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Article

Random Selection for Scaling Standards

Michael Abramowicz[†]

INTRODUCTION

Standards don't scale. When adjudication costs are relatively high, according to the canonical economic advice on rules versus standards, rules are preferable.¹ The virtue of standards is that they allow the law to be tailored to individual circumstances,² but applying a standard to millions of citizens will be unworkable if many will invoke costly procedures to explain their unique situations. And so, to achieve mass justice, regulators usually seek to create detailed rules³ despite the inevitability that they will be overinclusive and underinclusive.⁴ But could standards scale? If legislatures could reduce the cost of adjudication but still ensure that like cases are treated reasonably alike,⁵ then massive spending programs could be administered

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1. See, e.g., Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 572 (1992) ("The difference in promulgation costs favors standards, whereas that in enforcement costs favors rules."); Hans-Bernd Schäfer, *Rules Versus Standards in Rich and Poor Countries: Precise Legal Norms as Substitutes for Human Capital in Low-Income Countries*, 14 SUP. CT. ECON. REV. 113, 116 (2006) ("The cost effectiveness of rules versus standards has to do with the relative size of various costs associated with the specification, adjudication and enforcement of legal norms.").

2. See, e.g., Ernst Freund, *The Use of Indefinite Terms in Statutes*, 30 YALE L.J. 437, 438 (1921) (identifying "flexibility" as a benefit of indefinite standards).

3. See, e.g., *Heckler v. Campbell*, 461 U.S. 458, 470 (1983) (allowing an agency to create rules even where the statute requires consideration of individual circumstances).

4. See, e.g., FREDERICK SCHAUER, *PLAYING BY THE RULES: A PHILOSOPHICAL EXAMINATION OF RULE-BASED DECISION-MAKING IN LAW AND IN LIFE* 31–34 (1991) (explaining that rules are overinclusive and underinclusive relative to their purposes).

5. One danger of a standard is that a decisionmaker may reach results for reasons that the creator of the standard and that most other decisionmakers applying the same standard would have thought inappropriate. See, e.g., RICHARD A. POSNER,

through simple standards, with no need to approximate those standards with rules. This Article explores a novel technique for accomplishing this goal: allowing claimants to sell their claims to intermediaries and then distributing the government subsidy to the intermediaries in proportion to valuation of a small number of randomly selected claims.

Consider a hypothetical program for which a broad standard seems infeasible using conventional regulatory techniques: a legislature is considering a statute to mitigate climate change (perhaps through a carbon tax⁶) but it wishes to provide transition relief for those likely to be adversely affected.⁷ An administrative agency might be created to administer a standard, such as a provision entitling any citizen claimant to “compensation sufficient so that the statute will not have a significantly disproportionate effect on the claimant.” But if lower-level bureaucrats rendered awards directly under the standard, intolerable inconsistency might result.⁸ The conventional legal response would be to approximate the standard with rules identifying discrete classes of people entitled to benefits,⁹ such as coal miners who will lose their jobs or drivers of Hummer automobiles who will have to scrap their cars or pay more for gas. The regulations would almost surely omit many affected individuals.¹⁰ Regulators will probably ignore the waitstaff at a diner frequented primarily by coal miners, for example. Any rules are likely to be so imperfect—overcompensating some and undercompensating others, sometimes for political

ECONOMIC ANALYSIS OF LAW 592 (5th ed. 1998) (noting “a broad standard . . . raises agency costs,” which is contrary to the standard’s goal); SCHAUER, *supra* note 4, at 98 (noting that rules limit the power of judges); Michael D. Gilbert, *Does Law Matter? Theory and Evidence from Single-Subject Adjudication*, 40 J. LEGAL STUD. 333, 352 (2011) (“Many observers hypothesize that law predominates when rules are determinate and ideology predominates when rules are indeterminate.” (citation omitted)).

6. See, e.g., Gilbert E. Metcalf & David Weisbach, *The Design of a Carbon Tax*, 33 HARV. ENV’T L. REV. 499, 527 (2009) (considering a myriad of design issues with such a tax); CONG. BUDGET OFF., EFFECTS OF A CARBON TAX ON THE ECONOMY AND THE ENVIRONMENT (2013) (assessing a carbon tax’s effects).

7. Cf. Bruce R. Huber, *Transition Policy in Environmental Law*, 35 HARV. ENV’T L. REV. 91, 101–03 (2011) (discussing past efforts to provide transitional financial relief to those adversely affected by environmental legislation).

8. Administrative agencies often give discretion to officials, but they seek to constrain such discretion, for example with detailed substantive rules. See generally Charles H. Koch, Jr., *Judicial Review of Administrative Discretion*, 54 GEO. WASH. L. REV. 469 (1986) (identifying various types of discretion and means by which they are controlled).

9. See, e.g., *Young v. Nationwide Mut. Ins. Co.*, 693 F.3d 532, 539 (6th Cir. 2012) (discussing the basis on which classes are defined for class-action suits).

10. See SCHAUER, *supra* note 4.

reasons and sometimes as a result of sheer administrative necessity—that the legislature might well decide to give up on compensation, or even on the climate change legislation altogether.

Enter random selection markets. The government would create a fund—say, \$1 trillion, though the same principles would apply to an experimental program many orders of magnitude smaller—that it would distribute in proportion to valuations of randomly selected claims held by intermediaries who have purchased them from the original claimants. That is, instead of allowing every citizen to make a direct claim to an administrative agency, claimants would sell their rights in the fund to the intermediaries. Only a very small number of rights, maybe 1,000, would be selected at random for the agency to adjudicate. Each of these cases would involve a careful adjudication before a multi-member tribunal. Continuing the example above, the tribunal's task would be to estimate the claimant's disproportionate loss from the legislation, if any. Adjudicating 1,000 cases is a far more manageable task for an administrative agency than adjudicating millions of separate claims. Lawyers would have ample incentive to develop factual and legal arguments in these cases, because much more would be at stake: the *entire* fund would be distributed to the intermediaries holding these rights, with the amount each intermediary receives proportional to the judicial valuation of the corresponding claim.

Superficially, this might appear to be a lottery, rewarding the intermediaries purchasing claims at random. But the prospect of this ultimate payout gives intermediaries incentives to pay more for rights held by owners with stronger claims for compensation. A frivolous claim for compensation would be worth virtually nothing, because intermediaries would anticipate that if a frivolous claim were randomly selected for adjudication, it would receive at best a negligible portion of the fund.¹¹ If there is some circumstance unique to a claimant that one would expect should lead to a high valuation, then that right would be more valuable to the intermediary as well. If randomly selected as one of the 1,000, this claim would entitle the intermediary to a relatively large portion of the fund. An intermediary would thus be willing to pay more for it. In this climate change compensation hypothetical, a claim sold by a coal miner seems likely to be much more valuable than the typical food service worker's, but a worker in the diner frequented by the miners might receive a value somewhere in

11. Frivolous claims also can be discouraged by charging a fee to submit a claim. See *infra* Part I.B.2.

between. Intermediaries have incentives to consider any facts that might affect valuation and adjust offers accordingly.

An intermediary would like to pay as little as possible to a claimant for the applicable right, but competition among intermediaries will drive up the price. Intermediaries perform a task akin to that of insurance companies¹² but in reverse, paying citizens for low-probability windfalls instead of accepting premiums from citizens for low-probability losses.¹³ Although significant debate addresses the need for regulating prices charged by insurance companies,¹⁴ a primary justification for regulation in that context lies in consumers' informational burden in choosing among insurance plans.¹⁵ Here, because nonprice contract terms would not differentiate the intermediaries' offers, a consumer needs to be concerned only with receiving the highest payment possible, so choosing among offers is not difficult. If the intermediary market is competitive, claimants should receive approximately the expected value of their claims minus a portion of the intermediaries' costs in assessing and adjudicating claims. Because intermediaries can hold diversified portfolios and mitigate their risk exposure in other ways, the randomness inherent in this approach should not significantly reduce payments.¹⁶ Some consumer protection regulation may still be appropriate,¹⁷ but the regulatory task is the comparatively easier one of ensuring that there is sufficient competition in the market.

Random selection does not eliminate the need for individualized judgments to be made. It just shifts the responsibility for making

12. Insurance companies distribute risk to those better able to bear it. *See, e.g.*, KENNETH S. ABRAHAM, *DISTRIBUTING RISK: INSURANCE, LEGAL THEORY, AND PUBLIC POLICY* (1986) (articulating the common framework of American insurance law through an economic, ethical, and legal lens). The intermediaries serve a similar function, taking on the risk that claimants would bear, both from the randomization itself and from inconsistency across decisionmakers in evaluating claims.

13. Another analogy is securitization, by which a holder of a risk asset receives a certain sum by selling it to the market. *See, e.g.*, Robert Dean Ellis, *Securitization Vehicles, Fiduciary Duties, and Bondholders' Rights*, 24 J. CORP. L. 295, 299-303 (1999) (discussing the mechanics and benefits of securitization).

14. *See, e.g.*, Daniel Schwarcz, *Ending Public Utility Style Rate Regulation in Insurance*, 35 YALE J. ON REGUL. 941 (2018) (arguing that rate-setting is not needed under current market conditions).

15. *See, e.g., id.* at 980-81; *see also* Daniel Schwarcz, *Transparently Opaque: Understanding the Lack of Transparency in Insurance Consumer Protection*, 61 UCLA L. REV. 394 (2014) (arguing that insurance policies are not sufficiently transparent).

16. *See infra* Part I.B.4 (explaining how intermediaries can reduce the cost of risk).

17. *See infra* Part III.B.

individualized judgments in most cases from the government agency to market actors. A plausible argument is that this does not help *scale* judgment, but only to *disguise* judgment. A related critique is that this form of scaling is a pernicious outsourcing of a core governmental responsibility.¹⁸ Government procedures are valuable not simply because they are efficient mechanisms for applying the law to the facts, but also because they may impart feelings of procedural justice.¹⁹ A citizen denied payment by the government may still perceive procedural justice as a result of the government's provision of reasons, while a citizen unable to sell a claim on the market might react differently.²⁰ And finally, it may be more feasible to prevent the government from engaging in invidious discrimination than it will be to prevent private actors from doing so.²¹

These are important criticisms. But they do not defeat the point that this system drastically reduces the economic cost of adjudication and therefore makes otherwise impossible administrative schemes feasible. Even relatively informal, non-adversarial forms of

18. Scholars sometimes worry that privatization will allow legislators to achieve policy goals that they could not achieve directly through legislation. *See, e.g.*, Jon D. Michaels, *Privatization's Pretensions*, 77 U. CHI. L. REV. 717 (2010) (examining how privatization "workarounds" allow agencies to achieve policies that would be otherwise politically unattainable). Others argue that privatization can either advance or hinder public law values. *See, e.g.*, Jody Freeman, *Extending Public Law Norms Through Privatization*, 116 HARV. L. REV. 1285, 1291-1314 (2003) (examining the ideological differences in the pragmatic debate over privatization between economic and public law theorists). In this context, however, the government is unlikely to be able to regulate by choosing a particular private provider, and ultimate payments of funds will still be made by the government.

19. *See* E. ALLAN LIND & TOM R. TYLER, *THE SOCIAL PSYCHOLOGY OF PROCEDURAL JUSTICE* (1988) (reviewing theories and research on procedural justice and its implications on legal framework); JOHN THIBAUT & LAURENS WALKER, *PROCEDURAL JUSTICE: A PSYCHOLOGICAL ANALYSIS* (1975) (exploring how procedural justice is used to mediate conflicts between individuals and groups).

20. An analogous question is whether bargaining can support a psychological recognition of procedural justice. *See* Rebecca Hollander-Blumoff & Tom R. Tyler, *Procedural Justice in Negotiation: Procedural Fairness, Outcome Acceptance, and Integrative Potential*, 33 LAW & SOC. INQUIRY 473 (2008) (examining the role of fairness in bilateral negotiations, finding that procedural justice encourages the acceptance of negotiated terms); Michael M. O'Hear, *Plea Bargaining and Procedural Justice*, 42 GA. L. REV. 407 (2008) (discussing the impact of procedural justice on effective plea bargaining strategy).

21. *See, e.g.*, Ian Ayres & Fredrick E. Vars, *When Does Private Discrimination Justify Public Affirmative Action?*, 98 COLUM. L. REV. 1577, 1583 (1998) (noting that private discrimination may continue in markets after government discrimination has ended).

government adjudication are subject to procedural norms,²² and government formality has its price.²³ Adjudication has a significant minimum cost. This cost makes class actions particularly suitable where each member of the class has suffered relatively small damages against private actors, but that mechanism is unavailable when the claimants are heterogeneous.²⁴ Private actors may be able to consider relevant evidence in more informal ways, without in-person hearings. Shifting decision-making from governmental actors to the market via random selection will be most appropriate when the cost of adjudication per case will be large relative to the amount of money at stake. This is more likely to be true when an administrative program would involve a massive number of claims and when adjudication of each claim involves many separate but interacting issues rather than rote application of bright-line rules.

The case for using random selection to scale judgment is at its apex when the question is whether a subsidy should be administered through random selection or not at all. Why might governmental adjudication sometimes seem off the table as a possible means of administering a standard, as in the example of transitional compensation developed above? At least in principle, it might seem that the government could relax the formality of government decision-making as an alternative. The problem is not constitutional law, which allows

22. Even what is technically referred to as “informal administrative adjudication” is often quite formal. The Administrative Procedure Act (APA) imposes no explicit requirements on such adjudication. See Edward Rubin, *It’s Time to Make the Administrative Procedure Act Administrative*, 89 CORNELL L. REV. 95, 107–09 (2003) (discussing the myriad of actions that comprise informal adjudication under the APA, juxtaposed with the little direction the APA supplies in regard to these actions). Still, the judiciary imposes ex post constraints on such adjudications. See, e.g., *Citizens to Pres. Overton Park, Inc. v. Volpe*, 401 U.S. 402, 420 (1971) (insisting that the agency record contain sufficient justification for the decision); Ronald J. Krotoszynski, Jr., *Taming the Tail That Wags the Dog: Ex Post and Ex Ante Constraints on Informal Adjudication*, 56 ADMIN. L. REV. 1057, 1060–69 (2004) (discussing claimants seeking after-the-fact review of an agency decision via mechanisms within the APA).

23. See, e.g., Matthew C. Stephenson, *The Strategic Substitution Effect: Textual Plausibility, Procedural Formality, and Judicial Review of Agency Statutory Interpretations*, 120 HARV. L. REV. 528, 531 (2006) (“Procedural formality is costly because of the time, effort, and resources that it requires, and perhaps also because it may trigger unwelcome external attention.”).

24. See FED. R. CIV. P. 23(a)(2) (requiring “questions of law or fact common to the class”); *id.* 23(b)(3) (requiring in a damages class action “that the questions of law or fact common to class members predominate over any questions affecting only individual members”).

for less formality when less is at stake.²⁵ The danger is that less formality may yield more arbitrary governmental decision-making, as well as arbitrariness's cousins, corruption and discrimination.²⁶ Like rules and especially in their absence, procedural protections can increase fairness and consistency.²⁷ So does the law of large numbers,²⁸ but allowing many decisionmakers to vote on each case also escalates costs. In the example of climate change compensation, an administrative regime that allows claimants to raise any individual circumstance would almost surely be too cumbersome without random selection, particularly because avoiding idiosyncratic awards would likely require multiple decisionmakers to consider the facts of each case.

Creating a new bureaucracy to process millions of claims for a legal entitlement that does not already exist would be a challenging feat of legal engineering if limited to traditional tools. Our existing bureaucracies for processing mass claims, such as the Social Security Administration²⁹ and the Veterans Administration,³⁰ have grown and evolved over decades, with continuous refinements to both substantive standards and procedures that are specific to the relevant context.³¹ In principle, a government could hire thousands of new administrative judges and regulation drafters, but in the absence of prior experience with a similar administrative program, it may be difficult to anticipate the range of factual and legal issues that will arise. Thus,

25. See *Mathews v. Eldridge*, 424 U.S. 319, 341 (1976) (holding that “the degree of potential deprivation that may be created by a particular decision is a factor to be considered in assessing the validity of any administrative decisionmaking process”).

26. See, e.g., Paul Stancil, *Substantive Equality and Procedural Justice*, 102 IOWA L. REV. 1633 (2017) (arguing that the Federal Rules of Civil Procedure seek to achieve formal justice by treating like cases alike, but differences across cases in modern litigation may justify alternative approaches).

27. See Richard L. Marcus, *Slouching Towards Discretion*, 78 NOTRE DAME L. REV. 1561, 1571–74 (2003) (recounting the development of rules preventing judges from using ad hoc procedures).

28. See Adrian Vermeule, *System Effects and the Constitution*, 123 HARV. L. REV. 4, 13–15 (2009) (discussing the application of Condorcet’s Jury Theorem, which states “as the number of members in [a] group increases, the probability that a majority vote of the group is correct tend towards certainty” (citation omitted)).

29. See generally Federal Old-Age, Survivors, and Disability Insurance (1950–), 20 C.F.R. pt. 404 (2019) (providing detailed regulations for the administration of Social Security).

30. See generally Schedule for Rating Disabilities, 38 C.F.R. pt. 4 (2019) (providing detailed regulations for the administration of veteran benefits).

31. A search of the *Federal Register* identifies 2,367 documents relating to the Social Security Administration, including roughly a few every new week. See *Social Security Administration*, FED. REG., <https://www.federalregister.gov/agencies/social-security-administration> [<https://perma.cc/E4UK-F5W3>].

developers of a new bureaucracy would be well-advised to build on existing infrastructure, as for example some advocates of Medicare for All propose to build on the existing Medicare program.³² But this may be less feasible when a government program has a goal not closely related to any program, as exemplified by the climate change compensation hypothetical.

Even when fully developed, an agency dedicated to distributing government funds to large numbers of heterogeneous claimants may do a poor job of ensuring horizontal equity among claimants. With decades of improvements and experience, agencies like the Social Security Administration still exhibit large disparities based on which administrative law judge a particular claimant receives.³³ The crux of the challenge is that administrative law judges have significant protections from political interference³⁴ but may have different preferences about how to resolve cases. An alternative agency design would feature strong political control. If a strong administrator is empowered to overrule decisions below³⁵ and has discretion to dismiss administrative law judges who decide cases contrary to the administrator's goals,³⁶ perhaps greater consistency can be achieved. But that might offend due process norms³⁷ and create the risk that the program will

32. See Medicare for All Act of 2017, S. 1804, 115th Cong. (2017) (providing for universal health care by gradually increasing eligibility for Medicare).

33. See, e.g., Richard J. Pierce, Jr., *What Should We Do About Social Security Disability Appeals?*, REGULATION, Fall 2011, at 34, 36–37 (describing “the growing problem of ALJ’s unwarranted commitment of billions of dollars to undeserving claimants” and the Social Security Administration’s inability to address the issue); see also *Hearings and Appeals: ALJ Disposition Data FY 2020*, SOC. SEC. ADMIN., https://www.ssa.gov/appeals/DataSets/03_ALJ_Disposition_Data.html [<https://perma.cc/VVW7-RRVN>] (showing a large disparity in grant rates among ALJs with at least fifty decisions, including 4.9% with grant rates from 20% to 30% and 3.6% with grant rates from 80% to 90%).

34. See Kent Barnett, *Resolving the ALJ Quandary*, 66 VAND. L. REV. 797, 806–08 (2013) (describing ALJ protections).

35. Agency heads sometimes but not always may personally review ALJ decisions. See Russell L. Weaver, *Appellate Review in Executive Departments and Agencies*, 48 ADMIN. L. REV. 251, 252 (1996) (“Agency officials retained complete authority to review examiners’ decisions and substitute their own decisions.”).

36. Today, ALJs are removable “only for good cause established and determined by the Merit Systems Protection Board on the record after opportunity for hearing before the Board.” 5 U.S.C. § 7521(a).

37. See, e.g., Barnett, *supra* note 34, at 821–22 (considering whether political ability to remove ALJs would threaten due process of those appearing before agency). The Supreme Court has not resolved whether ALJs must be removable by the President. See *Free Enter. Fund v. Pub. Co. Acct. Oversight Bd.*, 561 U.S. 477, 507 n.10 (2010) (“For similar reasons, our holding also does not address that subset of independent agency employees who serve as administrative law judges.”).

shift radically with changes in political administration.³⁸ Yet another approach to distributing massive number of claims would be devolution, for example in the form of block grants.³⁹ But devolution simply passes on the challenge of creating a sound administrative structure to a more local jurisdiction,⁴⁰ entailing the risk that political commitment will vary not only over time, but also geographically. In short, all of the standard approaches to scaling mass justice introduce the risk of inconsistency, whether across administrative law judges, across jurisdictions, or across time. More stringent rules and procedures may reduce inconsistency on the margins, but only at increased costs.

An administrative program resolving claims by randomly selecting claims purchased by intermediaries would scale judgment with a fundamentally different approach, so initial experiments ideally would be on a small scale. Yet one of the proposal's chief virtues is that the randomization is straightforward to calibrate. Simply allowing (or requiring) claim sales and instituting random selection ensures that the intermediaries will have robust incentives to predict how cases will be valued if selected for random adjudication.⁴¹ Administration does not require the creation of a large bureaucracy. Some mechanism for filing claims and for registering changes of ownership, such as a website,⁴² is needed. Then, enough judges must be appointed to

38. Administrative agencies are sometimes permitted to change course for reasons of political preference, but they must provide nonpolitical justifications for doing so. *See, e.g.*, Kathryn A. Watts, *Proposing a Place for Politics in Arbitrary and Capricious Review*, 119 YALE L.J. 2, 6 (2009) (“[A]gencies, courts, and scholars alike generally seem to have accepted the view that influences coming from one political branch or another cannot be allowed to explain administrative decisionmaking, even if such factors are influencing agency decisionmaking.”).

