the appropriate policy is to consider profitability only, then an auction ensures that they do not silently enter the calculus.

264. The law of preliminary injunctions might seem to be a counterexample. After all, in deciding whether to grant such injunctions, courts consider the probability of success on the merits, but this does not necessarily bind them when they decide a request for a permanent injunction. *See, e.g.*, RESTATEMENT (SECOND) OF JUDGMENTS § 13 (1982) (providing that only final judgments have preclusive effect). *But see* Miller Brewing Co. v. Jos. Schlitz Brewing Co., 605 F.2d 990, 995 (7th Cir. 1979) (holding that a preliminary injunction "will be given preclusive effect if it is necessarily based upon a determination that constitutes an insuperable obstacle to the plaintiff's success on the merits"). *See generally* Roper Corp. v. Litton Systems, Inc., 757 F.2d 1266, 1269 (Fed. Cir. 1985) (listing the factors that a court considers in whether to grant a preliminary injunction). It would be less awkward, however, for a court to indicate that it had in fact changed its mind since the preliminary injunction hearing than to report that at some time in the past no one could have expected the decision the court subsequently handed down on the merits.

265. *See supra* note 137 and accompanying text.

266. *See* Abramowicz, *supra* note 14, at 223-24 (discussing how administrative agencies might use market prices to determine which corporations to target for investigation).

267. There is even concern about arbitrariness by the federal courts of appeal, institutions themselves designed in part to discipline the decisionmaking of district judges and prevent arbitrariness. *See, e.g.*, William Glaberson, *Caseload Forcing Two-*

could be trusted to do its best to determine how to allocate spectrum in the public interest, so many questions must be answered—which firms should receive spectrum, how much they should receive, which frequencies should go to which firms—that some decisions might be made without full consideration of the consequences.²⁶⁸ Similarly, a court appointing a lawyer for a criminal defendant on appeal might not have time to scrutinize the record in an effort to assess the difficulty of the case and the quality of representation needed. In the class action context, even if a court does its best to estimate damage awards that will be paid to future claimants in a mass tort case, it may have time to review only a small portion of the relevant evidence.²⁶⁹ Similarly, a local government performing property tax assessments may not have the resources to consider the value of all property in a region carefully.²⁷⁰

By shifting decisionmaking to third parties, market mechanisms encourage additional spending on research as long as the marginal benefit to the researcher exceeds the marginal cost. In an auction for spectrum, a bidder will expend funds to refine its bids for different frequency ranges as long as its research indicates that the efficiency and certainty benefits of increased accuracy exceed the

Level System for U.S. Appeals, N.Y. TIMES, Mar. 14, 1999, at A1 (reporting that a “crushing load of cases” is causing federal courts of appeals to resolve a larger percentage of cases with unpublished summary affirmances); see also William L. Reynolds & William M. Richman, *Studying Deck Chairs on the Titanic*, 81 CORNELL L. REV. 1290, 1290 (1996) (noting the “nation’s dire need for substantial additional appellate capacity” and arguing that only an expansion in the size of the appellate judiciary can ensure that all cases receive adequate treatment).

268. Cf. ERWIN KRASNOW ET AL., THE POLITICS OF BROADCAST REGULATION 28 (1982) (“The FCC . . . is more than just an independent regulatory commission wrestling with the problem of its political nonindependence; it is also a bureaucracy. As such it exhibits all the classic symptoms of bureaucracies—massive hierarchy, institutional conservatism, professed rationality, and entrenched self-interest.”).

269. Raskolnikov, for example, recommends that courts use a relatively complex mathematical model in making decisions regarding future claimants. See Raskolnikov, *supra* note 128, at 2552-78. The model is well-designed to accomplish the relevant task, but still requires careful estimates of several variables. Of one such variable, Raskolnikov notes, “While the range of available estimates is often staggering, there are usually several middle-of-the-road estimates that are not too far from one another. Moreover, considering that the most biased parties usually produce the outliers, it seems reasonable to trust the middle figures more.” *Id.* at 2557-58. I agree that given the enormous complexity of making reliable estimates, picking a number from the rough middle of expert estimates may be the best we can expect.

270. Many property tax assessments are inaccurate, but because taxpayers do not understand the mechanics of the assessment process, few appeal. See Georgette Jasen, *Home Front: It Can Pay to Take On Your Tax Assessor*, WALL ST. J., Oct. 22, 1991, at C1; cf. Carlyn Johnson, *The Complicated Process of Property Tax Reform*, IND. STAR, July 23, 1996, at A11 (arguing that property tax assessments in Indiana are unfair and noting that some legislators have suggested eliminating “the hated property tax” completely).

costs.²⁷¹ A law firm bidding on the right to represent criminal defendants will perform some preliminary research on the probability of winning particular cases, but not as much as it would do once it won at auction. Traders at an exchange of shares in a mass tort limited fund will conduct additional research on the expected damage claims to future claimants as long as there is a substantial probability that such research will reveal mispricing on which they can profitably trade. Property owners self-assessing the value of their property will have good reason not to be arbitrary, while the incentive of third parties to search for property owners who have undervalued their properties will be proportional to the perceived quantity and discernibility of such under-assessments.

All of these market mechanisms thus provide at least a loose constraint on the quantity of resources that will be allocated to particular decisionmaking tasks. Administrative agency bureaucrats and judges surely spend more time on important decisions than on less important ones, but they have no direct financial incentive to consider the social benefit of additional research when allocating their limited time. Market mechanisms will not necessarily result in more time and resources being spent on decisionmaking. Sometimes, it may take relatively little time and resources to see what the result of a decision will be, but a far greater amount of time justifying that decision. Administrative agencies (or, less likely, courts) may be larger than they need to be.²⁷² Moreover, research costs may be lower for market participants than for neutral third-party government officials, especially where the purpose of the market mechanism is to determine what a non-common-value asset is worth to particular individuals or firms, as in the spectrum auction or the property owner self-assessment regime.

271. Cf. Wimmer & Tiedrich, *supra* note 44, at 30 (explaining that under an auction procedure, a substantial amount of effort must be expended at the outset by prospective applicants to determine, among other things, “the magnitude of a bid that would be rational for the planned service and the particular applicant’s access to capital”).

272. In canvassing reasons for the failure of judges to justify decisions by giving reasons, Frederick Schauer suggests that “[p]erhaps there are things we can think but cannot write down.” Frederick Schauer, *Giving Reasons*, 47 STAN. L. REV. 633, 652 (1995). A related possibility is that some judgments might be intuitively appealing but difficult to conceptualize. Even in such situations, legal institutions might demand reason-giving as a bulwark against bias. Schauer concludes:

Although there is no basis for presuming that particular decisions are necessarily a function of decisionmaker partiality, it might be supposed that particular decisions *are* often, empirically, the result of decisionmaker partiality, and that an artificial constraint of giving reasons, and therefore of generality, is designed to counteract this tendency.

Id. at 653.

With some market mechanisms, the quantity of resources channeled into research and decisionmaking can be controlled directly. In a bankruptcy auction for part of a firm, the greater the percentage of the firm sold, the more research potential buyers will put into pricing the securities. In the census exchange, the amount of research can be governed by changing the amount per person at which securities will be redeemed. Similarly, the exchange used to estimate expected recoveries can be made more accurate by increasing the percentage of any ultimate judgment that the securities equal. Ordinarily, the specification of this percentage would occur in advance, though it also would be possible to require a judge to specify the percentage after the judgment, based on a contextual assessment of the optimum. The quantity of market participants' research would thus depend on a prediction in part of what percentage eventually will be selected, as well as a prediction of what the ultimate recovery would be. Such an approach increases the risk of participating in the market, however, because traders would face uncertainty not only about asset values, but also about what percentage of those asset values the securities they own are worth.²⁷³

5. *Allocation to highest valuing user*

The final virtue of market mechanisms is that they tend to allocate goods to their highest valuing users.²⁷⁴ We have seen this already in the auction context.²⁷⁵ At forfeiture, spectrum, or *Revlon* auctions, the winners will be the participants that believe they can benefit most from owning the property. Allocation to the highest valuing user may be important in some contexts not only because this maximizes the sum of individual utilities, but also because the highest valuing user will be the one most capable of performing some desirable social function. The winner of the right to try for a scientific research prize will be the team most likely to be able to accomplish the goal efficiently.²⁷⁶ Similarly, the winner of an auction to represent a convicted defendant on appeal usually will be the participant that believes it is best positioned to win.²⁷⁷ In such an auction, bids reflect firms' estimated costs of undertaking a case, so it is possible that a

273. It also may make market prices more obtuse, because a judge using the market price to set counsel fees would need to disaggregate the percentage that traders expected would be traded ex post.

274. See, e.g., Skeel, *supra* note 15, at 477 (explaining that bankruptcy auctions move assets "to the highest valuing user").

275. See *supra* Part I.A.

276. See *supra* text accompanying notes 66-71.

277. See *supra* note 77 and accompanying text.

lower-cost firm might beat out one with a better chance of winning.²⁷⁸ Even this, however, may be a sensible resource allocation decision; if it is not, the appropriate conclusion is that the government has set the contingency fee for winning too low, not that the auction procedure itself is flawed.

Allocation to the highest valuing user is also important when the purpose of a market mechanism is to allow third parties to provide valuations. In a bankruptcy auction of part of a firm, for example, the highest valuing “users” of shares will be those with the most confidence about their valuations, because the risk cost to them will be lowest. Third parties enforcing self-assessment regimes, by purchasing property that owners have undervalued, will be those most confident of the accuracy of their valuations, or of their own need for the property.²⁷⁹ Similarly, those who are more confident of their valuations will be more willing to trade in an exchange. In the exchange used to allocate a limited fund among present and future claimants, those who have no ability to assess the expected volume of future damage awards will be more hesitant to participate than those who have estimated such awards carefully. Any exchange transaction involves one party willing to sell and another willing to buy; thus, the smart but uninformed trader will be loath to buy securities when an expert is trying to sell them.²⁸⁰

This does not mean, however, that the high bidder at an auction, the owner of a security in an exchange, or the third party exercising a right stemming from a self-assessment will always be the best positioned to provide a valuation. Even if most bidders at an auction are well-informed, an unknowledgeable bidder still could enter the high bid, particularly if only the informed bidders realize that the appropriate valuation should be low.²⁸¹ Casual investors, meanwhile, might like to hold some litigation securities simply to diversify their portfolios, and these noise traders could cause market prices to deviate somewhat from the level at which more informed parties would exchange the securities.²⁸² To have full confidence in the

278. *But see* Pritchard, *supra* note 3, at 1174 (arguing that competition will create efficiency as “more efficient appellate counsel underbid their competitors”).

279. *Cf.* Levmore, *supra* note 192, at 859 (identifying valuation accuracy as the primary motivation of assessment systems).

280. *See, e.g.,* Nicholas L. Georgakopoulos, *Frauds, Markets, and Fraud-on-the-Market: The Tortured Transition of Justifiable Reliance from Deceit to Securities Fraud*, 49 U. MIAMI L. REV. 671, 698 (1995) (explaining that one common way in which uninformed traders protect themselves is to stop trading or to trade less).

281. *See infra* Part II.B.3 (discussing the “winner’s curse”).

282. In general, uninformed traders’ opinions are unlikely to have a large effect on trading prices. *See* Georgakopoulos, *supra* note 280, at 698 (asserting that

integrity of market outcomes, we need some means of preventing uninformed, fringe parties from affecting the outcome. Ideally, the outcome of a market process would not be the prediction of a single party, but a consensus value. That a single party may control the outcome is perhaps the ultimate drawback of market mechanisms, one that encompasses many of the problems that the next section will discuss directly. By responding to distinct vices individually, perhaps we can develop more elaborate market mechanisms that would produce consensus values on which the legal system could rely more comfortably.

B. Vices

By “vice,” I mean a technical problem that might interfere with the seamless functioning of a market mechanism, or that might prevent a market mechanism from fully accomplishing a particular legal task. If there were perfect information, an infinite number of market participants, and zero transaction costs,²⁸³ we would not need to worry about most of these problems. Under ideal circumstances, though, we would have little need for market mechanisms, because we could rely on frictionless political and judicial markets to make omnisciently perfect decisions. The question that we face is whether the imperfections of market mechanisms render them entirely unfeasible, or whether corrective measures could nevertheless make them worthwhile.

The purpose of this section is as much constructive as it is evaluative. Clever design of market mechanisms can solve, or at least substantially address, many of the problems discussed here. Several of the vices identified can be virtually eliminated with a single market device, which I will refine progressively in subsequent subsections. This device, as we shall see, is a self-assessment mechanism that gives the owner of a right being traded on an exchange the incentive to price it honestly.

uninformed traders who make long-term investments in the stock market share in the economic growth of the market but that “this participation is only possible because of the intervention of informed traders whose profits effectively come out of the pockets of the uninformed”); *see also* Gilson & Kraakman, *supra* note 7, at 591 (explaining that “uninformed trading generates prices that reflect high-quality forecasts about future events . . . that are as yet unknown to the market”).

283. These are some of the conditions for the ideal of perfect competition. *See, e.g.*, GEORGE J. STIGLER, *THE THEORY OF PRICE* 87-88 (3d ed. 1966) (defining perfect competition).

1. *Manipulability*

If we are to base legal decisions on the numbers that market mechanisms produce, we must be confident that the numbers are in fact a legitimate result of the market process. Just as in traditional adjudication we must be sure that judicial decisions are not the product of bribery or self-interest, and we must anticipate that litigants or others might engage in market behavior with ulterior motives.

Market mechanisms that directly affect only the high bidder, market purchaser, or self-assessor should raise few manipulability concerns. If all of a firm's assets are auctioned off in bankruptcy, for example, we need not worry that someone will pay too much for the firm, because the high bidder will bear the full costs of its bid. Smith's system for allocating rights between present and future claimants also is insulated from interested market behavior, because the value of shares in the limited fund do not affect judicial decisions.²⁸⁴ Rather, judicial decisions affect how much people are willing to pay for shares in the limited fund.²⁸⁵ Similarly, with the mechanism for the rancher and the farmer, both the self-assessor and the party that chooses whether to accept the settlement bear the full consequences of their choices.

We must worry more when there is some social consequence to the numeric result that the market mechanism produces. For example, if we auction off just a small percentage of the stock in a firm to determine its value in bankruptcy, employees of the firm might participate in the auction and bid an unduly high number, willing to overpay for the stock in an effort to influence the bankruptcy proceedings. A bankruptcy court relying on such a bid might conclude erroneously that the firm has greater value as a going concern than it does in liquidation.²⁸⁶

284. See Smith, *supra* note 13, at 405 (stating that the market corrects distortions due to psychological, political, and other influences).

285. Smith also concludes that manipulation is not likely to be a significant problem for his proposal:

Under the capital markets approach, the trust share pricing process would be decentralized; in an administrative process, it would be centralized. Decentralized processes are more costly for interested parties to manipulate If present claimants collude to drive up the price of trust shares, individual claimants would tend to defect from the cartel, underbid the cartel, and cause a competitive market price to reemerge While traders sometimes attempt to manipulate markets, these strategies tend to fail and usually risk large losses.

Smith, *supra* note 13, at 404-05.

286. Cf. *supra* note 98 (describing the difficulties of determining a firm's

Consider also the auction or market used to determine the expected recovery in a class action as a way of calculating attorneys' fees once the action is complete. The market result would be contaminated if the defendant could bid up these shares in an effort to decrease the incentives that attorneys would have to participate in the litigation. Because the rights auctioned or traded are just a percentage of any eventual award, a defendant might find it worthwhile to interfere with the market in this way. Or, if a political election market were used to distribute campaign finance funds, a candidate's employees or supporters might execute collusive trades to drive up a politician's standing artificially. Perhaps there is little sign of such manipulation now only because the Iowa Electronic Markets are without direct consequence.²⁸⁷ Similarly, in the census market, a district's residents or political representatives could inflate its market price in an effort to increase the district's legislative representation.

There are two obvious solutions to such manipulation, and their appeal depends on the particular market mechanism assessed. The first solution is simply to ban trading by individuals who have an interest in the substantive outcome. In the case of a bankruptcy auction, this might be easy to accomplish, because the class of potentially interested parties—labor, management, and creditors—is likely to be readily identifiable. Stiff penalties, either civil or criminal, could deter manipulative behavior, and the law could provide that "insider" participation is grounds for appeal or collateral attack. This solution is perhaps less feasible in the case of census market manipulation, where individuals can be affected by other districts' numeric determinations.

The second solution is really just a drastic version of the first. It is to limit trading to preselected firms or individuals, who have been identified as having no or de minimis interest in a particular market. If only relatively well-capitalized companies with no obvious political agenda were to participate in the census market, and if participants eventually were required to explain why they made particular trades, we could be relatively confident that their sole motive was to earn a profit. A related solution in the case of the bail self-assessment mechanism is to regulate bail bondsmen by requiring certification and by imposing strict penalties for bribery. But even this type of solution might be unfeasible in the political market, because

reorganization value).

287. See *supra* notes 96-97 and accompanying text; *supra* note 118 <<http://www.biz.uiowa.edu/iem/wsj/wsj.html>> (describing how the IEM works).

everyone has some interest in the outcome of elections, and therefore, it would be difficult to find anyone who legitimately could participate.

There is a nonobvious solution that may be better than the two obvious solutions, however. It relies not on the government to supervise market participants, but on market participants to supervise one another. A market participant's bid at an auction, or price paid for a security, could serve as the basis of a self-assessment mechanism. For example, in a bankruptcy auction of part of a firm, we could prevent collusively low bids by providing that bids for stock are to be satisfied first by sales from any existing stockholder. Thus, if someone bids \$10 per share on one percent of the company being auctioned off, anyone else would be entitled to sell at \$10 before any of the shares in the one percent were auctioned. If all the stockholders might collude to encourage high bids, we could allow third parties to sell to the bidders shadow securities, i.e. notes that the third parties guarantee will be reimbursed at the same price as the stock.²⁸⁸ These rules will prevent interested parties from taking advantage of the bankruptcy auction's small scale.

We might create a similar mechanism in the case of the bail bondsman. If the bondsman agrees to post bond, we might allow anyone else to force the bondsman in effect to double his bet before the deal is consummated. For example, if the bondsman agreed to put up \$10,000 in exchange for a nonrefundable fee of \$1000, a third party could require the bondsman to give the third party \$10,000 more and promise to give \$11,000 back if the defendant appears. If enough third parties believe that the bondsman has accepted a bribe or made a miscalculation, then they will take advantage—perhaps even multiple times each—of this self-assessment. The bondsman will recognize that if the defendant flees, he will go broke and will change his mind about entering into the transaction.²⁸⁹ More importantly, a bondsman anticipating such harsh market treatment will have little incentive to accept bribes in the first place. This arrangement also protects against the possibility that a bondsman sympathetic to a

288. See *supra* note 202 (explaining that self-assessment mechanisms can rely on "manufactured" securities as well as pre-existing ones).

289. Even if the bondsman decides not to enter into the transaction with the defendant because of the market reaction, the third parties' exercise of their options might still be declared legally enforceable, to ensure that third parties have adequate incentive to police prospective deals. A statute establishing a system like that here would need to allow some period of time between the bondsman and the defendant's agreeing to a contract and the consummation of that contract for the self-assessment challenges to take place.

particular defendant will accept a small loss to help the defendant out.²⁹⁰

A more complicated self-assessment mechanism might be used in conjunction with an exchange being used to predict some number, such as an exchange for shares in a percentage of a future class action recovery or a political market. Immediately after completing a trade in such an exchange, the owner might be required to announce a self-assessment of the security's value. Everyone else would then have both a call option and a put option; that is, anyone could purchase the security from the owner or sell an identical one to the owner at the announced price.²⁹¹ This double constraint exposes anyone who has priced a security too low or too high and refuses to relent to the possibility of crippling financial losses. If this were not enough to prevent manipulation, the law could provide that if call options or put options are exercised against someone a certain number of times, that trader could no longer participate in the market. The eliminated participant would then be required to auction off the security to the highest bidder. With such rules in place, someone seeking to manipulate the market would expect not only to fail in the effort, but to lose money as well.

2. *Competitiveness*

The competitiveness concern is that too few people will decide to bid at the auction, trade in the market, or respond to self-assessments. This lack of participation may have direct consequences, as when auction revenues are less than they would be in a competitive auction, or indirect ones, as when the legal system relies on a market price to set attorneys' fees and that price deviates from the correct price. Ultimately, both concerns are empirical, and the absence of perfect competition will often have some effect on the outcome of market processes. Careful construction of market mechanisms, however, can ensure that this effect is not too great.

With auctions, the worry is that the winning price will be less than the property auctioned would be valued by its highest valuing user. It will always be somewhat less whenever there is only one highest valuing user.²⁹² This does not mean that the producer will receive less

290. See *supra* note 188 and accompanying text.

291. See *supra* note 202 and accompanying text (explaining how a self-assessment could subject a valuer to both a put option and a call option).

292. If there are a small number of bidders in a first-price sealed-bid auction, each bidder will enter an amount somewhat lower than she would be willing to pay, to obtain the possibility of some consumer surplus. With a second-price sealed-bid auction, each bidder's incentive is to enter a true valuation, because the high bidder

money from an auction than from some other means of sale, but a lack of competitiveness could mean that the producer would do better by negotiating with potential purchasers. This is especially likely when there is one buyer who is clearly the highest valuer of the item being auctioned, because other potential bidders may not even participate. An auction may be combined with negotiation, however, such that the seller is allowed to accept the high bid or to further discuss a final price with the seller. If the goal of corporate control law is to maximize the target's revenues, then allowing the target to refuse the high bid after a *Revlon* auction might be optimal.²⁹³ If there were no, or small, transaction costs to resale,²⁹⁴ however, then permitting negotiation would be counterproductive. It risks the possibility that strategic bargaining will prevent the parties from reaching the deal, with no offsetting benefit. With no transactions costs (including entry costs to participate in an auction), the seller can be satisfied that an auction will maximize revenues. Even if *X* is clearly the highest valuing user, *Y* might recognize that *X* is bidding lower than its true valuation and could outbid, and then negotiate with, *X*.²⁹⁵ As long as transactions costs of resale are low or the number of potential buyers who will recognize the existence of the auction is high, the profit incentive of third parties to enter noncompetitive auctions will tend to minimize the danger of noncompetitive prices.²⁹⁶

pays only the bid of the second-highest bidder. This leaves the consumer with a surplus whenever it values the item auctioned more than any other participant. *See supra* note 40 (discussing second-price sealed bid auctions).

293. Even under Delaware law, refusing a high bid is possible as a way of generating even higher bids after a *Revlon* auction. Indeed, *Revlon* mandates only that the sellers of a firm get the best price they can, not that they conduct a formal auction to whose winner they are committed. *See Barkan v. Amsted Indus., Inc.*, 567 A.2d 1279, 1286-88 (Del. 1989) (allowing such refusal where it is used to increase the amount at which the corporation will be sold).

294. *Compare* Stephen Fraidin & Jon D. Hanson, *Toward Unlocking Lockups*, 103 YALE L.J. 1739, 1790-94 (1994) (arguing that transaction costs are not a significant bar to resale), *with, e.g.*, David A. Skeel, Jr., *A Reliance Damages Approach to Corporate Lockups*, 90 NW. U. L. REV. 564, 581-84 (1996) (arguing that transaction costs of resale may foreclose transfer to the highest valuing user).

295. *See supra* note 33 (suggesting that competition among third-party bidders drives up auction prices).

296. In designing an auction whose purpose is to dispose of property at the greatest possible value, the government should thus seek to ensure that it will be relatively easy for third parties to enter the market. For example, if there is concern about uncompetitiveness in the sale of a slice of spectrum, perhaps because the particular frequencies are most valued by a particular user, the FCC should not require a potential bidder to demonstrate that it is capable of using the spectrum. By allowing anyone who can pay to purchase the spectrum and minimizing the paperwork involved in transferring it, the government can encourage the participation of arbitrageurs who will make the market more competitive.

Where the purpose of an auction is primarily to obtain valuation information and revenue concerns do not loom as large, the answer is simpler: Hold a second-price sealed bid auction. The high bid rather than the sale price can be used for legal purposes. In a bankruptcy auction of securities equal to one percent of a firm, for example, the high bidder might bid \$100 per share, while the second-highest bidder bids \$90. The result is that the high bidder must pay only \$90, but the \$100 value should still be used to determine the total value of the firm for bankruptcy purposes. Similarly, when the right to a portion of an expected class action recovery is auctioned off, the bid, not the sale price, should be used when calculating the expected recovery for the purpose of determining attorney's fees. The government in these types of valuation auctions could still seek to encourage participation and reduce transactions costs, so that the auction revenues are as high as possible. Relying on the bid price rather than the sale price ensures that noncompetitiveness will not downwardly bias price assessments used for independent legal purposes.

Noncompetitiveness may be a more significant concern when the legal system relies on the price of a security traded in an exchange to make a prediction about the future (or to determine what an *ex ante* prediction would have been). Suppose that the government established a market mechanism to accomplish the census, initially auctioning off the population-contingent securities. Even if the government established an exchange in which such securities may be traded, there is a possibility that their owners may prefer simply to hold onto them. Thus, any new information relevant to determining population in a particular district will not be reflected in trading prices, and the census exchange will have been reduced to a census auction. Similarly, if the government established an exchange that it would later use to determine the expected class action recovery at any point in time, intermittent sales of such securities might provide only limited guidance about the expected class action recovery between such sales.

These problems will not necessarily arise. Shares exchange hands often on stock markets, even though their owners could keep them. More relevantly, trading is frequent enough on the Iowa Electronic Markets to provide day-by-day assessments of political candidates' fortunes.²⁹⁷ These two examples suggest that if the market is

297. On typical recent trading days on the Democratic National Convention market, between 50 and 100 shares of each Al Gore and Bill Bradley were exchanged. See Iowa Electronic Markets, *IEM 2000 Democratic National Convention*

adequately capitalized, sufficient trading will occur. Although trading might be too sparse to be useful if the government auctioned off rights to an amount equivalent to only a very small percentage of a class action lawsuit, for the purpose of later setting attorneys' fees, the problem is easily solved by increasing the percentage of the suit for sale. This response is costly, however, and at some point this increased expense must be balanced against the benefits of greater accuracy from more frequent trading.

There is another solution to the problem of thin trading, and it should be familiar. We have already seen that requiring security owners to self-assess the values of their securities, and giving the world a put and a call option for those securities, mitigates concerns about manipulation.²⁹⁸ Such a self-assessment regime will also give security owners incentives to update their valuations of a security as new information develops, and to do so honestly. If new information reveals that a self-assessment no longer reflects the value of a security, a third party will have an incentive to execute a put option or a call option. Legal scholars have long noted that property protection of an entitlement may be inferior to liability protection where bargaining is costly.²⁹⁹ The self-assessment regime eliminates bargaining costs. It can thus make frequent exchange of securities possible even in a thin market, or on an exchange in which concerns about insider trading otherwise would deter transactions.³⁰⁰

Noncompetitiveness may be a danger, however, even in a self-assessment regime. If the total market capitalization of a security is very small, the research required to identify misvaluations may be too

Presidential Nomination Winner-Takes-All Market (visited Oct. 28, 1999) <http://iemweb.biz.uiowa.edu/pricehistory/pricehistory_SelectContract.cfm?market_ID=17> (listing low, high, and average list prices for Democratic presidential campaign-based securities). This number of trades is paltry compared to most securities exchanges, in part because the total capitalization of the market is very small. This represents a sufficient number of transactions per day, however, because political trends manifest themselves in security prices relatively quickly. Importantly, the bid-ask spread on securities that would pay off a dollar if a particular candidate wins is generally between one and two cents, indicating that at least some investors are monitoring political events closely.