39. *See generally* Jerry L. Mashaw & Dylan S. Calsyn, *Block Grants, Entitlements, and Federalism: A Conceptual Map of Contested Terrain*, 14 YALE L. & POL’Y REV. 297 (1996) (offering a critical assessment of these techniques).

40. One might argue for devolution on the ground that states are more likely to experiment than the federal government and that state agencies can learn from other states’ experiences. *See* *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (“[A] single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.”). Some scholars, however, argue that in fact states engage in relatively little experimentation. *See, e.g.*, Susan Rose-Ackerman, *Risk Taking and Reelection: Does Federalism Promote Innovation?*, 9 J. LEGAL STUD. 593 (1980) (answering the title’s question mostly in the negative); Hannah J. Wiseman & Dave Owen, *Federal Laboratories of Democracy*, 52 U.C. DAVIS L. REV. 1119 (2018) (arguing that the federal government can serve as a locus of experimentation).

41. It is possible, however, to increase or decrease intermediaries’ incentives to invest in claim screening. *See infra* Part I.A.2.

42. As the experience with the Affordable Care Act demonstrates, creation of a website to be used at such scale is not a trivial task. *See* Alexander B. Howard, *What*

enable careful, thoughtful adjudication of the relatively small number of claims that are randomly selected; if judges are appointed for reasonably long terms, the profile of the average jurist may not shift all that much with political winds. Critically, it will not matter if the total number of underlying claims grows or shrinks. Perhaps the government would wish to increase the number of decisionmakers and adjudicated cases somewhat if the agency's mission expands. But this is nowhere near the challenge of scaling an administrative agency that must give individualized attention to every case. A problem with some systems of mass justice is that claims can take years to process.⁴³ The market approach has no need for queuing, and claimants can receive their payouts as quickly as they can negotiate with intermediaries.

The idea of using random selection in the way this Article proposes is new, but the prospect of randomly selecting cases for adjudication has received some attention.⁴⁴ First, Shay Lavie has described a mechanism called "reverse sampling" to distribute proceeds in successful small claims class action cases.⁴⁵ The problem that Lavie addresses is that of the class action with a large number of potential claimants, each entitled to only a small amount of damages.⁴⁶ Such cases present the challenge of how to distribute the damages paid by the defendant.⁴⁷ If the administrative costs of distributing the damages are high relative to the damages themselves, then either the defendant must pay too much or the plaintiffs receive too little relative to hypothetical full compensation.⁴⁸ Courts sometimes award *cy pres* damages,⁴⁹ but plaintiffs might then receive no benefit at all. Lavie

Went Wrong at Healthcare.gov?, DIGIPHILE (Dec. 1, 2013), <http://digiphile.wordpress.com/2013/10/17/what-went-wrong-at-healthcare-gov> [<http://perma.cc/7479-B6JD>] (describing the factors that led to the Healthcare.gov's failure at relaunch on October 1).

43. See, e.g., Michael Serota & Michelle Singer, *Veterans' Benefits and Due Process*, 90 NEB. L. REV. 388, 389–92 (2011) (documenting multiple years' delays in resolving veterans' benefits issues).

44. Random sampling has also been used to provide evidence within cases. See Joseph B. Kadane, *Probability Sampling in Litigation*, 18 CONN. INS. L.J. 297 (2011) (discussing the possibility of using statistical methods to handle mass tort cases efficiently). For example, a prosecution of a doctor for Medicare fraud relied on an analysis of a random sample of patient records. *Id.* at 303.

45. Shay Lavie, *Reverse Sampling: Holding Lotteries to Allocate the Proceeds of Small-Claims Class Actions*, 79 GEO. WASH. L. REV. 1065, 1069–74 (2011).

46. *Id.*

47. *Id.* at 1067.

48. *Id.*

49. See generally Rhonda Wasserman, *Cy Pres in Class Action Settlements*, 88 S. CAL. L. REV. 97 (2014) (discussing *cy pres* awards in class action suits).

suggests distributing the damages among class members chosen at random, thus reducing the total administrative costs of distribution.⁵⁰ A recent Supreme Court oral argument on cy pres awards considered the feasibility of this approach.⁵¹ A limitation is that Lavie assumes that the relative damages of each plaintiff is known in advance and thus ignores the possibility that relative draws on the fund could be determined through adjudications in randomly selected cases.⁵² This Article extends the Lavie approach, arguing that it can work with claims requiring valuation, so long as claimants sell the claims to intermediaries.

Second, some commentators have argued that “statistical adjudication” could be used to resolve claims of heterogeneous class members.⁵³ With statistical adjudication, the courts would adjudicate a small percentage of randomly selected claims,⁵⁴ and the remaining claimants, instead of having their days in court, would have their claims resolved based on statistical models.⁵⁵ A class member would be assigned a higher value, the greater the damages received by similarly situated claimants among the adjudicated claims. If the claims in the class action are sufficiently homogeneous, the plaintiff for each remaining claim may receive the average of the adjudicated claims.⁵⁶ Advocates of statistical adjudication do not view the mechanism as an

50. Lavie, *supra* note 45, at 1068.

51. See Transcript of Oral Argument, *Frank v. Gaos*, 139 S. Ct. 1041 (2019) (No. 17-961) (“Isn’t it always better to at least have a lottery system, then, that one of the plaintiffs, one of the injured parties gets it, rather than someone who’s not injured?”). The Court did not reach the merits of the cy pres issue. *Frank*, 139 S. Ct. 1041.

52. Lavie, *supra* note 45.

53. See Robert G. Bone, *Statistical Adjudication: Rights, Justice, and Utility in a World of Process Scarcity*, 46 VAND. L. REV. 561, 580 (1993) (exploring adjudication by sampling to handle large scale adjudication and illustrates how “at some point along the heterogeneity-homogeneity continuum, aggregation ceases to improve the accuracy”); Alexandra Lahav, *The Case for “Trial by Formula,”* 90 TEX. L. REV. 571, 626 (2012) (explaining how “reasons for variation are ‘noise’ rather than the effect of legally relevant variables that ought to have been taken into account” when case outcomes are heterogeneous); Michael J. Saks & Peter D. Blanck, *Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in the Trial of Mass Torts*, 44 STAN. L. REV. 815, 837 (1992) (“At some point along the heterogeneity-homogeneity continuum, aggregation ceases to improve the accuracy of traditional trials and becomes a vitiation.”); Laurens Walker & John Monahan, *Sampling Evidence at the Crossroads*, 80 S. CAL. L. REV. 969, 981 (2007) (illustrating the importance of sample size instead of focusing on homogeneous class members).

54. See Bone, *supra* note 53, at 565 (discussing the process demonstrated by the *Cimino* court).

55. See *id.* (discussing how the *Cimino* process would impact remaining asbestos cases).

56. See, e.g., *id.* at 577–84.

inferior substitute for actual adjudication⁵⁷ The statistical model, they suggest, can produce more accurate and more consistent results, because the statistical recoveries are based on an expectation of damages that averages what idiosyncratic judges or juries might decide in any particular case.⁵⁸ A problem, however, is that statistical adjudication itself requires some procedure for resolving contested coding of different claims. The random selection mechanism described here, though immediately applicable to administrative proceedings rather than class actions, avoids the need for the government to conduct any statistical analysis or determine which cases are most similar to one another.

Third, David Rosenberg and Steven Shavell have suggested what they frame as a simple method to reduce litigation costs in general civil litigation.⁵⁹ Only half of unsettled cases⁶⁰ would be selected for adjudication. Damages in these cases would be twice as high as they otherwise would be, and defendants in other cases would owe nothing.⁶¹ This mechanism is closer to the market mechanism described here, in that random selection is coupled with proportionately higher damages. The damages that a plaintiff expects to receive on average or that a defendant expects to pay on average in the Rosenberg-Shavell mechanism is roughly equal to the damages in the absence of the mechanism.⁶² The average cost of trial is, however, reduced, because fewer trials occur.⁶³ With our mechanism, though, claims are sold, so every claimant still can receive some recovery. Because of this, much higher multipliers and thus much greater cost savings are possible. Rosenberg and Shavell do not generalize their mechanism to allow 1 in N cases to be selected for N times the damages.⁶⁴ Perhaps they

57. *See id.* at 566 (listing scholars who advocate for statistical adjudication).

58. *See, e.g.,* Saks & Blanck, *supra* note 53, at 851 (explaining how statistical adjudication helps to “increase accuracy” and “reduce bias”); Lahav, *supra* note 53, at 612–18 (arguing that statistical adjudication promotes “outcome equality” by treating similar cases more consistently).

59. David Rosenberg & Steven Shavell, *A Simple Proposal To Halve Litigation Costs*, 91 VA. L. REV. 1721 (2005).

60. The randomization would occur immediately after filing. *See id.* at 1727. Thus, settlement would need to occur before filing.

61. *Id.* at 1731.

62. *Id.* at 1730.

63. Rosenberg and Shavell anticipate that their proposal would promote settlement. *Id.* at 1727–28 (noting that risk aversion should increase settlement, though the elimination of all litigation costs in half of the cases reduces pressure to settle).

64. The possibility of basing governmental decision-making on random selection with some other probability clearly would have occurred to Rosenberg, who in another coauthored article considers random selection of administrative enforcement. *See*

believed that higher N would be infeasible, for example because defendants might be less likely to be able to pay the judgment.⁶⁵ When the government is payor and claimants can sell their rights, however, virtually any level of N can be achieved.

The Article proceeds as follows. Part I describes choices associated with the design of random selection: whether the fund to be distributed should be fixed or based on judicial valuations, whether claim sales should be required or optional, how many claims should be selected, how to deal with problems associated with very small or very large claims, and how to reduce the risk associated with the random selection mechanism. The design of the system of adjudication in randomly selected cases is the focus of Part II. Especially in the absence of detailed regulations, it is critical that decisionmakers have ample time to attend to details, because details that intermediaries expect decisionmakers to ignore will have no effect on claim values. Part II also discusses the incentives of various participants in the valuation process: the claimants, the adversaries selected to argue against the claimants, and the judges themselves. Then, Part III offers some preliminary analysis of consumer protection. The core protection for consumers is the incentive that intermediaries will have to compete against one another. Traditional tools like antitrust, consumer protection, and antidiscrimination law might bolster competition.

Finally, Part IV applies the random selection approach to various regulatory schemes. Several of these seek to direct government spending to prevent climate change. Climate change is a useful illustration of the power of random selection because legal rules designed to address it economy-wide present a challenge of distributing resources at a scale beyond even that of our most extensive existing administrative programs. Moreover, some plausible legislative goals are easy to state in principle yet hard to implement in rules.⁶⁶ These are precisely the circumstances in which random selection markets might be especially useful. Three different forms of compensation funds (for

Robert J. Jackson, Jr. & David Rosenberg, *A New Model of Administrative Enforcement*, 93 VA. L. REV. 1983 (2007) (introducing single-outcome sampling, where regulators randomly select one of the sources of risk, determine liability, and apply the outcome as determinative of liability at all of the sources).

65. An avenue for future research is to generalize the Rosenberg-Shavell mechanism to higher damage multipliers by requiring (or at least allowing) plaintiffs to sell claims and by requiring defendants to insure their claims.

66. Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1187 (2009) (explaining how the long-term implementation of climate change will continue to be impeded despite enacting appropriate legislation).

costs associated with climate change mitigation, for expenses associated with improving energy efficiency, and for climate change-related research and development) are described. The Article also considers how random selection might be used to distribute damages of a disaster, using the current novel coronavirus pandemic as an example that anticipates future challenges, whether from climate change, other pandemics, or entirely unexpected emergencies. It argues that a governmental damages fund distributed in this way might be less easily exploited by fraudsters and special interests than funds distributed through a more traditional structure. It also explains that random selection markets can be created quite quickly and can save the legislature the challenge of making difficult decisions about how relief funds should be distributed.

I. THE RANDOM SELECTION MECHANISM

Suppose that Congress were to create a “Goodness and Niceness Commission,” to borrow Gary Lawson’s hypothetical example of a generic administrative agency that we would not really want,⁶⁷ with the mission of subsidizing acts of goodness and niceness. Using the Social Security Administration model to accomplish this goal would be challenging, to say the least. Extensive regulations defining acts that qualify for a subsidy payment would be needed to reduce disparity among decisions by the many thousands of agency officials who would need to be hired to adjudicate cases. With the random selection model defined in the Introduction, the task is relatively simple. Anyone with evidence of having performed an act of goodness or niceness could submit documentation of that act to a website and then sell rights to any payment. The Commission would adjudicate some tiny fraction of cases and divide the government’s entire subsidy among them. The greater the subsidy, the more intermediaries would pay for claims and the more effort they would put into distinguishing strong claims from weak ones.

The Commission might still be a horrific idea, but it would not be administratively infeasible. The randomization mechanism saves the government from the task of assessing every detail of every claim. The government’s initial role is the much simpler one of serving as repository for recording initial claims and transfers of those claims to intermediaries. This might be accomplished with a website,⁶⁸ serving as a

67. See Gary Lawson, *The Rise and Rise of the Administrative State*, 107 HARV. L. REV. 1231, 1239 (1994).

68. See *supra* note 42 and accompanying text.

user interface allowing users to store information in the underlying database. Perhaps in the future, a decentralized solution such as a blockchain might be used.⁶⁹ Most of the information in claims could be anonymous, but claimants must at least register their ID, such as Social Security number, to prevent duplicate claims,⁷⁰ as well as some proof that the filing was authorized.⁷¹ This Article will not discuss these implementation issues in any further detail. Rather, this Article will focus on the foundational structure of the mechanism, specifically the rules governing claim payouts, addressed in Section A, and the random selection itself, addressed in Section B. The principles are applicable regardless of the agency's mission, so the Commission can serve as a stand-in for any agency primarily dedicated to spending government money.

A. DEFINING RULES ON CLAIM SALES AND PAYOUTS

We have assumed so far that the government would distribute a fixed fund to the owners of randomly selected claims, but it would also be possible to leave the total payout amount undefined. Subsection 1 explains why the fixed fund will generally be preferable, and Subsection 2 introduces variants of both mechanisms that would allow the government to reduce or increase the incentive of intermediaries to investigate claims thoroughly. Then, Subsection 3 explains why it likely makes sense to require claim sales, rather than merely making such sales optional.

69. Some have argued that the blockchain is particularly useful where transparency is needed to prevent corruption. *See, e.g.,* Jesse Marks, *Distributed Ledger Technologies and Corruption: The Killer App?*, 20 COLUM. SCI. & TECH. L. REV. 42, 62 (2018) ("Since records in properly run DLTs can never be deleted, the DLT can help to prevent other officials from extracting bribes to make the problem 'go away.'").

70. If a single individual is permitted to file duplicate claims, for example for multiple acts of goodness and niceness, then when a claim is selected, the adjudicators will need to consider all other claims registered under the same Social Security number. If a claim for the same underlying act is filed multiple times, the adjudicators could divide any award by the number of times the claim was filed. *See infra* Part I.B.3. Alternatively, redundant filings could lead to disqualification.

71. The goal of this requirement is to prevent harassment stemming from filing under someone else's identity. *Cf.* Pippa Browde, *Many Unhappy Returns: The Need for Increased Tax Penalties for Identity Theft-Based Refund Fraud*, 18 FLA. TAX REV. 53 (2015) (discussing problems of identity theft in taxation). For example, a video in which the person is filmed authorizing the claim could be used. The key is that the government only needs to verify authenticity in the small percentage of cases selected for adjudication. Perhaps more important than the ability to prove that one's claim is valid is the ability to post evidence that another claim purportedly on one's behalf is not authorized.

1. Fixed Fund vs. Variable Payouts

In the variable payout alternative to the fixed fund,⁷² the government would pay to the holder of each randomly selected claim the valuation amount divided by the probability of random selection. As a result, the government's total liability would be uncertain. Such an approach may be advisable if the government believes it important to give full compensation to each claimant, rather than having the amount of compensation vary depending on the number of claimants. This might be appropriate if it is unclear how many claimants are likely to participate. In addition, it might reduce claimant risk attributable to uncertainty about how many other applicants will seek funds. Finally, this approach is useful if a legislature would like a program to be able to scale from year to year without further need for the legislature to change the size of the subsidy fund.

Yet there is a strong argument that the total monetary commitment to a particular program *should* be up to the legislature, especially if money is to be distributed based on a vague standard rather than detailed rules. Our Goodness and Niceness Commission hypothetical might be silly, but it would be even sillier for a government to delegate to the Commission unlimited authority to determine just how much goodness and niceness ought to be subsidized. The legislature would still affect the total award payment amount, but that effect would arise in the selection of judges, thus politicizing the judge selection process. If the agenda of the Commission is politicized, then random selection might reduce disparities at any particular time but increase disparity over time, depending on which party controls the legislature. Politics should determine relative governmental priorities. But if adjudication is just a battle between judges who want to grant high and low awards, the system will perform less well at distinguishing between claims. With a fixed fund, the focus would be on selecting judges who will make appropriate comparisons between claims.

Intermediate possibilities exist. The government could, for example, provide that the total payout will equal the sum of valuations, but constrained to some minimum and maximum. Or, the government could set total compensation as a function of the total number of

72. The fixed versus variable payout problem is an instance of the more general choice between bounded and unbounded institutions. See Yair Listokin, *Bounded Institutions*, 124 YALE L.J. 248 (2014). An example is that the National Science Foundation is a bounded institution, with a fixed amount of money to distribute. See *id.* at 358–59. This is especially attractive if the fund distributor may have different preferences from the legislature. See *id.* at 358 (noting that the NSF might have greater “pro-science” leanings relative to Congress”).

claimants. Or, the government could provide for a fixed fund, but provide some formula determining whether the fixed amount should change over time. The formula might, for example, increase the amount if the population increases. The formula for the fixed fund might even depend in part on judicial valuations, so that if the valuations suggest claimants are being shortchanged, the fund will increase at least somewhat in the next period.

2. Whole Fund vs. Partial Fund Payouts

Whether a fixed fund or variable payouts are used, we have assumed above that the only money that claimants would receive for their claims would be from the intermediary. A variant approach would be for the government to give claimants money proportional to the amount received from intermediaries. With a fixed fund, for example, the government might distribute some portion of the fixed fund among all claimants, or with variable payouts, the amount distributed might be a preset multiplier (say, two or three) of intermediary payments. The purpose of such an approach would be to reduce the total stakes for intermediaries and thus, reduce their investments. If, for example, half of the government subsidy is distributed in this way, with the other half distributed to intermediaries in the usual way, then intermediaries will only have half as much at stake. And so, they should be expected to devote less time overall to claim assessment and fewer resources to the ultimate adjudications.

Whether this is appropriate depends on the trade-off between two goals: minimizing administrative costs and pricing claims accurately. The higher the proportion of total payments to be distributed by the government to claimants in proportion to the amounts received from intermediaries, the less intermediaries will have at stake. The result will be reduced administrative costs and a higher ratio of money received by claims to money spent by the government. A complication is that such a scheme introduces the danger of side payments; a claimant might bribe an intermediary to increase official payment, and the government would need to police such bribery. The lower the proportion, on the other hand, the more intermediaries will have at stake, resulting in greater accuracy. In principle, the government could even achieve greater accuracy (at greater expense) than the baseline, by taxing intermediaries on payments to claimants and adding the taxes paid to the fund to be distributed back to intermediaries. The rest of the Article, however, will assume that there are no taxes and no matching payments, though of course the legislature could change this over time depending on its initial experience.

3. Allowing vs. Requiring Claim Sales

We assumed above that claimants would be *required* to sell their claims to a genuine intermediary. A simple way of enforcing this would be to limit random selection to intermediaries owning at least some number of claims corresponding to different claimants (perhaps 1,000). One might reasonably argue, however, that claim sales ought not be required. An individual who wishes to hold onto a lottery ticket, the argument goes, should be able to save the administrative costs of the claim sale. Indeed, if the public understands the point of the mechanism, this would do little harm and could perhaps save some administrative costs if claims are for very small values.⁷³ But a requirement that claimants sell claims reinforces the point that the random selection system is not intended to be a government lottery, but a market for claims. In addition, if sale is not required, the market will be subject to adverse selection,⁷⁴ as someone's willingness to sell a claim might be seen as an indication that the claim is of low quality.⁷⁵ A requirement that claims be sold eliminates this adverse selection problem, because intermediaries would understand that a claimant was selling because of the requirement to do so.

B. SELECTING CLAIMS FOR ADJUDICATION

Claims would be selected for adjudication at random, with each claim having an equal chance of being selected. One task for the government would be to conduct this random selection. Governments often conduct lotteries in other contexts,⁷⁶ such as where a limited

73. When the administrative costs of selling a claim are close to the claim value, then it probably makes sense for individuals simply to hold onto their claims. In this case, the proposal here becomes close to Lavie's reverse sampling proposal. *See* Lavie, *supra* note 45, at 1073–75. The difference is that different claimants' lottery tickets would have different values if randomly selected for adjudication.

74. *See* Ronen Avraham, *The Economics of Insurance Law—A Primer*, 19 CONN. INS. L.J. 29, 44–61 (2012) (discussing the problem of adverse selection in the insurance market).

75. *See* George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970) (modeling this phenomenon in the market for used cars).

76. One of the most infamous was the government's draw of numbers determining draft order for the Vietnam War. Subsequent analysis suggested that the lottery was not random, as men born late in the year had a lower probability of being selected. Norton Starr, *Nonrandom Risk: The 1970 Draft Lottery*, 5 J. STAT. EDUC. (1997), <http://jse.amstat.org/v5n2/datasets.starr.html> [<https://perma.cc/GQ88-AVFL>].

number of seats are available in a desired school,⁷⁷ so this is relatively straightforward. If the government were to use a blockchain to store claims, it could make the random selection particularly transparent to prevent concerns about corruption.⁷⁸ If there were worries that a pseudo-random number generator would be insufficiently random, the government could use quantum random number generation.⁷⁹ These techniques are hardly necessary—the government could just use Excel⁸⁰—but their availability highlights that the government should be able to choose random numbers.

1. Number of Claims

But how many claims should be adjudicated? Because the only purpose of the adjudication is to provide incentives for intermediaries, in principle the government could choose as few as two claims. It would then adjudicate each and divide the entire fund between those two claims. For example, if Claim *A* were adjudicated to have a value twice Claim *B*'s, then Claim *A* would receive two-thirds of the entire subsidy. Assuming intermediaries had correctly anticipated the selection and valuations of these claims and that there was sufficient competition among intermediaries, then Claim *A* would have been purchased for about twice the price paid for Claim *B*. Claims more valuable than *A* would earn more in the market than *A*, and claims less valuable than *B* would earn less than *B*.

There may, however, be good reasons to adjudicate considerably more than two claims. One reason is mathematical. When a fund is distributed to just two randomly selected claims, a claim will not quite be expected to receive exactly its value proportional to all other claims. Rather, small claims will receive considerably more, and large claims will receive considerably less. The reason is that if two small claims are the only ones selected, each will receive precisely half the fund, the same amount that two large claims selected would receive. Indeed, if claims' true values are perfectly anticipated and are uniformly distributed from zero up to some maximum, the lowest value claims might receive almost six times their value, while the highest value claims are

77. For a critique of the fairness of this approach, see Carol Necole Brown, *Casting Lots: The Illusion of Justice and Accountability in Property Allocation*, 53 *BUFF. L. REV.* 65, 414–24 (2005).

78. See *supra* note 69 and accompanying text.

79. See, e.g., *Quantum Random Numbers*, ANU QRNG, <https://qrng.anu.edu.au> [<https://perma.cc/5PG2-36J8>] (measuring “the quantum fluctuations of the vacuum”).

80. See *How to Generate Random Numbers in Excel*, TRUMPEXCEL.COM, <https://trumpexcel.com/generate-random-numbers-excel> [<https://perma.cc/89BB-Z9H9>] (providing a tutorial on how to generate random numbers in Excel).

worth only about 70% of their value.⁸¹ The situation is even more dire if there are many small claims and few large ones.⁸² If, however, 100 claims are sampled, the situation is much better.⁸³ The larger the number of claims sampled, the closer approximation of the sampling distribution to the underlying distribution. If the underlying distribution were known, then it would be possible to adjust for this, but this seems unlikely.⁸⁴ Thus, the goal should be to adjudicate enough claims to ensure at least that market valuations are not systematically distorted by much.

A second reason is legal. If adjudication results in written opinions, then more adjudications will produce a greater number of precedents. But, as we will see below,⁸⁵ it is not obvious that precedents improve the operation of the random selection scheme. If we assume that there is some benefit to production of precedents, that must be balanced against the cost of adjudication to determine an appropriate number of cases to adjudicate. In any event, the proportion of cases that must be reviewed is likely to be relatively small, certainly far fewer than in a regime with appeal as of right. Moreover, the legislature creating such a regime may choose a fixed number of adjudications for each period, rather than some set percentage. If 100 adjudications suffice when 10 million file demands for compensation for their goodness and niceness,⁸⁶ then that number should also work in an even better and nicer society resulting in 100 million claims. This administrative scheme can scale without hiring substantial additional personnel, though perhaps benefits of precedents would make some

81. This was calculated from a simple model in which two claims are sampled from 1,000 claims. With sampling repeated a billion times, the lowest value claim earned on average 6.46 times its value, while the highest value claim earned 0.693 of its value. For the code that produced this calculation, see *mbabramo/ClaimSampleModel*, GITHUB, <https://github.com/mbabramo/ClaimSampleModel> [<https://perma.cc/2T7J-FSDU>].

82. We defined the claims as having true values ranging from $100,000^{i/1001}$ for $1 \leq i \leq 1000$. Again sampling 10 million times, the lowest claim received 1,026 times its true value, while the highest claim received only 0.164 of its true value. *See id.*

83. With a uniform distribution of claims, the lowest claim received 1.01 times its true value; the highest, 0.993 of its true value. With the asymmetric distribution defined in the previous footnote, the lowest claim received 1.058 times its true value; the highest, 0.947.

84. The distribution might be estimated based on payments for insurance on random selection. *See infra* Part I.B.4. But even with actuarially fair rates, some intermediaries might not insure some claims, and perhaps small claims would disproportionately not be insured. Therefore, it is difficult to know the distribution of claims in advance.

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

86. *See supra* note 67 and accompanying text.

scale desirable. The months—or years—long backlog inherent in other agency decisions would not be an issue. The legislature's only recurring decision then becomes how great the subsidy should be in each period, assuming that the subsidy is fixed.⁸⁷

2. Filing Fees

Because the system scales so easily, it can handle claims both large and small. When a small claim is randomly selected, the intermediaries will likely not spend as much to persuade the decisionmakers that it is high value, since less overall is at stake. The adjudicators presumably would not spend as much time on it either. But the adjudicators likely would try to ensure that small claims receive proportional payouts relative to one another and that the ratios of payouts between large and small claims reflect their merits. Still, a concern might be that too many small or even frivolous claims would be filed. The rules, as stated so far, mean that there is little reason *not* to sell a claim. A problem with this is that in the random sample of adjudications, small claims might dominate large ones. This exacerbates the problem above, that absent a large pool of cases to adjudicate, small claims might receive higher payouts than they deserve. Moreover, the social costs associated with filing small claims might exceed the social benefits.

There is, however, a simple solution. The government could discourage claimants from filing small claims by requiring a filing fee. If, for example, the government intends the Goodness and Niceness Commission to reward acts like building soup kitchens rather than acts like stopping at a pedestrian crosswalk, it might insist on a filing fee of, say, \$10,000. The money from the filing fees would be added to the overall pool, so it would not reduce the net subsidy. But it would deter small claims. If the market expects a valuation for a claim significantly below that threshold, then no intermediary would want to buy that claim. This is not without its downsides, as subsidies would effectively be distributed proportional to assessed value over \$10,000, instead of distributed proportional to assessed value. This slightly overvalues large claims relative to smaller ones, a tendency that works in the opposite direction of the distortion described above.⁸⁸ A variant on the filing fee approach would increase each claim valued at an amount above the filing fee by the amount of the filing fee. Thus, if one were sure that one had a claim that would be valued at \$20,000 and one

87. See *supra* Part I.A.1.

88. See *supra* notes 81–83 and accompanying text.

paid a \$10,000 filing fee, one would expect to receive approximately \$30,000 back on average for a net gain of \$20,000, but someone with a claim valued at \$5,000 would expect on average a \$5,000 loss.

3. Subdivided Claims

The flip-side problem is the danger that small claims will receive too high a proportion of the subsidy relative to a very small number of very strong claims. Suppose, for example, that the vast majority of a fund really should go to a single person or entity.⁸⁹ If there are millions of very small claims, then the chance of this claim being selected is low, and so it will be undercompensated. For example, if only 100 claims of 100,000,000 were to be selected, then the best any claim can hope for is to receive all of the fund if selected, producing an expected amount of only one millionth of the fund. There is, however, an easy solution. A claimant should be able to divide its right to compensation into shares, with each share having the same probability of being selected for random adjudication as any undivided claim. Then, if one such claim were randomly selected for adjudication, the resulting valuation would be divided by the number of shares. For example, if a claimant with an undivided claim would have received a \$100 million valuation but breaks the claim into 100 shares, then a single share, if randomly selected, would receive a valuation of \$1,000,000. This approach could be used in conjunction with filing fees⁹⁰ to discourage excess subdividing.

4. Insurance for Nonselection

Another virtue of claim subdivision is that it serves an insurance function. The intermediary who holds a valuable claim faces a substantial risk that the claim might not be randomly selected for adjudication. Yet even with subdivision, the intermediary would retain substantial risk. Fortunately, there is a better way of greatly reducing the risk cost of the random selection device: The government could offer, at actuarially fair rates, insurance that would pay off if a claim is *not* randomly selected.⁹¹ Suppose, for example, that an intermediary

89. See, e.g., EDWARD MONKTON, *THE PIG OF HAPPINESS* (2007) (describing a community in which a single individual's efforts greatly increase goodness and niceness). This may be more obvious with some of our later proposals. For example, if the government's goal is to reward climate change innovation, then it is possible (though unlikely) that a single inventor will end up deserving most of the fund. See *infra* Part IV.A.3.

90. See *infra* Part IV.A.2.

91. For a similar proposal, see Michael Abramowicz, *Tax Experimentation*, 71 FLA. L. REV. 65, 103–04 (2019).

holds a claim that, if all claims were adjudicated, would receive \$100,000. But because of the random selection function, the claim has a one in one thousand chance of being randomly selected, in which case it will be worth \$100,000,000. The intermediary could then put up a bond for \$99,900,000, which would be forfeited to the government in the event the case is randomly selected; the other 99.9% of the time, the government would pay \$100,000. This entirely eliminates the intermediary's risk. Meanwhile, because the government should be risk neutral,⁹² this should be a service that it can cheaply provide.⁹³

Admittedly, that is a high bond to put up, and it would not be practical for an intermediary with thousands of claims to put up a bond that high on each claim. By holding a diversified portfolio, an intermediary has already hedged risk; this illustrates the capacity of the capital markets to reduce risk.⁹⁴ The intermediary could then further reduce risk by buying an insurance product that reflects the risk that it will have bad luck, in the sense that the random selection will be of claims with lower expected value for the intermediary than would occur on average. An intermediary might accomplish this by self-assessing the value of each of its claims. This makes it straightforward to calculate the expected value of its portfolio, given random selection. The contract could then provide that if the random selection implies a significantly greater expected value (that is, the intermediary benefited from the luck of the draw), the intermediary would forfeit a bond to the government, while if random selection implies a significantly

92. See Christopher Serkin, *Big Differences for Small Governments: Local Governments and the Takings Clause*, 81 N.Y.U. L. REV. 1624, 1666 & nn.162-64 (2016) (citing sources assuming government risk neutrality). Governmental officials sometimes act to avert risk, leading to policy that fails to take advantage of government risk neutrality. See *id.* at 1666-67. In principle, however, the government should be able to accept fairly large, actuarially-fair bets while imposing virtually zero risk on individual taxpayers.

93. Alternatively, the private sector could provide such insurance. A standard argument for private insurance instead of governmentally provided insurance is that the government may use private insurance to achieve social objectives that are better pursued outside an insurance system, and thus that private insurance is more likely to be actuarially sound. See, e.g., Regina Austin, *The Insurance Classification Controversy*, 131 U. PA. L. REV. 517, 569 n.304 (1983). But there may be economies of scope in governmental administration, because the government is administering the fund. Meanwhile, there is no actuarial challenge here, because what is being administered is a random number function.

94. An intermediary also might take advantage of capital markets to reduce risk in other ways, for example by selling shares to the public. See, e.g., Kelli A. Alces, *Legal Diversification*, 113 COLUM. L. REV. 1977, 1978 (2013) ("Diversification is the best protection investors have from the risks of capital investment.").

lower expected value, the government would pay money to the intermediary. Though this is modestly more complex, because such contracts would depend entirely on random selection (rather than on the ultimate results of adjudications), the government can offer perfectly actuarially fair contracts, thus reducing the risk from random selection. From the government's perspective, it does not matter whether the intermediary self-assesses correctly. In principle, each intermediary's incentive would be to insure up to the point where it would be indifferent how the random selection turns out.⁹⁵

Random selection, however, is not the only source of risk for intermediaries. Risk cannot be altogether eliminated because of the uncertainty inherent in valuation.⁹⁶ Some decisionmakers might value a claim higher than others, creating risk, and even the distribution of how different decisionmakers would value a claim may be unknown, creating uncertainty.⁹⁷ In cases randomly selected for adjudication, the stakes will be very high, far higher than if every case were adjudicated. On the other hand, valuation risk is eliminated in the cases *not* randomly selected for adjudication, and we have seen above that the risk associated with random selection itself can be insured against. The question thus arises of which imposes a greater economic burden: valuation risk in every case, or n times the valuation risk in one-of- n cases? The answer may be the latter, but the difference may not be so great. Valuation risk associated with a claim is largely unsystematic risk, meaning that it is uncorrelated with other risks.⁹⁸ Finance theory tells us that unsystematic risk can be eliminated if held as part of a diversified portfolio.⁹⁹ With higher n , an unsystematic risk amounts to

95. See, e.g., Alan Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis*, 97 *YALE L.J.* 353, 362–63 (1988) (noting that when the price of insurance is actuarially fair, consumers will buy sufficient insurance so that the consumer is indifferent between states of the world).

96. See FRANK H. KNIGHT, *RISK, UNCERTAINTY AND PROFIT* 22–48 (1921).

97. *Id.* In Donald Rumsfeld's famous typology, the concern here is still with known unknowns, rather than unknown unknowns. See Donald H. Rumsfeld, U.S. Sec'y of Def., & Gen. Richard Myers, Chairman, Joint Chiefs of Staff, Remarks at Department of Defense News Briefing (Feb. 12, 2002), <https://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=2636> [<https://perma.cc/D9GV-W6U5>] (distinguishing these from known knowns). Known unknowns at least can be estimated.

98. Per B. Mokkelbost, *Unsystematic Risk over Time*, 6 *J. FIN. & QUANTITATIVE ANALYSIS* 785, 785 (1971) (defining "unsystematic risk or variation" as "variation due to attributes of individual securities").

99. See generally EDWIN J. ELTON, MARTIN J. GRUBER, STEPHEN J. BROWN & WILLIAM N. GOETZMANN, *MODERN PORTFOLIO THEORY AND INVESTMENT ANALYSIS* 313 (9th ed. 2014) ("[E]ven if an individual asset had a great deal of unsystematic risk, it would have little impact on portfolio risk, and therefore, unsystematic risk would not require a higher return.").

a greater portion of a market-basket portfolio, but this has only a tiny effect on overall diversification. Just as the intermediary's pooling of claims reduces risk, so too can the market further diversify risk. A hedge fund might invest in an intermediary, for example, because its risk is idiosyncratic, much as hedge funds may invest in litigation.¹⁰⁰ Or an intermediary can sell shares to the public, thus accomplishing further diversification.

II. ADJUDICATION OF RANDOMLY SELECTED CLAIMS

Once a case is selected for adjudication, the stakes will be high. If, for example, only one in 1,000 claims is adjudicated, the expected value of the claim will be 1,000 times what it was before random selection. It is the expectation of this occasional high payoff that gives intermediaries incentives *ex ante* to bid claims up. Litigation expenses will be higher with such a claim than would be the case if no multiplier were applied, but the litigation expenses will be borne far less often. Because litigation expenses rise less than proportionately to the value of adjudication,¹⁰¹ this mechanism reduces expected litigation expenses. In competitive markets, intermediaries will bid up to expected claim value less expenses, so random selection's reduction of expected litigation expenses means that claimants will receive more than they would if every claim were adjudicated.

This Part addresses what the adjudication process would look like, considering how random selection might change the way that litigation is conducted. Section A examines how expert and other evidence might be considered, how to ensure full development of arguments against claimants, and whether the outcome binding on claimants before a multi-judge tribunal should be that of the average or median judge. It also explains that because the goal is to provide predictability to the public, rather than predictability to litigants, precedent should play less of a role. Section B describes the incentives of various participants. Because claimants have already been paid by intermediaries, they may need some incentive to encourage their full participation in litigation—and to hold them accountable should they

100. See Bruce H. Kobayashi & Larry E. Ribstein, *Law's Information Revolution*, 53 ARIZ. L. REV. 1169, 1211–12 (2011) (noting similarity of litigation funding to hedge fund investing).

101. This is implicit in the oft-noted point that “small recoveries do not provide the incentive for any individual to bring a solo action prosecuting his or her rights.” *Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 617 (1997) (quoting *Mace v. Van Ru Credit Corp.*, 109 F.3d 338, 344 (7th Cir. 1997)). The ratio of litigation costs to damages is higher for small claims suits than for suits with high stakes.

have engaged in fraud when selling their claims. Meanwhile, this Part also considers the role of adversaries, whose function is to argue against claimants, and of judges.

A. STRUCTURE OF THE PROCESS

This Section considers the structure of adjudication from start to finish and beyond.

1. Consideration of Evidence

Adjudication is the occasion for careful consideration in the context of specific facts how to measure relative desert—in the case of our generic hypothetical example, what counts as “goodness and niceness”¹⁰²—that is, how much credit an individual might receive for different acts, and how to address evidentiary uncertainties or disagreements among experts. In this sense, the adjudications function in the manner and spirit of the common law.¹⁰³ The process thus flips the typical regulatory script, under which most of the identification of relevant distinctions occurs when regulations are crafted rather than when adjudication is performed. To be sure, the Goodness and Niceness Commission *could* enact regulations that would resolve issues large and small.¹⁰⁴ But the challenge to which random selection responds is the creation of an administrative program in which we assume that full development of regulations is not practical, because there are too many factual scenarios or because it is too difficult to assign weights to various scenarios.¹⁰⁵ We thus assume that the

102. See *supra* note 67 and accompanying text.

103. J. Lyn Entrikin, *The Death of Common Law*, 42 HARV. J.L. & PUB. POL’Y 351, 362–63 (2019) (defining common law as legal rights and duties derived from judicial opinions).

104. See *supra* note 3.

105. In the criminal context, the U.S. Sentencing Guidelines serve as a useful reminder that the most ambitious attempts to create rules to convert acts (e.g., crimes) into numbers (e.g., prison sentences) fall short. The Guidelines recognize their own incompleteness by allowing upward and downward departures. U.S. SENT’G GUIDELINES MANUAL §§ 5K1.1–5K3.1 (U.S. SENT’G COMM’N 2018). Critics long argued that the Guidelines are too constraining even with the departure mechanism. See KATE STITH & JOSE A. CABRANES, FEAR OF JUDGING: SENTENCING GUIDELINES IN THE FEDERAL COURTS 143–78 (1998). Perhaps in part because of these critiques, the Guidelines today are merely advisory. See *United States v. Booker*, 543 U.S. 220, 245 (2005). Unsurprisingly, *Booker* has led to increased inter-judge disparity in sentencing. See Crystal S. Yang, *Have Inter-judge Sentencing Disparities Increased in an Advisory Guidelines Regime? Evidence from Booker*, 89 N.Y.U. L. REV. 1268, 1272–73 (2014). Similarly, in distributing funds using a conventional administrative regime, the government may reduce disparity or may grant flexibility to take all factors into account, but not both.

agency acts under a broad standard or at least that the enacted regulations leave considerable room for discretion.

What types of arguments should judges consider in *ex post* proceedings? One answer is any kind of factual evidence or legal consideration relevant in an ideal world of perfect and costless adjudication. In determining how much to offer for particular claims, intermediaries will consider any information that they anticipate judges will consider, unless the cost to the intermediaries of considering such information even informally is too high. If an intermediary believes that a judge would consider a factor to be relevant even tangentially, then the intermediary will have an incentive to adjust its offer for the claim up or down. If judges were expected not to consider certain factors as too tangential, the intermediaries would not consider them either, so pricing would be a less nuanced reflection of underlying merit. Thus, in our hypothetical, judges should consider any specific circumstances that someone would ordinarily weigh in considering how “good and nice” someone’s acts were, even if hypothetical regulators trying *ex ante* to create a catalogue of relevant considerations would never even think of such a consideration.

On the other hand, even if a judge believes some consideration to be marginally relevant in theory, the judge reasonably might decide to assign it no weight. Perhaps the judge is confident that each intermediary would view the cost of considering such evidence to exceed the benefits in determining how much to bid for a claim. Because of the multiplier, an intermediary rationally might ignore some evidence *ex ante*, even though either the intermediary or an adversary to the intermediary would wish to argue about it after a claim is randomly selected. Alternatively, the judge might believe that intermediaries would consider such evidence, but that such consideration would increase the cost of determining how much to bid on claims. Because claimants ultimately bear this cost,¹⁰⁶ a judge reasonably might decide to ignore such evidence. Judges, however, should be careful not to exclude considerations that intermediaries could cheaply consider in informal ways. When a person “thinking fast” is likely to have an intuitive reaction to some detail, it probably bears some weight, even though it would take a person a long time “thinking slow” to articulate the detail’s relevance.¹⁰⁷ We should not assume that the intuitive

106. *See, e.g., Baker Botts L.L.P. v. ASARCO LLC*, 576 S. Ct. 2158, 2164 (2015) (referencing the “bedrock principle known as the American Rule,” which provides that “[e]ach litigant pays his own attorney’s fees”).