298. See *supra* text accompanying note 291.

299. See, e.g., Calabresi & Melamed, *supra* note 169, at 1127.

300. The divergence between "bid" and "ask" prices, i.e., the price someone is willing to pay for a security and the price at which the owner is willing to part with it, reflects in part the concern that someone else might have new information relevant to the pricing of a particular security. See, e.g., H. Nejat Seyhun, *Insiders' Profits, Costs of Trading, and Market Efficiency*, 16 J. FIN. ECON. 189, 190-91 (1986) (stating that informed trading results in opposing traders having abnormal losses and higher charges to offset such losses). Without the put and call options, this could be particularly problematic in an exchange intended to encourage the production of new information.

costly to justify any profit potential. Ultimately, when deciding the value at which to capitalize a predictive market, the government is determining how much it is willing to spend to subsidize research to find misvaluations in that market. If the government were to auction off rights to an amount equal to one percent of a future class action recovery, and then require that such rights be traded in an exchange protected by the call and put self-assessment rules, it would in effect be declaring that it is willing to spend \$1 to subsidize research that can be expected on average to refine a recovery prediction by \$100. Even this might be too great a subsidy if the purpose is to determine appropriate attorneys' fees. A larger subsidy might be justified in the administrative claims exchange, since employees may need substantial monetary rewards before they will be willing to blow the whistle on their employers. The government can adjust the subsidy to the purpose for which the exchange and self-assessment mechanism are being used.

3. *Winner's curse*

In the story so far, the high bidders at auctions ought to be pleased, especially if the amount they must pay is less than what they might have been willing to spend. The "winner's curse" challenges this complacency.³⁰¹ In an auction of a common-value asset, the victor may in fact be the fool.³⁰² If everyone else thought that the securities were worth from \$5 to \$7, and the high bid was for \$8, then it seems odd to suppose the winner right and the losers wrong.³⁰³ In some circumstances, the winner may have been uniquely privileged with access to a hint that the securities were worth more than others think. In others, though, the winner may have made a raw miscalculation, or may have been the only bidder not aware of some key information pointing the other way.

Though the winner's curse will not worry us when our only goal is to maximize auction revenues—indeed, we may embrace it there—it becomes a concern when the legal system is relying on the result of an auction to render a legal decision. In a partial sale of a firm in bankruptcy, perhaps the purchasers of stock are the few eccentrics who think the firm has a chance of survival.³⁰⁴ Or, in the auction for

301. See generally RICHARD H. THALER, *The Winner's Curse*, in THE WINNER'S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE 50 (1992).

302. See *id.* at 51-52.

303. See *id.*

304. Suppose that both *A* and *B* believe that a bankrupt company's stock would not be worth anything if the firm continued as a going concern because it would continue to accumulate liabilities faster than assets, but *C* believes that it would be

rights to an amount equal to a percentage of a class action recovery, the high bidders will be those who are relatively more enthusiastic about the plaintiffs' case. Though the phrase "winner's curse" traditionally refers to auctions, we can imagine similar problems with exchange and self-assessment. For example, perhaps Internet stocks are valued so highly only because a small minority of investors believe there is gold at the end of the cyber-rainbow.³⁰⁵ Meanwhile, the bondsman who supplies bail for a prisoner may be the only one who believes the prisoner's promise to appear.

At first, the winner's curse problem may seem devastating to any attempt to rely on auction values for legal purposes. Reliance on the high bids at auction, it seems, will lead to systematically upwardly biased estimates of whatever the number is that we are estimating. Auction theory offers a ready answer, although the answer ultimately does not recognize the full scope of the problem. The answer is that auction bidders are not stupid. Unless bidders believe they have some unique information or some special ability to take advantage of the property, they will recognize that if they win the auction with their best estimates, they have probably overbid. Thus, bidders will shave their bids.³⁰⁶ Indeed, one should expect the smart bidder to shave a bid enough so that on average there is no winner's curse.³⁰⁷ That is, whatever the winner's profit would be in a world *without* the winner's curse, it will on average be the same in a world *with* the winner's curse.

An important but not devastating response to this critique is that bidders might not be so smart. Indeed, an empirical study of Texas oil wells demonstrates the winner's curse in action.³⁰⁸ The winners of auctions for oil leases repeatedly paid too much for them.³⁰⁹ The limitation of this critique is that people eventually realize their

worth \$10. If a bankruptcy court held an auction for securities in the reorganized enterprise (promising to cancel the auction if it ultimately decides to liquidate the firm), and if *C* bid \$10 per share, then the court might overestimate the firm's value.

305. See *When the Bubble Bursts*, *ECONOMIST*, Jan. 30, 1999, at 23 (arguing that Internet stocks are overvalued and noting that only a small percentage of shares in many Internet companies are publicly traded).

306. See Schroepfer, *supra* note 36, at 44 ("In order to make money in a competitive bidding situation (and avoid the winner's curse), a bidder needs to adjust his bid for the incorrect estimation of the contested item's value.").

307. See *id.*

308. See E.C. Capen et al., *Competitive Bidding in High-Risk Situations*, 23 *J. PETROLEUM TECH.* 641, 643 (1971).

309. But see Otis Gilley et al., *Uncertainty, Experience and the 'Winner's Curse' in OCS Lease Bidding*, 32 *MGMT. SCI.* 673, 678 (1986) (suggesting that bidders may have begun compensating for winner's curse errors); Kenneth Hendricks & Robert H. Porter, *An Empirical Study of an Auction with Asymmetric Information*, 78 *AM. ECON. REV.* 865, 882 (1988) (same).

errors.³¹⁰ People who have never heard of the winner's curse possibly will bid too much at an auction, but if a legal regime routinely uses auctions to distribute entitlements, bidders will recognize that they should reduce their bids. A firm specializing in making purchases at public forfeiture auctions would go out of business if it routinely neglected to adjust for the winner's curse. If a capital market mechanism were used on a large scale for some legal purpose, cottage industries would grow around this mechanism, and proprietors would recognize the general need to have some strategy about how to bid, when to trade, or what to do in response to a self-assessment. Pockets of stupidity may survive, but these are unlikely to threaten the stability of a market-based legal institution.

The winner's curse does, however, present a deeper concern. Even if the winners shave their bids the right amount on average, they may do so too much or too little in any individual case. With an infinite number of bidders evaluating the same evidence, bids might lie along a bell curve distribution. The winner of a particular auction, though, will be the high bidder from a finite group. The bidder may lie in the tail end of the distribution or not too far from the center. Bid shaving may make the peak of the distribution the expected result, but because the bidders cannot see the full distribution, the high bidder may overshoot or undershoot it. Thus, if in a particular auction, there is likely to be large divergence among bidders about the appropriate valuation or a great chance of error, simply relying on the winning bid is precarious.

One solution in the auction context would be to use not the high bid, but the median bid. That is, the median bidder would purchase the right, and that bidder's bid would be the number on which the legal system relies. In such a system, no bid shaving would occur, and the winning bid will be a relatively moderate one. For example, in the auction used to determine the expected value of a class action recovery, a middle-ground assessment of the suit, rather than an

310. *But cf.* Barry Lind & Charles R. Plott, *The Winner's Curse: Experiments with Buyers and with Sellers*, 81 AM. ECON. REV. 335, 336 (1991) (showing that in experimental studies, subjects had difficulty learning from their initial mistakes); Richard H. Thaler, *Anomalies: The Winner's Curse*, 2 J. ECON. PERSP. 191, 196 (1988) (suggesting that bidders may not be rational). This critique, however, does not show that self-conscious investors could not develop mathematical models that they would use to decide how much to shave their bids. For studies indicating that bidders do compensate for the winner's curse, see R. Preston McAfee & John McMillan, *Auctions and Bidding*, 25 J. ECON. LIT. 699 (1987), which indicates that the extent to which bidders are risk-averse influences their bidding; and Stuart E. Thiel, *Some Evidence on the Winner's Curse*, 78 AM. ECON. REV. 884, 884-86 (1988), which argues that the winner's curse is not a significant problem in the construction industry because bidders in that industry shave their bids to avoid the winner's curse.

extreme assessment shaved somewhat arbitrarily downward, would control. Similarly, Kremer proposes that patent value be determined as a function of the various bids offered.³¹¹ These approaches make using the results of auctions more attractive, but they do not resolve the analogous concerns for exchange and for self-assessment. The concerns may be less salient in the exchange context, though, because the dynamics of security transactions over time may give traders a better sense of the mean prediction. Even if initially a few traders are more bullish on a security than the vast majority of the others, they will soon recognize their competitors' trepidation. Just as smart bidders shave their bids, so too should they adjust their willingness to buy and sell securities somewhat toward the market consensus about a particular price.

We need not, however, rely on median-bid auctions, or on traders' recognition of their own fallibility, to overcome the problem of the winner's curse. There is a market-based solution, and by now it should be doubly familiar. The solution once again is to require market traders to self-assess their securities and to give everyone else a put option and a call option at those prices. Any auction would be followed by at least some period in which exchange with such self-assessment could occur. This self-assessment regime solves the winner's curse problem because if the high bidder has shaved her bid too much or too little, others will have an incentive to exercise put or call options, respectively. After a few iterations, the market participants will be able to identify one another's assessments, and the self-assessed value will converge to a consensus.

4. *Market risk*

A sure thing is worth more than a gamble expected to pay off just as much on average.³¹² The value of a stock will be equal to the present discounted value of future profits, less some risk premium attributable to uncertainty. Risk will affect the results of all three types of market mechanisms. Bidders at an auction will not offer expected value for assets whose payoffs are uncertain. In an exchange, trading prices will be lower than they would be in a certain

311. See Kremer, *supra* note 11, at 18 ("It will be efficient for the government to use information from the entire distribution of bids, rather than only the highest bid, in estimating the private value: there is not reason to throw away the information provided by the other bids . . .").

312. For accessible discussions, see Henry T.C. Hu, *Risk, Time, and Fiduciary Principles in Corporate Investment*, 38 UCLA L. REV. 277, 286-87 (1990), and Samuel C. Thompson, Jr., *A Lawyer's Guide to Modern Valuation Techniques in Mergers and Acquisitions*, 21 J. CORP. L. 457, 504-14 (1996).

world. And those deciding whether to take advantage of a self-assessment will consider the risk that their assessments may be inaccurate or that future events will change the value of property they might receive.

Once again, this is not cause for worry when the government transfers an asset in its entirety. In the case of a car sold at a forfeiture auction, the government is effectively unloading the risk that the automobile may be a lemon, along with the vehicle itself. Bidders who are least risk-averse will bid, all else being equal, more than others, and this is efficient. Similarly, a firm's uncertainty about its ability to use spectrum will lower its bid in an FCC auction, but if the government were to use the spectrum itself, there would also be uncertainty about how effectively it could do so.

The problem arises when the government relies on the prices determined by a market mechanism. In some cases, the risk-affected number may be the one that matters for the law. In a bankruptcy auction of part of a firm, risk will depress the total revenues from the auction. This is not a problem, however, because risk is relevant in the calculation of whether the firm should continue as a going concern.³¹³ But if an administrative agency uses an administrative claims exchange to estimate the recoveries that it should expect to receive against alleged regulatory violators,³¹⁴ then it must recognize that, even if transactions were canceled should the agency not prosecute, prices will be less than the expected value of what the agency would recover in litigation.³¹⁵ In the census prediction exchange, similarly, simply dividing the total capitalization of a particular security by the price per person at which the security is to be redeemed will lead to an undercount. This is even more true if nine-tenths of the census exchange securities are to be redeemed at zero; multiplying the security price by ten to determine a market

313. A bankruptcy court ordinarily may proceed with a reorganization if the business's value as a going concern is greater than its liquidation value. The relevant comparison, however, is not between the expected value of the business as a going concern or in liquidation. That is, if the expected value of the business as a going concern is marginally greater than the expected value in liquidation, but uncertainty is much greater, then liquidation is preferable. Thus, it is appropriate that an auction of part of a firm to determine reorganization value take into account how much less the public will be willing to pay for shares on account of risk. *See generally* David Gray Carlson, *Secured Creditors and the Eely Character of Bankruptcy Valuations*, 41 AM. U. L. REV. 63, 79 (1991) (discussing some definitional difficulties in assessing value).

314. *See supra* text accompanying notes 149-54 (describing such an exchange).

315. This problem does not affect the self-assessment mechanism that might be used to levy fines against alleged regulatory violators, because that mechanism ensures that risk-averse self-assessors always have an incentive to be as accurate as possible. *See supra* text accompanying notes 207-15.

prediction ignores the significant risk cost that worthlessness nine-tenths of the time might impose.

We must, therefore, estimate how great this risk cost is. In the census prediction exchange, for example, we might look to determine the extent of undervaluation of securities corresponding to the census districts that are randomly selected for more intense scrutiny. If those securities turn out to be undervalued on average by ten percent, then we could add ten percent to the security prices for other districts in estimating those districts' populations. A more elaborate approach would classify all securities according to a few salient characteristics (such as demographic variables from a previous census) and customize our increases attributable to risk depending on the particular characteristics of the individual security. By doing this, we ensure that inaccuracy due to risk has only marginal effect on security prices. It might even be possible to use a market mechanism independent of the initial census prediction exchange to predict the amount by which each security is valued. That is, corresponding to each security would be another security that would be redeemed at some percentage of the amount by which the corresponding security turned out to be undervalued when the relevant district was selected for more intense scrutiny. This would then reduce the risk estimation problem to the smaller problem of calculating the risk in these risk estimation securities, and the problem can be made recursively smaller by creating additional markets.

The market cynic may complain that even if we can calculate risk and adjust for it when rendering legal decisions, the existing risk would be too expensive. The government, after all, must ultimately pay the risk premium when it uses a market mechanism to make a prediction. That is, auction revenues will be depressed by the amount of the total risk that traders must bear. This, however, is not a complete loss. With this expenditure, the government has produced a number that it can use for its purposes, here determining which companies to pursue for environmental violations. The risk cost is simply the cost to the government of obtaining that number. If this cost is too great, the government could use a smaller percentage, and tolerate in exchange a less precise prediction. The existence of some risk cost, though, is inevitable, because the outcome of the numeric assessment procedure itself is unpredictable.

5. *Transactions costs*

Another cost borne by the seller of property in an auction is the cost of running the auction itself. When the property right being

auctioned off is well-defined, however, there is little need for an auction to be expensive.³¹⁶ If certain types of auctions are held regularly, extensive publicity would not be necessary. Nor is it difficult to hold an English auction, as the numerous Internet sites sponsoring auctions of property attest, or to record the various bids of the participants in a sealed-bid auction.³¹⁷

Transactions costs of auctions are likely to be highest when the auction procedure itself is undefined. *Revlon* auctions, for example, seem to be a cross between sealed-bid auctions and English auctions.³¹⁸ That is, initially a sealed-bid auction is held, but the law does not necessarily make the result of such an auction final.³¹⁹ Perhaps it is desirable to give the target firm's manager the right to negotiate with the high bidder as a means of maximizing revenues to target shareholders,³²⁰ but this furnishes no reason to provide for additional rounds of bidding. The existence of such additional rounds makes auction strategy considerably more complex than it needs to be, and invites rent-seeking as parties argue about whether additional auction rounds shall be held. Because the decision whether to hold additional rounds must ultimately be within someone's discretion—either the firm itself or a court with oversight—the ambiguous structure also creates the danger that the auction will continue until the high bidder is the white knight or judicial favorite.³²¹ If a company is definitely to be sold at auction, a

316. See generally Amy Harmon & Leslie Kaufman, *On-Line Auctions: Let's Make a Deal Without the Haggle*, N.Y. TIMES, Apr. 13, 1999, at A1 (stating that Internet sites greatly reduce the expense of traditional auctions).

317. See *id.*

318. See *supra* note 252 (discussing *Revlon* and the making of similar offers by bidders).

319. A student commentator explains the confusion:

To obtain a maximum price, a board ideally would allow round after round of bidding until one bidder remains standing. Such a prolonged auction, however, is itself a significant threat to the corporation because of the uncertainties that it creates regarding ongoing ownership. As a result, the board must, at some point, declare an end to the auction. At that point, the bidders obviously cannot truly be treated equally; in order to end an auction, one bidder (the winner) must be treated preferentially (being allowed to buy the company) to the detriment of all others. *Revlon's* greatest lasting impact, therefore, is in governing the conditions under which a target may permissibly move to declare an end to the auction and close a sale of the company to one of the bidders.

T. Richard Giovannelli, Note, *Revisiting Revlon: The Rumors of Its Demise Have Been Greatly Exaggerated*, 37 WM. & MARY L. REV. 1513, 1547 (1996). Even if this approach is a logical doctrinal interpretation of *Revlon* and Delaware corporate law, it is unlikely that any self-conscious designer of an auction framework would suggest such an approximate mix of the English auction and the sealed-bid auction.

320. See *supra* note 293 and accompanying text (noting that *Revlon* mandates only that sellers of a corporation get the best possible price).

321. See *supra* note 252.

one-time sealed-bid auction is preferable.³²²

Legal costs are a particularly important type of transactions cost. When a firm is liquidated entirely in bankruptcy, for example, the legal costs may be a substantial portion of the firm's value.³²³ Similarly, the transactions costs in transferring real estate are a significant percentage of the property's value.³²⁴ With the self-assessment mechanism requiring property owners to value their property and giving others the option of buying the property at this price, the transaction costs of a transfer in cases where the property right is exercised must be considered.³²⁵ Sometimes transfer costs will be well-spent because the exerciser of the self-assessment truly values the property more than the owner; in other cases, however, the exerciser may simply have caught the self-assessor who has, sneakily or mistakenly, set too low a value. One factor in deciding whether to adopt such a system would thus be what percentage of forced transfers in fact make the self-assessor better off. If such a system were adopted, transactions costs could be trimmed by making the scope of the entitlement clear and by allowing the self-assessor and the exerciser to negotiate a fee that the self-assessor could pay to avoid the forced sale.³²⁶

The bidders' research expenses are also a concern to the market mechanism designer.³²⁷ An axiom of auction theory is that in a

322. See Cramton & Schwartz, *supra* note 53. The problem of excessive investment in research, see *supra* Part II.B.4, means that in a common value context, negotiation with a single potential purchaser can be cheaper than an auction. See Cramton & Schwartz, *supra* note 53, at 33-34.

323. See generally Karen Hopper Wruck, *Financial Distress, Reorganization, and Organizational Efficiency*, 27 J. FIN. ECON. 419, 436-39 (1990). Commentators debate whether liquidation generally imposes smaller transactions costs than reorganization. See sources cited *supra* note 15.

324. For example, the transactions costs associated with buying and selling a house can be as much as 10% of its value. See RICHARD F. MUTH & ALLEN C. GOODMAN, *THE ECONOMICS OF HOUSING MARKETS* 6 (1989).

325. These costs may well be higher than in typical real estate transactions, because the buyer and seller will not have had an opportunity to agree on precisely what will be included in the sale, and litigation is thus a more likely result. In particular, the parties will likely disagree about what counts as a fixture. See generally Alphonse M. Squillante, *The Law of Fixtures: Common Law and the Uniform Commercial Code*, 15 HOFSTRA L. REV. 191, 193-99 (1987) (introducing some of the complications in fixtures doctrine).

326. When the current property owner is the highest valuing user of the property despite her undervaluation, taking into account the moving costs of both parties, both potential buyer and seller will benefit from a negotiated payment from the property owner to extinguish the right to buy. In these cases, the self-assessed valuation system serves a function akin to self-assessment in tax systems, where the taxpayer who is caught undervaluing pays a substantial fine. See *supra* note 173 and accompanying text (discussing the use of self-assessment in tax systems).

327. See Kenneth R. French & Robert E. McCormick, *Sealed Bid, Sunk Costs, and the Process of Competition*, 57 J. BUS. 417, 417-18 (1984) (discussing pre-contract costs in a

common value auction, these costs are borne ultimately by the seller.³²⁸ An intuitive way of understanding this is that if a risk-averse bidder expects to spend \$1000 on research and to have a ten percent chance of winning the auction, the bidder can break even only by shaving \$10,000 from the expected value of the asset. Thus, even if it costs nothing to run an auction at which a firm is to be sold in bankruptcy, creditors will lose an amount equal to prospective bidders' research into the value of the firm. An auction is thus undesirable if the information that the auction generates is itself not useful. If, for example, it were already clear that the firm should be run as a going concern regardless of exactly how much it is worth, then the auction generates unnecessary costs. When that is not clear, there may be a benefit to an auction. One benefit of auctioning off just part of a firm in bankruptcy is that this reduces the total amount of research that bidders will be willing to do and thus decreases the costs of the auction. If the dollar figure of a firm's value provides all that is needed for bankruptcy purposes, this type of auction will be preferable to liquidation.

Where market mechanisms are used solely for informational purposes, transactions costs are likely to cause less worry. The census prediction market could be run at a relatively small transactions cost. The government would need to release its preliminary census information and would need to have some means of auctioning off rights contingent on final population figures. Because these rights are not tied to physical property, however, the legal costs attendant such a device need not be large. The government would still pay the research costs of auction bidders and market participants, but the very purpose of the market mechanism is to encourage such research to save itself the cost of intensively scrutinizing each market sector. If coming up with a best estimate is an easy statistical task requiring little research, then auction revenues will be high, and the auction procedure will be inexpensive. If, on the other hand, market participants believe that they can predict accurately only at great cost, for example manual counting in parts of particular districts, the government will end up paying more. Before launching the market, however, the government can set the redemption price of census securities based on how valuable additional precision is.³²⁹

sealed bid auction).

328. See, e.g., *id.* at 439; Hansen & Thomas, *supra* note 15, at 170-71 (discussing French and McCormick's model).

329. If the government promised to redeem the securities at one cent per person, then a prospective researcher would spend a marginal dollar on research as long as this allowed a refinement in the market's population estimates by 100 people. If the

6. *Inability to pay*

The sponsor of an auction must ensure that the winner can pay. This problem surfaced in the FCC auctions, in which some high bidders did not have the financing to support their bids.³³⁰ The bidders, it seems, hoped that by winning, they might attract sufficient financing that they could use to pay their bids, particularly if the winning bids were lower than what financiers would have expected.³³¹ This “heads I win, tails you lose” strategy meant that the government needed to look to subsequent bidders.³³² In many auctions, such a solution will be acceptable, but it would be less viable in auctions in which the government is relying on the results of an auction or a market to make some legal determination. The government relies on a market mechanism only because it knows that the participants have an incentive to be accurate.³³³ If a market participant is near bankrupt, however, then the participant may not bear the entire risk of loss,³³⁴ and legal decisions may thus be unreliable.

government wishes to spend a dollar only if that will lead to an estimate being more accurate by 1000 people, then it should redeem the securities at just one-tenth of a cent per person. *See generally supra* note 273 and accompanying text (noting the possibility of using a market mechanism to set counsel fees).

330. *See, e.g.*, Daniel Pearl, *FCC Says Some License Bidders Have Defaulted*, WALL ST. J., Aug. 17, 1994, at B6 (reporting a default rate of about 40% from one interactive television license auction).

331. QuestCom, for example, was relying on funding from a pending loan agreement with U.S. West, but that loan agreement did not materialize. *See* Albert R. Karr & Scott Ritter, *QuestCom Unit Defaults on Payment for Winning FCC Wireless Auction Bids*, WALL ST. J., May 20, 1996, at B4. Bidders may also have hoped for a bail-out from the FCC. *Cf.* Bryan Gruley, *New FCC Chief Shows Willingness to Aid Firms Unable to Pay for PCS Licenses*, WALL ST. J., Nov. 4, 1997, at B11. This illustrates the danger of an auction process that is prone to political manipulation.

332. *See* Karr & Ritter, *supra* note 331, at B4 (quoting FCC officials wanting “to deal quickly and fairly with defaults and put licenses in the hands of the companies that will provide service to the American public”).

333. *But see id.* (clarifying that bidders suffer substantial penalties for withdrawing bids).

334. This is a familiar problem in bankruptcy. A firm that is about to go bankrupt has an incentive to roll the dice. If lucky, bankruptcy is averted; if unlucky, the creditors lose. *See, e.g.*, Ramesh K.S. Rao et al., *Fiduciary Duty à la Lyonnais: An Economic Perspective on Corporate Governance in a Financially Distressed Firm*, 22 J. CORP. L. 53, 76 (1996) (“Managers of financially-distressed firms will undertake high-risk projects because shareholders have little to lose if the projects are unsuccessful (their capital is already gone), but will benefit substantially if the projects are successful (high-risk projects yield high expected rewards). Creditors, however, do not participate in the “upside” potential of the risk and are actually worse off because the managers are taking this risk at their expense.”) (citation omitted). Commentators on the savings-and-loans crisis of the 1980s have identified this kind of risk taking with taxpayer dollars as a proximate cause. *See, e.g.*, Joseph A. Grundfest, *Lobbying into Limbo: The Political Ecology of the Savings and Loan Crisis*, 2 STAN. L. & POL’Y REV. 25 (1990) (recounting how lax supervision and inexpensive deposit insurance fueled the risky behavior at the root of the savings-and-loan crisis). This might also be a problem in the voluntary tax self-assessment procedure in which corporations would have only some percentage chance of having to fill out tax forms and pay a multiple

This problem can lead to perverse results in a market mechanism that subjects the participant to the possibility of a large fine only some percentage of the time, such as the tenfold fine imagined for the administrative claims market.³³⁵ For example, an individual with no money in the bank might buy a security and announce a valuation of \$1,000,000. If knowledge of this participant's impecuniousness was widespread, there would be little incentive for any third party to exercise a put option, because the self-assessor would effectively be judgment proof. Nine-tenths of the time, the self-assessor would receive \$1,000,000. Perhaps appropriate criminal sanctions could deter such behavior, but ideally, protection against this particular form of manipulation should be built into the mechanism itself.

This problem is not difficult to solve. The government simply would need to require that everyone participating in the market be bonded. If the market participant himself could not pay, the insurer supplying the bond would be liable. The goal is not just to ensure that the government receives its money, but to prevent the near-bankrupt from snubbing market fundamentals. If insurance companies charged uniform rates for coverage, we would still need to be concerned about using the results of a market mechanism for legal purposes. Insurers, however, would be likely to scrutinize prospective market participants, checking their solvency and their potential liability, in addition perhaps to demanding collateral.³³⁶ A market participant engaging in too high a volume of transactions might lose coverage, and with it the ability to trade. Insurance companies would likely require many insured customers to preapprove transactions so that the insurer could prevent massive losses from a single trade.³³⁷ If potential liability were particularly

of any initial underreporting. *See supra* text accompanying note 205. Companies whose taxes would throw them into bankruptcy might underreport (assuming no criminal penalties), because the consequences of being caught are no greater than the result attaching to honesty.

335. *See* Abramowicz, *supra* note 14, at 208-09.

336. For a discussion of risk classification by insurers, see KENNETH S. ABROHAM, *DISTRIBUTING RISK: INSURANCE, LEGAL THEORY, AND PUBLIC POLICY* 64-100 (1986).

337. In a traditional stock market, limited liability ensures that losses are limited to investment. *See* EASTERBROOK & FISCHER, *supra* note 147, at 40 (explaining that limited liability shields stockholders from personal liability for corporate debts). With the comprehensive market mechanism described so far, however, any transaction in theory could lead to far greater liability. For example, if *A* values a security at \$3, *B* exercises a put option and values that contract at \$1 (corresponding to a \$2 valuation on the underlying security), and *C* exercises a put option and values that at \$1,000,000 (corresponding to a \$1,000,002 valuation of the underlying security), then, if there is no further trading, *B* will lose over a million dollars. If the price falls back to its initial value, then *C* will have lost that much. Of course, it will be rare for there to be such great differences of opinion, but the market needs some means of preventing such mistakes and ensuring that it will be paid if large losses

large for some specific trade, the insurance companies might even have an incentive to learn about the fundamentals underlying the corresponding security.

An insurance requirement necessitates some direct government regulation. The government must ensure that insurers are sufficiently capitalized and reinsured,³³⁸ and it must establish some reporting scheme allowing insurers to certify or decertify particular market participants. The true market advocate, however, might support a market-based means of assessing insurance companies. It would be easy enough to establish a security that could be used to assess the probability that an insurance company would be able to pay its debts. Indeed, a market scheme might also be used to assess individual market participants; if the security value corresponding to a particular participant's ability to pay fell too low, that participant would be required to liquidate holdings and would be prevented from further participation. This more radical scheme runs into a circularity obstacle, however, because there must at least be some means of ensuring the ability to pay of those who trade in the market evaluating other market participants. Nonetheless, the amount of government involvement in such a scheme could be quite small, as it could certify a handful of insurance companies that would be available to bond participants in this solvency prediction market.³³⁹ This conclusion is illustrative of a more general one, that even if some regulation of the market itself is necessary, that regulation might be simplified with capital market schemes.