107. *Cf. DANIEL KAHNEMAN, THINKING, FAST AND SLOW* 19–108 (2013) (comparing two systems for making judgments).

moralist or even intuitive economist in each of us is irrelevant; if intuitive reactions should be suppressed, it should be because they are found irrelevant after careful consideration.

The exact nature of the evidence that judges would consider depends on the administrative program. The hypothetical Goodness and Niceness Commission would naturally lend itself to specific information about just what an individual or entity applying for a part of the subsidy did. Perhaps there is video or other contemporaneous evidence, or maybe witnesses exist. Expert evidence also might be important to assess how much the claimant actually helped people—for example, by providing education or substance abuse services. Economists might testify about whether these individuals had better outcomes than others. But neither this nor any other agency need commit solely to an economic methodology. Maybe ethicists or philosophers would have relevant contributions. An advantage of adjudicating under a standard is that a wide range of considerations can be brought to bear, even if they are generally viewed as incommensurable.¹⁰⁸ Arguments might be made about the relative weight these considerations should have. If, over time, certain types of arguments, within or across methodologies, come to be recognized as more reliable, intermediaries will change their expectations of how judges will rule. Random sampling thus makes it possible to integrate various methodologies in a way that would be difficult to accomplish with *ex ante* rules, and in a way that allows expectations to evolve organically as knowledge and information improves.

2. Measure of the Outcome

Once judges consider all of the evidence for a particular claim, they must announce a claim valuation. With variable payouts, the claim owner would simply receive the valuation amount, but with the fixed fund approach recommended above, the claim valuation would be divided by the sum of all claim valuations in the period to determine how much of the fund the claim owner should be paid.¹⁰⁹ But what happens if different judges disagree? Should we assign the claim to a new panel, akin to the approach that the legal system takes if a

108. One might argue that where values are incommensurable, it is impossible to weigh them against one another. See Richard Warner, *Does Incommensurability Matter? Incommensurability and Public Policy*, 146 U. PA. L. REV. 1287, 1313 (1998) (considering this claim). Standards are useful if multiple values should be weighed against one another, even in the absence of a methodology for doing so objectively.

109. See *supra* Part I.A.1.

jury is unable to agree on damages?¹¹⁰ Such a step is probably unnecessary, even if the agency decided to use juries as decisionmakers rather than judges.¹¹¹ Instead, once judges have had a full opportunity to consider all evidence and to deliberate amongst themselves, if there is not full agreement, then either the average or median decision might be determined to be the claim valuation.

But which value should be used—average or median? There is a strong case for the median. Assume that claims are to be decided by three-judge panels, with the judges randomly drawn from a broader pool of judges. And suppose that a small percentage of judges have wildly different views from other judges, for example by valuing some claims at multiple orders of magnitude greater than other judges would believe appropriate. A single outlier on a panel might then have an outsized effect on an award if an average valuation metric were used—and to the extent that intermediaries anticipate the possibility of such a judge, such outlier judges have an outsize effect on the amounts received by claimants. With a median measure, this effect will be reduced, because two such judges with the same preferences must be on the same panel to affect the final valuation.

The argument for using the median thus also suggests that three-judge panels are preferable to single-judge panels and may even provide an argument for still larger panels. The danger of outsized influence is even more disturbing if one imagines that perhaps some judges will exaggerate their views to increase their influence. Other solutions are possible. Techniques like peremptory strikes might be used to reduce the influence of outliers.¹¹² Or perhaps, an average should be used unless it deviates more than a certain percent from the median.

There is, however, a separate argument for using the median rather than the average. Suppose that there is disagreement not just about the *amount* of the award but about whether someone should be

110. This is virtually unheard of, because juries will compromise on damages. Morris B. Hoffman, *The Case for Jury Sentencing*, 52 DUKE L.J. 951, 1007 (2003) (“[J]urors [in civil cases] who have managed to agree on the yes or no question of whether a defendant has been proved responsible are very unlikely to be unable to reach a unanimous verdict on punishment.”).

111. Studies suggest that while different juries tend to compare different fact patterns similarly, they may be highly inconsistent when asked to award damages. See generally Cass R. Sunstein, Daniel Kahneman & David Schkade, *Assessing Punitive Damages (with Notes on Cognition and Valuation in Law)*, 107 YALE L.J. 2071, 2075–81 (1998) (reporting results of jury experiments).

112. See Michael Hasday, *Ending the Reign of Slot Machine Justice*, 57 N.Y.U. ANN. SURV. AM. L. 291, 291–92, 307 (2000) (discussing possibility of peremptory challenges of judges and suggesting instead that appellate panels always include at least one member of each major party).

entitled to an award at all. For example, there might be a debate about whether a claimant is eligible to receive awards. If the majority of judges determines that a claimant is ineligible, there is a strong argument that the claimant should receive nothing. An analogy is to a tort case in which the defendant is found not liable; we do not encourage a jury to award one-quarter damages if they expect that one-quarter of hypothetical juries would find liability.¹¹³

3. Effect of Precedent

Whether a median or average is used, judges would be encouraged to issue written opinions. By issuing a written opinion, a judge shows the public that the judge has carefully considered the relevant issues. A written opinion thus functions analogously to proof of work¹¹⁴ and helps ensure that judges do not shirk their responsibilities to consider issues carefully. When reputational considerations lead judges to care about their work product, intermediaries will likely have greater confidence that relevant evidence will be considered. Intermediaries will thus be more likely to consider relevant evidence themselves in pricing claims. Equally important, an obligation to explain one's reasoning may decrease the probability that a judge will rely on factors that the judge would not wish to admit relying on—for example, because such consideration would violate a statute or the Constitution.¹¹⁵ Written opinions also contribute to general knowledge about the issue being adjudicated.¹¹⁶ If a judge has engaged in careful thought about some abstract issue, writing it down

113. *Stein v. New York*, 346 U.S. 156, 178 (1953) (“Courts uniformly disapprove compromise verdicts but are without other means than admonitions to ascertain or control the practice.”). For an explanation of how such compromise may adversely affect the legal system’s interests but suggesting that it may be appropriate in very close cases, see Michael Abramowicz, *A Compromise Approach to Compromise Verdicts*, 89 CALIF. L. REV. 231, 246–50 (2001).

114. The concept of “proof of work” is most well known in the context of the cryptocurrency Bitcoin. See Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN, <http://bitcoin.org/bitcoin.pdf> [<https://perma.cc/8NQ2-HQF4>]. But others have drawn the analogy that many institutions may bestow status based on demonstrated proof of work. See Eugene Wei, *Status as a Service (StaaS)*, REMAINS DAY (Feb. 26, 2019), <https://www.eugenewei.com/blog/2019/2/19/status-as-a-service> [<https://perma.cc/K72Y-N5N3>].

115. See Chad M. Oldfather, *Writing, Cognition, and the Nature of the Judicial Function*, 96 GEO. L.J. 1283, 1338 (2008) (“[T]he act of writing puts the judge into greater contact with the legal materials that are to govern her decision, thereby enhancing their constraining effect.”).

116. See *id.* at 1327–29.

may save a judge time in a later case, in much the same way a journal article seeks to do the cognitive heavy lifting for others.

This justification of written opinions, however, is not the standard justification for precedent. Precedents are usually thought to be valuable in part because they create at least provisionally binding rules, constraining judges and reducing disparity.¹¹⁷ But when decisionmakers (here, the intermediaries) have strong incentives to act like the average member of some other body (here, the ultimate judges), disparity is less of a concern, and so precedent is less necessary. Even if decisionmakers are unpredictable and inconsistent, market pricing may be relatively consistent. Indeed, competition provides strong incentives for market pricing consistency, because an intermediary that pays an unusually high amount for a claim loses money, while one who offers too little will likely lose the claim to a competitor. Intermediaries will develop models of how they expect decisionmakers to rule (perhaps based on surveys or focus groups of people with backgrounds similar to the decisionmakers), updating these models based on their observations of other intermediaries' offers.¹¹⁸ Over time, one should expect their models to converge, even without precedents, but also to evolve as relevant research emerges and attitudes modernize.¹¹⁹ The public, meanwhile, will learn what claims are worth based on how much intermediaries are willing to pay.

Precedents might even be a bad idea in this context. After all, they undermine the virtues of standards over rules.¹²⁰ Like any rule, a precedent will necessarily be overinclusive and underinclusive relative to its purposes.¹²¹ The decisionmakers who issue precedents are just individuals, and they may have idiosyncratic beliefs about the relevant issue. If a decisionmaker settles an issue, creating precedent, then future intermediaries will price claims according to that outcome rather than their expectation of what a representative decisionmaker would decide. On the other hand, the better the process for making

117. See, e.g., Heidi Li Feldman, *Objectivity in Legal Judgment*, 92 MICH. L. REV. 1187, 1232-34 (1994) (discussing constraining power of common law).

118. The rationale underlying this assertion is that intermediaries should recognize a phenomenon like the winner's curse, where the winner of an auction may be the party that has most overestimated the value of the auctioned asset. See, e.g., E.C. Capen, R.V. Clapp & W.M. Campbell, *Competitive Bidding in High-Risk Situations*, 23 J. PETROL. TECH. 641, 641-53 (1971) (discussing the "winner's curse"). The rational response to losing auctions is to increase one's bid in similar auctions, and the rational response to winning is to lower one's bid in the future. See *id.*

119. See *id.*

120. See *supra* note 4 and accompanying text.

121. See *supra* note 4 and accompanying text.

precedent, the less likely it will be that a particular precedent is just one decisionmaker's idiosyncratic belief. Multi-judge panels may create precedents, and the ordinary processes of common law decision-making allow precedents to adapt over time.¹²² Judges may be sensitive to the reduced need for precedents in the random selection regime, yet still decide that particular precedents have the potential to be more transparent than market pricing. Thus, while precedent is not essential when random selection is used, it still may perform a useful role if used judiciously.

At the least, written opinions may be valuable for their persuasive value. Market pricing is opaque.¹²³ Intermediaries have no incentives to release their rationales for concluding why they expect particular factors to affect claims' expected values.¹²⁴ In written opinions, decisionmakers have the opportunity to apply established theory to concrete facts—for example, developing reasons why some acts should or should not be rewarded by our hypothetical Goodness and Niceness Commission and how much credit various acts should receive. Should similar facts arise in a later case, those initial impressions may be useful in identifying some considerations relevant to the problem. Over time, the set of relevant arguments and counterarguments would be further developed. The market will then assess—in part based on its perception of the relative strength of these considerations, but also based on the views that judges seem to favor—the probability that a judge will choose one position or another. In this sense, market pricing can complement written opinions, assigning weights to different perspectives even if decisions do not produce conventional holdings. This approach reduces the risk associated with idiosyncratic precedent, while still allowing legal ideas to flourish.

B. PARTICIPANTS

The parties that will study precedent most closely are the intermediaries, because, whether binding or not, opinions will provide insight into how decisionmakers think. We will consider whether the intermediaries should be regulated below, but in this Section, we

122. See, e.g., George L. Priest, *The Common Law Process and the Selection of Efficient Rules*, 6 J. LEGAL STUD. 65, 65 (1977) (arguing that inefficient rules are likely to be litigated more, thus improving the efficiency of the common law); see also Daniel Klerman, *Jurisdictional Competition and the Evolution of the Common Law*, 74 U. CHI. L. REV. 1179, 1179 (2007) (offering a balanced perspective on the debate concerning the common law's efficiency).

123. See Schwarcz, *supra* note 15, at 396–97 (arguing that insurance policies are not sufficiently transparent).

124. See *id.*

consider how the random selection system should treat other involved individuals: judges, claimants, and perhaps those assigned the role of arguing against the intermediaries.

1. Judges

Because intermediaries will set pricing based on who they expect the judges to be, they may well focus on the identity and views of judges. They might read a judge's opinions and listen to a judge's comments at public events just as the market listens to the Fed chair, not for enlightenment about the underlying merits but for clues about individual predilections.¹²⁵ If the pool of judges is large enough, this presents less of an issue, because intermediaries will not know who is likely to resolve a particular claim. Nonetheless, intermediaries might still focus on the characteristics of the judicial pool as a whole. Perhaps of greatest concern, they might focus on whether most judges are from one political party or another, especially if the question of how to distribute a fixed fund has a political valence. This focus further increases instability, because prices could change dramatically after a presidential election.

One might view the tendency of prices to move with polls and elections as beneficial, increasing judicial accountability. But one could also view this as pernicious, the influence of politics on what should be apolitical valuations. If so, then ideally the current administration ought not have much effect on the selection of judges. This might not be possible, however, in the U.S. federal system, where principal officers must be nominated by the President and confirmed by the Senate.¹²⁶ If the agency's judges were inferior officers, perhaps they could be appointed by "the courts alone,"¹²⁷ thus attenuating political influence. But for that to be the case, the judges might not be able to make final decisions,¹²⁸ and giving the agency the ability to overturn the judges would reintroduce political decision-making.

125. Academics already offer sophisticated analysis of judicial tendencies. See, e.g., R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105 (2004) (analyzing Federal Circuit).

126. See U.S. CONST. art. II, § 2, cl. 2. For a recent opinion finding certain agency decisionmakers insulated from review to be principal officers, see *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320, 1328–29 (Fed. Cir. 2019).

127. See James E. Pfander, *The Chief Justice, the Appointment of Inferior Officers, and the "Court of Law" Requirement*, 107 NW. U. L. REV. 1125, 1174–79 (2013) (proposing approach for courts to use in appointing inferior officers).

128. See *Arthrex*, 941 F.3d at 1328–29.

Even in the U.S. federal system, however, there are alternatives for reducing political influence. One approach would eliminate the need for agency judges. Instead, valuations might be performed in federal court, by federal judges. The population of federal judges shifts only slowly over time, because the judges have lifetime appointments.¹²⁹ This would increase the workload of the federal courts, but because of random selection, the increased burden on the courts would be reasonable. If that is not feasible, an alternative approach might be to appoint judges for relatively short periods of no more than a few years, but postpone decision-making, perhaps by five or ten years.¹³⁰ The intermediaries then will be making their decisions not based on what *particular* judges will do but based on what *hypothetical future* judges might do. Uncertainty about which political party might win the presidency in the future would result in some weight being assigned to each possibility, becoming just another factor in the intermediaries' model.

The possibility of resolving cases with federal judges highlights that the judges could be generalists.¹³¹ There may, however, be value to appointing judges with specialized expertise. A judge in a randomly selected case ideally should be someone who can understand the various arguments that might be brought to bear on the question of how much money, if any, an applicant to the fund should receive. The relevant expertise thus depends on the purpose of the subsidy that the government is distributing. In some cases, an ideal judge might not even be a lawyer. In existing regulatory regimes, administrative judges almost always are lawyers because they must be able to understand how to deal with diverse legal materials, including statutes, case law, and regulations, including both substantive and procedural rules.¹³² If random selection were used to implement a standard

129. See Jack M. Balkin, *Why Liberals and Conservatives Flipped on Judicial Restraint: Judicial Review in the Cycles of Constitutional Time*, 98 TEX. L. REV. 215, 225 (2019).

130. Postponement of decisions may be counterproductive in our existing judicial system, where it is important to resolve issues. See David A. Super, *Against Flexibility*, 96 CORNELL L. REV. 1375, 1380 (2011). But it should be more acceptable with a system, like this one, that makes precedent less important. See *supra* Part II.A.3.

131. An argument for generalists in this context is that, with few cases to decide, the advantage of specialist judges in processing cases matters less. See Chad M. Oldfather, *Judging, Expertise, and the Rule of Law*, 89 WASH. U. L. REV. 847, 854–70 (2012) (arguing that although specialist courts may be more efficient, generalists may produce better decisions).

132. On the other hand, the fact that nonlawyers are allowed to represent disability applicants suggests that nonlawyers can be competent, if less effective on average than lawyers. See, e.g., *Survey Statistics: Can a Nonlawyer Advocate Help You Get Social*

without accompanying regulations, however, legal knowledge might be less essential. The arguments for how much someone is entitled to might sound more in economics or science, depending on the topic, than in law. Returning to our hypothetical Commission, does anyone believe that one must be a lawyer to take the measure of goodness and niceness?

Lawyers do have an advantage in following procedural and evidentiary rules, but these might well be looser than in traditional adjudication, both because administrative law often uses informal adjudication¹³³ and because procedural protections might be most important when individual rights are at stake.¹³⁴ The purpose of randomly selecting cases is not to preserve the rights of intermediaries, but to discipline the decision-making of these intermediaries so their bids to claimants reflect the statutory specification of the judicial valuation task. Procedural informality might introduce more variance in decision-making, but a little bit of extra randomness ought not matter when the goal is for claimants to estimate expected values. Second-order questions such as whether particular arguments should be admissible may not improve decision-making *on average* even if they may make decision-making more consistent. Moreover, judges are likely to be influenced even by evidence that they find inadmissible,¹³⁵ so allowing a broad scope of admissibility, as in arbitration,¹³⁶ may make sense. Some procedural rules might make sense (such as rules restricting each litigant to a certain number of hours of presentation time), but nonlawyers can follow such rules. Meanwhile, because intermediaries are applying for money rather than being dragged into

Security Disability Benefits?, NOLO, <https://www.disabilitysecrets.com/resources/survey-statistics-can-nonlawyer-advocate-help-get-social-security-disability-benefits.html> [<https://perma.cc/AUY8-3XWX>] (assessing success of applicants with nonlawyer representatives).

133. See Rubin, *supra* note 22, at 123–31 (discussing informal adjudication).

134. Melissa M. Berry, *Beyond Chevron's Domain: Agency Interpretations of Statutory Procedural Provisions*, 30 SEATTLE U. L. REV. 541, 547 (2007) (explaining why due process protections are greater for adjudication than for rulemaking).

135. See Andrew J. Wistrich, Chris Guthrie & Jeffrey J. Rachlinski, *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251, 1286–1324 (2005) (reporting results of an experiment performed on judges about the effect of inadmissible evidence).

136. See Paul Radvany, *The Importance of the Federal Rules of Evidence in Arbitration*, 36 REV. LITIG. 469, 470 (2016) (“Many arbitrators admit almost anything proffered as evidence, and these decisions are largely beyond review.”).

court, standing, mootness, and other justiciability doctrines will not have a large role.¹³⁷

2. Claimants

When arguing a randomly selected case, an intermediary will claim that the valuations corresponding to the original claimant should be high. The claimant has nothing at stake. And yet, the claimant's participation might be useful. The claimant presumably will have already provided the intermediary with some supporting documentation, but, with the great stakes after a case is randomly selected for adjudication, the intermediary will likely want to do more investigation of the facts, if such investigation is possible. This investigation may require the cooperation of the claimant. How can such cooperation be achieved? The most straightforward approach would be for the contract between the intermediary and the claimant to require cooperation. Similarly, insurance contracts require insureds to cooperate with insurance companies.¹³⁸ The prospect that the insurance company may enforce such a clause, by refusing to pay out on the insurance policy, is enough to induce cooperation from most claimants.

Yet one might worry that cooperation clauses will not be enough, because claimants will have already received payment from the intermediary. This problem has at least two possible solutions. Either one could be accomplished by voluntary contracting, though, because a goal is to ensure equal treatment of claimants, it might be better to create a general rule in the enacting legislation. The "stick" solution would be for the intermediary to have the right to claw back funds should a claimant not cooperate with the intermediary. A drawback of the stick is that it may not work with judgment-proof claimants¹³⁹ who have already spent the money from the intermediary. Under the "carrot" solution, an intermediary might be allowed to give the claimant some of the funds from the adjudication. For example, if one in one thousand cases is adjudicated, the intermediary might give one-thousandth of the recovery—an amount that should on average be roughly

137. *Cf.* *Vt. Agency of Nat. Res. v. United States ex rel. Stevens*, 529 U.S. 765, 771–78 (2000) (finding that statutory entitlement to money was sufficient for a whistleblower to establish standing).

138. *See generally* 44 AM. JUR. 2D *Insurance* § 1427 (2020) (detailing interpretation of cooperation clause).

139. *See* Amy Knapp, *What Does Judgment Proof Mean?*, NOLO, <https://www.nolo.com/legal-encyclopedia/what-does-judgment-proof-mean.html> [<https://perma.cc/C5AQ-2SKY>] (“[I]f you don’t have any income or property that the creditor can legally go after, then . . . [the creditor] cannot collect on the judgment.”).

equal to what the intermediary paid the claimant in the first place—to the claimant.

3. Adversaries

With cooperation, the interests of intermediaries and claimants should be roughly aligned. But who will have an incentive to point out weaknesses in their arguments? One approach would be to leave this to the judges. Inquisitorial development of the facts is the norm in Social Security adjudication,¹⁴⁰ and it is widely used in Europe.¹⁴¹ A good judge would look for weaknesses in the arguments of those seeking funds and would dispassionately consider these weaknesses against the strengths of the arguments. Even if we suspect that this will tilt adjudication slightly in favor of claimants, that does not matter when they are competing for a fixed fund. Unless there is an *ex ante* reason that claimants would expect that one-sided presentation would favor some claimants over others, judicial evaluation should not change expected values and thus the prices that intermediaries pay for claims.