III. MARKET MECHANISMS AND LEGAL VALUES

So far, I have shown that market mechanisms may provide a workable alternative to accomplishing certain legal decisionmaking tasks, and that a comprehensive market mechanism anchored by self-assessment rules might overcome some of the technical problems that beset market solutions. This alone, however, provides only a suggestive argument for replacing some of our existing legal institutions with market-based ones. Ultimately, we must ask to what extent capital market mechanisms satisfy the various aims of law. In this Part, I consider a range of values that law seeks to promote and

occasionally occur.

338. Such requirements are common in a variety of insurance regulatory schemes. *See, e.g.*, 12 C.F.R. § 933.16 (1999) (requiring that insurance company applicants meet "minimum statutory and regulatory capital requirements").

339. Requiring audits by independent appraisers would be an alternative means of limiting the role of the government. *See, e.g.*, CAL. INS. CODE § 900.2 (West 1993) (requiring all insurers to submit to annual independent audits).

evaluate the various market-based proposals I have imagined against them. I have divided the values of law into three groups; rough groupings to be sure, but adequate to illustrate the different roles that decisionmaking institutions play in a legal system. By “process values,” I refer to criteria through which to evaluate how effective legal institutions are at processing individual cases. “Democratic values” refer to the effectiveness of institutions in incorporating the citizenry and their preferences into decisionmaking processes. Finally, “institutional values” offer benchmarks for assessing a particular institution in relation to a broader legal culture.

A. *Process Values*

1. *Accuracy*

Accuracy is regarded universally as an important value for adjudication to pursue, though its definition can be elusive.³⁴⁰ To evaluate the accuracy of a particular market mechanism, we first need to establish the goal of the legal institution that the market mechanism is employing. If the purpose of a spectrum auction, for example, is only to generate sufficiently large revenues for the government, then the auction method is almost surely superior to any other means of distributing spectrum. It is a more accurate way of finding the buyers who will be willing to pay the most for spectrum, and of determining how much they are willing to pay, than other methods. If the purpose is to allocate spectrum in the public interest, an assessment of the market solution’s accuracy becomes more complicated. If the “public interest” must take into account externalities in spectrum uses,³⁴¹ then the spectrum auction may not be as accurate as a regime of governmental assignment, unless the government also adopts externality-specific policies, such as taxes or subsidies. Of course, the government can adopt such policies in conjunction with a spectrum auction, and thus a spectrum assignment policy ultimately can combine a governmental agency’s relative advantage in identifying externalities with individual telecommunications firms’ advantage in assessing consumer demand.

Bidders’ advantage in making certain assessments, however, will

340. See Louis Kaplow, *The Value of Accuracy in Adjudication: An Economic Analysis*, 23 J. LEGAL STUD. 307 (1994) (arguing that accuracy is a central concern in a wide range of legal rules).

341. See Douglas C. Melcher, Note, *Free Air Time for Political Advertising: An Invasion of the Protected First Amendment Freedoms of Broadcasters*, 67 GEO. WASH. L. REV. 100, 119-20 (1998) (outlining some of the various interests government has in spectrum auctions, including, for example, providing for a variety of programming).

translate to sound policy only if the bids they offer ultimately reflect this advantage. Two obstacles may dampen the accuracy of bids. First, bidders may be institutionally inept at announcing their own needs. Perhaps some firms bidding for spectrum are beset by agency problems, because managers wish to expand the size of the business even if this is not to the benefit of shareholders.³⁴² Because a purchase of spectrum generally requires business expansion, the soundness of the spectrum auction depends on the quality of corporate governance. This problem is even more salient in a *Revlon* auction. In corporate takeovers, the stock price of acquirers often falls as the stock price of targets rises,³⁴³ indicating that agency problems may drive up bids. These obstacles are not necessarily fatal. Generally, corporations do act in their best interests.³⁴⁴ Because they bear the cost of inaccurate bids, they have stronger incentives to be accurate than administrative agencies simulating the same task. Moreover, despite the existence of competitive federalism in the corporate charter market,³⁴⁵ most corporations are structured similarly.³⁴⁶ Thus, even if agency problems inflate or deflate bids, they may do so systematically, without affecting relative bids or allocative accuracy.

Second, bidders' interests in rights being auctioned may be more or less extensive than the considerations that the government would like them to take into account in making their bids. A company might bid more on spectrum than it would if it were considering only its own profits from use of that spectrum because it might wish to prevent a competitor from obtaining that spectrum, or to extend its monopoly control in a particular market.³⁴⁷ The same considerations

342. See generally F.M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 46 (1990) (discussing the agency problem known as "empire building").

343. For a skeptical evaluation of whether "empire building" can explain high takeover premiums, see John C. Coffee, Jr., *Regulating the Market for Corporate Control: A Critical Assessment of the Tender Offer's Role in Corporate Governance*, 84 COLUM. L. REV. 1145, 1167-69 (1984).

344. Businesses that do not act in their own best interests over time will go extinct. See EASTERBROOK & FISCHEL, *supra* note 147, at 21.

345. See generally ROBERTA ROMANO, THE GENIUS OF AMERICAN CORPORATE LAW (1993).

346. See *id.* at 45-48.

347. A regulated utility whose rates are set on a cost-plus basis may be able to underprice its rivals in a competitive telecommunications market by classifying costs as promoting its regulated services. Thus, a company might be the highest valuer of spectrum only because it can pass some of the costs of wireless services along to non-wireless customers. But see J. Gregory Sidak, *Telecommunications in Jericho*, 81 CAL. L. REV. 1209, 1216 (1993) (book review) (reviewing empirical evidence and concluding that such cross-subsidization does not occur).

are even more forceful in the *Revlon* context,³⁴⁸ and we ultimately must ensure that the motives for a takeover are not illicit. The accuracy of these auctions in achieving the public interest depends on the efficiency of antitrust law in preventing anti-competitive practices.

Likewise, bidders may be unwilling to take into account factors that the government could incorporate silently in an assignment process. In assigning counsel to represent a criminal defendant, for example, a court might like to allocate greater resources if in fact the defendant might be actually innocent, even when this is irrelevant to the procedural issues available on the appeal. Although it might be unseemly for an appellate court to make public assessments of innocence,³⁴⁹ they might be advancing the social good by taking a rough assessment of innocence into account in steering the potentially innocent to stronger lawyers. Law firm bidders in an auction for the right to represent a defendant on contingency might take actual innocence into account too, because of the possibility of a publicity windfall from representing a popular defendant, or the belief that a strong claim of innocence may affect the probability of success on technically unrelated issues. We must ask whether the amount of weight courts or bidders place on this variable is too much or too little, and if this consideration works to advocate the traditional assignment process, whether this variation is so great as to offset the auction's benefits in allocating legal counsel to cases that are relatively strong on the merits.

Similar concerns may pervade self-assessment markets. A bondsman deciding whether to agree to a criminal's self-assessed bail may take into account not only the defendant's risk of flight, but also the amount of negative publicity the bondsman may receive if the particular defendant fled. A property owner self-assessing for tax purposes will consider not only how much the property is worth, but

348. The auction framework itself, of course, need not provide the protection against anticompetitive bidding. The federal government polices mergers, *see* ANTITRUST DIV., U.S. DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, HORIZONTAL MERGER GUIDELINES, *reprinted in* 4 Trade Reg. Rep. (CCH), Apr. 2, 1992, ¶¶ 13, 104, and administrators of a *Revlon* auction can accept the second-highest bid if there is an antitrust bar to the highest bid.

349. Judges do sometimes make such assessments on *habeas* review, perhaps in part to catch the attention of reviewing courts. *See, e.g.,* *Kyles v. Whitley*, 5 F.3d 806, 820 (5th Cir. 1993) (King, J., dissenting) ("For the first time in my fourteen years on this court—during which I have participated in the decision of literally dozens of capital habeas cases—I have serious reservations about whether the State has sentenced to death the right man."), *rev'd*, 514 U.S. 419 (1995). It might seem inappropriate, however, for a judge to make such an announcement when assigning appellate counsel, before the merits of the appeal have even been heard.

also the accessibility of the property to third parties that seek to identify undervaluations.³⁵⁰ As these examples suggest, self-assessed valuations may be noisy. That is, they may depend in part on factors that from a normative perspective should be irrelevant for legal purposes.

Popular skepticism about the accuracy of capital market approaches may be greatest for exchange mechanisms. In fact, however, concerns about accuracy are least salient for such mechanisms, because the rights embodied by securities are typically clearly defined, and because ownership is separated from control.³⁵¹ In a stock market, for example, prices are unlikely to reflect idiosyncratic agendas unless a single shareholder or a small number of shareholders own a large percentage of stock. Some political activists may be unwilling to invest in tobacco stocks to make a political point independent of their desire to build the best portfolio possible,³⁵² but this will have only a small effect on stock price, because any resulting price depression will make a tobacco stock more attractive to politically indifferent traders.³⁵³ Similarly, in an exchange used to predict census numbers, we might be concerned about accuracy if only a few shareholders owned the securities corresponding to a particular district, because those shareholders might care about the census value itself. But if the securities are held by a large number of diverse traders, or there is some means by which intentional misassessments will lead to the loss of an ownership right,³⁵⁴ concerns about inaccuracy diminish.

350. See *supra* notes 192-97.

351. Cf. Robert G. Vanecko, *Regulators in 14A and 13D and the Role of Institutional Investors in Corporate Governance*, 87 NW. U. L. REV. 376, 376 (1992) (addressing the separation of corporate ownership and control given the growing dominance of institutional investors).

352. Commentators have debated whether so-called "socially responsible investing" is likely to lead to a less desirable portfolio than investing that looks only to future anticipated profits. Compare John H. Langbein & Richard A. Posner, *Social Investing and the Law of Trusts*, 79 MICH. L. REV. 72, 96 (1980) (arguing that socially responsible investing is economically imprudent), with Maria O'Brien Hylton, "Socially Responsible" Investing: *Doing Good Versus Doing Well in an Inefficient Market*, 42 AM. U. L. REV. 1, 51 (1992) (arguing that because markets may be inefficient, socially responsible investing may make economic sense).

353. Because there will always be some traders willing to buy a stock deemed socially irresponsible by others, the only effects of socially responsible investing are to decrease a stock's liquidity and to increase the size of the stock as a percentage of holders' portfolios, both of which are likely to have marginal effects on price. Anecdotal evidence suggests that trends in socially responsible investment have not adversely affected the performance of affected stocks. See, e.g., Earl C. Gottschalk Jr., *Many 'Nice Guy' Funds Fail to Make Nice Profits*, WALL ST. J., July 7, 1993, at C1 ("There is no long-term evidence that social investing beats unrestricted investing over an extended period.").

354. I refer, of course, to the put-call mechanism that allows challenges of

Critics of exchange mechanisms have cited volatility as evidence that trading prices are inaccurate.³⁵⁵ Volatility, however, may simply indicate changes in underlying fundamentals, with price swings reflecting new information about the world. Some swings, of course, are so sudden and so dramatic that no new piece of data could possibly account for them; surely, no one company's earnings report can justify the stock market crash of 1987.³⁵⁶ That traders one day could believe the market's fundamentals sound and the next day change their minds ultimately may prove the existence of human irrationality. But given the existence of such irrationality, the market price on any given day may still reflect the best guess that fallible humans can make. No matter what decisionmaking procedures we adopt and trading regimes we establish, we will still always be prisoners of our own cognitive limitations and sheep-like mentalities.³⁵⁷

"Irrational exuberance"³⁵⁸ provides cause for doubting the relative accuracy of exchange mechanisms only if there are a few level-headed individuals whom we can select with minimal controversy and trust to identify instances of collective self-deception. Casual observers of market behavior may believe that they can tell when securities on an exchange are overvalued.³⁵⁹ Newspaper and television commentators, after all, routinely tell us when the market or a particular stock is overvalued or undervalued.³⁶⁰ The problem is that others offer

misassessments. See, e.g., *supra* note 291 and accompanying text.

355. See generally Clifford W. Smith, Jr., *Market Volatility: Causes and Consequences*, 74 CORNELL L. REV. 953 (1989) (attempting to find a relationship between market volatility and other variables).

356. See Lewis D. Solomon & Howard B. Dicker, *The Crash of 1987: A Legal and Public Policy Analysis*, 57 FORDHAM L. REV. 191, 249 (1998) (suggesting that advances in information technology increase the volatility of markets). Economists have long recognized that swings in prices do not necessarily correspond to new information. See, e.g., James Tobin, *On the Efficiency of the Financial System*, LLOYD'S BANK REV., July 1984, at 6 ("[T]he market moves up and down much more than can be justified by changes in rationally formed expectations.").

357. See generally JUDGMENT UNDER UNCERTAINTY, *supra* note 228 (providing an overview of cognitive biases in human information processing).

358. This is the phrase Federal Reserve Chairman Alan Greenspan used in suggesting that the stock market might be overvalued. See, e.g., David Wessel, *Fed Chairman Pops the Big Question: Is Market Too High?*, WALL ST. J., Dec. 6, 1996, at A3. Since then, the Dow Jones Industrial Average has almost doubled in value. See Jeffrey M. Laderman, *Talk About Throwing the Bull*, BUS. WK., Sept. 27, 1999, at 23 (discussing phenomenal recent growth in the stock market).

359. The question is whether government officials, who are not causal observers, can "beat" the market. Cf. Andrew Bary, *Is Alan Addled? "Greenspan Model" Indicates Stocks are Overvalued by About 18%*, BARRON'S, Mar. 16, 1998, at 21 (comparing Greenspan's model for predicting overvalued stocks to that of Peter Canelo).

360. See Jerry Knight, *Washington Investing: Four Firms That Make the Internet Pay*, WASH. POST, Oct. 25, 1999, at F7 (outlining how inflated technology stocks diminish a firm's priority to that of making profits rather than building a base of customers).

precisely the opposite advice.³⁶¹ Empirical studies suggest that individuals cannot beat the market, at least not once adjustment is made for the cost of the time they spend engaging in research.³⁶² Although security exchanges cannot boast so-called strong-form efficiency, they exhibit at least somewhere between weak and semi-strong efficiency, as good as a best guess.³⁶³ This level of accuracy is likely to be higher than that of any governmental institution charged with the equivalent of setting prices could accomplish.

We need not look to econometrics, however, to assess the accuracy of the comprehensive market mechanism that I have constructed. For the comprehensive market mechanism is not merely the sum of its parts. Even if there are inaccuracies in an auction, inaccuracies in the pricing of securities in an exchange, or inaccuracies in self-assessment by third parties, the comprehensive market mechanism works to allow corrections. The final valuation at the conclusion of the challenge round will reflect one trader's honest assessment because of the possibility of fines and bonuses for misassessment. It will also reflect other market participants' belief that the valuation is right, or at least not so far off as to justify a challenge. To assess accuracy, in short, we need only compare the incentives the market would create to those of other legal decisionmakers. These incentives would both affect the identity of the market participants—those more skilled at legal and factual analysis will thrive, while the uninformed will lose money and exit—and these participants' motivation to identify the relative strength of the litigants' positions.

361. Compare Greenspan's skepticism with the analysis of two economists who argue that the Dow Jones Industrial Average should be 36,000, about three times its level as of this writing. See James K. Glassman & Kevin A. Hassett, *Stock Prices Are Still Far Too Low*, WALL ST. J., Mar. 17, 1999, at A26 (concluding that "investors today are rationally exuberant"). Their model is based on the conclusion that stocks in the long term are as safe as bonds, at least when held in a diversified portfolio, and that investors have gradually become more rational by being less afraid of stocks. See JAMES K. GLASSMAN & KEVIN A. HASSETT, *DOW 36,000* at 91 (1999) (asserting that in the long run the stock market "is no more risky than . . . Treasury bonds").

362. See, e.g., Tobin, *supra* note 356, at 5-6 (likening stock market investing to "[s]peculations on the speculations of other speculators who are doing the same thing"). See generally Eugene F. Fama & Kenneth R. French, *Permanent and Temporary Components of Stock Prices*, 96 J. POL. ECON. 246 (1988).

363. The three possible levels of efficiency—weak, semi-strong, and strong—were introduced in Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383, 383 (1970). Semi-strong efficiency "is now an accepted working assumption in financial economics research." JAMES H. LORIE ET AL., *THE STOCK MARKET: THEORIES AND EVIDENCE* 73 (2d ed. 1985).

2. Consistency

A legal system that is perfectly accurate will also be perfectly consistent. To any imperfect level of accuracy, however, may correspond different levels of consistency. A legal system might systematically shortchange plaintiffs by ten percent of what they should receive, but it might do so all the time. On the other hand, it might treat only half of plaintiffs in this way, while giving the other half ten percent more than they deserve. All else being equal, perhaps, the system that is more consistent is better than the system that is less so. Like cases should be treated alike.³⁶⁴

Auctions will generally be successful in generating consistent results. If two different bidders for small portions of spectrum have identical needs, then they will probably both offer similar bids, and thus probably either both will receive spectrum or neither will. An administrative agency might also strive to treat like cases alike, but the decision of whether a company will receive spectrum also might depend on chance or quirks of the individual bureaucrat making the decision for each prospective spectrum owner. In some auctions, there can be only one winner, but the contingency of ownership does not diminish consistency. If two law firms are identically capable of successfully appealing a criminal defendant's conviction, then the identity of the law firm that wins the contingency fee auction will effectively be arbitrary, but from a defendant's perspective, equally good representation can be expected either way.

Auctions, as well as self-assessment mechanisms, are also consistent in another way. If the same auction were run many different times in parallel universes, the results would probably be more or less the same each time. This is because self-evaluative decisionmaking procedures are likely to have relatively more consistent results than decisionmaking procedures used to assess third parties. A company's bid for spectrum may depend in part on who its employees happen to be, or chaotically on the actions of a butterfly a continent away, but this random noise is likely to be small. Just as I will more consistently assess the value I would obtain from different gifts than my friends deciding which gifts to buy for me,³⁶⁵ companies will more

364. This maxim has not been free from challenge. See, e.g., Christopher J. Peters, *Foolish Consistency: On Equality, Integrity, and Justice in Stare Decisis*, 105 YALE L.J. 2031 (1996) (arguing that the treatment of one case in a particular way does not by itself furnish a reason to decide another case in the same way).

365. Cf. Jonathan Chait, *Keep It*, NEW REPUBLIC, Jan. 6, 1997, at 42 (offering a humorous economic argument against exchanging gifts). This is, of course, the

consistently produce the same results than governmental agencies assessing their needs. Similarly, with a self-assessment mechanism requiring property owners to value their own property, there will be less inconsistency in an individual owner's assessment than there would be if the government were to determine valuations.³⁶⁶ The government's desire to simplify its task might cause it to assign the same valuation to two slightly different properties, while self-assessed valuations would be more likely to reflect these differences.

Exchange mechanisms, however, may offer less consistency than governmental alternatives. If a government agency were responsible for determining how much of society's resources should be invested in particular corporations, it might well accomplish the same task more or less the same from day to day. The optimist will say that the government is less likely to be swayed by fads; the pessimist will complain that the government ignores new developments. If consistency in valuations of companies were the only goal, then perhaps a case for a governmental alternative to the stock market could be made.³⁶⁷ Census prediction may provide a better example of how exchange mechanisms may shortchange consistency. The census exchange may be a more accurate predictor of population than a door-to-door count using the same quantity of resources.³⁶⁸ Nonetheless, as conventional wisdom about demographic analysis develops, usually for the better but perhaps sometimes for the worse, the exchange's assessments may change. Holding population constant, the traditional census may well give more consistent results from decade to decade than a census exchange would offer. If there is a high cost to inconsistency, for example because redistricting is expensive and time-consuming,³⁶⁹ the additional accuracy may not be

theory behind wedding gift registries and children's holiday gift lists.

366. Cf. Levmore, *supra* note 192, at 777 (discussing studies concluding that existing property tax assessments are inconsistent).

367. I refer skeptically to Unger's proposal. See *supra* notes 1-2 and accompanying text.

368. At least, it could not be much worse than the existing approach.

Despite consistent efforts to improve the quality of the count, errors persist. Persons who should have been counted are not counted at all or are counted at the wrong location; person who should not have been counted (whether because they died or were born after the decennial census date, because they were not a resident of the country, or because they did not exist) are counted; and persons who should have been only once are counted twice. It is thought that these errors have resulted in a net "undercount" of the actual American population every decennial census.

Wisconsin v. City of N.Y., 517 U.S. 1, 6 (1996).

369. See Arthur J. Anderson, *Texas Legislative Redistricting: Proposed Constitutional and Statutory Amendments for an Improved Process*, 43 Sw. L.J. 719, 728 & n.84 (1989) (recounting that "California spent approximately \$1 million to redistrict from 1971

worthwhile.

Market mechanisms also promote consistency not only by averaging the results of what different judicial decisionmakers would do, but also by establishing communities of market participants that would remain more or less constant across cases. If auctions of parts of firms in bankruptcy were a regular phenomenon, for example, firms specializing in making bankruptcy assessments would likely arise, and theories of how to make accurate assessments would be employed more consistently than if different firms made each assessment. The markets are always open to entry and thus subject to challenge and change, and the identity of the particular participants looking at the pricing of any given security may vary. But even if the community of market participants is diverse, in the aggregate the market mechanism itself will be a relatively homogeneous evaluator of cases.

3. *Efficiency*

A legal system that achieved perfect accuracy and perfect consistency would still be unacceptable if it used too large a portion of society's resources to achieve its results. We have already seen one way that market mechanisms promote efficiency, by providing incentives for deployment of decisionmaking resources where decisionmaking would be most useful.³⁷⁰ Profit potential for market participants will be greatest where research into legal and factual questions is most likely to resolve uncertainty. This does not mean that market-based decisionmaking is inherently cheaper than the alternative. Whether a spectrum auction is cheaper than just having the FCC assign spectrum depends on how carefully the FCC approaches its task. Whether the alternative to class action litigation saves resources depends in part on the percentage of the judgment that securities are worth and the percentage of cases that are traditionally adjudicated. The decentralized nature of market-based decisionmaking ensures only that participants will have strong incentives to use wisely the time and resources that they do devote to the market.

Market-based decisionmaking can promote efficiency by lessening formality. Preparation for traditional legal proceedings involves more than just freeform assessment of evidence. Legal process is, and perhaps must be, formal, and because lawyers may have only one

to 1973"). In Texas, redistricting resulted in 20 years of prolonged litigation, resulting in both considerable cost and voter confusion. *See id.* at 721.

370. *See supra* Part II.A.4.

chance to make a particular point or preserve an objection for appeal, a trial demands considerable preparatory work beyond familiarity with the facts and the applicable law. Even bringing together the various parties and lawyers to a centralized location can require a considerable expenditure of time and resources.³⁷¹ Participants in market mechanisms are not required to justify their assessments in a particular way. A bidder at an auction need not provide documentation in support of a bid, though a bidder may have produced some documentation as a means of self-imposed discipline. Though traders will presumably follow some conventions—a trader's explanation of a particular valuation will not be persuasive if no one else can understand it—these conventions would likely not be as rigid as those applying to conventional pleadings or regulatory requirements.³⁷²

Market mechanisms also may promote efficiency by reducing the amount of time that lawyers and decisionmakers need to spend investigating the background necessary to understanding particular issues. If market-based mechanisms were implemented on a sufficiently large scale, participants might specialize in a relatively small number of securities, or even in certain issues relevant to a large number of cases. For example, some market participants in the census market might specialize in particular geographical areas or certain groups of areas sharing some characteristics. Doctrinally inclined participants in the market familiar with estimating class action verdicts for the purpose of setting attorneys' fees might specialize in particular legal issues. Traders with more training, experience, and intelligence would be more willing to take on more difficult issues, and legwork that easily could be done by individuals without formal training, legal or scientific, relevant to a particular prediction probably would be done by such individuals, at lower cost. Law firms, of course, already exhibit a great deal of specialization, but courts as a general matter are not specialized.³⁷³ Sometimes, of

371. Courts have long worried about the problem of litigation in remote forums. *See, e.g.*, *Shaffer v. Heitner*, 433 U.S. 186, 218-19 (1977) (Stevens, J., concurring). Even litigation in a local forum can be expensive, however, particularly when a dispute involves many parties, witnesses, and attorneys.

372. The Federal Rules of Procedure do not impose rigid constraints on the form of pleadings. *See, e.g.*, FED. R. CIV. P. 8(a)(2) (requiring "a short and plain statement of the claim"). Individual courts, however, may impose rules that are considerably more formal. *See, e.g.*, S. CT. R. 33 (specifying typographic, color, and other rules for briefs and motions).

373. *See, e.g.*, Richard L. Revesz, *Specialized Courts and the Administrative Lawmaking System*, 138 U. PA. L. REV. 1111, 1111 (1990) ("The federal judiciary at the Article III level is predominantly generalist . . .").

course, a generalist may have insights that a specialist would miss.³⁷⁴ An advantage of market-based decisionmaking is that, whether in a legal or non-legal context, both can coexist and that no tradeoff between perspectives need be made ex ante.

By encouraging many individuals to participate, however, market mechanisms might seem to breed inefficiency.³⁷⁵ Some cases are so simple that only one person needs to evaluate the evidence to reach a firm conclusion. In such cases, though, traders will not waste their time challenging the evaluation of the first evaluator, as long as that evaluator has established a reputation over time by accurately predicting the results of cases that are actually adjudicated. Some issues, meanwhile, may be so complicated that it would be better to have a small number of traders spend a large amount of time evaluating the issue than to have a large number spend a small amount of time each. Once again, however, the market should work as intended. Participants would recognize that deeper analysis can produce more accurate predictions, and market participants will have an incentive to spend time on a particular security only if they believe they can persuade others that this level of inquiry is sufficient to revise prior estimates. Thus, regardless of the complexity of the predictions being made, competition will lead to an allocation of the total decisionmaking resources among an efficient number of decisionmakers.

B. Democratic Values

1. Accountability

In a world in which markets and politics are often seen in antithesis, suspicion that use of market-based mechanisms in law would undermine democracy is natural. If the FCC allocates spectrum on the basis of the public interest,³⁷⁶ then the ultimate allocation, efficient or not, has a democratic pedigree. The people elect the President, and the President, subject to Senate approval, selects the FCC commissioners.³⁷⁷ When spectrum is sold to the

374. A separate advantage of generalist courts is that judges are unlikely to be invested in the success of particular governmental programs and, thus, less prone to ideological biases. See, e.g., Richard A. Posner, *Will the Federal Courts of Appeals Survive Until 1984? An Essay on Delegation and Specialization of the Judicial Function*, 56 S. CAL. L. REV. 761, 785 (1983) (stating that a generalist judge protects the statute's original goals, while a specialist promotes short-term special interest).

375. See *supra* Part II.A.4.

376. See *supra* note 43 and accompanying text (discussing spectrum allocation based on the public interest).

377. Such appointments are closely watched by industry insiders. See, e.g., *Kennard*

highest bidder, the people can vote only with their wallets. Likewise, if we tolerate emissions trading, we have given up on the possibility of democratic discourse concerning appropriate corporate environmental policies.³⁷⁸ Finally, citizens either elect the judges who set bail for prisoners, or elect the politicians who appoint the judges. If bail were determined based on a self-assessment system, the people would lose control over those individual decisions.

These arguments miss half of democracy. Each argument emphasizes that decisionmaking in individual cases is democratic, but ignores the fact that democratic deliberation also produces the statutes that a court, administrative agency, or market-based mechanism administers. If we do not believe that the amount of money a telecommunications company can make from selling spectrum ought to be relevant to who should receive that spectrum, then, of course, we should reject spectrum auctions. But if legislators believe that economic efficiency should be central to spectrum allocation, then the selection of auctions may be a good choice—a choice upon which democratically elected representatives can agree. If a legislative frustration with command-and-control environmental regulation results in adoption of emissions trading policies,³⁷⁹ then democracy has done its work. Legislators who believe that the self-assessment bail system would produce better bail assessments than alternative approaches, using whatever values they choose to define “better,” would be acting democratically in selecting such a system.

These counterarguments, though, might seem to miss the other half of democracy, the half of democracy that the original objections recognized. Although legislatures are democratically entitled to adopt market-based decisionmaking systems, perhaps they should not do so because such mechanisms shrink the sphere of democratic

Seen Likely to Get FCC Chmn. Nomination, N.M. Comr. in Line for Seat, COMM. DAILY, July 25, 1997, available in 1997 WL 3946331 (demonstrating that the communications technology industry tracks possible nominations to the FCC on a daily basis). This type of scrutiny might be said to promote democratic accountability.