It would also, however, be possible to designate “adversaries” in each case, assigning each the goal of arguing against a claimant. These might simply be employees of the administrative agency, charged with conducting appropriate factual investigation and arguing against the intermediary in a particular case in court. A more complex scheme might provide financial incentives. Consider, for example, the following variation on final offer arbitration¹⁴²: The intermediary is required to announce the valuation that the intermediary seeks. The right to oppose the intermediary might then be auctioned. The auction winner would be the adversary and would announce a different valuation, lower than the intermediary’s. The judge would be required to choose between these values, rather than finding a compromise; this gives the intermediaries an incentive not to exaggerate their asks.¹⁴³ The entire fund, plus auction revenues, would be distributed in proportion to the amount requested by the intermediary, but if the adversary won, the

140. See, e.g., *Sims v. Apfel*, 530 U.S. 103, 110–11 (2000) (“Social Security proceedings are inquisitorial rather than adversarial. It is the ALJ’s duty to investigate the facts and develop the arguments both for and against granting benefits . . .”).

141. But see David Alan Sklansky, *Anti-Inquisitorialism*, 122 HARV. L. REV. 1634, 1668–88 (2009) (identifying reasons that American jurisprudence should not incorporate Continental inquisitorialism).

142. See, e.g., Amy Farmer & Paul Pecorino, *Bargaining with Informative Offers: An Analysis of Final-Offer Arbitration*, 27 J. LEGAL STUD. 415, 416 (1998) (“In [final-offer arbitration], the arbiter must choose one of the two submitted offers.”).

143. See *id.* at 428–29 (explaining how the mechanism encourages parties to be reasonable in submitting valuations).

intermediary would be required to pay it a portion of what it received, specifically the difference between the valuations divided by the amount requested by the intermediary.

Such an approach, though easily implemented, might be conceptually too complex for any early experimentation with market-based random selection, but the virtues of both auctions and final offer arbitration seem apt in the random selection context. The use of auctions borrows from an approach that was used in some class actions for the right to become class counsel.¹⁴⁴ The goal of such a procedure is to align incentives between class members and counsel, but it is imperfect.¹⁴⁵ Auctions may be more plausible here, where the winner of the auction would not be representing a particular client. Meanwhile, final offer arbitration limits the range of disagreement, because each party has the incentive to make a reasonable offer. So long as the valuations are announced before judges are chosen, this reduces the risk that an idiosyncratic judge may have an outsized influence on the process. In addition, it ensures that both the intermediary and the adversary have the exact same amount of money at stake. They will thus tend to spend similar amounts on the adjudication, ensuring genuinely adversarial presentation.

Whether final offer auctions are used or not, settlements might be allowed. In most adjudicative contexts, it goes without saying that settlements should be encouraged.¹⁴⁶ The case, however, is closer with random selection. Because random selection already greatly reduces the number of cases to be adjudicated, the burden of adjudication will be much lower, and thus the adjudication costs saved relative to the size of the program as a whole will be lower as well. If adjudication is viewed as providing a public good—for example, because judges' written opinions will enrich the public understanding about what should count as advancing the government's goals in the

144. See, e.g., *In re Amino Acid Lysine Antitrust Litig.*, 918 F. Supp. 1190, 1197–1207 (N.D. Ill. 1996) (directing the appointment of the firm with the fee structure most favorable to clients); Alon Harel & Alex Stein, *Auctioning for Loyalty: Selection and Monitoring of Class Counsel*, 22 YALE L. & POL'Y REV. 69, 72 n.1 (2004) (citing similar cases); Kathryn Kranhold & Richard B. Schmitt, *To Rein In Fees, Some Judges Ask Attorneys To Bid for Suits*, WALL ST. J. (Dec. 6, 2000, 12:01 AM), <https://www.wsj.com/articles/SB976053221217460327> [<https://perma.cc/8PBZ-MJBB>].

145. See Harel & Stein, *supra* note 144, at 107–20 (explaining how to modify the mechanism to improve incentive alignment).

146. See, e.g., Andrew W. McThenia & Thomas L. Shaffer, *For Reconciliation*, 94 YALE L.J. 1660 (1985) (arguing against the argument forwarded by Owen M. Fiss in *Against Settlement*, 93 YALE L.J. 1073 (1984)).

administrative program¹⁴⁷—then there may be an argument for forbidding settlement. The case against settlement is especially strong if the adversaries are expected to be weak, for example because they do not have as much at stake as the intermediaries. But if the final offer auctions are used, this should not be a significant concern, and settlements would save some costs, ultimately increasing claimant payouts. Moreover, final offer arbitration tends to promote settlement by revealing the parties' information.¹⁴⁸ Settlement could thus allow adjudication to become quite rare in such a system, perhaps further advancing the argument for resolving disputes with federal judges or other generalists.¹⁴⁹

III. REGULATION OF THE MARKET FOR CLAIMS

Whether or not settlement is permitted, the costs of adjudication can be quite low if relatively few cases are selected for adjudication. The market itself achieves the function of adjudication in most cases, and the market will consume real resources. Intermediaries must invest in modeling decision-making and in evaluating individual claims, but will also have incentives to make their claim evaluation processes efficient, thus providing a foreseeable cost advantage over governmental adjudication of individual claims and discouraging idiosyncratic judgments. To be sure, these are as yet untested empirical claims. At a minimum, the market provides incentives for consistent claim resolution that are challenging to provide within an agency that adjudicates every claim. The most powerful objection to the market role is thus not that the market will be too expensive or random, but that the market will systematically shortchange claimants, or at least some groups of claimants.

The argument that the market will not shortchange claimants is simple: competition. If intermediaries are making large profits, entrepreneurs will sense profit opportunities and enter the market, at least assuming an absence of barriers to entry. Under standard models of industrial organization, entry will dissipate supplier rents.¹⁵⁰ The

147. See, e.g., William M. Landes & Richard A. Posner, *Adjudication as a Private Good*, 8 J. LEGAL STUD. 235, 238 (1979) (explaining that written opinions (i.e., precedent) may be a public good).

148. See Farmer & Pecorino, *supra* note 142 (modeling the effect of final-offer arbitration and noting that offers "may reveal private information").

149. See *supra* Part II.B.1.

150. See Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807, 809–15 (1975) (offering a model of the social costs of monopoly with complete rent dissipation). See generally Paul Kleinsorge, *Rent*, BRITANNICA, <https://www.britannica.com/topic/rent-economics> [<https://perma.cc/B67L-3V25>] ("In modern

hope is that rents will be dissipated by competition to pay as much as possible to claimants. Rents, however, could also be dissipated by expenditures on marketing, which is likely to be of low value in this context given the most probable deciding factor for most consumers is who will pay them the most money.¹⁵¹ This should be less of a problem than in the insurance context; consumers strongly consider prices in buying insurance, so the usual concern is that consumers will pay insufficient attention to contractual protections.¹⁵² Here, all that matters is price, so there should be no need for consumers to assess complex contracts or guess which provider might offer the best service. Possibly a more serious concern is that political rent-seeking could occur,¹⁵³ with claimants lobbying for the institution of licensing requirements, purportedly for consumer protection but in practice to reduce competition.

Could a law creating an agency relying on random selection increase the competitiveness of intermediaries? This Part considers the possible role of antitrust law, consumer protection law, and antidiscrimination law in ensuring that claimants receive a sufficient amount from the fund.

A. ANTITRUST LAW

Individual claimants' risk of unfairly low compensation due to anti-competitive behavior would be reduced because ordinary antitrust law would presumably be in force. Thus, any attempts to engage in price-fixing would be illegal and subject to treble damages.¹⁵⁴ So too would attempts by intermediaries to divide markets,¹⁵⁵ either based on geography or based on the identity of the claimants. Antitrust law,

economic usage, rent is represented as the difference between the total return to a factor of production (land, labour, or capital) and its supply price—that is, the minimum amount necessary to attain its services.”).

151. Marketing may help promote economic efficiency for some products in countries with corruption or burdensome regulation. See M. Joseph Sirgy, Grace B. Yu, Dong-Jin Lee, Shuqin Wei & Ming-Wei Huang, *Does Marketing Activity Contribute to a Society's Well-Being? The Role of Economic Efficiency*, 107 J. BUS. ETHICS 91, 100 (2012) (“empirically demonstrat[ing] the positive predictive influence of marketing system on societal wellbeing”).

152. See Paul L. Joskow, *Cartels, Competition and Regulation in the Property-Liability Insurance Industry*, 4 BELL J. ECON. & MGMT. SCI. 375, 404–05 (1973) (discussing consumers' difficulty obtaining information about insurer quality).

153. See Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224, 231–32 (1967) (describing political rent-seeking).

154. See 15 U.S.C. § 15(a) (allowing “threefold the damages”).

155. Such attempts also may be particularly amenable to class actions. See A.B.A. SECTION OF ANTITRUST L., *ANTITRUST CLASS ACTIONS HANDBOOK* 48–49 (2d ed. 2018).

however, has its limits. A concern in modern antitrust scholarship is that providers might tacitly collude,¹⁵⁶ a prospect made more severe by improvements in artificial intelligence.¹⁵⁷ Moreover, antitrust law does not penalize a company for *being* a monopoly, only for *seeking* to monopolize.¹⁵⁸ Thus, if it turns out that the function of intermediary is a natural monopoly,¹⁵⁹ antitrust law would offer little protection.¹⁶⁰ Emergence of a natural monopoly seems unlikely, however. An intermediary need only develop a pricing model to enter the market, not spend billions on a power plant.¹⁶¹

If the antitrust laws are insufficiently protective in the random selection context, one could imagine specific solutions. A crude but simple approach would be to limit any intermediary (or any set of jointly owned intermediaries)¹⁶² from owning more than a set percentage of claims. If, for example, market share were limited to 20% in a geographic region (perhaps defined at the county level) but an intermediary bought up 30% of the claims, then each of its claims would be penalized by being assigned a lower probability of random selection, without a corresponding increase in the proportion of the fund to which it would be entitled. This increases the incentive for another firm to enter the market. This approach is not without its limitations and downsides. Ideally it would be applied to nongeographical markets (such as claims for particular types of claimants). Meanwhile,

156. See, e.g., William E. Kovacic, M.J. Moltenbrey & Nathan Eimer, *The Detection and Punishment of Tacit Collusion*, 9 LOY. CONSUMER L. REP. 151, 156 (1997) (offering hypothetical examples and explaining the problem they pose for antitrust enforcement).

157. See Emilio Calvano, Giacomo Calzolari, Vincenzo Denicolò & Sergio Pastorello, *Artificial Intelligence, Algorithmic Pricing and Collusion* (Ctr. for Econ. Pol'y Rsch., Discussion Paper No. DP13405, 2019), <https://a.qoid.us/SSRN-id3310310.pdf> [<https://perma.cc/GU2B-8PH6>].

158. See 15 U.S.C. § 2 (outlawing “attempt to monopolize”).

159. Jim Chappelow, *Natural Monopoly*, INVESTOPEDIA, https://www.investopedia.com/terms/n/natural_monopoly.asp [<https://perma.cc/B5X9-AHY6>] (Aug. 29, 2019) (“A natural monopoly is a type of monopoly that exists due to the high start-up costs or powerful economies of scale of conducting a business in a specific industry.”).

160. Natural monopoly status is not a defense, but the plaintiff must still demonstrate exclusionary conduct. See Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 325–26 (2003).

161. See Chappelow, *supra* note 159.

162. Recent antitrust scholarship has focused increasingly on the danger that cross-ownership can encourage collusion, even in public companies. See Einer Elhauge, *Horizontal Shareholding*, 129 HARV. L. REV. 1267, 1278–1301 (2016); Eric A. Posner, Fiona M. Scott Morton & E. Glen Weyl, *A Proposal To Limit the Anticompetitive Power of Institutional Investors*, 81 ANTITRUST L.J. 669, 680–91 (2016) (detailing the potential harms of common ownership).

excessively strict market share limits may reduce achievement of economies of scale. But because the service provided by intermediaries is homogenous, market share limits seem more plausible here than in markets for which incentives are essential to foster innovation.

An alternative approach to ensure that most of a fund goes to claimants would be for a statute to limit the profit of the industry as a whole based on the industry's costs. The website transferring claims could collect information about the sales price for these claims. Intermediaries might be required to submit information indicating their total expenses in researching claims and in adjudicating randomly selected cases. By statute, *total industry profits* would be capped at some percentage above this level. Any excess might be distributed to all claimants in proportion to the amounts they initially received. Profits would not apply on a per-firm basis because some firms might be particularly skilled and thus deserve greater payments and also because random selection would complicate the assessment. If markets are sufficiently competitive, this regulation may be unnecessary and, given the need to audit industry-reported expenses and to ensure that claim sales are in arms-length transactions, cumbersome. But it does provide a relatively straightforward way of ensuring that the vast bulk of any fund goes to claimants.

B. CONSUMER LAW

Consumer protection law also might be tailored to the random selection context, but the degree of supervision required is likely much less than in other important contexts. The Consumer Financial Protection Bureau (CFPB) might be seen as saving consumers from bad terms buried in small print¹⁶³ or perhaps from attractive financial products that they cannot actually afford.¹⁶⁴ Because consumers are selling their claims, they should care only about how much money they receive. There might, however, be a role for government in defining a single standard contract for such transactions, or for mandating warnings for nonstandard contracts. For example, intermediaries might be required to give consumers disclosures encouraging the consumers to contact other intermediaries to obtain the best possible price.

163. The CFPB's website formerly promised that the agency would ensure "that nothing is buried in fine print." *About Us*, CONSUMER FIN. PROT. BUREAU, <http://www.consumerfinance.gov/the-bureau> [<https://perma.cc/Y5FG-D627>].

164. *See id.* (emphasizing mission to ensure "that prices are clear up front [and] that risks are visible").

Even better, intermediaries might be required to give claimants time to shop around for offers. An intermediary might adopt the old used car salesman tactic of offering a great deal available only that day. Such high-pressure sales pitches not only are inherently unpleasant but also may victimize relatively low-information consumers. But there are simple solutions, such as laws authorizing cooling-off periods, permitting consumers to cancel transactions within some period of time, such as a month.¹⁶⁵ The Internet should make it easy for consumers to shop around for better offers. A drawback of this approach is that it might allow second-movers to free-ride¹⁶⁶ off the valuations of other intermediaries. If Intermediary *A* has a reputation for performing detailed research, Intermediary *B* might adopt a policy of paying any consumer a bit more than *A* offered. This may discourage *A* from performing careful investigation.

Potential compromises exist, however. An intermediary, for example, might be allowed to insist that a consumer walking away from a previously accepted offer pay to the intermediary some percentage (perhaps 2%, or some other number designated by statute). Indeed, the statute might provide that intermediaries must publish tentatively accepted offers, along with some basic, nonidentifying information about the claimant and an anonymized email address at which the claimant could be reached. If an intermediary developed a reputation for paying too little (by more than the specified statutory percentage), third parties would have an incentive to submit higher bids on these claims. They might do so sight unseen if the offering intermediary's reputation were sufficiently bad, or they might simply encourage claimants to consider selling to them instead. Thus, a relatively easy-to-implement consumer protection rule could help trigger an auction for claimants' rights, while still ensuring some compensation for intermediaries performing initial investigations.

C. ANTI-FRAUD LAW

So long as claimants seek the highest price from intermediaries, it is unlikely that intermediaries will have occasion to engage in fraud,

165. See generally Jeff Sovern, *Written Notice of Cooling-Off Periods: A Forty-Year Natural Experiment in Illusory Consumer Protection and the Relative Effectiveness of Oral and Written Disclosures*, 75 U. PITT. L. REV. 333, 334 & nn.1-5 (2014) (discussing such laws).

166. See generally Jim Chappelow, *Free Rider Problem*, INVESTOPEDIA, https://www.investopedia.com/terms/f/free_rider_problem.asp [<https://perma.cc/HLH3-5TEE>] (July 25, 2019) ("The free rider problem is the burden on a shared resource that is created by its use or overuse by people who aren't paying their fair share for it or aren't paying anything at all.").

though any fraud by intermediaries (for example, false statements that claimants are not permitted to talk to other intermediaries) could be prosecuted. The greater fraud danger to a claimant is fraud by other claimants. With a fixed fund, honest claimants are victimized by the dishonesty of other claimants. For example, if half of the fund goes to entirely bogus claims, then each honest claimant receives only half the award the claimant would have received in fraud's absence. Fraud could be policed as in any other market. If an intermediary believed that a claimant was attempting to defraud it or had successfully done so, the intermediary could report this to federal prosecutors who then could decide how to proceed. The government thus must decide, as with any other administrative regime, the optimal amount to spend on fraud investigations, prosecutions, and, where appropriate, punishment.

Yet perhaps the most important protection against fraud is the incentive of intermediaries to be vigilant. If an intermediary believes that some evidence submitted is fraudulent, the intermediary will have an incentive to offer less, dig deeper, or walk away. In a rule-bound government agency, suspicions of fraud can be addressed only through cumbersome procedures, so if a single medical expert gives many dubious diagnoses, the agency may need to treat these as legitimate unless it wishes to undertake an expensive investigation.¹⁶⁷ Intermediaries, by contrast, will have an incentive to make informal assessments of the credibility of witnesses, including experts, gauging the outcome of a hypothetical detailed adjudication. Sometimes, an honest claimant might be disbelieved, but the market at least also provides incentives for intermediaries to bid up the value of strong claims from which others have shied.

D. ANTIDISCRIMINATION LAW

The argument that competition will drive up prices is perhaps reminiscent of Gary Becker's explanation of how discrimination creates profit opportunities that in turn can counter discrimination.¹⁶⁸

167. A drawback of rare highly publicized enforcement is that the public may erroneously conclude that fraud is common. See Martha T. McCluskey, *The Illusion of Efficiency in Workers' Compensation "Reform,"* 50 RUTGERS L. REV. 657, 882-84 (1998) (noting that concerns about claims fraud disproportionately emphasize claimant-side fraud despite contrary data about the prevalence of employer fraud).

168. See GARY S. BECKER, *THE ECONOMICS OF DISCRIMINATION* 14 (1957) (explaining how a "taste for discrimination" measures the monetary value discriminators "pay" to discriminate). *But see* Cass R. Sunstein, *Why Markets Don't Stop Discrimination*, 8 SOC. PHIL. & POL'Y 22, 31-34 (1991) (providing additional, nonstandard arguments as to why markets fail to stop discrimination).

Indeed, if minority or women claimants were paid less than white male claimants for equally valuable claims, then intermediaries will have incentives to bid up these claims. Full acceptance of this logic, however, would suggest that some areas of antidiscrimination law, such as protections against “redlining,” are unnecessary.¹⁶⁹ Such protections continue to exist, however,¹⁷⁰ and they could be applied to transactions between intermediaries and consumers. The statute creating the random selection markets might require intermediaries to report aggregate claim values for racial or other subgroups, including geographical subgroups, to facilitate the filing of such claims.

One reason that intermediaries might be motivated to discriminate would be if they expect that the ultimate adjudication itself is likely to discriminate. So long as witness credibility is at issue, judges might discriminate,¹⁷¹ and reliance on standards rather than rules may increase the danger.¹⁷² Discrimination is especially likely, however, when decisionmakers make many decisions with relatively little scrutiny. The large stakes of randomly selected claims will highlight issues of expert evidence, possibly reducing the focus on the characteristics of the claimant and thus the likelihood that conscious or subconscious bias will affect assessments. But for discrimination that persists, the law can provide remedies. Antidiscrimination law generally bans statistical discrimination,¹⁷³ including discrimination that is economically rational based on the aggregate characteristics of some group, as well as discrimination that is rational based on third parties’ anticipated discrimination.¹⁷⁴ The statute regulating intermediaries could explicitly allow suits based on these theories and clarify that

169. For an analysis highlighting methodological difficulties in determining whether race discrimination exists in the mortgage market, see Andrew Holmes & Paul Horvitz, *Mortgage Redlining: Race, Risk, and Demand*, 49 J. FIN. 81 (1994).

170. See, e.g., 42 U.S.C. § 3604 (“[I]t shall be unlawful . . . [t]o refuse to sell or rent . . . a dwelling to any person because of race . . .”).

171. See Sheri Lynn Johnson, *The Color of Truth: Race and the Assessment of Credibility*, 1 MICH. J. RACE & L. 261, 266–317 (1996) (discussing the effects of discrimination on credibility assessments).

172. See Samuel Estreicher, *Achieving Antidiscrimination Objectives Through “Safe Harbor” Rules for Cases of Chronic Hiring Aversion*, U. PA. J.L. & PUB. AFFS. 1, 3–5 (2017) (examining the potential costs of relying on rules rather than standards to prevent discrimination).

173. See, e.g., Peter P. Swire, *The Persistent Problem of Lending Discrimination: A Law and Economics Analysis*, 73 TEX. L. REV. 787, 790–91 (1995) (noting that statistical discrimination is illegal under disparate treatment theory).

174. The classic example of this is customer discrimination. See, e.g., Jonathan S. Leonard, David I. Levine & Laura Giuliano, *Customer Discrimination*, 92 REV. ECON. & STAT. 670, 671–73 (2010) (modeling the effects of customer discrimination).

they encompass situations in which the market anticipates judicial bias.

IV. APPLICATIONS TO CLIMATE CHANGE, PANDEMICS, AND OTHER EMERGENCIES

Parts I through III have used the example of a generic administrative agency to demonstrate how randomly selecting a small number of cases for adjudication can provide market incentives for pricing claims based on a vague standard. The case for the market-based approach is strongest when an administrative problem is so vast that a conventional agency could not easily address it.¹⁷⁵ To consider some specific applications of the market-based approach, we focus on one of the greatest problems of our time: climate change. A vast literature exists assessing the danger of climate change¹⁷⁶ and various legal responses to it.¹⁷⁷ This Article's goal is to show how random selection markets might prevent climate change or, failing that, perform better in distributing funds than the government has in other disasters, including the recent COVID-19 pandemic.

This Article simply assumes that a legislature or other arm of a government wishes to spend money either to combat climate change or to compensate the victims of climate change or some other disaster. The point is not to argue that the particular expenditures represent the best way of fighting climate change, either in the United States or in an international treaty. Rather, it is to highlight that distributing funds connected to climate change on an economy-wide basis is a massive administrative challenge¹⁷⁸—and it is a challenge that may be much more easily met with random selection and sales to intermediaries than with a traditional administrative structure. Some of the proposals are novel, even though they would be obvious policy candidates if we conclude that an administrative agency could efficiently administer a broad standard governing how to distribute funds. That

175. See *supra* Introduction.

176. The Intergovernmental Panel on Climate Change creates periodic reports synthesizing the latest research. See, e.g., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 SYNTHESIS REPORT (Core Writing Team, Rajendra K. Pachauri & Leo Meyer eds., 2014).

177. See, e.g., J.B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, 40 ENV'T L. 363, 372 (2010) ("To be sure, legal scholarship on climate change policy is sharply on the rise.").

178. See generally J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CALIF. L. REV. 59 (2010) (broadly discussing administrative challenges with handling climate change).

these proposals have not been suggested before highlights how much governmental ambition is constrained by a shared assumption that efficiently scaling standards is impossible.

The diversity of these proposals also establishes that market-based random selection can be used in diverse contexts, whether or not the contexts have anything to do with climate change: when each claimant might be entitled to large payments and also when there are many claimants entitled to small payments, when rules might be feasible and when they are almost surely infeasible. Section A describes various funds that the government might distribute as part of anti-climate change efforts. The proposals include compensating people hurt by legislation to combat climate change, reimbursing expenditures for improving building efficiency, and promoting research and development. Section B explains how funds to compensate for climate change or other disasters that occur. A fund subsidized by the government might be used to share the burden of climate change while limiting the role of politics in measuring loss.

A. PREVENTING CLIMATE CHANGE

This Section considers the possibility of three possible compensation funds designed to prevent climate change. Subsection 1 elaborates on the fund described in the Introduction to compensate those harmed by anti-climate change legislation, and Subsection 2 assesses how a fund might be used to compensate building owners who improve energy efficiency. Then, Subsection 3 assesses whether funds might be used to reward research and development into new technologies.

1. Compensation for Legislative Losers

Many economists have long argued that the best approach to addressing climate change is to impose a carbon tax¹⁷⁹ or to create a cap-and-trade system for greenhouse emissions.¹⁸⁰ These proposals, however, have had only modest political successes.¹⁸¹ In France, for

179. See, e.g., Frederick van der Ploeg & Cees Withagen, *Growth, Renewables, and the Optimal Carbon Tax*, 55 INT'L ECON. REV. 283, 283 (2014) ("A substantial and possibly rising carbon tax is needed . . .").

180. See, e.g., MATT HORN, CAP AND TRADE: REDUCING POLLUTION, INSPIRING INNOVATION 11 (2008). For a comparison of these two approaches, see Lawrence H. Goulder & Andrew R. Schein, *Carbon Taxes Versus Cap and Trade: A Critical Review*, 4 CLIMATE CHANGE ECON. 1, 2–25 (2013).

181. Ted Nordhaus & Michael Shellenberger, *The Flawed Logic of the Cap-and-Trade Debate*, YALE ENV'T 360 (May 19, 2009), https://e360.yale.edu/features/the_flawed_logic_of_the_cap-and-trade_debate [<https://perma.cc/82DR-9DHR>] (arguing

example, a recent proposal to institute a carbon tax was withdrawn after mass protests.¹⁸² Part of the problem, no surprise, is that the public does not like tax increases.¹⁸³ Thus, some have proposed that carbon taxes be redistributed to the U.S. population as a whole as “carbon dividends,”¹⁸⁴ following Canada, which has implemented such an approach.¹⁸⁵ The hope is that a broad political constituency will emerge in support of policies combatting climate change once people start receiving checks.¹⁸⁶ Others have argued that commitments to earmark carbon tax revenue for environmental programs might increase voter support.¹⁸⁷ Either approach, however, may not be easy to enact, because while many people would see sufficiently small tax increases that they might judge worth the benefits, a smaller group will be especially harmed,¹⁸⁸ and small groups may be able to lobby efficiently.¹⁸⁹

that current efforts to tax or cap carbon emissions are “doomed to failure”).

182. See, e.g., Alissa J. Rubin & Somini Sengupta, *Yellow Vest' Protests Shake France. Here's the Lesson for Climate Change*, N.Y. TIMES (Dec. 6, 2018), <https://www.nytimes.com/2018/12/06/world/europe/france-fuel-carbon-tax.html> [<https://perma.cc/83TB-L8YF>].

183. But see Cameron Ballard-Rosa, Lucy Martin & Kenneth Scheve, *The Structure of American Income Tax Policy*, 79 J. POL. 1 (2016) (discussing how degree of dislike of paying taxes varies based on income bracket).

184. See, e.g., JAMES A. BAKER, III, MARTIN FELDSTEIN, TED HALSTEAD, N. GREGORY MANKIW, HENRY M. PAULSON, JR., GEORGE P. SCHULTZ, THOMAS STEPHENSON & ROB WALTON, CLIMATE LEADERSHIP COUNCIL, *THE CONSERVATIVE CASE FOR CARBON DIVIDENDS* (2017), <https://www.clcouncil.org/media/2017/03/The-Conservative-Case-for-Carbon-Dividends.pdf> [<https://perma.cc/9V9C-NTCA>].

185. See *Canada Adopts Carbon Fee and Dividend To Rein In Climate Change*, CITIZENS' CLIMATE LOBBY (Oct. 23, 2018), <https://citizensclimatelobby.org/canada-adopts-carbon-fee-and-dividend-to-rein-in-climate-change> [<https://perma.cc/8M7M-2WKR>].

186. See Kate Yoder, *Republicans Are Backing a 'Carbon Dividend.' What the Heck Is That?*, GRIST (June 21, 2018), <https://grist.org/article/republicans-are-backing-a-carbon-dividend-what-the-heck-is-that> [<https://perma.cc/463K-GETY>].

187. See DAVID AMDUR, BARRY G. RABE & CHRISTOPHER BORICK, PUBLIC VIEWS ON A CARBON TAX DEPEND ON THE PROPOSED USE OF REVENUE 4 (Issues in Energy & Env't Pol'y, No. 13, 2014), <http://closup.umich.edu/sites/closup.umich.edu/files/ieep-nsee-2014-spring-carbon-tax.pdf> [<https://perma.cc/QB5W-Q5KS>]; Gary M. Lucas, Jr., *Voter Psychology and the Carbon Tax*, 90 TEMP. L. REV. 1, 41–42 (2017) (“[E]vidence from focus groups indicates that many people ignore the incentive effects of environmental taxes and conclude that they will be ineffective unless the government uses the resulting revenue to fund environmental programs.”).

188. See MANCUR OLSON, JR., *THE LOGIC OF COLLECTIVE ACTION* 53 (1965) (“The greater the effectiveness of relatively small groups . . . is evident from observation and experience as well as from theory.”).

189. *Id.* at 141 (describing the effectiveness of small “special interest” groups).

A different strategy would be to redistribute carbon tax revenue directly to those most likely to suffer from the legislation combatting climate change.¹⁹⁰ Whether such a plan would be more politically palatable is beyond my scope here. Also beyond my scope is whether there would be adverse consequences from paying off those harmed by anti-climate-change legislation in this manner. One might argue, for example, that anticipation of compensation will create incentives to use large amounts of carbon in hope of compensation.¹⁹¹ Or, alternatively, one might argue that if the goal is simply to maximize the political enactability of the legislation, the compensation should be directed not necessarily at those who suffer from the legislation, but instead at those most likely to be median voters.¹⁹² Perhaps West Virginia should not receive compensation at all, because it is unlikely to be converted to the environmental cause anyway.¹⁹³

This Article's project is to assume that the goal is to distribute money (perhaps carbon tax revenue) to those adversely affected in proportion to how they are affected. The argument for random selection is based largely on the infeasibility of administrative alternatives. As argued in the Introduction,¹⁹⁴ bright-line rules determining eligibility will be virtually impossible to devise unless limited to the most obvious cases, such as coal miners. Even then, the actual measure of damages may be crude, failing to take into account nuances such as whether those who have lost jobs are in a position to transition easily to other employment, based on considerations such as their educational background and whether their family ties make it feasible to move to other cities. Calculation becomes far more complex for indirectly affected individuals. It is often said that a single job supports

190. Some argue for offsetting the overall distributional effect of a carbon tax, for example by simultaneously making the income tax more progressive. Metcalf & Weisbach, *supra* note 6, at 513–16.

191. Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 527–29 (1986) (making the broader point that parties may behave more efficiently if they anticipate retroactive tax legislation enacting an efficient rule).

192. Anthony McGann, *Voting Choice and Rational Choice*, OXFORD RSCH. ENCYCLOPEDIA POL. (Aug. 31, 2016), <https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-79> [<https://perma.cc/75MK-AHSX>] (“[I]t is optimal for both parties to position themselves at the preference of the median voter [to enact policies].”).

193. *America's Greenest States*, FORBES (Oct. 17, 2007), https://www.forbes.com/2007/10/16/environment-energy-vermont-biz-beltway-cx_bw_mm_1017_greenstates.html#787bd366119d [<https://perma.cc/PZG5-WDKW>] (ranking West Virginia as America's least “green” state).

194. See *supra* Introduction.

multiple other jobs.¹⁹⁵ But every town is different, as is every job and every worker and family. It would be extraordinarily difficult to devise reasonable payment formulas *ex ante*. If formulas left any ambiguity (and likely even if they did not), the administrative burden of processing tens or hundreds of millions of claims would be enormous. Achieving reform within a conventional administrative structure would thus be difficult. Suppose, for example, that an agency included a single tier of decisionmakers. The resources required to staff the agency with enough decisionmakers initially would be large, and it would be difficult to craft incentives that would prevent idiosyncratic decision-making.

A different approach, but one that would also require a massive investment in personnel, might be to establish an agency with great discretion, vested ultimately in the agency head, to distribute money. The agency's decisions might not even be conceived as adjudications.¹⁹⁶ Such a model bears resemblance to the approach used in the September 11th Victim Compensation Fund,¹⁹⁷ whose head, Kenneth Feinberg, generally received praise for distributing funds fairly.¹⁹⁸ But the Victim Compensation Fund involved a relatively small number of claimants,¹⁹⁹ and the limited duration of the Fund²⁰⁰ and relative lack of political disagreement about the relevant considerations in distributing money made the identity of the head of the Fund less important.²⁰¹ Due process was also less of a concern, because anyone could decline an offer of compensation and bring an individual lawsuit.²⁰² The climate change issue, including the question of who deserves the greatest payments, is sufficiently politically charged that payments in a highly hierarchical model might depend greatly on the

195. See, e.g., Gregory Schmid, *Manufacturing: The Key to Future Jobs*, CHALLENGE, Nov./Dec. 1988, at 54, 56.

196. Matthew Lee Wiener, *General Rules for Agency Adjudications?*, REGUL. REV. (Oct. 29, 2018), <https://www.theregreview.org/2018/10/29/wiener-general-rules-agency-adjudications> [<https://perma.cc/L6BS-QEAC>] (broadly discussing the lack of uniformity for adjudications across agencies).

197. September 11th Victim Compensation Fund, 28 C.F.R. pt. 104(c) (2019).

198. For Feinberg's own account, see Kenneth R. Feinberg, *The September 11th Victim Compensation Fund*, 32 LITIG. 14, 14–17 (2006).

199. *Id.* at 14 (reporting more than 5,000 families and physical injury survivors participating in program).

200. *Id.* (noting that Feinberg only administered the Fund for thirty-two months).

201. Kenneth R. Feinberg, *Speech: Negotiating the September 11 Victim Compensation Fund of 2001: Mass Tort Resolution Without Litigation*, 19 WASH. U. J.L. & POL'Y 21, 29 (2005) ("I had tremendous support . . . and it was bipartisan.").

202. September 11th Victim Compensation Fund of 2001, Pub. L. No. 107–42, § 405(a)(1).

identity of the agency head.²⁰³ At least that is likely to be so if the agency head controls the salary and continued employment of subordinates. If not, the agency would be a behemoth with great discretion vested in lower-level employees, resulting in disparity. Uniform substantive and procedural rules might reduce disparity, but only somewhat and only at high cost.²⁰⁴

Using a random selection market would reduce the government's administrative burden. This approach relies on a dynamic market sector to price individual claims.²⁰⁵ Ultimately, the effectiveness of claim pricing is an empirical question. Yet it is not even clear how one could design a study to measure pricing accuracy, as an adjudication that reaches a very different result from the claim price could be a result of an idiosyncratic decisionmaker. If the government were to implement the random selection market, the public would assess the accuracy of claim pricing informally, likely placing excess weight on highly salient cases.²⁰⁶ This public assessment might determine the random selection approach's destiny. A virtue of the random selection market is that the government can scale it easily over time, simply by changing the size of the fund. For example, the government might pass modest climate change legislation with a modest fund, and if that proves sufficiently popular, it could then pass more encompassing legislation with a larger fund.

2. Green Upgrades Expense Compensation

Compensation for adverse effects of legislation is especially challenging, because the circumstances of those who might apply for compensation are so diverse. This strengthens the case for random selection, because this diversity might make rules difficult to enact. But

203. David B. Spence, *The Effects of Partisan Polarization on the Bureaucracy*, in *CAN AMERICA GOVERN ITSELF?* 272–73 (Frances E. Lee & Nolan McCarty eds., 2019) (discussing the strain that political polarizations places on agencies and its impact on agency decision-making).

204. Robert R. Kuehn, *Bias in Environmental Agency Decision Making*, 45 *ENV'T L.* 957, 1009 (2015) (studying the prevalence of discrepancy in environmental agency decision-making despite rules to eliminate bias).

205. See *supra* Part III.

206. Individuals often make judgments based on examples that come most easily to mind. See Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, in *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* 3, 11 (Daniel Kahneman, Paul Slovic & Amos Tversky eds., 1982) (discussing the availability heuristic). With the random selection market, judgments might be affected by cases that receive high publicity. For example, the public might wrongly infer that a claimant received too little when an idiosyncratic decisionmaker made a very high evaluation ex post.

random selection markets also might be used for less open-ended measurement challenges. Consider, for example, the problem of upgrading the energy efficiency of existing buildings.²⁰⁷ A recent proposal in the United States known as the “Green New Deal” recommends, among other things, upgrading the energy efficiency of every building in the country.²⁰⁸ Yet the government will inevitably face trade-offs in what upgrades it might reimburse. For example, one might not be allowed a free trade-in of a television to the newest LED television display, even if it is the most energy efficient model.²⁰⁹

Let us assume that government subsidization of energy efficiency upgrades of existing buildings is desirable, but that it also makes sense for the government to allocate its limited resources to the upgrades that make the most difference. With random selection markets, the United States might establish a fixed fund to distribute among building owners who provide evidence of improving energy efficiency, such as receipts and proof that old inefficient equipment has been destroyed. This approach, like the legislation compensation fund, can easily be tested on a small scale and then scaled if successful. Even though the model developed here is intended to allow for massive governmental programs, smaller experiments can test its viability. For example, the government initially might provide a fund of only a few billion dollars for energy upgrades paid for in a particular year, and then if that proves successful, it might increase the size of the fund to hundreds of billions of dollars, without necessarily increasing the size of the agency adjudicating claims. As the program scales, each claim is less likely to be randomly selected, and randomly selected claims earn more, but the adjudicative task stays essentially the same. The government could change the mission of the program if appropriate, for

207. Jon Creyts, Hannah Choi Granade & Kenneth J. Ostrowski, *US Energy Savings: Opportunities and Challenges*, MCKINSEY & CO. (Jan. 1, 2010), <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/us-energy-savings-opportunities-and-challenges#> [<https://perma.cc/89HG-477M>] (“Upgrading building shells and heating and cooling equipment, mostly in existing homes, represents the largest opportunity” for residential sector energy savings.”).

208. See Salvador Rizzo, *What’s Actually in the ‘Green New Deal’ from Democrats?*, WASH. POST (Feb. 11, 2019), <https://www.washingtonpost.com/politics/2019/02/11/whats-actually-green-new-deal-democrats> [<https://perma.cc/S7QF-H73C>] (recommending “[u]pgrading all existing buildings in the United States and building new buildings to achieve maximal energy efficiency, water efficiency, safety, affordability, comfort, and durability, including through electrification”).

209. See *Most Energy Efficient TV 2019 | Types | Reviews*, ALT. ENERGY, <https://powersolarphoenix.com/most-energy-efficient-tv-types> [<https://perma.cc/T85U-GBR2>] (rating LED TVs as most energy efficient).

example by giving greater incentives for technologies with the potential to improve efficiency even more over time.²¹⁰

A building upgrades program could use a more traditional agency structure, but not without difficulty. The agency might approach its regulatory task by rating the energy efficiency of many different products, such as cars, appliances, and building materials.²¹¹ Then, the agency might devise a formula for determining total energy savings based on the item being replaced and the replacement. Ideally, such a scheme also would factor in energy usage data, since it makes little sense to subsidize replacement of, say, a gas guzzler that was barely driven even before the statute was passed. Taxpayers might then be able to take tax credits on their income tax returns. In addition to being informationally demanding, however, this system might easily be gamed. A taxpayer might claim nonexistent upgrades. Thus, the agency might need to create a nationwide corps of building inspectors, who ideally would come both before and after upgrades.²¹² Or, it might give states incentives to perform inspections, with penalties on states that do a poor job. Such incentives, however, might be challenging to administer and calibrate.

The random selection approach's primary advantage over a traditional agency is not in saving the expense of devising ex ante rules, but in processing an enormous number of relatively small claims.²¹³ Creating an efficient bureaucracy for assessing the validity of billions of claims would not be easy, especially if the process involves inherent subjectivity. The random selection program gives incentives for intermediaries to find low-cost ways to verify the accuracy of claimed

210. Advocates of clean energy subsidies argue that early innovations provide a foundation for later innovations. See Zachary Liscow & Quentin Karpilow, *Innovation Snowballing and Climate Law*, 95 WASH. U. L. REV. 387, 389 (2017). Some technologies, however, might have greater potential than others for such snowballing. *Id.* at 392 (discussing the dynamics of innovation that impact snowballing by hypothesizing an application to solar technology). For example, if a fusion reactor were created at great cost, it might deserve greater subsidy than wind, where further improvements will run up against the Betz limit. See generally *Betz Limit*, ENERGY EDUC., https://energyeducation.ca/encyclopedia/Betz_limit [<https://perma.cc/JDE5-V9DS>] (defining Betz limit as the "theoretical maximum efficiency for a wind turbine").

211. Such testing is not always trivial, as evidenced by a scandal involving Volkswagen's manipulation of energy efficiency tests. See Jack Ewing, *Inside VW's Campaign of Trickery*, N.Y. TIMES (May 6, 2017), <https://www.nytimes.com/2017/05/06/business/inside-vws-campaign-of-trickery.html> [<https://perma.cc/FGD2-8WLJ>].

212. See generally Peter J. May & Robert S. Wood, *At the Regulatory Front Lines: Inspectors' Enforcement Styles and Regulatory Compliance*, 13 J. PUB. ADMIN. RSCH. & THEORY 117 (2003) (discussing the role that building inspectors can have in regulatory compliance).

213. See *supra* Part I.B.1.

improvements. For example, intermediaries might devise AI systems to assess before-and-after photos and receipts, if that is technologically feasible. Just as taxpayers have incentives to find ways to cheat the IRS, so too would building owners have incentives to find ways to cheat intermediaries. But intermediaries may be more adaptable, unconstrained by the notice-and-comment process,²¹⁴ and will want to ensure that they are not paying for claims that will be judged worthless when eventually adjudicated and scrutinized.

3. Innovation Rewards

Part of the goal of spending a fund on energy efficiency upgrades might be to encourage research on energy efficiency technologies or other technologies to combat or adapt to climate change.²¹⁵ Yet it would also be possible for a fund to be used directly to reward successful research and development. For example, the government might establish a fund to be distributed to researchers in proportion to their contribution to combatting climate change. Because it will be difficult to know the usefulness of such research for years,²¹⁶ the government might delay paying out the fund, for example by investing the money to be distributed for research each year in the stock market for fifty years. The example illustrates that intermediaries need not be paid right away; so long as they will eventually be paid with interest, they will have incentives to buy up claims. Intermediaries can seek further funding from capital markets, either by selling equity or by seeking out loans. Capital market funders of intermediaries would have their own incentives to assess the intermediaries' portfolios, whether by themselves sampling purchased claims or by scrutinizing the intermediaries' models and methods.