378. Moreover, at least one commentator argues, that focus on the complexity of the emissions trading system itself may make legislators less accountable on underlying environmental issues. See David M. Driesen, *Is Emissions Trading an Economic Incentive Program? Replacing the Command and Control/Economic Incentive Dichotomy*, 55 WASH. & LEE L. REV. 289, 329 n.185 (1998) (indicating that emissions trading involves technical issues that ordinary citizens do not understand, thus reducing democratic participation).

379. See, e.g., Robert W. Hahn, *Economic Prescriptions for Environmental Problems: How the Patient Followed the Doctor's Orders*, 3 J. ECON. PERSP. 95, 95 (1989) (discussing the failure of command-and-control regulation “in which a regulator specifies the technology a firm must use to comply with regulations” and the need for economic incentive approaches to environmental management).

activity.³⁸⁰ The more choices that are made through democratic means, the more democracy we have, the argument goes.³⁸¹ More democracy is not necessarily better democracy, however, because the time voters spend in considering the choices they face is not likely to be directly proportional to the number of issues outstanding.³⁸² Votes may well reflect hot-button issues: war, abortion, even the controversial school the local government is considering building.³⁸³ Only a tiny fraction of the average vote will be based on the FCC's decisions in allocating spectrum. In a less apathetic society,³⁸⁴ we might respond with more votes: nationally elected FCC commissioners, or televised debates on the science of environmental regulation. Apathy should not bring down the republic, but when a particular statute reflects a global value determination that saves the democratic process the trouble of making many local determinations, then the people can fairly be said to be in control. If they disagree with the legislature's global decision, then they can hold the politicians accountable.³⁸⁵

2. *Transparency*

Market-based decisionmaking may even increase accountability by making substantive policy more transparent. Command-and-control regulation involves scientific complexities demanding great

380. See Stephen M. Johnson, *Economics v. Equity: Do Market-Based Environmental Reforms Exacerbate Environmental Injustice?*, 56 WASH. & LEE L. REV. 111, 159 (1999) (arguing that safeguards for public participation are needed in market-based environmental reforms because "[p]rocedures that limit public participation increase the likelihood that individual citizens will forego participation in government decisionmaking").

381. See Richard H. Pildes & Elizabeth S. Anderson, *Slinging Arrows at Democracy: Social Choice Theory, Value Pluralism, and Democratic Politics*, 90 COLUM. L. REV. 2121, 2122 (1990) (suggesting that the legitimacy of legal norms is now often seen as based on whether the norms are the product of democratic processes).

382. Cf. David B. Magleby, *Let the Voters Decide? An Assessment of the Initiative and Referendum Process*, 66 U. COLO. L. REV. 13, 37-38 (1995) (noting voters often are unable to evaluate all of the issues in particular elections and are more influenced by partisan identification or candidate appeal).

383. See *id.* at 37 (describing how voting on initiatives "is often diversionary, directing attention away from pressing political issues in the state or nation" toward hot button issues such as automobile insurance rates or statutes protecting gay and lesbian people).

384. Cf. Clay Calvert, *When First Amendment Principles Collide: Negative Political Advertising and the Demobilization of Democratic Self-Governance*, 30 LOY. L.A. L. REV. 1497, 1498-99 n.7 (1997) (discussing statistics indicating that during the 1996 presidential election, approximately half of the voting age population did not vote and that viewer ratings were down for televised debates).

385. But see Richard Briffault, *Distrust of Democracy*, 63 TEX. L. REV. 1347, 1367 (1985) (arguing that re-election may not be a sufficient guarantee that lawmakers will respond to the wishes of the public).

expertise.³⁸⁶ Political institutions may be ineffective at translating voters' firm but simple views on environmental policy—more protection, less protection—into statutory commands.³⁸⁷ Although they can choose the political candidates who mouth the slogans with which they agree, voters will have little means of determining whether elected politicians have acted in accordance with their promises. With emissions trading, “more” and “less” are easily translated into concrete policy recommendations, and individual polluters will adjust to such blunt shifts in policy.³⁸⁸ By moving much of the actual decisionmaking onus to individual market participants, emissions trading makes policymaking more transparent, without reducing any of the complexity driving the system as a whole.³⁸⁹

386. See, e.g., Eric W. Orts, *Reflexive Environmental Law*, 89 NW. U. L. REV. 1227, 1257 (1995) (indicating that command-and-control statutes and regulations are detailed and complex). Regulators may even have incentives to draft complicated regulations, which need updating and thus create a continued demand for the initial drafters' expertise. See Todd J. Zywicki, *Environmental Externalities and Political Externalities: The Political Economy of Environmental Regulation and Reform*, 73 TUL. L. REV. 845, 894 (1999) (explaining that statutes under the command-and-control approach become obsolete quickly and require frequent overhaul by legislators and regulators).

387. See Jane S. Schacter, *The Pursuit of “Popular Intent”: Interpretive Dilemmas in Direct Democracy*, 105 YALE L.J. 107, 165 (1995) (acknowledging that lawmakers are often unable to translate popular intent into meaningful statutory provisions).

388. See Cass R. Sunstein, *Administrative Substance*, 1991 DUKE L.J. 607, 633-34 (explaining that under a market-based approach, citizens determine how much pollution reduction is appropriate, the market determines how the reductions are accomplished, and financial penalties ensure compliance). But see David M. Driesen, *Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Change Convention*, 26 B.C. ENVTL. AFF. L. REV. 1, 61-62 (1998) (expressing skepticism that emissions trading will create transparency in environmental decisionmaking). Driesen contends that emissions trading will reduce transparency and accountability, allowing officials to avoid specificity about what types of pollution must be reduced, how, and by whom. See *id.*

389. This is the argument of Bruce Ackerman and Richard Stewart. See Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333, 1341-51 (1985) (arguing that replacing Best Available Technology (“BAT”) would reduce administrative burdens and increase finances available for informed decisionmaking on environmental standards); Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 COLUM. J. ENVTL. L. 171, 188-98 (1988) (arguing that the marketable permit system would reduce bureaucratic haggling over “arcane technological questions,” shifting the broader public debate on environmental objectives); see also Sunstein, *supra* note 388, at 634-40 (arguing that introducing market mechanisms into the environmental area will cause the government to address policy questions on pollution reduction). Lisa Heinzerling, however, has offered a descriptive account of environmental lawmaking supporting the argument that market-based systems are unlikely to promote democratic deliberation around specific concrete variables. See Lisa Heinzerling, *Selling Pollution, Forcing Democracy*, 14 STAN. ENVTL. L.J. 300, 303 (1995) (arguing that federal pollution trading legislation shows that introducing market incentives did not enhance democratic deliberation, as Congress was still influenced by powerful interest groups). She does not argue, though, that command-and-control lawmaking is better for democracy than market approaches, concluding simply that pollution trading must be evaluated in terms of its efficiency and

Transparency has an additional important dimension. A value of democracy is that the citizenry comprehend not just what factors enter into decisions, but the process by which decisions are made.³⁹⁰ A critic might say that the comprehensive market mechanism is hopelessly complex and that few citizens could understand its more technical details.³⁹¹ Yet a degree in finance theory would hardly be needed to appreciate how market mechanisms work. The average citizen easily could recognize that the purpose of such mechanisms is to give third parties incentives to make accurate value assessments and predictions about the future. Demanding popular understanding of the inner workings of the legal system, rather than just the overall structure, would doom our existing adjudicative processes. Legal procedure is intricate, driven by far more rules and far deeper theorizing than would be required to establish a market mechanism.³⁹² That the public might not understand exactly how census predictions are made should not be a significant obstacle to adoption of such a system.

Even if a market-based mechanism is simpler from a technical perspective than existing systems of adjudication, perhaps visceral understanding is as important to a legal system as procedural understanding. The average citizen may not be able to recite the intricacies of the hearsay rule, but presumably does recognize, for example, that criminal cases are ordinarily tried to a jury, that the lawyers present evidence and make closing arguments, that the judge provides instructions, and that the jury ultimately must evaluate this evidence in light of the instructions.³⁹³ The importance of such

distributive effects only. *See id.*

390. *See, e.g.,* *Richmond Newspapers, Inc. v. Virginia*, 448 U.S. 555, 572 (1980) (“When a criminal trial is conducted in the open, there is at least an opportunity both for understanding the system in general and its workings in a particular case.”).

391. This would be consistent with the debate on market mechanisms generally. *Compare, e.g.,* Gilson & Kraakman, *supra* note 7, at 53 (explaining that even financial economists often disagree over which models explain how market mechanisms really work), and Lawrence A. Cunningham, *From Random Walks to Chaotic Crashes: The Linear Genealogy of the Efficient Capital Market Hypothesis*, 62 *GEO. WASH. L. REV.* 546, 597 (1994) (doubting the transparency of market mechanisms and stating that “market behavior is far more complex than the current debates over relative efficiency and relative rationality would suggest”), with Zywicki, *supra* note 386, at 907 (arguing that it is the “impenetrable body of rules and regulations issuing from Congress and the EPA” that are too complex and detailed).

392. This is especially true in complex litigation. *See generally* Jay Tidmarsh, *Unattainable Justice: The Form of Complex Litigation and the Limits of Judicial Power*, 60 *GEO. WASH. L. REV.* 1683, 1691-92 (1992) (assessing the procedural challenges of complex litigation, including the difficulty of assimilating and presenting all relevant information to the factfinder, complexity in pre-trial and trial procedures, and the problem of determining remedies).

393. *See, e.g., Richmond Newspapers*, 448 U.S. at 575 (explaining that the public

intuitive grasp, however, can easily be overstated. Surely citizens should be cognitively comfortable with aspects of the legal system that they regularly encounter, even if only through the media. Some hypothetical market replacement for criminal law almost certainly would be unacceptable, because such a system might prevent average citizens from following the progress of particular trials, a type of observation that provides valuable feedback for criminal justice policy.³⁹⁴ Visceral understanding probably is less critical in areas in which the average citizen is less familiar with substantive legal principles and less likely to take an interest in the minutiae of individual cases. With Smith's proposal for distributing mass tort judgments using trust shares,³⁹⁵ individual plaintiffs could learn the basics of how the system works even if the public generally does not understand it.

3. Participation

Even if citizens understand their legal processes and are well positioned to hold their representatives accountable for their decisions, they might justifiably complain if they had no direct role in the process.³⁹⁶ The genius of the jury is not merely that it is accurate, but also that it provides a forum in which any citizen may be called upon to make a decision of great importance.³⁹⁷ Citizen participation may also be an important component of other legal institutions.

understands "the manner in which criminal trials are conducted" because our democratic system allows open access to criminal trials).

394. The O.J. Simpson trial, for example, sparked popular calls for legal reform. See, e.g., Peter Hartlaub, *Simpson Items Torched in Rally for Legal Reform*, L.A. DAILY NEWS, Feb. 18, 1999, at N1 (describing a citizen group protest rally in which Simpson memorabilia was burned to draw public attention to the need for legal reform). But see M.A. Stapleton, *Sound and Fury Likely to Change Nothing: Professor*, CHI. DAILY L. BULL., Sept. 20, 1996, at 3 (indicating that some notorious cases have spurred legal reform, but typically only when a reform movement already is underway).

395. See *supra* notes 129-36 and accompanying text (explaining Smith's proposal for a capital markets approach to the future claimants problem).

396. See JOHN HART ELY, *DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW* 74 (1980) (explaining that open participation in the political process by all citizens is an essential part of our representative government); see also Briffault, *supra* note 385, at 1352 (explaining that ballot initiatives are a means of providing voters direct participation in the political process); Kurt M. Saunders, *Race and Representation in Jury Service Selection*, 36 DUQ. L. REV. 49, 53-54 (1997) (identifying jury service as giving ordinary citizens the opportunity for direct participation in democracy). But see Douglas H. Hsiao, *Invisible Cities: The Constitutional Status of Direct Democracy in a Democratic Republic*, 41 DUKE L.J. 1267, 1269-70 (1992) (arguing that direct participation vehicles such as referenda and initiatives are inappropriate in a republican government).

397. For commentary praising the jury for involving citizens in governance, promoting community responsibility, and enhancing democracy, see sources cited in Joanna L. Grossman, Note, *Women's Jury Service: Right of Citizenship or Privilege of Difference?*, 46 STAN. L. REV. 1115, 1121 n.29 (1994).

Whistleblower suits may serve not just to expose information, but also to assure employees that they have a role in ensuring that their employers comply with regulatory standards.³⁹⁸ Perhaps the census is not just about estimating population, but also about giving all citizens the satisfaction of knowing that the government has recognized their individual existence.³⁹⁹

Some market mechanisms increase the role of nongovernmental officials in the legal process by decentralizing decisionmaking. If the government gave away forfeited property, potential recipients would have no direct control over the outcome, but with a forfeiture auction, the disposition of property depends entirely on their bids. The self-assessment property tax system, meanwhile, leaves the assessment of property value entirely in the owner's hands. Moreover, the system is enforced through private entrepreneurship.⁴⁰⁰ That anyone in theory can participate in this enforcement, or in the predictive task of estimating the judgment in a civil case as a means of setting attorneys' fees, may itself promote participatory values. The possibility that anyone might grow up to become a lawyer, a member of Congress, or even the President is an important aspect of our participatory democracy. Market mechanisms may promote such participation by reducing barriers to entry, though participation *de facto* is still likely to be limited to a meritocratically selected elite.

C. Institutional Values

1. Legitimacy

Even those who concede that market mechanisms might work effectively and would be compatible with democracy might find such systems inherently illegitimate. Such an objection could be constitutionally based. Perhaps appointing counsel based on an

398. Cf. Elletta Sangrey Callahan & Terry Morehead Dworkin, *Who Blows the Whistle to the Media, and Why: Organizational Characteristics of Media Whistleblowers*, 32 AM. BUS. L.J. 151, 163 (1994) (noting that powerlessness, real or perceived, is a cause of whistleblowing).

399. Interestingly, those who feel disenfranchised are less likely to provide accurate census information. See Roberta Rehner Iversen et al., *How Much Do We Count? Interpretation and Error-Making in the Decennial Census*, DEMOGRAPHY, Feb. 1, 1999, at 121 (indicating that a negative attitude about a person's connection to the government influenced error rates on the 1990 Decennial Census). Though I am skeptical, perhaps cause-and-effect works the other way as well, making the counted feel more a part of government.