A justification for the government to subsidize research and development is that the patent system is not an effective tool for combatting climate change.²¹⁷ The limited duration of patents makes it

214. See 5 U.S.C. § 553.

215. Mary Beth Gallagher, *The Race to Develop Renewable Energy Technologies*, MIT NEWS (Dec. 18, 2019), <https://news.mit.edu/2019/race-develop-renewable-energy-technologies-1218> [<https://perma.cc/7T5T-SK2E>] (identifying the need for energy technologies and specific growing fields).

216. Climate change research has been going on since 1640, and often it takes many years to complete and understand such research. See *History of Climate Science Research*, UCAR CTR. FOR SCI. EDUC., <https://scied.ucar.edu/learning-zone/how-climate-works/history-climate-science-research> [<https://perma.cc/ZZM8-A2ZA>].

217. Ofur Tur-Sinai, *Patents and Climate Change: A Skeptic's View*, 48 ENV'T L. 211, 231 (2018) (explaining challenges of patent appropriability in context of climate change, stating "the patent system is far from an optimal incentive mechanism in the

hard for those who contribute to addressing a long-term problem to appropriate value from their work.²¹⁸ It is unlikely that a single inventor could solve climate change, but an inventor who did so likely would not make much money, as governments could simply wait until the patent expired to deploy the solution.²¹⁹ If, as seems more likely, multiple generations of research are needed to address the problem completely,²²⁰ the work of early research may be useful but not commercially viable within the patent term. This problem is not unique to climate change. Much early-stage research receives inadequate incentives from patents.²²¹ But the problem is likely especially acute in this context, because the costs of climate change are expected to rise dramatically in the future.²²²

When the social value of inventions diverges greatly from appropriate private benefits, patent theorists suggest that alternatives to the patent system may be appropriate.²²³ Literature has considered the possibility of prize or reward alternatives to the patent system,²²⁴ recognizing that government can reduce deadweight loss by compensating inventors and placing their inventions in the public domain.²²⁵ Some scholars have argued that the government should buy out

environmental field, and thus cannot be trusted to adequately promote the development of climate change technologies”).

218. *Id.* (noting that “[p]atents have limited scope and duration, and some downstream uses may fall outside the patent’s scope or be performed long after it expires”).

219. See Michael Abramowicz, *Orphan Business Models: Toward New Form of Intellectual Property*, 124 HARV. L. REV. 1362, 1404 (2011) (“The time between the present and when global warming is expected to cause major problems is likely greater than the length of the patent term, so patent incentives to reverse global warming may be absent.”).

220. Tur-Sinai, *supra* note 217, at 212 & n.1 (“[Climate change] will be a part of the future for our generation and for many to follow.” (quoting J.B. Ruhl & James Salzman, *Climate Change Meets the Law of the Horse*, 62 DUKE L.J. 975, 977–78 (2013))).

221. See generally Rebecca S. Eisenberg, *Proprietary Rights and the Norms of Science in Biotechnology Research*, 97 YALE L.J. 177, 180 (1987) (exploring challenges of promoting basic research with patents).

222. MARCY LOWE & REBECCA MARX, DATU RSCH., CLIMATE CHANGE-FUELED WEATHER DISASTERS: COSTS TO STATE AND LOCAL ECONOMIES 4 (2020) (documenting the economic loss trends due to climate change-fueled natural disasters).

223. See Amy Kapczynski & Talha Syed, *The Continuum of Excludability and the Limits of Patents*, 122 YALE L.J. 1900, 1909–10 (2013).

224. *Id.* at 1909.

225. See, e.g., James Love & Tim Hubbard, *The Big Idea: Prizes To Stimulate R&D for New Medicines*, 82 CHI.-KENT L. REV. 1519, 1520 (2007); Benjamin N. Roin, *Intellectual Property Versus Prizes: Reframing the Debate*, 81 U. CHI. L. REV. 999, 1025 (2014); Steven Shavell & Tanguy van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J.L. & ECON. 525, 530 (2001).

patents based on their private value,²²⁶ but this method will be inefficient when that private value is a poor measure of social value.²²⁷ An alternative approach with a rich historical lineage²²⁸ is for the government to create prizes, with an entire prize given to the first party that meets some goal.²²⁹ But it is unlikely that a single person or entity will solve the climate change problem.

A more appropriate solution in the literature is the possibility of rewards, in which each inventor receives value proportionate to their contributions.²³⁰ An argument against such proposals is that government valuation may be unpredictable.²³¹ Invention is inherently risky, however, and because all that matters is that inventors receive the expected value of the contributions, it does not matter if the government might pay too much or too little in a particular case.²³² Just as intermediaries with random selection ensure that claimants can receive appropriate compensation even with uncertain valuations, so too can capital markets ensure adequate payment to inventors in a reward system.

Yet a significant administrative problem remains unaddressed in the literature: Is it feasible for the government to adjudicate every claim for reward? Decisionmaker variance may be tolerable in this context, but it remains critical that adjudications be careful, lest the rewards and thus the market prioritize superficial achievements over real accomplishments. This concern may explain why one project that advocated for international implementation of a reward program focused narrowly on one type of innovation: pharmaceuticals.²³³

226. See, e.g., Michael Kremer, *Patent Buyouts: A Mechanism for Encouraging Innovation*, 113 Q.J. ECON. 1137, 1138 (1998).

227. UN TASK TEAM ON SOC. DIMENSIONS CLIMATE CHANGE, *THE SOCIAL DIMENSIONS OF CLIMATE CHANGE 6* (Discussion Draft 2011) (discussing the need to include social values when evaluating climate change).

228. See, e.g., Jonathan R. Siegel, *Law and Longitude*, 84 TUL. L. REV. 1, 2-5 (2009) (discussing the history of the longitude prize).

229. See Fiona Murray, Scott Stern, Georgina Campbell & Alan MacCormack, *Grand Innovation Prizes: A Theoretical, Normative, and Empirical Evaluation*, 41 RSCH. POL'Y 1779 (2012).

230. See Michael Abramowicz, *Prize and Reward Alternatives to Intellectual Property*, in 1 RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW 350 (Ben Depoorter & Peter S. Menell eds., 2019) (distinguishing prize and reward approaches).

231. *Id.* at 360.

232. *Id.*

233. See AIDAN HOLLIS & THOMAS POGGE, *THE HEALTH IMPACT FUND: MAKING NEW MEDICINES ACCESSIBLE FOR ALL* 3 (2008), <https://www.semanticscholar.org/paper/The>

The number of pharmaceutical drugs is relatively small, and so it may be feasible for an agency to examine all of them.²³⁴ Moreover, a common metric, known as QALY (quality-adjusted life years), can be used to assess the contribution of each drug to well-being.²³⁵ Even QALYs will have some measurement challenges.²³⁶ But a more open-ended program, encompassing not only completed pharmaceuticals but also advances in basic research contributing indirectly to cures, would result in a much larger number of claimants, each of whom would require a more detailed adjudication.²³⁷

With random selection, valuation becomes considerably easier, because the total number of administrative hearings can be made arbitrarily small.²³⁸ Measuring the social contribution of any research, however, will still be extraordinarily difficult.²³⁹ The more basic the research, the greater the challenge.²⁴⁰ The agency working *ex post* will need to consider how some particular piece of research contributed to some broader research project.²⁴¹ That broader research project

-Health-Impact-Fund%3A-Making-new-medicines-for-Hollis-Pogge/f8cfb5f5d27455498320dc5dc3a599e418e1f538 [https://perma.cc/R6ZX-4G7P].

234. See generally Ljubica Cvetkovska, 32 *Astonishing Pharmaceutical Statistics & Facts for 2020*, SUPPLEMENTS 101 (Apr. 1, 2020), <https://supplements101.net/pharmaceutical-statistics> [https://perma.cc/P3YC-NYNX] (listing important facts about the pharmaceutical industry including the number of drugs that are in development globally, the amount of drugs the FDA approves every year, and the amount of money it costs to develop a new drug).

235. See Hollis, *supra* note 233, at 9 (“A drug that extended a person’s life by ten healthy years would be recognized as having created ten QALYs.”).

236. Still, QALYs may be more easily measured than alternatives. See Matthew D. Adler, *QALYs and Policy Evaluation: A New Perspective*, 6 *YALE J. HEALTH POL’Y L. & ETHICS* 1, 35–42 (2006) (explaining that QALYs values might be easier to measure than willingness to pay/accept (WTP/WTA) values).

237. See generally CONG. BUDGET OFF., *RESEARCH AND DEVELOPMENT IN THE PHARMACEUTICAL INDUSTRY 2–3* (2006) (“The federal government spent more than \$25 billion on health-related . . . [research and development] in 2005. Only some of that spending is explicitly related to the development of new pharmaceuticals. However, much of it is devoted to basic research . . .”).

238. See *supra* Part I.B (discussing methods of randomly selecting claims for adjudication and the implications of random selection).

239. See Magnus Gulbrandsen & Richard Woolley, *Measuring Impact: Methods, Challenges and Biases*, U. OSLO: OSIRIS BLOG (Apr. 5, 2018), <https://www.sv.uio.no/tik/english/research/centre/osiris/osirisblog/measuring-impact.html> [https://perma.cc/6B5G-FEU4] (explaining the difficulties in measuring the impact of research including, attribution, latency, and causality).

240. See *supra* notes 141–42 and accompanying text.

241. See generally Gulbrandsen & Woolley, *supra* note 239 (explaining the difficulties in attributing particular research’s contribution to a final project such as a motion picture).

itself might be just one component of a larger contribution.²⁴² Similar problems exist in patent law, when courts must assess damages for infringement of a small component of an invention.²⁴³ Some have argued that, in part because of the salience of the infringed component, valuations may tend to be exaggerated.²⁴⁴ With a fixed fund, all research contributions will be subject to exaggeration, and if the exaggeration is the same for each assessed contribution, the effect cancels itself out.

Thus, an argument that the random selection mechanism will produce distortions must be more subtle. The claim must be that some types of contributions might be valued too high relative to other contributions. For example, suppose an argument exists that a basic research contribution will be valued too highly. Then, if intermediaries anticipate this, they will pay more to buy claims for basic research than they should relative to applied research. But if one anticipates that intermediaries will incorporate into their calculations a bias against applied research, then perhaps one should also anticipate that the ultimate decisionmakers will recognize the possibility of such a bias. If so, then those decisionmakers should be able to self-correct by devaluing their initial assessments of basic research or increasing their later assessments of applied research. For random selection to produce systematic distortions, those distortions must be anticipatable yet not correctable. If everyone overvalues basic research and fails to recognize that they are doing so, then the random selection mechanism is unlikely to correct the misallocation, but it is also unlikely to exacerbate the problem.

The random selection approach is not, of course, the only possible mechanism by which a government (or international organization distributing resources contributed by many nations) could subsidize climate change research.²⁴⁵ The most obvious alternative is a grant-generating body.²⁴⁶ A core difference is that grant-making institutions

242. See *id.* (“Research usually does not lead to certain impacts on its own or automatically. It is the *combination* of research with a range of other factors . . . that makes the difference for a firm or for society.”).

243. See, e.g., Brian J. Love, *Patentee Overcompensation and the Entire Market Value Rule*, 60 STAN. L. REV. 263 (2007) (discussing challenges in apportioning patent damages).

244. For an assessment of the effect of anchoring on patent damages, see Thomas F. Cotter, *Patent Damages Heuristics*, 25 TEX. INTELL. PROP. L.J. 159, 199–203 (2018).

245. See *infra* note 247 and accompanying text.

246. See *Climate Change Research Grants*, EPA (Oct. 5, 2020), <https://www.epa.gov/research-grants/climate-change-research-grants> [<https://perma.cc/MD8L>]

provide funding *ex ante*, while the random selection mechanism measures *ex post*.²⁴⁷ If a grant-making institution is capable of making sound *ex ante* assessments of the welfare contributions of different grant proposals, then there may be limited need for an *ex post* mechanism.²⁴⁸ However, the random selection approach may be preferable in several circumstances.²⁴⁹ First, the prospective number of projects may be so large that the administrative challenges of creating the grant-making agency may be overwhelming.²⁵⁰ Second, especially if a large sum of money is involved, a grant-making agency may face strong political pressures, for example, to allocate funding to particular regions.²⁵¹ By delaying the eventual distribution of a fund, political pressure may be vitiated. Third, if grant-making institutions are, as some charge, excessively defensive of the conventional scientific wisdom,²⁵² then the delay in distribution of the subsidy may facilitate supporting more longshot approaches.

B. COMPENSATING VICTIMS OF CLIMATE CHANGE, PANDEMICS, AND OTHER DISASTERS

Subsection IV.A.1 highlights that one reason climate change is so difficult a problem is that any governmental responses must ultimately affect individuals with heterogeneous circumstances.²⁵³ For this and many other reasons, significant climate change can cause

-N4QD] (showing how the EPA uses funds to support research on various aspects of climate change).

247. *But see* W. Nicholson Price II, *Grants*, 34 BERKELEY TECH. L.J. 1 (2019) (arguing that grant-making institutions involve repeated interactions and thus are not entirely *ex ante*).

248. *But see infra* notes 250–51 and accompanying text (explaining the advantages of using a random selection approach).

249. *See infra* notes 250–51.

250. *See* Amara Omeokwe & Yuka Hayashi, *SBA Under Fire for Failing To Get Aid to Struggling Small Businesses*, WALL ST. J. (Apr. 8, 2020, 7:00 AM), <https://www.wsj.com/articles/sba-under-fire-for-failing-to-get-aid-to-struggling-small-businesses-11586343600> [<https://perma.cc/826A-2RFU>] (discussing the Small Business Administration's difficulties in providing emergency grants to all of the small businesses that are in need across the United States).

251. *See* Price, *supra* note 247, at 13–14 (noting this critique).

252. *See, e.g.*, Gina Kolata, *Grant System Leads Cancer Researchers To Play It Safe*, N.Y. TIMES (June 27, 2009), <https://www.nytimes.com/2009/06/28/health/research/28cancer.html> [<https://perma.cc/SNG6-TC7N>] (explaining how grant-making institutions inhibit innovation in cancer research).

253. *See supra* Part IV.A.1 (claiming that divergent individual circumstances can make it difficult for the government to devise reasonable payment formulas *ex ante*, which will intensify administrative burdens).

serious damage when it occurs.²⁵⁴ If past disasters and the coronavirus pandemic are a guide, the government might decide to pay compensation to those especially harmed by climate change.²⁵⁵ A random selection approach can provide an administratively simple mechanism for the government to compensate those who suffer as a result of climate change or other disaster, including another pandemic.²⁵⁶

In the United States, the government typically responds to a disaster by helping claimants pay for necessities such as rent and home repairs and also approving low-interest loans for reconstructing damaged homes and businesses.²⁵⁷ Some of this money ends up being spent on fraudulent claims.²⁵⁸ It is administratively challenging for an agency to spend a great deal of money both quickly and carefully.²⁵⁹ Perhaps because of this administrative challenge, government spending following the pandemic largely focused on providing direct cash payments to citizens regardless of demonstrated need,²⁶⁰ supplementing unemployment insurance,²⁶¹ and subsidizing loans to assist businesses in payroll expenses.²⁶² Some commentators suggested different allocations, such as extending rebates to the elderly and disabled,²⁶³ but the shared implicit assumption was that Congress would

254. See Leslie Baehr, *22 Devastating Effects of Climate Change*, BUS. INSIDER (June 11, 2014, 3:04 PM), <https://www.businessinsider.com/effects-of-climate-change-2014-6> [<https://perma.cc/8R8Y-VVRM>] (detailing the various consequences of climate change on public health, housing, and the economy).

255. See *supra* notes 194, 196–98 and accompanying text.

256. See *supra* notes 66–67, 69–70 and accompanying text (presenting random selection methods).

257. See, e.g., *FEMA Assistance Tops \$1 Billion for Florida Hurricane Irma Survivors*, FED. EMERGENCY MGMT. AGENCY (Apr. 19, 2018), <https://www.fema.gov/news-r-lease/20200220/fema-assistance-tops-1-billion-florida-hurricane-irma-survivors> [<https://perma.cc/44PP-Q4M8>] (displaying the amount of funds that FEMA has given to the survivors of Hurricane Irma for various purposes, including rental payments and home repairs).

258. See, e.g., *4 Hurricane Irma-Affected U.S. Attorney Offices Form Fraud Task Forces*, INS. J. (Sept. 19, 2017), <https://www.insurancejournal.com/news/southeast/2017/09/19/464738.htm> [<https://perma.cc/U4P2-T758>] (describing how some U.S. Attorney's Offices have taken steps to combat disaster fraud related activity).

259. See *supra* note 250 (describing the difficulties the Small Business Administration has faced in distributing grants).

260. CARES Act, Pub. L. No. 116-136, 134 Stat. 281, § 2201 (2020) (authorizing “recovery rebates”).

261. *Id.* §§ 2101–07.

262. *Id.* § 1102 (establishing the Paycheck Protection Program).

263. See Daniel Hemel, *Stiffed by the Senate Stimulus: The Surprising Group Left Out of Coronavirus Rescue Bill*, N.Y. DAILY NEWS (Mar. 26, 2020, 12:47 PM), <https://nydailynews.com/opinion/ny-oped-stiffed-by-the-senate-stimulus-20200326-624qm3qnvbhw7py2unylqpd6iy-story.html> [<https://perma.cc/TR2D-CL3V>] (revealing

need to specify who received how much, using limited sources of information such as tax returns.²⁶⁴ This assumption reflects a view that it would be impossible to have an administrative regime that would provide individualized assessments of loss attributable to the pandemic.²⁶⁵

With the random selection alternative, the government might still allocate specific sums of money for particular disasters,²⁶⁶ but then allow markets to provide compensation. In such a program, we can conceive of the victims themselves as the claimants, who sell their claims for compensation to intermediaries. These claims might be based on specific expenses (such as repair bills after a hurricane) or on data showing economic loss (such as proof that a business at which an individual worked was forced by the government to close). The fund in this conceptualization would be distributed in proportion to adjudicated assessments of how much benefit the intermediaries provided to the claimants or how much loss the claimants suffered. Alternatively, we might conceive of charities as the claimants, with a claim for every type of relief granted. The charities might then hold on to the claims, if large enough, or sell them to intermediaries aggregating claims from multiple charities. However conceptualized, this system would allow for consideration of the relative merits of different types of relief. The ultimate question for adjudication would not be how much money was given, but how much value was produced. For example, relief in the form of food might receive more credit than relief in the form of entertainment. Moreover, distributional concerns might be considered. Greater valuations might be given to relief that

that the COVID-19 relief package enacted in March excludes elderly and disabled “dependents” and other vulnerable groups).

264. *But see* Chuck Marr, Samantha Jacoby, Chye-Ching Huang, Stephanie Hingtgen, Arloc Sherman & Jennifer Beltran, *Future Stimulus Should Include Immigrants and Dependents Previously Left Out, Mandate Automatic Payments*, CTR. ON BUDGET & POL’Y PRIORITIES (Mar. 6, 2020), <https://www.cbpp.org/research/economy/future-stimulus-should-include-immigrants-and-dependents-previously-left-out> [<https://perma.cc/S3EF-WEX6>] (presenting other explanations for why these groups were not provided rebates, including the fact that the members of these groups aren’t primarily responsible for their financial support or that it was a mere legislative tradeoff).

265. *See generally* Eric Morath, *How Many U.S. Workers Have Lost Jobs During Coronavirus Pandemic? There Are Several Ways To Count*, WALL ST. J. (June 3, 2020, 5:30 AM), <https://www.wsj.com/articles/how-many-u-s-workers-have-lost-jobs-during-coronavirus-pandemic-there-are-several-ways-to-count-11591176601> [<https://perma.cc/SS9X-23K2>] (proclaiming that estimates for lost jobs during the spring of 2020 ranged from 20 to 40 million).

266. *See generally* BRUCE R. LINDSAY, CONG. RSCH. SERV., R43537, *FEMA’S DISASTER RELIEF FUND: OVERVIEW AND SELECTED ISSUES 12* (2014) (describing debate over whether FEMA should rely on supplemental appropriations).

successfully targeted the poor or that successfully targeted those most harmed by the disaster.

The novel coronavirus pandemic illustrated not only the government's difficulty in determining how much individuals lost,²⁶⁷ but also the government's inability to direct spending to the most helpful items for the pandemic.²⁶⁸ In comparison to spending on individual cash payments, the government spent relatively little money on ventilators,²⁶⁹ which seemed that they might save many lives (though turned out not to help as much as initially thought),²⁷⁰ or on respirators and other protective equipment.²⁷¹ Even though face masks greatly reduced transmission of the virus,²⁷² and thus constituted the sort of positive externality that standard economic theory suggests justifies

267. The government payments under the CARES Act were based on a simple formula, providing "up to \$1,200 per adult for individuals whose income was less than \$99,000 (or \$198,000 for joint filers) and \$500 per child under seventeen years old—or up to \$3,400 for a family of four." *The CARES Act Provides Assistance to Workers and Their Families*, U.S. DEP'T TREASURY, <https://home.treasury.gov/policy-issues/cares/assistance-for-american-workers-and-families> [<https://perma.cc/R2YA-XXFL>]. The amounts are calculated based on previous tax filings and Social Security records. See *id.* Note that there is no effort to determine whether particular workers were employed in industries especially likely to be affected or even to determine whether individuals had suffered a decline in wages.