400. See Levmore, *supra* note 192, at 778-79 (explaining market-based enforcement penalties for under-assessment).

auction, as in Pritchard's proposal,⁴⁰¹ might violate the right to counsel,⁴⁰² though this is surely not a question that has a clear doctrinal answer.⁴⁰³ Using a market as a means of setting attorneys' fees in a class action also might be attacked as violative of Article III,⁴⁰⁴ inconsistent with the Seventh Amendment,⁴⁰⁵ or contrary to the demands of due process.⁴⁰⁶ Surely, a court might reach these results, but a sophisticated analysis would require (among other things) translation of the Framers' words and values to a legal arrangement they never considered.⁴⁰⁷ The question of constitutionality thus depends in part on assessment of the values that law promotes.

Concerns about legitimacy, however, need not be constitutionally based. Critics might find it fundamentally inconsistent with the "rule of law" for markets to determine legal entitlements, such as who should own a slice of spectrum.⁴⁰⁸ The "rule of law" is a contested concept,⁴⁰⁹ but a positivist might object that because law is ultimately the product of a sovereign, so too should legal decisions flow from a body of government.⁴¹⁰ Judges and administrative agencies make law, the argument goes, but it would be inappropriate for private decisions to determine the content of the law and its application in particular cases. The question, though, is *why* it should be

401. See Pritchard, *supra* note 3.

402. See U.S. CONST. amend. VI ("In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial by an impartial jury . . . and to have the assistance of counsel for his defence.").

403. *Cf. Morris v. Slappy*, 461 U.S. 1, 13-14 (1983) (holding that the Sixth Amendment does not guarantee the defendant a "meaningful relationship" with counsel).

404. See U.S. CONST. art. III (articulating the powers of the judicial branch of the United States government).

405. See U.S. CONST. amend. VII (establishing the right to a jury trial for suits at common law).

406. See U.S. CONST. amend. XIV ("No State shall . . . deprive any person of life, liberty, or property, without due process of law . . ."); see also U.S. CONST. amend. V.

407. See generally Lawrence Lessig, *Fidelity in Translation*, 71 TEX. L. REV. 1165 (1993) (articulating an interpretive model that seeks to promote fidelity to the meaning of the Constitution while allowing changes in interpretation over time).

408. *Cf. Rau*, *supra* note 44, at 151 (indicating that if the FCC deviated from the public interest standard of federal communications laws in favor of a purely market-based approach to spectrum allocation, "the 'regulation' of spectrum in the public interest would begin to resemble a granting of statutorily prohibited property interests").

409. See Richard H. Fallon, Jr., "The Rule of Law" as a Concept in Constitutional Discourse, 97 COLUM. L. REV. 1, 1 (1997) ("[T]he meaning of the phrase 'the Rule of Law'—which I shall refer to as 'the Rule-of-Law ideal'—has always been contested.").

410. For a discussion of the connection between positivism and the rule of law, see John W. Van Doren, *Positivism and the Rule of Law, Formal Systems or Concealed Values: A Case Study of the Ethiopian Legal System*, 3 J. TRANSNAT'L L. & POL'Y 165, 194 (1994), which argues that the rule of law incorporates a positivist view that "there are rules that pre-exist their application," fostering stability, uniformity, and preventing arbitrary actions by the government.

inappropriate for bids to determine whose rights to spectrum the government will enforce or for a prediction by private individuals to control a civil dispute. The law inevitably depends on the outcomes of private decisions, such as decisions to enter into contractual arrangements.⁴¹¹ A belief that a judge or other governmental official must decide each dispute depends on a formal distinction, and we must assess pragmatically whether that distinction is worthwhile.

Perhaps the strongest argument that the distinction is worthwhile is a circular one: that people believe it is worthwhile. If many people perceive a market mechanism as illegitimate, that alone may be a sufficient argument against the mechanism.⁴¹² A utilitarian would consider the negative utility that people would experience from being subject to a regime they view as illegitimate, and a deontologist might contend that the people have a right not to live under such a system, regardless of its merits in theory. More frighteningly, in the absence of perceived legitimacy, parties might resolve their disputes with private vengeance.⁴¹³ Thus, the legitimacy of market-based decisionmaking depends on perceptions of legitimacy. Perceptions, however, are not static. Modest experiments with market-based decisionmaking might change them; so might academic discussion of market-based decisionmaking. Legitimacy requires time,⁴¹⁴ and most market-based mechanisms have not yet had a chance.

411. Arbitration also depends on decisions by nongovernmental actors, but arbitrability depends on consent. For an argument that adjudication could be entirely a private function, with dispute resolution providers competing for business, see William M. Landes & Richard A. Posner, *Adjudication as a Private Good*, 8 J. LEGAL STUD. 235, 237 (1979).

412. Legitimacy, however, cannot be equivalent simply to the public's having a high opinion of the operation of particular legal institutions, or else our existing courts would have little legitimacy. See Alan Hyde, *The Concept of Legitimation in the Sociology of Law*, 1983 WIS. L. REV. 379, 409 (arguing that public opinion data indicates that the public does not have a favorable view of the courts and often favors Congress' or the President's view on many issues).

413. "Self help" is often characterized as being an unfortunate ancestor of modern, more enlightened judicial systems. For a critical analysis, see James Q. Whitman, *At the Origins of Law and the State: Supervision of Violence, Mutilation of Bodies, or Setting of Prices?*, 71 CHI.-KENT L. REV. 41, 42-44 (1995), which argues that "self-help" models, focusing on state supervision of private vengeance, provide an insufficient explanation for the development of the ancient state.

414. Jed Rubenfeld has made this argument most forcefully. See Jed Rubenfeld, *Reading the Constitution as Spoken*, 104 YALE L.J. 1119, 1143-44 (1995) (arguing that self-government comprises more than the consent of the governed but is instead "a temporally extended project"); see also Jed Rubenfeld, *The Moment and the Millennium*, 66 GEO. WASH. L. REV. 1085, 1107 (1998) (critiquing the modern emphasis on the present tense and arguing that self-governance principles reflect a commitment of the people over time).

2. *Expressivity*

The law, some believe, is not merely a means of directly achieving socially desirable results, but also a way of expressing society's approval or disapproval.⁴¹⁵ Even if antidiscrimination law were less efficient than subsidies in remedying racial discrimination, we might retain it because it expresses a moral principle.⁴¹⁶ Lawmakers might proscribe flag burning even if few protestors burn flags, and even if empirically the advent of a prohibition increased the amount of flag burning by strengthening the message of such an act.⁴¹⁷ These are examples of the expressive function of the law. Expressivity may be a means of inculcating beneficial social norms,⁴¹⁸ or it might have value in its own right, just as private speech may be valuable even if it changes no one else's views.⁴¹⁹

Market mechanisms may prevent the government from expressing approval or disapproval. The importance of this may vary from one area of the law to the other. FCC allocation of spectrum in the public interest has an expressive component.⁴²⁰ Perhaps it is good for society, through the FCC, to be able to say that it sees one proposed use of the spectrum as worthwhile and another as not worthwhile. But this expressive effect seems relatively minor. Arguably, judicial

415. See Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021 (1996). "Many people support law," Sunstein explains, "because of the statements made by law, and disagreements about law are frequently debates over the expressive content of law." *Id.* at 2022.

416. See *id.* at 2027-28 ("A society might . . . insist on an antidiscrimination law for expressive reasons even if it does not know whether the law actually helps members of minority groups.").

417. See *id.* at 2023, 2047-48 (arguing that a constitutional amendment criminalizing flag burning would likely lead to an increase in the prohibited act, and maintaining that the purpose of such a prohibition must be to express social norms rather than to prevent the act of burning flags).

418. Sunstein explicitly defends legal arguments based on expressivity on the basis that legal statements might affect social norms. See *id.* at 2024-25 (arguing that the law can be used to change social attitudes on issues such as emissions trading or mandatory recycling); see also Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585, 587-88 (1998) (stating that social norms are obligations regarding what people ought to do and that lawmakers can use norms to increase cooperation and productivity); cf. Lawrence Lessig, *Social Meaning and Social Norms*, 144 U. PA. L. REV. 2181, 2182-83 (1996) (explaining that the law can express both behavioral and social norms and affect the contextual social meaning attached to behavior); Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 914 (1996) (stating that social norms convey "attitudes of approval and disapproval," encouraging certain types of behavior and discouraging others).

419. See Sunstein, *supra* note 418, at 916 (arguing that social norms may have intrinsic value); see also Sunstein, *supra* note 415, at 2026 ("But sometimes people support a law, not because of its effect on norms, but because they believe it is intrinsically valuable . . .").

420. See *supra* note 44 and accompanying text (discussing allocation of spectrum by the FCC in the public interest).

assessment of bail has an expressive component, providing an initial useful statement from the court that an individual is or is not dangerous or a threat to flee.⁴²¹ Somewhat more plausibly, a judicial or administrative assessment of fines against a polluter may convey a useful expressive message about how our society feels about pollution. By auctioning off pollution rights and then allowing them to be traded, the legal system might implicitly be seen as expressing approval of pollution as simply another form of economic activity.⁴²²

3. *Continuity*

The law should not change dramatically from one day to the next, and shifts from one legal regime to another should be smooth rather than jarring.⁴²³ Adoption of some proposals would represent epochal change, for example if bankruptcy auctions were implemented wholesale, without prior incremental changes. Spectrum auctions are built on earlier reforms,⁴²⁴ and the government should not (and almost surely would not) implement most of the market proposals discussed without more evidence of their effectiveness. Many market systems lend themselves to small-scale testing. A group of property owners could be given the option of self-assessing their property values instead of receiving assessments picked by the local government. A market mechanism could be used to predict the class action judgments simply for informational purposes without initially using this information to help set attorneys' fees. Such testing would allow for any technical and implementation problems to be addressed, and would provide experience from which lawyers and

421. Commentators, however, focus on prevention of crime rather than on expression of distrust. See Ann M. Overbeck, *Detention for the Dangerous: The Bail Reform Act of 1984*, 55 U. CIN. L. REV. 153, 162-63 (1986) (stating that the social purposes of judicial denial of bail are to prevent dangerous people from entering the community and to prevent criminals from fleeing before trial).

422. See Michael J. Sandel, *It's Immoral to Buy the Right to Pollute*, N.Y. TIMES, Dec. 15, 1997, at A23 (criticizing global emissions trading by noting that "the United States might find it cheaper (and more politically palatable) to pay to update an old coal-burning factory in a developing country than to tax gas-guzzling sports utility vehicles at home"); see also Sunstein, *supra* note 415, at 2024 (noting that "emissions trading systems are frequently challenged because they are said to 'make a statement' that reflects an inappropriate valuation of the environment").

423. But see Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 512-13 (1986) (arguing that market mechanisms adequately respond to changes in the law and that transitional relief such as compensation, grandfathering, or other mitigating measures are inefficient).

424. Originally, the FCC prohibited transfers of radio station licenses, but gradually became tolerant of sales of such licenses, including the right to use spectrum. See, e.g., Krystilyn Corbett, Note, *The Rise of Private Property Rights in the Broadcast Spectrum*, 46 DUKE L.J. 611, 639 (1996) (indicating that the transition in FCC policy occurred over time).

scholars could debate whether the experiment should be extended. The life of the law is experience,⁴²⁵ and market mechanisms cannot move from the drawing board to law without it.

CONCLUSION

Capital market mechanisms provide decentralized, objective means of producing numbers useful to legal decisionmaking. Auctions enable the government to determine how much the highest valuing user of a particular asset is willing to pay for it, whether that asset is a confiscated automobile, a patent, or the right to appeal a criminal conviction in exchange for a contingency fee. Typically, the government holds auctions to sell a particular asset, but as long as sales occur at least some random percentage of the time, they can also use them to value property that in most cases will not be transferred. Exchange allows for valuation of an asset over time. Some exchange mechanisms transfer an asset in its entirety, while others involve the trading of only some percentage of the asset. Finally, self-assessment can offer property owners incentives to announce honest valuations of their assets. A self-assessment mechanism can be used to induce owners of securities to value the rights accurately.

Market mechanisms need not exist in isolation. They can be used as adjuncts to existing legal systems, or a combination of market mechanisms can be used complementarily. The comprehensive market mechanism that this Article develops uses an auction, an exchange, and a pair of self-assessment rules. The auction distributes securities whose values ultimately depend on some future occurrence. Those securities may then be exchanged. Finally, the self-assessment rules give holders incentives to announce honest valuations and third parties incentives to ferret out misvaluations. The comprehensive market mechanism can serve a variety of legal purposes, stepping in whenever it is useful to have a prediction of a dollar figure or number that otherwise could be ascertained objectively only in the future.

The jury has often been referred to as a “black box,” which when given evidence and legal instructions produces (at least most of the time) a concrete verdict.⁴²⁶ The comprehensive market mechanism is

425. See OLIVER WENDELL HOLMES, JR., *THE COMMON LAW* 1 (1881) (“The life of the law has not been logic: it has been experience.”).

426. *E.g.*, *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 38 n.8 (1997) (exploring ways of addressing concerns regarding unreviewable “black box jury verdicts”); George Fisher, *The Jury’s Rise as Lie Detector*, 107 *YALE L.J.* 575, 707

also a black box, a general prediction machine that stimulates a dynamic competition among self-interested individuals. This market produces not just a result, but also a conversation in which each participant seeks to refine others' predictive models and assessments. Legal scholars can debate both how juries should be structured and for what kinds of legal decisions juries should be used. So too with the comprehensive market mechanism. The first question is how to make the black box work best, to generate the most accurate predictions possible with a minimum of legal resources. The second question is for what legal purposes, if any, the comprehensive market mechanism should be used. In this Article, I have sought to answer the first by equipping the comprehensive market mechanism with design features that address problems that would beset market mechanisms used in isolation. To address the second question, I have sketched a variety of potential uses of market mechanisms. There is as yet, however, no market to weigh these tentative proposals, and so we must continue to rely on the more familiar forums for debate to assess them. Perhaps the ultimate motivation for this Article is to suggest that it is now time for such a debate to begin.

(1997) (explaining that in the "black box" of the jury room, jurors sort through questions of fact to reach a verdict).