268. See *supra* notes 203, 205 and accompanying text.

269. See, e.g., Nathan Layne, *Outbid and Left Hanging, U.S. States Scramble for Ventilators*, REUTERS (Apr. 11, 2020, 1:52 PM), <https://www.reuters.com/article/us-health-coronavirus-usa-ventilators/outbid-and-left-hanging-u-s-states-scramble-for-ventilators-idUSKCN21S20D> [<https://perma.cc/3Y6V-BLEY>] (revealing that the federal government does not have enough ventilators to support all of the states in need).

270. See Sharon Begley, *With Ventilators Running Out, Doctors Say the Machines Are Overused for COVID-19*, STAT (Apr. 8, 2020), <https://www.statnews.com/2020/04/08/doctors-say-ventilators-overused-for-covid-19> [<https://perma.cc/4BMU-Q492>] (explaining that some physicians believe that COVID-19 is more effectively treated with devices that are less intense than ventilators).

271. For a pre-solicitation by the government for N95 surgical masks, see *Personal Protective Equipment (PPE) N95 Surgical Masks/Respirators, Filtering Facepiece Respirator*, BETA.SAM.GOV, <https://beta.sam.gov/opp/d0c04e0df6e2458698a06812519d462f/view> [<https://perma.cc/JK9Y-52KJ>].

272. See *The Simple Science Behind Why Masks Work*, HEALTHLINE, <https://www.healthline.com/health-news/the-simple-science-behind-why-masks-work> [<https://perma.cc/K2JX-KRGL>] (explaining how masks can help reduce the transmission of COVID-19).

subsidization,²⁷³ the government took relatively modest measures.²⁷⁴ Public health officials pronounced that a vigorous test-and-trace program would allow the country to reduce transmission of the virus more quickly,²⁷⁵ yet the government monopolized and botched testing²⁷⁶ and offered no inducements to private firms. The government relied more on threats to mandate production through the Defense Production Act²⁷⁷ than on incentives for companies voluntarily to meet the needs of the pandemic. And while the government did subsidize an effort to produce a vaccine, total spending was far below what cost-benefit analysis would justify.²⁷⁸ But the blame cannot be placed entirely on a particular administration, as states did not pick up the slack.²⁷⁹ For example, not a single state invested in a sufficient number

273. See *Arguments in Favor of Mask Requirements During the Coronavirus (COVID-19) Pandemic, 2020*, BALLOTPEDIA, [https://ballotpedia.org/Arguments_in_favor_of_mask_requirements_during_the_coronavirus_\(COVID-19\)_pandemic_2020#Mask_requirements_are_good_for_the_economy](https://ballotpedia.org/Arguments_in_favor_of_mask_requirements_during_the_coronavirus_(COVID-19)_pandemic_2020#Mask_requirements_are_good_for_the_economy) [<https://perma.cc/4MT5-SJWH>] (presenting arguments for why mask mandates are beneficial to the economy).

274. Some states mandated masks in some locations but did not subsidize the masks or require higher quality surgical masks. For a rare exception of a program to provide free masks, albeit only one per person, see Alicia Lee, *The State of Utah Will Provide a Free Face Mask to Any Resident Who Requests One*, CNN, <https://www.cnn.com/2020/04/29/us/Utah-free-mask-coronavirus-trnd/index.html> [<https://perma.cc/J5CM-63PA>] (Apr. 29, 2020, 5:50 PM).

275. Cf. Denise Chow, *Escaping the Coronavirus Lockdown with Test and Trace*, NBC NEWS (Apr. 13, 2020), <https://www.nbcnews.com/science/science-news/test-trace-how-u-s-could-emerge-coronavirus-lockdowns-n1182626> [<https://perma.cc/M9LT-H45P>] (explaining how states can use testing and tracing to reduce the spread of COVID-19 and relax lockdowns and other restrictions).

276. See Michael D. Shear, Abby Goodnough, Sheila Kaplan, Sheri Fink, Katie Thomas & Noah Weiland, *The Lost Month: How a Failure To Test Blinded the U.S. to Covid-19*, N.Y. TIMES, <https://www.nytimes.com/2020/03/28/us/testing-coronavirus-pandemic.html> [<https://perma.cc/F6UH-XLZ8>] (Apr. 1, 2020) (describing how the United States could have mitigated the effects of the COVID-19 pandemic through earlier and more aggressive screening).

277. See Michael Abramowicz, *The Defense Production Act and Central Pandemic Planning*, REASON: THE VOLOKH CONSPIRACY (Mar. 19, 2020), <https://reason.com/2020/03/19/the-defense-production-act-and-central-pandemic-planning> [<https://perma.cc/S856-5BAG>] (discussing the Defense Production Act's provisions and the powers it bestows upon the executive branch).

278. See Susan Athey, Michael Kremer, Christopher Snyder & Alex Tabarrok, *In the Race for a Coronavirus Vaccine, We Must Go Big. Really, Really Big.*, N.Y. TIMES (May 4, 2020), <https://www.nytimes.com/2020/05/04/opinion/coronavirus-vaccine.html> [<https://perma.cc/8ES8-6H5H>] (advocating for the U.S. government to contribute greater funds to vaccine research, given the impact that COVID-19 has already had on the nation).

279. See Dylan Hayre, *How State Governments Across the Country Failed To Protect Our Communities from COVID-19*, ACLU (July 2, 2020), <https://www.aclu.org/news/criminal-law-reform/how-state-governments-across-the-country-failed-to-protect>

of non-respirator surgical masks to ensure that everyone could wear a new one each day, relying instead on homemade face coverings.²⁸⁰ An explanation for these collective failures is that it is not easy to scale up an administrative program, deciding what to purchase, in what quantities, and to whom to distribute it, especially if corruption and cronyism are to be avoided. However, a market approach could be scaled up quickly, without precisely determining what to spend money on in advance. Had the government devoted a tenth of the money that it spent on income support to random selection markets rewarding private efforts to stop the virus, it might have saved both lives and money.

Whether a market approach is superior to the status quo approaches to hurricane and pandemic relief depends on the market and government's relative skill at scaling up operations quickly, prioritizing important expenditures, and distinguishing legitimate from illegitimate claims. One objection might be that most of the value the government provides is prior to the disaster, for example, in the form of stockpiling food and other necessities for a literal rainy day.²⁸¹ But this arguably militates in favor of the market random selection approach. After all, private organizations might prepare stockpiles in advance in anticipation of the government declaring a disaster.²⁸² Then, once the government announced the value of a fund for the disaster, the private organizations would mobilize their resources. Some of these private organizations might be for-profit; others might be non-profits that are able to spend more as a result of this form of government subsidy. If private organizations are better than the government at identifying how *ex ante* expenditures might be useful in a disaster, then this

-our-communities-from-covid-19 [<https://perma.cc/X25A-8CEM>] (detailing how state leaders have endangered incarcerated populations and communities as a whole with their failure to adhere to warnings and take action).

280. See generally *Mask Types*, U. MD. MED. SYS., <https://www.umms.org/coronavirus/what-to-know/masks/mask-types> [<https://perma.cc/QY79-MP8H>] (presenting descriptions of N95, surgical, and cloth facial coverings).

281. See, e.g., Public Health Service Act, 42 U.S.C. § 247d-6b (creating the Strategic National Stockpile); ANNA NICHOLSON, SCOTT WOLLEK, BENJAMIN KAHN & JACK HERRMANN, NAT'L ACADS. OF SCIS., ENG'G, & MED., *THE NATION'S MEDICAL COUNTERMEASURE STOCKPILE: OPPORTUNITIES TO IMPROVE THE EFFICIENCY, EFFECTIVENESS, AND SUSTAINABILITY OF THE CDC STRATEGIC NATIONAL STOCKPILE* (2016), https://www.ncbi.nlm.nih.gov/books/NBK396382/pdf/Bookshelf_NBK396382.pdf [<https://perma.cc/9ELF-DMVR>].

282. See *Roche Introduces Program To Facilitate Corporate Pandemic Stockpiling of Tamiflu*, FIERCE BIOTECH (June 27, 2008, 8:29 AM), <https://www.fiercebiotech.com/biotech/roche-introduces-program-to-facilitate-corporate-pandemi-stockpiling-of-tamiflu> [<https://perma.cc/FV48-VG48>] (revealing how the pharmaceutical company Roche has started a flexible purchase program that will enable American businesses to "maintain access to their own stockpile of Tamiflu" in pandemic situations).

approach might be superior to the status quo. Private parties can also mobilize resources in hopes of selling to the government under the status quo, but this is made more burdensome by the difficulty of contracting quickly enough. Moreover, charging enough to compensate for the risk that stockpiled resources might never be used will lead to charges of price gouging,²⁸³ and perhaps even criminal penalties.²⁸⁴ But if the government promises to reward entrepreneurs in proportion to the value that they provide, this is less likely, as the government subsidy is framed as an ex post reward rather than as a response to an extortionate ex ante demand.

Climate change presents a similar challenge to a natural disaster fund,²⁸⁵ but in slow motion and potentially at a much larger scale.²⁸⁶ Although climate change might lead to specific disasters such as hurricanes,²⁸⁷ it also might cause gradual degradation of living conditions, an example being coastal areas.²⁸⁸ The goal of a climate change compensation fund might be to spread the losses due to climate change over an entire population.²⁸⁹ It might reimburse people not only for damages but also for mitigation efforts, such as the cost of constructing levees,²⁹⁰ and for damages suffered as a result of governmental

283. See Michael Brewer, Note, *Planning Disaster: Price Gouging Statutes and the Shortages They Create*, 72 BROOK. L. REV. 1101, 1112–16 (2007) (describing and critiquing legal protections against price gouging).

284. See, e.g., FLA. STAT. § 501.160 (2019) (criminalizing unconscionable prices of essential commodities during a state of emergency).

285. See *infra* note 287 and accompanying text.

286. See *infra* note 287 and accompanying text.

287. See, e.g., Alistair J. Woodward & Jonathan M. Samet, *Climate Change, Hurricanes, and Health*, 108 AM. J. PUB. HEALTH 33 (2018).

288. See, e.g., *Coasts*, U.S. CLIMATE RESILIENCE TOOLKIT, <https://toolkit.climate.gov/topics/coastal-flood-risk> [<https://perma.cc/6QR7-GKT9>] (Sept. 18, 2019, 4:32 PM) (detailing the risks that rising sea levels pose for coastal properties and infrastructure in the United States).

289. Cf. MICHAEL DWORSKY & LLOYD DIXON, *THE IMPACT ON WORKERS' COMPENSATION INSURANCE MARKETS OF ALLOWING THE TERRORISM RISK INSURANCE ACT TO EXPIRE 5* (2014) (“TRIA mitigates the impact of terrorism on insurance markets by transferring catastrophe risk to the federal government and then spreading losses broadly across the entire P&C policy-holder base in order to reduce the solvency impact a large attack would have on any particular insurance company.”).

290. This assumes that levees in fact serve to mitigate climate change. *But see* Erika Bolstad, *Irony: Levees Could Make River Flooding Worse*, SCI. AM. (May 9, 2017), <https://www.scientificamerican.com/article/irony-levees-could-make-river-flooding-worse> [<https://perma.cc/Z72M-RXT4>] (displaying the arguments from some researchers that levees have caused increased recreational development on floodplains, which results in the over-channelizing of rivers). Ex post decisionmakers ought not reimburse expenses that simply moved the effects of climate change from one place to another.

mitigation efforts that help some at the expense of others.²⁹¹ The fund might be implemented at the state,²⁹² national,²⁹³ or international level.²⁹⁴ Larger-scale implementation may be ethically justified because some regions may suffer considerably greater losses than other regions.²⁹⁵ Yet it may be politically treacherous to designate in advance how much money should go to each region because special interests may affect how money is spent, potentially resulting in money being spent inefficiently on those mildly affected by climate change.²⁹⁶

The random selection market approach avoids the need to make these decisions *ex ante*. Random selection will likely be justified if the expectation of how *average* *ex post* decisionmakers are likely to spend money allocates funds better than *ex ante* decisionmakers. Even if we expect a great deal of idiosyncratic decision-making *ex post*, the intermediaries will price claims by averaging various possible results. Meanwhile, it may be easier to arrive at an agreement *ex ante*, for the general reason that it is easier for legislatures to pass statutes that

291. See, e.g., Jeremy Patashnik, *The Trolley Problem of Climate Change: Should Governments Face Takings Liability If Adaptive Strategies Cause Property Damage?*, 119 COLUM. L. REV. 1273, 1276 (2019) (assessing the problem of damage that “results from future government-sanctioned climate change adaptations designed to save *other* parcels”).

292. Cf. *Montana COVID-19 Fund*, MONT. CMTY. FOUND., <https://www.mtcf.org/Montana-COVID-19-Fund> [<https://perma.cc/C2XS-H5DT>] (describing the Montana COVID-19 Fund which was created by the Montana Community Foundation and the Montana Nonprofit Association to help the state’s rural and tribal communities that are struggling during COVID-19).

293. Cf. *supra* notes 196–98 and accompanying text (explaining the provisions of the CARES Act that help citizens and businesses survive the COVID-19 pandemic).

294. Cf. *COVID-19 Financial Assistance and Debt Service Relief*, INT’L MONETARY FUND, <https://www.imf.org/en/Topics/imf-and-covid19/COVID-Lending-Tracker> [<https://perma.cc/QL6L-RAMX>] (Oct. 2, 2020) (explaining how the International Monetary Fund is providing financial aid and debt service relief to its member nations suffering from the economic consequences of COVID-19).

295. The IPCC estimates that if policy remains unchanged and global temperatures rise by 3.66°C, global GDP in the year 2100 will be 2.6% lower than it otherwise would be. INT’L PANEL ON CLIMATE CHANGE, *IMPACTS OF 1.5°C OF GLOBAL WARMING ON NATURAL AND HUMAN SYSTEMS* 256 (2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter3_Low_Res.pdf [<https://perma.cc/6LUE-SG2F>]. Though this purely economic effect is a serious loss akin to a global recession, it is sufficiently modest that in principle, people in less-affected regions could help those in more-affected regions.

296. Analogously, Wyoming receives far more antiterrorism aid from the federal government than either New York or California. See STEVEN MAGUIRE & SHAWN REESE, CONG. RSCH. SERV., *RL33770, DEPARTMENT OF HOMELAND SECURITY GRANTS TO STATE AND LOCAL GOVERNMENTS: FY2003 TO FY2006*, CRS-23 TO -24, -41 TO -42, -53 (2006), <https://fas.org/sgp/crs/homesecc/RL33770.pdf> [<https://perma.cc/UPW2-TWBN>].

punt significant decisions to administrative agencies.²⁹⁷ Because an agency can operate based on a relatively simple standard, special interest provisions will be more obvious. This makes it more likely, though not inevitable, that giveaways might be avoided. One approach might be to provide modest funding early on, ideally under a standard substantially free of political influence. Establishing this status quo will make it more difficult for special interests to distort the criteria if further funding is provided later.

There could, however, be negative consequences from the creation of a mechanism to provide disaster relief.²⁹⁸ The greater the expectation that the government will reimburse damages from climate change or from a pandemic, the less incentive there is for individuals to act to avoid losses.²⁹⁹ A similar problem already exists in the area of flood damage.³⁰⁰ Recognizing the moral hazard created by expectations that the government will reimburse such damage, the government has undertaken various initiatives to require residents of flood plains to purchase flood insurance.³⁰¹ There is great resistance to such requirements, though, even when such insurance is heavily subsidized by the government.³⁰² Perhaps if a national government could commit credibly *not* to provide climate change disaster relief, individuals would have better incentives to avoid such damage. But that may

297. *E.g.*, Eric Berger, *Individual Rights, Judicial Deference, and Administrative Law Norms in Constitutional Decision Making*, 91 B.U. L. REV. 2029, 2094 (2011) (“[L]egislatures punt to agencies to avoid accountability . . .”).

298. *See infra* note 299 and accompanying text.

299. *See* Kristin Tate, *Coronavirus Reveals Financial Irresponsibility of Americans*, HILL (Mar. 22, 2020, 6:00 PM), <https://thehill.com/opinion/finance/488906-coronavirus-reveals-financial-irresponsibility-of-americans> [<https://perma.cc/XF7Z-7VEJ>] (arguing that many Americans failed to properly save to prepare for an event such as the COVID-19 pandemic).

300. *See infra* notes 301–02 and accompanying text.

301. *See, e.g.*, Homeowner Flood Insurance Affordability Act of 2014, Pub. L. No. 113-89, 128 Stat. 1020 (making numerous changes to the National Flood Insurance Program). For a history of the National Flood Insurance Program and a proposal to privatize it, see IKE BRANNON & ARI BLASK, *REFORMING THE NATIONAL FLOOD INSURANCE PROGRAM: TOWARD PRIVATE FLOOD INSURANCE* (Cato Inst. Pol’y Analysis, No. 817, 2017), https://www.cato.org/sites/cato.org/files/pubs/pdf/pa817_2.pdf [<https://perma.cc/TH57-XLBQ>].

302. *See generally* Sarah Stochak, Jun Zhu & Laurie Goodman, *Too Many Homeowners Lack Flood Insurance, but Many Buy It Voluntarily*, URB. INST.: URB. WIRE (Sept. 18, 2018), <https://www.urban.org/urban-wire/too-many-homeowners-lack-flood-insurance-many-buy-it-voluntarily> [<https://perma.cc/WW7G-9GLB>] (revealing that policies through the National Flood Insurance Program have declined over the past decade and that the majority of individuals insured purchase policies voluntarily and did not need governmental compulsion).

be impossible, and it would penalize individuals who may have made investments before climate change was even recognized as a significant danger. A gentler alternative might be to penalize those who undertake unwise investments after the creation of the initial compensation fund. The random selection fund might provide for “appropriate” reductions in damages assessments where damages were exacerbated by claimants’ actions after the passage of the statute. Such a provision would not be adequate in a rule-bound agency but could work with an agency interpreting a standard in randomly selected cases.

CONCLUSION

Random selection has long been understood as an economizing device that allows for estimates of a population to be made based on a sample of the population’s members.³⁰³ Random selection is even used for quality assurance in some legal institutions, such as in the Social Security Administration.³⁰⁴ But institutions that have used random selection have generally used it as a means of measuring decisionmaker performance to improve decisionmaker incentives. Such incentives may be inadequate to generate consistent decision-making, especially if they conflict with other values, such as the norm of decisionmaker independence.³⁰⁵ But if a fund is divided among a random selection of claimants in proportion to adjudicated valuations, then the independence of government decisionmakers need not be compromised. Indeed, those decisionmakers may be given even more freedom to account for a wide range of considerations, because idiosyncratic decision-making by government matters less. What matters is how much market participants will pay, and they will have strong

303. See Greg Depersio, *Using Simple Random Sample To Study Larger Populations*, INVESTOPEDIA, <https://www.investopedia.com/ask/answers/042915/what-are-advantages-using-simple-random-sample-study-larger-population.asp> [<https://perma.cc/D9CQ-5CGN>] (discussing random sampling and its benefits, including its ability to create accurate representations of the larger population).

304. See David Ames, Cassandra Handan-Nader, Daniel E. Ho & David Marcus, *Due Process and Mass Adjudication: Crisis and Reform*, 72 STAN. L. REV. 1, 31–40 (2020) (describing the methods used by the Social Security Administration to conduct quality assurance, including random sampling).

305. See, e.g., Paul R. Verkuil, *Reflections upon the Federal Administrative Judiciary*, 39 UCLA L. REV. 1341, 1355 (1992) (“Management techniques are no match for claims of independence. . . . The decision arena reflects a setting where individual decision-making prevails over attempts to regularize outcomes on a statistical basis.”); see also Daniel E. Ho, *Does Peer Review Work? An Experiment of Experimentalism*, 69 STAN. L. REV. 1, 88–90 (2017) (explaining how peer review programs are often forced to compete with claims for decisional independence).

economic incentives to bid up claims that are underpriced. Antitrust law, consumer protection law, and antidiscrimination law can help ensure that claimants receive their claims' expected value.

The result is that an administrative agency with few resources aside from the fund to be distributed can be used to adjudicate a very large number of claims, even if the legislation is phrased in terms of standards rather than rules. Some potential interventions to address climate change might require individualized assessments for large numbers of potential claimants, so this is a fertile ground for considering whether tasks that one would ordinarily think impossibly complex for an administrative agency might be feasible. However, this Article has focused on just one type of task: the distribution of government funds. This does not address the many other tasks that administrative agencies perform, including the assessment of taxes or fees.³⁰⁶ Random selection is a mechanism that can be used to discipline any type of decision-making in which governmental officials exercise considerable discretion. The possibility that random selection might serve as a substitute for rules as a mechanism for preventing discretion from leading to arbitration and consistent decision-making has previously been disregarded in the legal literature, and government spending is but one area in which this tool might usefully be deployed.

306. One might wonder whether, instead of a rules-based carbon tax focused solely on some forms of pollution, random selection could facilitate a tax scheme embodying all activities contributing to global warming. A random selection system allowing taxes to be calculated based on a standard would reflect some of the same logic as is considered here but also would present unique issues. I address these challenges in Michael Abramowicz, Ian Ayres & Yair Listokin, *Randomizing Law*, 152 U. PA. L. REV. 929, 997–1001 (2011), which discusses the difficulties that can come with implementing a tax scheme that uses random assignment.